REMEDIATION ACTION PLAN (RAP)

ELAMBRA WEST

48 CAMPBELL STREET
LOT 2 / DP 1168922
GERRINGONG, NSW, 2534

Prepared For:	**Allen Price & Scarratts c/ Pearce & Campbell**
Project Number:	**ENRS2069**
Date:	**February 2022**

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Record of Distribution

Copies	Report No. & File Name	Version	Date	Commissioned By:
1 x PDF	ENRS2069.r3e1_APS_48 Campbell Street Gerringong_RAP	Rev.1	31/01/2022	Allen Price & Scarratts c/ Pearce & Campbell
1 x PDF	ENRS2069.r3e1_APS_48 Campbell Street Gerringong_RAP	Rev.2	23/02/2022	Allen Price & Scarratts c/ Pearce & Campbell
1 x PDF	ENRS2069.r3e1_APS_48 Campbell Street Gerringong_RAP	Rev.3	25/02/2022	Allen Price & Scarratts c/ Pearce & Campbell

EXECUTIVE SUMMARY

Environment & Natural Resource Solutions (ENRS Pty Ltd) was commissioned as independent environmental consultants by *Allen Price & Scarratts Pty Ltd*, on behalf of *Pearce & Campbell* (the Client) to prepare a Remediation Action Plan (RAP) to manage contaminated soils located within the Elambra West rezoning planning proposal located 48 Campbell Street, Gerringong, NSW, 2534 (*herein referred to as the Site*).

ENRS understand the remediation works are required to address the findings of a Detailed Site Investigation (ENRS, 2022) which identified shallow soil contamination requiring remediation prior to the lodgement of a subdivision application, and to address the requirements within Ministerial Direction 2.6 – Contaminated Land relating to the rezoning planning proposal.

This RAP documents the preferred final remediation strategy based on the results of previous investigations and has been prepared in general accordance with; the Safe Work Australia (2019) Code of Practice on *How to Safely Remove Asbestos;* the WorkCover NSW (2014) guidelines *for Managing Asbestos in or on Soil* and the *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA 2020).

The objectives of this RAP is to document all procedures, plans and environmental safeguards required to:

- Set remediation goals that ensure the remediated Site will be suitable for the proposed residential development that results from the proposed rezoning of the subject land, and will pose no unacceptable risk to human health or the environment;
- Define or estimate the extent of the quantities of the soil contamination at the Site;
- Document in detail all procedures and plans to be implemented to reduce risks to acceptable levels for the proposed Site use;
- Complete the remediation of impacted areas in a safe and environmentally acceptable manner;
- Identify and include proof of the necessary approvals and licences required by regulatory authorities; and
- Outline requirements for site validation upon completion of remedial works to ensure the Site will pose no unacceptable risk to human health or to the environment.

The scope of work for the preparation of this RAP included the review, assessment and collation of site data under the following tasks:

- Review of planning and regulatory requirements;
- Review of previous environmental investigations;
- Review of remediation options in consultation with the Client (ACC); and
- Document a Remediation Action Plan (RAP) for endorsement by the client, environmental auditor and the regulator (if required).

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

- The tasks completed during this investigation have met the project objectives set out in **Section 1.1**;
- Based on the proposed residential subdivision for the Site, NEPM HIL 'A' was considered the most appropriate Site Assessment Criteria.
- Based on the results of the previous environmental assessments as documented in **Section 3.1** and **Section 4.0** a total of 3,345m^3 or ~5,686.5 tonnes of material requires remediation to make the Site suitable for the proposed development:
- In assessing and determining the optimal remediation options available to the project a range of factors were considered as outlined in **Section 9.3** of this report. The selected final remediation strategy for the project is a combination of;
  - ***Off-Site Disposal*** (approximately 295m^3)
  - ***Onsite Encapsulation*** (approximately 3050m^3)
- ENRS consider the adopted remediation strategy appropriate for the current concentrations and volumes of contaminated soil present at the Site. Completing remediation works in line with this report will help ensure the Site can be made suitable for the proposed land use in a feasible and practical manner.
- Remediation and clearance works to be conducted prior to the commencement of construction;
- Remediation works must be carried out in accordance with this RAP once approved by the Site's appointed NSW EPA Site Auditor and Regulator (Kiama Municipality Council);
- Remediation of asbestos impacted material from AEC-R04 must be managed as friable asbestos under supervision of a Class A licenced removal contractor;
- Future Site works to be conducted in accordance with an Acid Sulfate Soils Management Plan (ASSMP) to be prepared by a suitably qualified Environmental Consultant;
- All waste removed from the Site must be disposed of at an appropriately licenced facility. Material disposed off-Site will need to be accompanied by a waste classification certificate prepared in accordance with the NSW EPA Waste Classification Guidelines (2014);
- All asbestos works must be completed in accordance with the Code of Practice; How to Safely Remove Asbestos (SafeWork NSW, 2019);
- A clearance certificate is required from an appropriately licenced asbestos assessor (LAA) for asbestos removal areas prior to re-occupation without asbestos specific PPE;
- Upon completion of remediation works, the stockpile holding area must be cleared by an asbestos assessor and the encapsulation cell documented within an Environmental Management Plan (EMP);
- Should any change in Site conditions or incident occur which causes a potential environmental impact, a suitable environmental professional should be engaged to further assess the Site and consider requirements for any additional assessment; and
- This report must be read in full in conjunction with the attached Statement of Limitations.

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1.0 INTRODUCTION

Environment & Natural Resource Solutions (ENRS Pty Ltd) was commissioned as independent environmental consultants by *Allen Price & Scarratts Pty Ltd*, on behalf of *Pearce & Campbell* (the Client) to prepare a Remediation Action Plan (RAP) to manage contaminated soils located within the Elambra West rezoning planning proposal located 48 Campbell Street, Gerringong, NSW, 2534 (*herein referred to as the Site*).

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1.1 OBJECTIVES

The objectives of this RAP is to document all procedures, plans and environmental safeguards required to:

- Set remediation goals that ensure the remediated Site will be suitable for the proposed residential development that results from the proposed rezoning of the subject land, and will pose no unacceptable risk to human health or the environment;
- Define or estimate the extent of the quantities of the soil contamination at the Site;
- Document in detail all procedures and plans to be implemented to reduce risks to acceptable levels for the proposed Site use;
- Complete the remediation of impacted areas in a safe and environmentally acceptable manner;
- Identify and include proof of the necessary approvals and licences required by regulatory authorities; and
- Outline requirements for site validation upon completion of remedial works to ensure the Site will pose no unacceptable risk to human health or to the environment.

1.2 SCOPE OF WORK

The scope of work for the preparation of this RAP included the review, assessment and collation of site data under the following tasks:

- Review of planning and regulatory requirements;
- Review of previous environmental investigations;

- Review of remediation options in consultation with the Client (ACC); and
- Document a Remediation Action Plan (RAP) for endorsement by the client, environmental auditor and the regulator (if required).

1.3 DEVELOPMENT CONSENT REQUIREMENTS

ENRS understand the Site is currently subject of the Elambra West Urban Release Planning Proposal (Allen Price & Scarratts, 2020). Therefore, specific consent conditions were not referenced as part of this RAP.

2.0 SITE DESCRIPTION

2.1 SITE IDENTIFICATION

The Site is located on the south-western boundary of the Gerringong township, between the Princes Highway and Union Way, as shown in **Figure 1**. The key features required to identify the Site are summarised in **Table 1** below.

Table 1: Site Identification

SITE	DESCRIPTION
Site Name	Elambra West
Street Address	48 Campbell Street, Gerringong, NSW, 2534.
Site Description	Primarily grassed agricultural land with two (2) residential dwellings, associated farming infrastructure and access roads.
Property Description	As above. Reader referred to **Section 2.2**.
Current Certificates of Title	Not considered necessary for the purposes of this assessment.
Lot / Deposited Plan	Lot 2 / DP1168922
Easting/Northing (GHA94)	Easting: 300277 Northing: 6152375
Current Owners	Mr Neil Campbell
Current Occupiers	Campbell Family
Site Area (combined)	Total Lot area ~ 46 ha. Subject Site ~ 14 ha.
Current Zoning	RU2 – Rural Landscape (Kiama LEP 2011). Reader referred to **Section 2.3**.
Local Government Area	Kiama Municipality Council
Locality Map	Kiama 9028-1S and Gerroa 9028-2N
Trigger for assessment	Proposed redevelopment for residential land use.
Local Council **statutory controls** (if any)	CLM Act 1997; *NSW State Environmental Planning Policy No. 55 (SEPP55)*;

SITE	DESCRIPTION
	Kiama Municipality Council Local Environment Plans (LEPs) (2009), associated Development Control Plans (DCPs).
Legal permissions to Access the Site obtained or required	Works commissioned by *Allen Price & Scarratts* as project managers on behalf of the land owner. Further access confirmation within email subject "ENRS2069 – Elambra West Site Access – Stage 2 Contamination Assessment – K128069" 08/11/2021
Consent of adjoining land owners and/or occupiers to access land (if required)	Not Required for this assessment

2.2 SITE LAYOUT

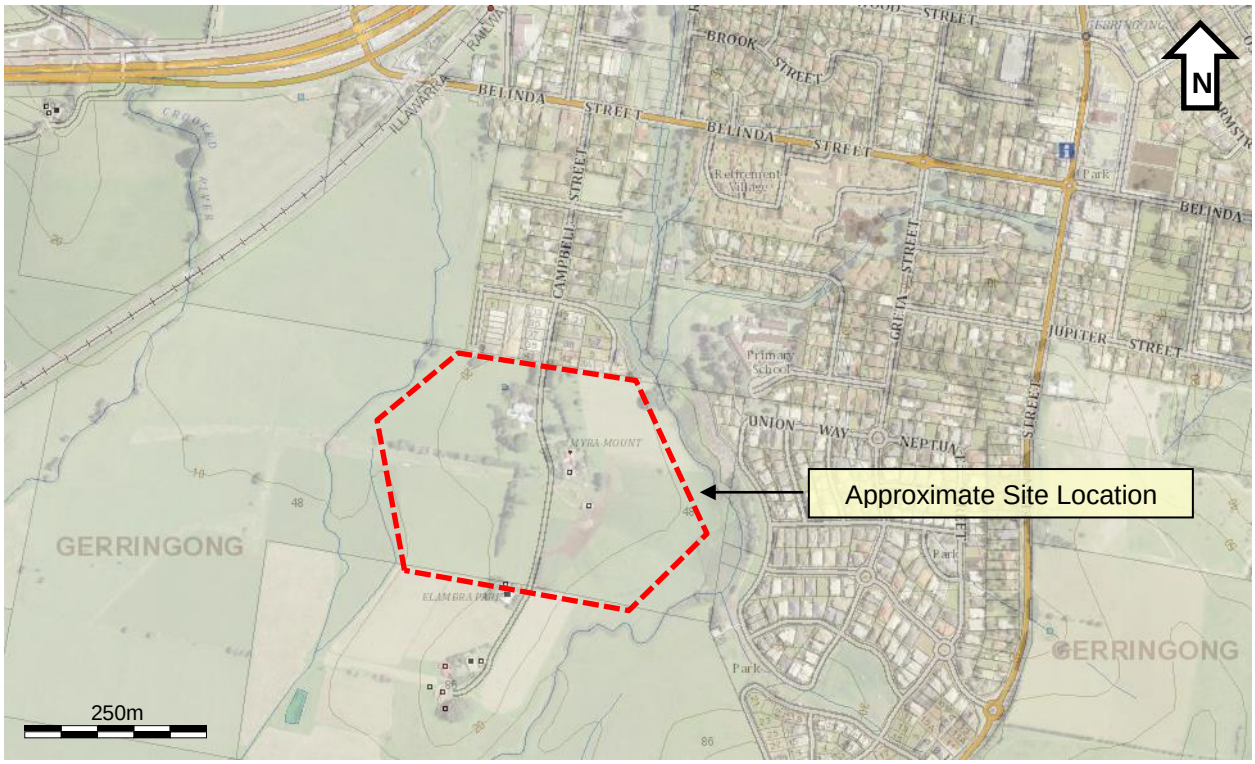
The following points outline the Site layout at the time of this investigation. A Site layout plan is provided in **Figure 5** with a photographic record of Site conditions tabled in **Appendix A**.

- At the time of this investigation, the Site was being used for residential and agricultural purposes;
- The portion of the Lot subject to this investigation (the Site) comprised two (2) residential dwellings, multiple outbuildings / sheds and associated farming equipment and infrastructure;
- The Site surface consisted primarily of open agricultural land with some access roads and areas of gravel pavement surrounding structures and dwellings;
- Areas of vegetation (trees, shrubs and gardens) were present around the residential dwellings, along roadways and fence lines throughout the property;
- Access to the site was via Campbell Street, which bisected the centre of the Site in a north-south direction; and
- The Site was located on an area of undulating topography, with the residential dwellings and surrounding structures of the Site located on a localised topographic high.

2.3 ZONING

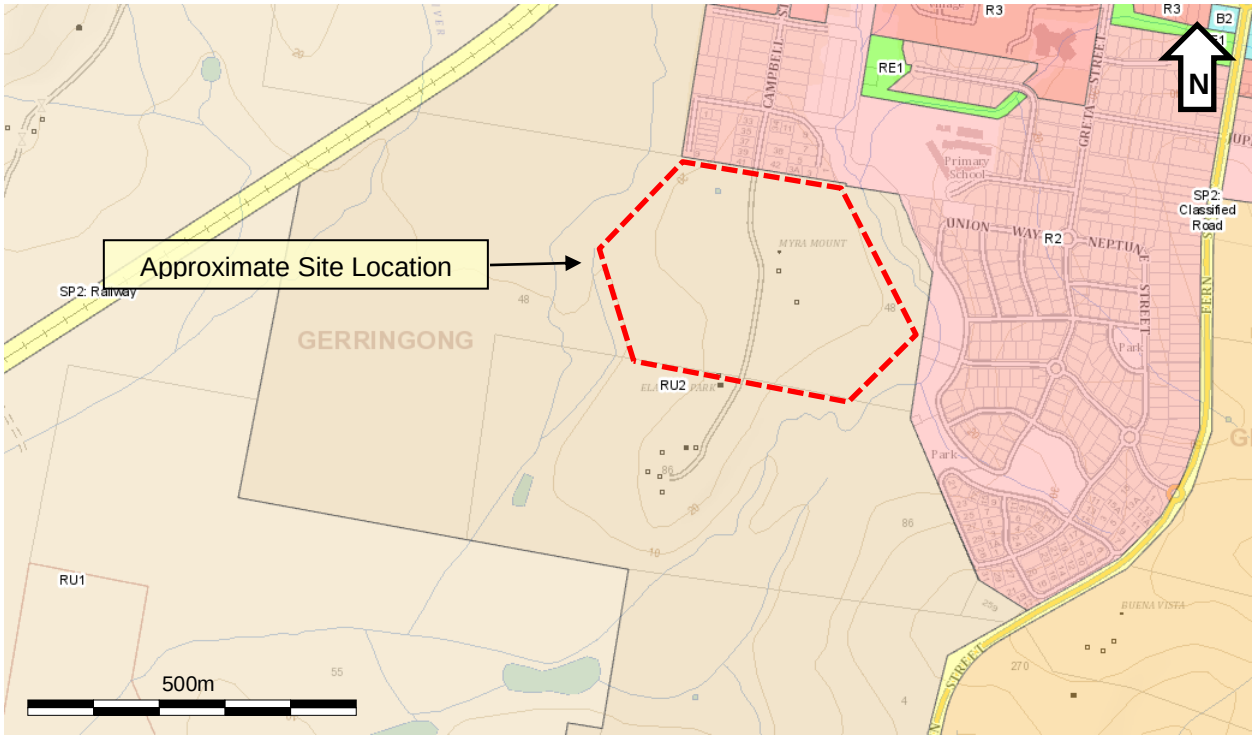
The Site was zoned as RU2 – Rural Landscape under the Kiama Local Environmental Plan (LEP) 2011, as shown in **Figure 2**. State and Local Government planning records including historical zoning maps were not reviewed during this scope of works as available historical aerial imagery, title searches and business directories were sufficient to document the Site's historical land use.

Figure 1: Site Location Summary



Source: https://maps.six.nsw.gov.au/ (cited 15/11/2021)

Figure 2: Land Use Zoning Map



Source: https://www.planningportal.nsw.gov.au/spatialviewer (cited 15/11/2021)

2.4 TOPOGRAPHY

A review of the Site topography was conducted with reference to current series topographic maps (Kiama 9028-1S and Gerroa 9028-2N). The centre of the Site is situated on a localised high point, with an approximate elevation of 28m AHD. The eastern and western portions of the Site slope downgradient towards the waterways adjacent to their respective boundaries. The low point in the eastern portion of the Site was at an elevation of 12m AHD, while the low point in the western portion of the Site was at an elevation of 10m AHD.

The regional gradient is expected to dip to the south-west towards Crooked River located approximately 2 kilometres from the Site. Surface water runoff from the Site, if any, is expected to be captured by the tributaries of Crooked River located alongside the Sites eastern and western boundaries.

2.5 GEOLOGY

A review of the geological setting was conducted with reference to the Shellharbour-Kiama 1:50,000 geological series sheet. The Site was primarily mapped as underlain by Permian sedimentary rocks and minor volcanic rocks (Ps), including sandstone, conglomerate, shale and coal measures. The eastern boundary of the Site is mapped as underlain by Quaternary floodplains (Qap) comprising silt, clay, fluvial sand and gravel. The western boundary of the Site is mapped as underlain by Quaternary alluvial and colluvial fan (Qavf) comprising fluvial sand, silt, gravel and clay.

In undisturbed areas of the Site, test pit investigations by ENRS (19-20/11/2021) encountered silty sands (topsoil) overlying red – brown sandy clays to maximum investigation depths of 1.1 metres below ground level. Subsurface conditions were characteristic of the mapped volcanic geology of the area. Test pit and borehole logs are provided in **Appendix B**.

2.6 POTENTIAL ACID SULPHATE SOIL ASSESSMENT (PASSA)

A desktop assessment was conducted for Potential Acid Sulphate in Soil (PASS) with reference to the eSPADE online Acid Sulphate Soil Risk maps. The Site is mapped within a '*Not Assessed*' area, with areas of no known occurrence mapped 400m of the Site, as shown in **Figure 3** below. High probability areas were located ~400m south-west of the Site within areas surrounding the headwaters of Crooked River. Based on the Sites relatively high position in the landscape, the mapped records and absence of field indicators during soil sampling, the proposed development area of the Site was considered unlikely to present a risk of PASS. Hence, no further assessment was considered necessary.

Figure 3: Potential Acid Sulphate Soil Map

Source: eSpade. www.environment.nsw.gov.au (cited 15/11/2021)

2.7 HYDROGEOLOGY

Based on the Site geology, groundwater in the area is expected to be associated with the following aquifer systems;

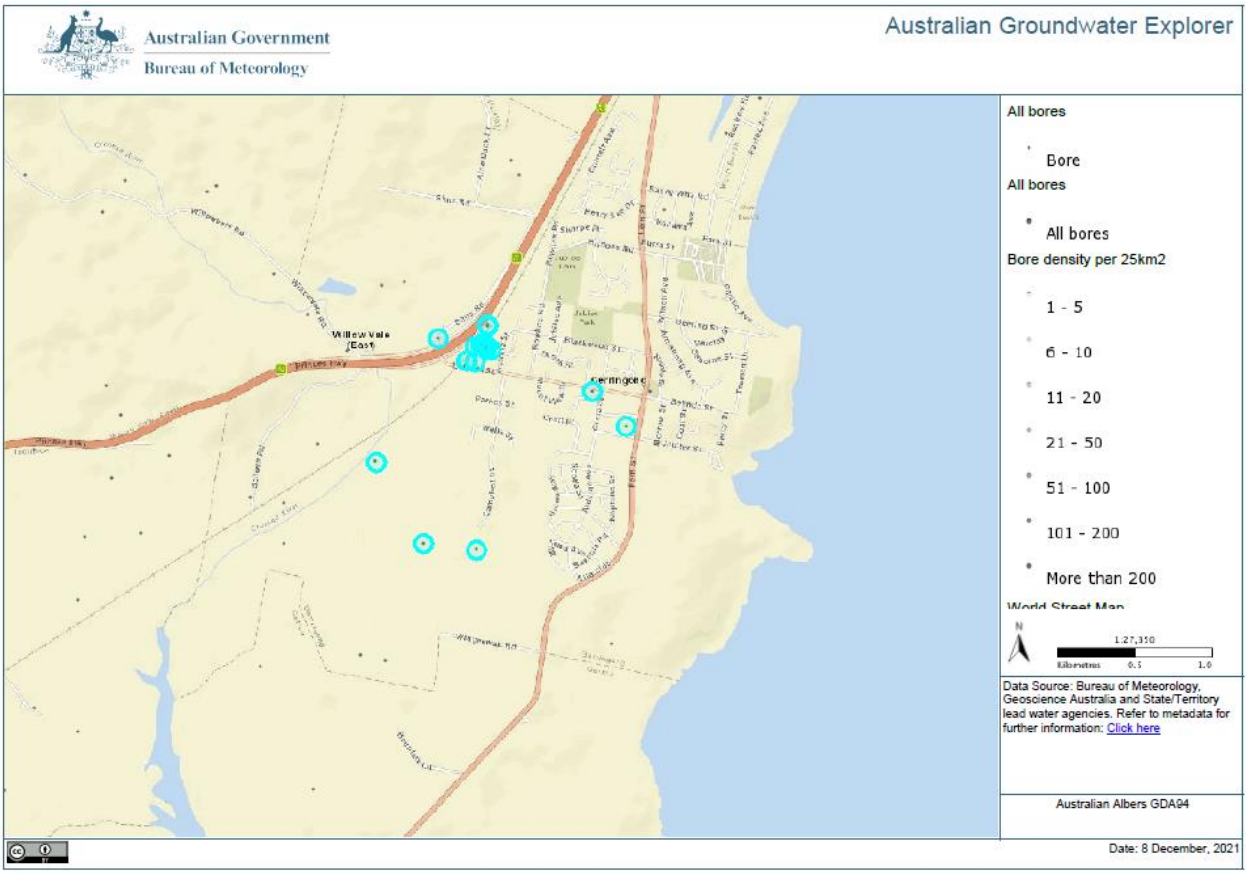
- Shallow unconfined systems hosted in the unconsolidated sands and sediments with a shallow water table generally less than 20 mbGL; (groundwater flow expected to mimic surrounding topography and flow south towards Mullet Creek)
- Deep fractured rock systems hosted in the underlying rock formations with a deeper water table generally greater than 20mbGL or at depths greatly below the zone of disturbance for this project.

Groundwater flow within the Site is inferred to flow south-west towards Crooked River. Regional groundwater flow is also expected to flow to the south south-west.

No groundwater was intersected during test pit investigations to depths of 1.1mbgl. Hence, the groundwater table was considered to be at sufficient depths below the potential sources of contamination at the Site.

Further review of the Australian government Bureau of Meteorology (BOM) online Australian Groundwater Explorer database identified twenty (20) registered bores within one (1) kilometre radius of the Site. The well locations are depicted in **Figure 4**. The closest mapped bores were located approximately 200m downgradient (south-west and south-east) from the Site. The existing bores are registered for water supply, irrigation, stock & domestic and monitoring purposes.

Figure 4: Registered Bore Locations



Source: http://www.bom.gov.au/water/groundwater/explorer/map.shtml (cited 12/08/2021).

3.0 SITE HISTORY (SUMMARY)

3.1 PREVIOUS REPORTS

ENRS understand the Site has been the subject of the following previous environmental investigations including;

1. Preliminary Site Investigations (PSI) by *Construction Sciences*, 2021; and
2. Detailed Site Investigations (DSI) by *ENRS Pty Ltd*, 2022.

ENRS note the PSI identified above was extensively reviewed in the DSI (ENRS Pty Ltd, 2022). For the purposes of this RAP, only the DSI (ENRS Pty Ltd, 2022) was considered necessary for review. The following **subsections 3.1.1** summarises the reviewed reports.

3.1.1 Detailed Site Investigation. *ENRS Pty Ltd,* February 2022.

Excerpt of executive summary:

Environment & Natural Resource Solutions (ENRS) were commissioned as independent environmental consultants in October 2021 by *Allen Price & Scarratts* (the client) to conduct a Detailed Site Investigation (DSI) for part of the property located at 48 Campbell Street, Gerringong, NSW, 2534 (*herein referred to as the Site*).

ENRS understand this assessment has been undertaken to form part of the Elambra West Rezoning Planning Proposal, and to address recommendations provided within the Stage 1 Preliminary Site Investigation (PSI) conducted for the Site (Construction Sciences, 2021).

ENRS understand that the Site has an extended history of agricultural land use. Given the proposed change in land use and zoning, this assessment is required to assess the potential for ground contamination consistent with *NSW State Environmental Planning Policy No. 55 (SEPP55)* and to meet *Kiama Municipal Council* development application (DA) requirements.

This report documents the results of available Site historical records, test pit investigations, environmental sampling and National Association of Testing Authorities (NATA) accredited laboratory analysis in general accordance with National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), and the guidelines made and approved under Section 105 of the *Contaminated Land Management Act* 1997 (the Act), namely the Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA, 2020).

The aim of this DSI was to provide comprehensive information through desktop studies and on-site investigations to characterise the type, extent, and level of contamination at the Site, if any. Provide a statement regarding the suitability of the Site for the proposed future land-use in accordance with SEPP55 and/ or recommendations for further investigations or remediation, if required.

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

- Review available Site history records incorporating previous environmental investigation reports, proposed development plans, publicly available data (including aerial photographs, geological maps, topographical maps, and registered groundwater bore database), Council and NSW EPA records to identify any past or present potentially contaminating activities and or any potential Areas of Environmental Concern (AECs);
- Site works (19/01/2021 – 18/01/2022) – supervise the excavation of ninety (90) test pits and four (4) surface water sampling points. Environmental sampling including the collection of soil and representative material samples;
- Submit selected samples to a NATA accredited laboratory for analysis;
- Conduct Tier 1 screening of NATA analysis results against *NSW EPA* endorsed Site Assessment Criteria (SAC); and
- Document investigation results in the form of a DSI report with assessment of Site suitability and recommendations for additional investigation works and environmental management, if required.

Based on the available information reviewed and site-specific data collected during the scope of works the following conclusions and recommendations are provided:

- The tasks completed during this investigation have met the project objectives set out in **Section 1.2**;
- Site history records documented in the PSI (CS;2021) indicated that the site has been used for rural-residential purposes since circa 1949. Between 1949 and 2010, the demolition and construction of multiple buildings across the Site had occurred;

- Based on the proposed development of a residential subdivision, the appropriate Site Assessment Criteria (SAC) adopted for this assessment was ASC NEPM HIL 'A' (2013) for residential land use with accessible soil;
- NATA accredited laboratory results for CoPC including TRHs, BTEX, PAHs, heavy metals, pesticides, and pathogens were generally reported below the SAC. Chemical exceedances of the adopted SAC were reported in three (3) areas of the Site; AEC-R02, AEC-R05 and AEC-R06, as summarised in **Table 17** and **Figure 7**.
- NATA accredited laboratory results for asbestos identification and asbestos in soil reported multiple positive detections across the Site. Asbestos impacted soils were identified in the following areas of the Site; AEC-R01, AEC-R03, AEC-R04, AEC-R05, AEC-R06 and AEC-R07, as summarised in **Table 17** and **Figure 9**;
- AEC-R04 was reported to contain friable asbestos associated with historical fragments weathered in gravel. All other AECs containing asbestos containing materials were assessed as non-friable (bonded)
- Based on the result of this DSI, the Areas of Environmental Concern (AECs) and extent of contamination identified at the Site included the following revised AECs. Revised AECs are also outlined in **Figure 10**.
    - **AEC-R01**: ~1,000m^2 of shallow asbestos impacted soils on the southern side of the Sites northern residential dwellings. AEC-R01 comprised preliminary AECs AEC13, AEC22 and AEC24.
    - **AEC-R02**: ~40m^3 stockpile of soil, vegetation, and non-putrescible waste with heavy fraction (C16-C34) hydrocarbons. AEC-R02 comprised preliminary AEC36.
    - **AEC-R03**: ~400m^2 of uncontrolled fill and reworked natural ground within the centre of the Site. Isolated fragments of non-friable ACM and one (1) presumed isolated pocket of historical fill with chemical exceedances of SAC. AEC-R03 comprised preliminary AEC17.
    - **AEC-R04**: ~500m^2 of aggregate roadway with laboratory exceedance of friable asbestos. Depth of asbestos impacted gravel varied between 0.2 and 0.5mbgl. AEC-R04 comprised part of preliminary AEC33.
    - **AEC-R05**: ~4,700m^2 of shallow asbestos impacted soils within the centre of the Site with chemical exceedances of SAC. Depth of asbestos impacted soils varied between 0.1 and 0.5mbgl. AEC-05 comprised preliminary AECs AEC5, AEC14, AEC15, AEC18, AEC19, AEC20, AEC21, AEC29 and AEC31.
    - **AEC-R06**: ~600m^2 of historical, uncontrolled Fill within and adjacent to a localised waterway on the eastern boundary of the Site. Non-friable ACM and chemical exceedances of SAC reported within soil samples from the Fill. Chemical exceedances of SAC also reported in surface water samples from the waterway. AEC-R06 comprised preliminary AEC35.
    - **AEC-R07**: ~4,200m^2 of livestock yards surrounding the Sites previously operational dairy. AEC-R07 characterised by two (2) separated areas; cattle holding/feeding yards

with exposed surface soils and a grassed horse paddock. Chemical exceedances of SAC reported, and two (2) isolated ACM fragments of unknown origin identified. AEC-R07 comprised part of former AEC28.

- Groundwater was not encountered during the scope of works and no further assessment was triggered based on the shallow nature of AECs in soil and associated surface water not in hydraulic connection with the deep underlying fracture rock aquifers;
- Based on the results of this DSI, the Site is assessed to comprise seven AECs with shallow soil and associated surface water and is capable of being made suitable for the proposed development in accordance with NSW State Environmental Planning Policy No. 55 (SEPP55) pending the completion of remediation works and subsequent validation of the revised Areas of Environmental Concern as delineated in **Figure 10**.

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

- Restrict access to AEC-R04 pending a clearance certificate. The area is required to be made safe in general accordance with the SafeWork NSW Code of Practice (2019) 'How to Safely Remove Asbestos' as summarised in **Appendix H**.
- Disturbance of materials with potential to disturb friable asbestos should be supervised by a Class 'A' licenced asbestos removal contractor and bonded / non-friable work by a Class 'B', in accordance with the Code of Practise; How to safely remove asbestos (SafeWork NSW, 2019);
- Avoid disturbance of remaining AECs where non-friable asbestos containing materials were identified;
- Select an appropriate remediation method for the reported exceedances deemed not suitable for residential land use and the proposed development. Based on the detection for both bonded and friable asbestos, a combination of the three (3) methods below may be considered feasible. Consideration should be given to quantities of material, regulatory requirements, impacts on future works and land values. Appropriate remediation methods may include;
  - Excavation and offsite disposal;
  - Excavation and onsite encapsulation; or
  - Manual emu picking of asbestos fragments.
- Preparation of a Remediation Action Plan (RAP) by a suitably qualified environmental consultant which documents the selected remediation methodology, validation requirements for the identified exceedances. The RAP should be approved by the regulator prior to commencement of site works;
- Remediation works, as specified in the RAP, to be completed and validated prior to the submission of the Subdivision Application to Kiama Municipality Council;
- In the event that material is required to be disposed off-Site, materials must be accompanied by a Waste Classification Certificate in accordance with the NSW EPA Waste Classification Guidelines (2016) prepared by a suitably licenced environmental professional;

- Should any change in Site conditions or incident occur which causes a potential environmental impact, a suitable environmental professional should be engaged to further assess the Site and consider requirements for any additional assessment; and
- This report must be read in conjunction with the attached Statement of Limitations.

3.2 PRE-REMEDIATION SITE CONDITIONS

Prior to the commencement of remediation works, Site conditions were characteristic of operational farming properties with cattle yards, equipment storage areas and large areas of grassed land. Representative images of Site conditions are provided below, with a Site layout plan provided in **Figure 5** - **Figure 7**.

Photograph 01: Representative Site Conditions

Photograph 02: Representative Site Conditions

4.0 CONTAMINATION SUMMARY & QUANTITY OF MATERIAL

The following contamination summary derived using the results of the DSI (*ENRS Pty Ltd*, 2022). AEC locations are illustrated in **Figure 5** attached. Asbestos was considered to be the primary contaminate of concern above the NSW EPA site assessment guidelines which required remediation. In addition to asbestos, some isolated areas of chemical hotspots were also identified within the Site, as shown in **Table 2** below.

Table 2: Contamination Summary & Quantities

AEC	Description & Source	Contaminants of Concern	Quantity Estimate
AEC-R01	Formerly AEC13, AEC22, AEC24	Asbestos (non-friable)	**200 m^3**
AEC-R02	Formerly AEC36	Heavy Fraction (C16-34) Hydrocarbons	**40 m^3**
AEC-R03	Formerly AEC17	Lead Asbestos (non-friable)	**200 m^3**
AEC-R04	Formerly AEC33	Asbestos (Friable)	**250 m^3**
AEC-R05	Formerly AEC05, AEC14, AEC15, AEC18, AEC19, AEC20, AEC21, AEC29, AEC31	Lead Asbestos (non-friable)	**2350m^3**
AEC-R06	Formerly AEC35	Lead, Zinc Asbestos (non-friable)	**300m^3**
AEC-R07	Formerly AEC28	Pathogens Asbestos (non-friable) Heavy Fraction Hydrocarbons	**840m^3**

Based on the above quantity estimates, a combined total volume of ***3,345m^3 or ~5,686.5 tonnes of asbestos impacted soil*** was identified within the Site.

5.0 SITE CONDITION & SURROUNDING ENVIRONMENT

The following **Table 3** outline the observed Site conditions and surrounding environment at the time of this investigation based on the requirements of the ASC NEPM Field Checklist for 'Site Information'. A Site layout plan is provided in **Figure 5**.

Table 3: Summary of observed Site Conditions & Surrounding Environment

	ITEM	DESCRIPTION	
1.	Site inspection (date, by whom)	Ground investigations works by Christopher Allen on ***19-20/11/2021.***	
2.	Topography of site and in relation to surrounding land	The centre of the Site is situated on a localised high point. The Site slopes downgradient to the east and west towards tributaries of Crooked River.	
3.	Elevation	Review of the topographic maps and survey plan indicated the site elevation is generally between 10-28 m Australian Height Datum (AHD).	
4.	Position on slope (e.g. Crest, upper slope, mid slope, lower slope, flat), including direction	Site encompasses various slope positions from centralised high to low points at the east and west.	
5.	Quantification of slope (if required) as percentage slope	General slope estimated to be approximately 5% dipping east and west.	
6.	Summary of local meteorology - nearby weather stations (e.g. Annual range in monthly temperature, precipitation, seasonal variations)	Based on data obtained through BOM climate statistics for Kiama (Bombo Headland) (Station ID 068242) for the period of 2001 - 2021, the mean maximum temperature is 25.1^{o}C (January) and the mean minimum temperature is 10.1^{o}C (July). Mean maximum rain fall is 148.3mm (March) and mean minimum rainfall is 50.7mm (September) with an annual rainfall of 1037.3mm.	
7.	Climatic conditions	Variable – Dry/partly cloudy 19/11/2021, heavy rain 20/11/2021.	
8.	Current land use	Mixed: Rural-residential and agricultural.	
9.	Surrounding land uses (north, south, east, west) noting apparent condition.	**North:**	Adjacent residential dwellings, further onto an area of mixed zoning, South Coast Train Line and the Princes Highway.
		East:	Localised drainage feature (tributary of Crooked River) onto adjacent residential dwellings (Elambra Estate).

ITEM		DESCRIPTION	
		South:	Agricultural / rural-residential land.
		West:	Agricultural / rural-residential land, localised drainage feature, onto the Train Line corridor and Princes Highway.
10.	Density of residential use in surrounding area	R2 low density residential.	
11.	Boundary conditions	Site was clearly delineated with boundary fencing or geographical boundaries.	
12.	Location and conditions of all visible features, including current buildings and surface structures, roads, foundations, positions of former buildings, tanks, pits, wells, drains and bores	➢ Two (2) residential dwellings and multiple sheds/outbuildings associated with rural/agricultural land use. ➢ Two (2) former building locations ➢ Access roads/tracks present throughout Site. Some areas of gravel/hardstand.	
13.	Site building information:		
	➢ Occupancy and use of buildings	Two (2) residential buildings both occupied.	
	➢ Age of buildings	1940's – 1970's	
	➢ Construction of buildings including materials (e.g. Wood frame), openings (e.g. Windows, doors), and height (e.g. One storey, multistorey)	Single storey, varied construction types.	
	➢ Number of storeys	Single storey.	
	➢ Height of storeys	Unknown.	
	➢ Foundation type (e.g. Basement, crawlspace, slab on ground), if combination then percentage	Unknown.	
	➢ Depth below grade to base of foundation	Unknown.	
	➢ Foundation construction for both floor and subsurface walls (e.g. Poured concrete, concrete block, brick, timber)	Unknown.	
	➢ General condition of foundation (cracks, openings)	Unknown.	
	➢ Elevator shafts	Presumed no.	
	➢ Sub-slab ventilation systems or moisture vapour barriers below buildings	Unknown.	

	ITEM	DESCRIPTION
	➢ Sumps or drains or wells inside buildings	Unknown.
	➢ Attached garage	Yes (carports)
	➢ Below building parking	No.
	➢ Chemical use and storage	No significant chemical storage observed.
	➢ Type of cooling and heating systems (e.g. Natural gas, oil, radiant, steam, electrical)	Unknown.
	➢ Equipment location (e.g. Basement, crawl space, roof)	Unknown.
	➢ Air intake and exhaust units	Unknown.
	➢ Source of return air (e.g. Inside air, outside air, combination)	Unknown.
	➢ System design consideration relation to indoor air pressure (e.g. Positive pressure is often the case for commercial buildings)	Unknown.
14.	Condition & type of surface cover e.g. Bare ground, asphalt, concrete, gravel etc & estimate of percentage of site occupied by buildings, landscaped areas, paved or non-paved areas	Approximately 5% of Site area occupied by buildings / landscaped. Surface cover observed to vary – hardstand, gravel/aggregate, grassland and vegetated areas.
15.	Chemical storage & transfer areas, including the presence of waste or chemical containers	No significant chemical storage observed.
16.	Details of above ground & underground storage systems & associated infrastructure (number, location, capacity, contents, age, construction, condition, bunding & spill control)	None observed, no records identified and landowner indicated none present.
17.	Underground storage tanks (USTs)- product stored, volume, direct or remote fill points, dispenser bowsers, contained or uncontained fill points, underground piping and ventilation points, dip stick volume gauge, age of tank, records of spills or stock loss	None observed or previously licensed.

	ITEM	DESCRIPTION
18.	Above ground storage tanks (ASTs)- product stored, volume, remote fill, bunded or un-bunded containment area, staining within bund, staining outside bund, bund plug in place, staining around bund plug, nearby drains, record of spills or stock losses	None observed or previously licensed.
19.	Evidence of debris, waste disposal, lagoons, drums, chemical storage or other indicators of potential contamination sources	Areas of building rubble/non-putrescible waste stockpiled around the Site. Soil/gravel containing fragments of asbestos cement sheeting observed. Uncontrolled fill present in creek on eastern boundary.
20.	Locations of settlement ponds	Non observed
21.	Description and location of services and utilities including on-site septic systems	On-Site septic system observed to the west of one (1) of the residential dwellings.
22.	Identification of electrical transformers/substation/capacitors	Non observed
23.	Odours	No olfactory evidence of contamination noticed during Site inspections.
24.	Visible signs of contamination such as discolouration or staining on the surface of soil or water, bare soil patches - on-site and at site boundaries	Fragments of ACM observed in multiple locations across the Site. Uncontrolled fill with non-putrescible waste stockpiled across Site & in creek.
25.	Presence of any stockpiled material, imported soil or fill material as well as any signs of settlement, subsidence or disturbed ground	Yes – stockpiled material and areas of fill present within the Site. See Figures within report attachments.
26.	Vegetation type and extent of cover (e.g. Scattered, sparse, dense, absent, invasive, native)	Site primarily covered by grassed agricultural land. Some large trees present, with other vegetation surrounding structures or along boundary / fence lines.
27.	Condition of vegetation (noting visibly distressed, disturbed or dead vegetation)	None observed.
28.	Assessment of soil loss or deposition that has occurred in the past and evaluation of the future erosion potential	None observed.
29.	Visible signs of erosion (on and off-site)	None observed.

	ITEM	DESCRIPTION
30.	Surface water bodies (e.g. Lakes, rivers, streams, wetlands), fresh/marine and distance from site	One (1) farm dam located in the north-west of the Site. One localised waterway, a tributary of Crooked River, bordered the Sites eastern boundary.
31.	Surface water drainage (e.g. Drainage bores, soak wells, sumps), run-off & identification of ponding areas (& potential for flooding)	Surface water runoff expected to be captured by localised waterways which are present on the eastern and western boundaries of the Site (tributaries of Crooked River).
32.	Direction of flow of water runoff from the site & adjacent properties	As above.
33.	Depth of any standing water, the direction and rate of flow of rivers, streams or canals, together with their flood levels & any tidal inundations	Flow direction of waterways inferred south towards to Crooked River.
34.	Surface water and groundwater use on site including rate and location of abstractions (current and historical)	Unknown.
35.	Evidence of possible naturally occurring contaminants	Non observed
36.	Identification of environmentally sensitive or significant features or habitats	Non observed.
37.	Evidence chemical substances have migrated or are likely to have migrated to a neighbouring site and is or is likely to be causing contamination of the neighbouring property	None observed.
38.	Photographs of site & surrounding adjacent land, showing significant features, topography, nature of surface & existing structures)	Refer to photographic log or Site conditions attached (**Appendix A**).
39.	Differences between current site condition and site history	Demolition and removal of al site buildings and fracture during 2021.

6.0 SITE CHARACTERISATION

Several exceedances of the adopted SAC were reported for heavy fraction hydrocarbons, heavy metals, asbestos, and pathogens within multiple AECs across the Site. While exceedances of the SAC varied in their nature and location within the Site, the impacted areas were not considered to be representative of the broader Site conditions and were instead defined within localised sub-areas which may be considered suitable for remediation and validation. The AECs which reported exceedances of the SAC are presented in **Figure 6** and **Figure 7**.

7.0 CONCEPTUAL SITE MODEL

7.1 SOURCES / POTENTIAL CONTAMINANTS

Based on the results of the DSI (ENRS, 2022) the Contaminants of Potential Concern (CoPC) and quantities of material requiring remediation are listed below in **Table 4**. A conceptual site model is illustrated in **Figure 6** attached.

Based on the below quantity estimates, a combined total volume of ***3,345m^3 or ~5,686.5 tonnes of asbestos impacted soil*** was identified within the Site.

Table 4: Contaminants of Concern

Areas of Environmental Concern (AEC)	Historical Activities	Source & affected media	Known CoC	Pathway	Receptor	Pathway Status
AEC-R01	Formerly AEC13, AEC22, AEC24	Shallow soils / fill	Asbestos (non-friable)	Dust, airborne	Site users, construction workers	Incomplete unless disturbed
AEC-R02	Formerly AEC36	Stockpiled soil / fill	Heavy Fraction (C16-34) Hydrocarbons	Dust, airborne, ingestion, dermal, soil	Site users, construction workers	Incomplete unless disturbed
AEC-R03	Formerly AEC17	Shallow soils / fill	Lead Asbestos (non-friable)	Dust, airborne, ingestion, dermal, soil	Site users, construction workers	Incomplete unless disturbed
AEC-R04	Formerly AEC33	Gravel ring-road	Asbestos (friable)	Dust, airborne	Site users, construction workers	Complete
AEC-R05	Formerly AEC05, AEC14, AEC15, AEC18, AEC19, AEC20, AEC21, AEC29, AEC31	Shallow soils / fill	Lead Asbestos (non-friable)	Dust, airborne, ingestion, dermal, soil	Site users, construction workers	Incomplete unless disturbed
AEC-R06	Formerly AEC35	Fill, water	Lead Zinc Asbestos (non-friable)	Dust, airborne, ingestion, dermal, soil, water	Site users, construction workers, surface waters, fauna	Incomplete unless disturbed
AEC-R07	Formerly AEC28	Shallow soils	Pathogens Asbestos, Hydrocarbons	Dust, airborne, ingestion, dermal, soil	Site users, construction workers	Incomplete unless disturbed

7.2 PATHWAYS & RECEPTORS

Given the primary source of potential contamination is associated with generally shallow soils and associated surface waters at the Site, the primary contaminant migration and exposure pathways are likely to include:

- Inhalation and or ingestion of dust or air bound contaminants primarily during site works by site users and neighbouring properties.
- Disturbance of materials by future Site users.

The receptors comprise:

- Human health – dermal / ingestion / inhalation - excavations, dust, fibres – Site personnel day time site users;
- Adjacent ecological receptors (aquatic ecosystems); and
- Stormwater and surface waters – runoff and connectivity with waterways.

7.3 VALUES FOR SOIL BULK DENSITY

To allow for reliable estimates of disposal mass and cost, a range of values for soil bulk density have been compared. **Table 5** references total estimated quantities of material for each AEC, while **Table 6** references estimated quantities of hotspot material within each AEC planned for off-Site disposal.

Table 5: Soil Bulk Density Values (Total Estimated Quantities)

AEC	Quantity (Total)	Soil Bulk Density Conversion Factor (tonnes / m^3)					
		1.5	**1.6**	**1.7**	**1.8**	**1.9**	**2.0**
AEC-R01	200 m^3	300	320	340	360	380	400
AEC-R02	40 m^3	60	64	68	72	76	80
AEC-R03	200 m^3	300	320	340	360	380	400
AEC-R04	250 m^3	375	400	425	450	475	500
AEC-R05	2350m^3	3525	3760	3995	4230	4465	4700
AEC-R06	300m^3	450	480	510	540	570	600
AEC-R07	840m^3	1260	1344	1428	1512	1596	1680
Total	3345 m^3	5017.5	5352	5686.5	6021	6355.5	6690

Table 6: Soil Bulk Density Values (Hotspot Estimated Quantities)

AEC	Quantity (Hotspot)	Soil Bulk Density Conversion Factor (tonnes / m^3)					
		1.5	**1.6**	**1.7**	**1.8**	**1.9**	**2.0**
AEC-R03	25 m^3	37.5	40	42.5	45	47.5	50
AEC-R05	175 m^3	262.5	280	297.5	315	332.5	350
AEC-R06	50 m^3	75	80	85	90	95	100
AEC-R07	5 m^3	7.5	8	8.5	9	9.5	10
Total	255 m^3	382.5	408	433.5	459	484.5	510

7.4 DATA GAPS & SOURCES OF VARIABILITY

The following points summarise the areas not accessed during the scope of works and associated data gaps or sources of variability which may require further consideration during future works:

- Areas nearby active underground services and public roads, such as former AEC33. ENRS note that test pits were installed to avoid underground services at the Site. While the three (3) discrete samples taken from material underlying the roadway reported concentrations of CoPC below the adopted SAC, future works within the area should be undertaken in accordance with an Unexpected Finds Protocol (UFP);
- The heterogeneous distribution of asbestos impacted soils within the Site presents a source of variability around the final quantities of material requiring remediation, and the actual boundaries of identified AECs. As such, an allowance for increased final volumes of material should be accounted for within the encapsulation cell design;
- No hazardous materials (HAZMAT) building surveys were undertaken as part of this scope of works. ENRS recommend a HAZMAT survey is conducted prior to any future demolition works occurring at the Site, as required by the Code of Practice;
- No assessment of ground conditions underlying building footprints was undertaken during this assessment. Future works within these areas should be undertaken in accordance with an UFP;
- This PSI and DSI did not include a search of SafeWork NSW Dangerous Goods licences. Records reviewed during this DSI were considered adequate to identify any potential hazardous chemicals kept onsite;
- This assessment did not include the sampling or inspection of groundwater at the Site. No groundwater was encountered at the site and no groundwater users were identified in proximity to the site. The refined AECs identified by this assessment comprise shallow soil and associated surface water which is considered not in direct hydraulic connection with groundwater in the area which is characterised by deep fractured rock aquifers. Hence, the investigation results did not trigger further investigation of groundwater;

This DSI did not include assessment of soil gas or vapour at the Site. Tier 1 comparison of laboratory results for key CoPC against the adopted SAC reported satisfactory results. PID screening of soil samples reported 0 ppm readings. No significant visual or olfactory evidence of contamination was observed during the Site works. Hence, the requirement for soil gas and vapour sampling was not triggered during the scope of works.

8.0 REMEDIATION OPTIONS ASSESSMENT

8.1 REMEDIATION OBJECTIVES

ENRS understand the remediation goals for this project are to:

- Make the site suitable for the proposed land use;
- Monitor remediation works and site conditions to ensure appropriate asbestos handling protocols are maintained and the works present no risk to personnel and the environment;
- Safely excavate and transport the material from the removal area accompanied with waste classification certification in accordance with the NSW EPA Waste Classification guidelines to a suitably licensed facility for disposal. Waste disposal documentation is to be appended to validation certification;
- Validation of the removal works supported by laboratory analysis and visual inspections to certify the site as suitable for the proposed land use.

8.2 REMEDIATION HIERARCHY

The Code of Practice (SWA;2019) How to Manage and Control Asbestos in the Workplace outlines the following hierarchy of controls for asbestos. A combination of these controls may be required in order to adequately manage and control asbestos or ACM.

1) eliminating the risk (for example, remove the asbestos)
2) substituting for the risk, isolating the risk or applying engineering controls (for example, enclosing, encapsulation, sealing or using certain tools)
3) using administrative controls (for example, safe work practices)
4) using PPE.

In addition to the Code of Practice, the ASC NEPM (2013) Assessment of Site Contamination Policy Framework Section 6. (16), outlines the following preferred hierarchy of options for site remediation and/or management:

1) on-site treatment of the contamination so that it is destroyed or the associated risk is reduced to an acceptable level; and
2) 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,

3) consolidation and isolation of the soil on site by containment with a properly designed barrier; and

4) removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material; or

5) 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.

Reference to the new remediation framework???

8.3 REVIEW OF REMEDIATION OPTIONS

In assessing and determining the optimal remedial options available to the project, the following factors have been considered:

- The source, types and level of contamination present;
- The vertical and lateral extent of ground contamination;
- The soil conditions and clay content suitability for asbestos screening;
- The physical and chemical composition of contaminants;
- Hydrogeological conditions (depth to groundwater, permeability, soil heterogeneity);
- The site location, layout, adjacent land use and nearest sensitive receptors;
- The future land use/s proposed for the remediation area/s;
- Proven remediation technologies for the Contaminants of Potential Concern (CoPC);
- Time, budgetary, engineering, environmental constraints; and
- Regulatory requirements.

In general, there are three (3) main options for remediation of asbestos in soils.

(a) Excavate & **offsite disposal**;

(b) On site **encapsulation** (below Site specific engineered capping layer with warning layer installed at least 0.2 m above encapsulation cell); and

(c) Remediation by **manual pick** to remove fragments. Mechanical methods are not recommended due to the high risk of incomplete remediation and generation of asbestos fines and fibres.

Selection of the preferred remediation method is determined by site specific conditions and project requirements. **Table 7** provides an overview of these options and an evaluation of their suitability for the project site.

Table 7: Review of Remediation Options

Option	Method	Description	Benefit	Limitations	Timing	Cost	Acceptability
(a)	Excavate & **offsite disposal**	Engage suitably licensed asbestos removal contractor to supervise the excavation and disposal offsite to an EPA licensed waste facility. Conduct soil validation sampling to confirm site suitability for ongoing use.	Removes all risk from the site.	Requires extensive earthworks and reinstatement relative to the scale of contaminated material required to be removed. Validation testing and clearance certification required.	Time efficient, with final duration relevant to scale of material required to be removed and area to be reinstated. Requires validation prior to commencement of reinstatement and ongoing site works.	High upfront cost with no ongoing liability or delays.	***ACCEPTABLE*** for low to moderate quantities of contaminated material. Suitable for sensitive land use i.e. residential or accessible soil. Suitable for projects with tight time constraints.
(b)	On site **encapsulation** (located within project area)	Excavate and reinstate with cap at pre-approved area within project site. Requires EMP and Regulator approval.	Reduces waste generation and transfers ongoing management requirements to other more suitable location.	Residual risk remains at the site with limitations which sterilise the cell area for future ground works, impact to property value and ongoing management requirements.	Unknown timing for regulator consent. Duration of Site works will be relative to the volume of contaminated material required to be encapsulated. Ongoing management requirements to be documented in the EMP.	Moderate upfront costs for earthworks, preparation of Env. Management Plan (EMP) with protocols for ongoing cap management i.e. no dig protocol, shallow rooted plants etc.	***ACCEPTABLE*** for all quantities of asbestos impacted soils where the proposed capping site is non-accessible.
(c)	Remediation by **manual picking** to remove fragments supported by progressive clearance inspections and gravimetric validation samples.	Screen material during excavation and/or at designated stockpile area/s. Validate remediation works by soil sampling and NATA laboratory analysis. Where successful, soil may be assessed as suitable for reinstatement on site supported by clearance inspections during final reinstatement.	Reduces waste generation and removes contamination from the site.	Labour and time intensive. Risk that ACM may not be completely removed. Requires validation testing and clearance certificate.	Dependent on quantity of material and number of persons conducting removal works.	Moderate costs determined by contractor rates and project delays.	***NOT SUITABLE*** for: • highly contaminated areas with asbestos concentrations above the ASC NEPM (2013) HSL; • friable/weathered asbestos; or • soil with high clay content not practical for raking/screening. Residual risk - screening cannot guarantee that all ACM has been removed. Excessive disturbance may generate asbestos fines and fibres.

8.4 PREFERRED REMEDIATION METHOD

The preferred remediation strategy is based on an understanding of the following issues;

- Previous discussions with the client;
- No evidence of offsite impacts have been identified to date;
- The primary contaminant of concern within stockpiled contaminated soils is asbestos containing materials. Levels of chemical CoPC were assessed to be below the SAC;
- Based on the qualities of asbestos impacted soils, total offsite disposal was not considered financially viable; and
- Onsite encapsulation of the identified contamination is preferential. An encapsulation cell requires a Site Management Plan (SMP), NSW EPA Site Auditor engagement and sign off (Site Audit Statement).

Based on the above points, the selected remediation strategy is a combined approach comprising ***off-Site disposal*** and ***on-Site Encapsulation*** within an engineered containment cell.

9.0 ASSSESSMENT OF ENCAPSULATION AREA

The proposed encapsulation cell area is delineated in **Figure 9** attached, and comprised an area of open, grassed agricultural land within the broader Lot boundary of 48 Campbell Street, Gerringong.

While no direct assessment of the encapsulation area was undertaken during the DSI, ENRS note the area is characteristic of former AEC32, which comprised similar areas of grassed agricultural land within the Site. Test pits installed within former AEC32 encountered brown, silty sands to depths of 0.2mbgl, overlaying red-brown sandy clays to maximum investigation depths of 0.6mbgl. Based on the subsurface conditions encountered in former AEC32, the proposed encapsulation area is presumed to contain similar soil profiles of undisturbed natural ground.

ENRS note that all soil samples from former AEC32 reported concentrations of CoPC below the laboratory Limit of Reporting and/or NEPM HIL 'A' Site Assessment Criteria.

10.0 REMEDIATION CRITERIA

10.1 REFERENCE GUIDELINES

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

10.1.1 National Environment Protection Measure (NEPM)

The NSW EPA has endorsed the use of the Health Investigation Levels (HILs) given in the 2013 National Environment Protection (Assessment of site Contamination) Measure (NEPM) 'Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater'. The NEPM provide a framework for risk-based assessment of soil and groundwater contamination. Health Screening Levels (HILs) are provided for four (4) land use categories:

Table 8: Summary of NEPM Land use Categories

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

Given the Site proposal a residential subdivision, this assessment has adopted **NEPM HIL A** as the Site Assessment Criteria (SAC) for the area underlying, and immediately surrounding the construction footprint.

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

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

In general, soil profiles within the Site encountered topsoil overlying natural clays with a moderate plasticity. ENRS note that contaminated material within the Site has generally been limited to shallow soils less than 1mbgl. Given this information, the application of NEPM 'A' HSL for Silt (<1mbgl) for this assessment is considered appropriate. SAC for near surface silt (<1mbgl) was adopted based on the stratigraphic conditions encountered at the Site and '*top down'* nature of the potential sources of contamination.

Table 9: Site Assessment Criteria for Residential Land Use

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

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

The ASC NEPM (2013) also provides Health Screening Levels for vapour intrusion in soil which should be considered based on the depth of soil and composition of soil medium, a summary of the adopted SAC for vapour intrusion is provided in **Table 10.**

Table 10: Soil Screening Criteria for Potential Vapour Intrusion

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

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

10.2 AESTHETIC CRITERIA

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

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

10.3 ASBESTOS IN SOIL CRITERIA

The ASC NEPM (2013) *Schedule B2 - Guideline on site characterisation* documents Health Screening Levels (HSLs) for asbestos levels in soil adopted from the Western Australian Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia (WA Gov, 2021). The Guidelines only apply to asbestos materials in soils, they do not apply to asbestos or asbestos containing materials present in buildings, structures, functional pipelines etc. The NEPM guidelines define three (3) primary forms of asbestos in soil:

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

Table 11: Health Screening Levels for Asbestos in Soil (NEPM 2013)

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

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

In conjunction with the WA Gov. (2021) and NEPM (2013) guidelines, the *2014 WorkCover NSW managing asbestos in or on soil* document, documents *that 'materials below 0.5m should not* be *disturbed*'. As such, the criteria to be adopted requires no asbestos within a depth of 0.5m of the potential depth of disturbance. To avoid future potential disturbance of asbestos materials that may arise, this 0.5m depth may be extended past proposed excavations.

10.4 WASTE CLASSIFICATION CRITERIA

Liquid and non-liquid waste designated for disposal shall be assessed in accordance with the NSW EPA Waste Classification Guidelines (EPA;2014) and Addendum 1 (EPA;2016) which documents values for classifying waste by chemical assessment for PFAS. Guidelines are defined for the specific contaminant concentration (SCC) and the toxicity characteristics leaching procedure (TCLP). To establish soil waste classification using both SCC and TCLP, the test values for each chemical contaminant must be compared with the threshold values set in Table 2 of the guidelines.

Where asbestos is identified the standard waste classification with regard to chemical impact is overridden by the presence of asbestos, which triggers the material to be classified as Special Waste – Asbestos Waste. The secondary (chemical) waste classification is still required to ensure the receiving facility can accept the waste under the provisions of their environmental protection licence. A summary of the classification criteria is provided below:

Table 12: Waste Classification Criteria

Classification	SCC value	TCLP value
General solid waste	≤ SCC1	≤ TCLP1
Restricted solid waste	≤ SCC2	≤ TCLP2
Hazardous waste	> SCC2	> TCLP2

11.0 REMEDIATION STRATEGY

11.1 EXTENT OF REMEDIATION

Remediation shall be limited to AEC-R01, AEC-R02, AEC-R03, AEC-R04, AEC-R05, AEC-R06 and AEC-R07. All other areas requiring excavation of uncontaminated materials may be conducted outside the remediation controls documented in this report. The areas of contamination required to be remediated are delineated in **Figure 5**.

ENRS note that quantities and extents of contamination were based field estimates during the DSI. Final quantities may differ and should be accounted for during the design of the encapsulation cell.

11.1.1 Hotspot Remediation Areas

Remediation areas AEC-R03, AEC-R05, AEC-R06 and AEC-R07 were identified to contain hotspot sub-areas within the broader AEC. The following points provide further information on the size and location of hotspot sub-areas to assist in their identification:

- AEC-R03: Estimated area of 25m^2 surrounding DSI sample location A17/TP3. Approximate impacted depth of 1mbgl. Grid reference: Easting 300270, Northing 6152349
- AEC-R05: Estimated area of 350m^2 surrounding DSI sample location A15/TP3. Approximate impacted depth of 0.5mbgl. Grid reference: Easting 300326, Northing 6152374.
- AEC-R06: Estimated area of 100m^2 surrounding DSI sample location A35/TP2. Approximate impacted depth of 0.5mbgl. Grid reference: Easting 300489, Northing 6152487.
- AEC-R07: Estimated area of 25m^2 surrounding DSI sample location A28/TP5. Approximate impacted depth 0.3mbgl. Grid reference: Easting 300413, Northing 6152399.

11.2 SCOPE FOR REMEDIATION: PERMITS & APPROVALS

Onsite encapsulation is the selected method of remediation for the contaminated stockpiles to remove the risk to sensitive receptors and allow for unrestricted residential land use of the Site. Where required, ACM impacted Fill and waste which is not suitable for encapsulation (eg large pipes, demolition debris, batteries or chemical wastes) must be disposed offsite to a suitably licensed waste facility.

The following summary is provided for the remediation methodology and scope of work:

- ***Remediation Action Plan (RAP)*** – submit RAP for approval by the Regulator prior to commencement;
- ***Contractor ARCP*** – Commission suitably licensed asbestos removal contractor to supervise the removal works. The contractor to prepare Asbestos Removal Control Plan (ARCP) prior to commencement;
- ***Lodge Removal Permit with SafeWork NSW*** – Removal contractor to lodge application for permit to remediate asbestos supported by copies of this RAP and the ARCP;
- ***Notifications*** – Ensure the following persons are informed that asbestos removal work is to be carried out at the workplace and when the work is to commence, prior to starting:
  - anyone conducting a business or undertaking at, or in the immediate vicinity of, the workplace (contractors, workers, site visitors); and
  - anyone occupying premises in the immediate vicinity of the workplace (adjoining neighbours).

11.3 SCOPE FOR REMEDIATION: OFF-SITE DISPOSAL

Areas of the Site subject to remediation by excavation off-Site disposal comprise AEC-R02, and hotspot sub-areas within AEC-R03, AEC-R05, AEC-R06 and AEC-R07, as shown in **Figure 7** and **Figure 8**.

- ***Pre-start tool box induction*** – all personnel to undertake toolbox induction including ARCP/SWMS and site specific training prior to commencement of works;
- ***PPE*** – Disposable Type 5 coveralls, boot covers, P2 respirator, disposable gloves, steel cap boots, hard hat & safety glasses;
- ***Establish Site Controls*** – Removal Contractor to establish site controls in accordance with the code practice, including but not limited to; fencing with suitable exclusion zone (minimum 10 m setback or 1.8 m high fencing with barrier material), warning signage at points of entry, decontamination area, erosion sediment control, stockpile controls, plastic sheeting and water for dust suppression);
- ***Decontamination*** – Establish designated decontamination area/s at point of entry/exit, all equipment to be disposed as waste or decontaminated using both wet and dry methods in accordance with the Code of Practice for How to Safely Remove Asbestos (2016);
- ***Airborne Asbestos Fibre Monitoring*** - to be conducted as determined by the project Asbestos Assessor at a frequency suitable to confirm the adequacy of asbestos site controls employed by the removal contractor;

- ***Excavate Contaminated Material*** – Excavate areas of hotspot material previously identified to contain exceedances of the adopted Site Assessment Criteria, as shown in **Figure 7** and **Figure 8**. Works should be supervised by an experienced contaminated land professional to assist in delineating the hotspot areas. The disturbance of asbestos contaminated soil is to be conducted under asbestos removal control conditions with PPE and dust suppression. Excavated material should be transported to a suitable stockpile location within the Site to confirm quantities prior to off-Site disposal. Stockpiled material shall be managed in accordance with **Section 11.6** of this document. Current quantity estimates for off-site disposal are 295m^3.
- ***Waste transport and Disposal*** – Load contaminated soil into sealed vessels for transport to a suitably licensed waste facility in accordance with Section 29 of the POE (Waste) Regulation. Trucks are to have sealed waterproof covers for offsite transport. Transport and disposal dockets shall be provided to the Asbestos Assessor and appended to the clearance certificate for record of disposal;
- ***Clearance Inspection & Certification*** - All areas where asbestos materials have been removed should be inspected by the Asbestos Assessor and issued with a **clearance certificate** supported by NATA laboratory testing prior to backfilling or reinstatement. Additional validation sampling of excavated areas will also be required in accordance with **Section 18.0** of this report.
- ***Plant Decontamination*** - All **equipment** and plant shall be **decontaminated** and certified as clear for asbestos prior to leaving the site;
- ***Validation / Clearance*** – Conduct validation and clearance works in accordance with **Section 18.0**.

11.4 SCOPE FOR REMEDIATION: ON-SITE ENCAPSULATION

Areas of the Site subject to remediation by excavation and on-Site encapsulation comprise all remaining material within identified AECs, as shown in **Figure 7** and **Figure 8**.

- ***Pre-start tool box induction*** – all personnel to undertake toolbox induction including ARCP/SWMS and site specific training prior to commencement of works;
- ***PPE*** – Disposable Type 5 coveralls, boot covers, P2 respirator, disposable gloves, steel cap boots, hard hat & safety glasses;
- ***Establish Site Controls*** – Removal Contractor to establish site controls in accordance with the code practice, including but not limited to; fencing with suitable exclusion zone (minimum 10 m setback or 1.8 m high fencing with barrier material), warning signage at points of entry, decontamination area, erosion sediment control, stockpile controls, plastic sheeting and water for dust suppression);

- ***Excavate and Prepare Encapsulation Cell*** – Proposed details and location of the encapsulation cell design are provided in **Figure 5** and **Figure 10**. The receiving containment cell should be designed to be of suitable size and dimensions to accept the surveyed fill quantities and allow for a potential increase of fill volume. The total volume of the encapsulation cell will also need to account for the provision of an appropriately designed capping layer. Based on the estimated volumes of material proposed for encapsulation, i.e 3050m^3, and a minimum contingency of +25%, ENRS recommend an encapsulation cell 8,000m^2 in size excavated to a depth of 1.0mbgl, providing a total volume of 8000m^3. An encapsulation cell of this volume would provide an allowance for 4000m^3 of contaminated material and a capping thickness of 0.5m, with final cell RL's to remain consistent with those currently present in the proposed cell area. Proposed cell dimensions are 200m x 40m x 1m, or 100m x 80m x 1m.
- ***Decontamination*** – Establish designated decontamination area/s at point of entry/exit, all equipment to be disposed as waste or decontaminated using both wet and dry methods in accordance with the Code of Practice for How to Safely Remove Asbestos (2019);
- ***Airborne Asbestos Fibre Monitoring*** - to be conducted as determined by the project Asbestos Assessor at a frequency suitable to confirm the adequacy of asbestos site controls employed by the removal contractor;
- ***Excavate Contaminated Material*** – Excavate remaining asbestos impacted soil from areas delineated in **Figure 7** and **Figure 8**. Note, material from AEC-R04 is be to placed at the base of the encapsulation cell. Works may require supervision by an experienced contaminated land professional to identify and separate Fill/items not suitable for encapsulation. The disturbance of asbestos contaminated soil to be conducted under asbestos removal control conditions with PPE and dust suppression. Load asbestos materials directly into encapsulation area. Should material be required to be stockpiled temporarily the stockpile shall be managed in accordance with **Section 11.6** of this document;
- ***Excavate and Encapsulate Stockpiles*** – Load stockpiles under asbestos controls. Separate and remove any large objects that do not comply with the geotechnical requirements, if any. These items should be managed as waste;
- ***Waste transport and Disposal*** – Bulk contaminated soil is to be placed in sealed vessels for transport to a suitably licensed waste facility in accordance with Section 29 of the POE (Waste) Regulation. Trucks are to have sealed water proof covers for offsite transport. Transport and disposal dockets shall be provided to the Asbestos Assessor and appended to the clearance certificate for record of disposal;
- ***Clearance Inspection & Certification*** - All areas where asbestos materials have been removed should be inspected by the Asbestos Assessor and issued with a **clearance certificate** supported by NATA laboratory testing prior to backfilling or reinstatement. Additional validation sampling of excavated areas will also be required in accordance with **Section 18.0** of this report.
- ***Plant Decontamination*** - All **equipment** and plant shall be **decontaminated** and certified as clear for asbestos prior to leaving the site;

- ***Survey Encapsulation Cell*** – survey the extents of the contamination cell, top of maker layer and top of capping material.

11.5 EXCAVATION

Excavation works shall not occur until all environmental protection measures are in place and operational. Suitable measures shall be put in place to reduce the risk of surrounding soils collapsing deeper portions of the remediation excavation footprint. Shallow groundwater has not been identified at the Site. However, if groundwater is encountered excavations shall not extend below the water table. Maintaining the stability of the surrounding soils is critical, where necessary the excavations shall be backfilled to stabilise the excavation with certified VENM/ENM or excavated material from site may be reinstated supported by NATA testing to confirm NEPM suitability for the proposed land use. Should it be anticipated that backfill material may need to be re-excavated the excavations should be lined with a marker layer of plastic/geotextile prior to backfilling. The principal requirement for material handling in the course of the excavation works will be to ***prevent the mixing of materials having different material types***. The Contractor should at all times ensure that materials are moved to an appropriate stockpile on the basis of the Material Type. Stockpile and materials shall be managed in accordance with the EMP section within this report.

11.6 STOCKPILING

The stockpile areas shall comprise hardstand or be prepared by lining the base with thick impermeable plastic or material should be contained within designated containers. Silt fencing, bunding and temporary cover may be required to control water leaching from the stockpile or during rainfall. Where necessary stockpiles should be covered to prevent dust generation and control potential release of fibres and/or odours. A primary principle in stockpile management shall be to maintain separate stockpiles for different material types and sources to avoid mixing waste types. All stockpiles shall be maintained in an orderly and safe condition. Batters shall be formed with slope angles which are appropriate to prevent collapse or sliding of the stockpiled material. Each stockpile shall be maintained in accordance with the environmental requirements given in this RAP. The integrity of neighbouring stockpiles of differing materials shall be maintained and all practical measures necessary to prevent mixing of material types shall be undertaken.

12.0 CONTINGENCY PLAN

The unexpected conditions that could feasibly occur at the site include:

- Increased volume of contaminated material;
- The uncovering of presently unknown types of contamination;
- Failure to meet project objectives;

Procedures that will be used to address these contingencies are provided in the following sections of this RAP.

12.1 INCREASED VOLUMES OF CONTAMINATED MATERIAL

In the case of a significant increase in the volume of Waste identified during primary remedial works, a review of the remediation strategy should be undertaken by the Project Manager.

Two (2) contingency plans for this scope of works following increased volumes of contaminated material are;

- Additional on-Site encapsulation: Expand the cell. Regulator to approve prior to commencing. Initial cell design should allow for an increased volume in order to avoid such issues; and
- Excavation and off-Site disposal: If additional volumes are still encountered, or material is uncovered which is not suitable for on-Site encapsulation, excavation and off-Site disposal is the recommended contingency plan. Excavation and off-Site disposal of excess material will need to meet waste disposal requirements outlined in **Section 13.8** of this report.

12.2 UNKNOWN TYPES OF MATERIALS

The presence of unknown materials would be highlighted during remedial works by the observation of any unusual physical/sensory characteristics of the “impacted” soils and/or validation sampling. In the event that any significant unknown type of material is identified at the site, the Site manage should follow the procedures documented in the project UFP.

An assessment of the influence of the unknown material on the remedial works would be undertaken by a suitably qualified and experienced professional. If required, a variation to the RAP will be made. If evidence suggests that the level and extent of contamination is significantly greater than assumed, further investigations will be performed to determine its extent. Once it is identified, the impacted material shall be remediated in accordance with the revised RAP.

12.3 FAILURE TO MEET PROJECT OBJECVTICES

Any failure to meet project objectives will incur a stop of works, notification to an environmental professional and reassessment of future or additional remediation works.

13.0 ASBESTOS REMOVAL CONTROLS

The following procedures are a guide only and do not override the requirements of legislation and accepted minimum standards, which apply for work involving removal of hazardous materials. The Procedure must be read in conjunction with the most recent version of the Safe Work Method Statement (SWMS) and Asbestos Removal Control Plan (ARCP) provided by the asbestos contractor. Copies of contractor SWMS and the ARCP shall be appended to this RAP. The SWMS will be adopted by all personnel involved in the remediation work and should be updated daily or as required by the asbestos contractor in conjunction with Site Manager.

13.1 CONTRACTOR

The Site remediation works shall be conducted by a suitably licensed asbestos removal contractor. The previous Contamination Assessment Reports have documented a mix of non-friable and friable asbestos in soil. Remediation of friable asbestos impacted material located within AEC-R04 is required to be managed under the supervision of a Class A Licenced Asbestos Removal Contractor. Remaining non-friable asbestos impacted soils within the Site are suitable for management under the supervision of a Class B Licenced Asbestos Removal Contractor.

In both instances, the Licensed Asbestos Removal Contractor is to provide for and maintain:

- Currency of their license to remove asbestos,
- Notifications (Safe Work NSW). The contractor is required to notify Safe Work NSW of the intention to conduct asbestos removal/clean-up works;
- Insurances (including asbestos liability insurance);
- A Safe Work Method Statement (SWMS);
- An Asbestos Removal Control Plan; and
- If materials are disposed offsite, copies of weighbridge receipts and transport dockets shall be compiled to document the transportation and/or disposal of asbestos materials has been conducted in accordance with the requirements of Section 29 of the Protection of the Environmental Operations (Waste) Regulation;

The named license holder and asbestos removal supervisor is required to be on site at all times. Asbestos removal works may only be performed by the removal contactor. The contractor shall ensure all personnel operating machinery and handling asbestos impacted soil or material must have the appropriate training and experience for handling asbestos materials and follow the safe work and decontamination procedures outlined in this RAP. Decontamination facilities are to be provided and maintained by the asbestos contractor for all personnel working at the site.

13.2 SITE ESTABLISHMENT

Prior to any work commencing suitable site controls shall be established:

- Delineate areas affected by asbestos and establish an effective exclusion zone with minimum 10 metre setback, where practical. The site area should be delineation with safety tape bunting, barricades or security fencing;
- Areas requiring remediation are to be marked out prior to the commencement of excavation works;
- Signage - Appropriate warning signs should be placed at the affected areas. Signs shall be attached at each point of entry, exit and at suitable intervals. Refer to the NSW Code of Practice: How to manage and control asbestos in the workplace (Section 274 of the Work Health and Safety Act, 2011) for further instructions;
- Waste storage and stockpile areas should be established within a designated area and protected with sediment controls, water spray for dust suppression and or plastic covers;
- Decontamination area setup at point or entry and exit with PPE supplies and waste receptacles; and

- Locate services – prior to commencing remedial activities, all services such as power, water, gas sewerage and telecommunications cables shall be identified and where possible disconnected by the contractor. Water will be required for dust control purposes.

13.3 RESTRICTED ACCESS

Access to the site will be determined by the Site Manager. The asbestos work site shall be deemed not accessible to non-employees or personnel not inducted for work within the contaminated areas until a final clearance certificate has been issued by the licensed Asbestos Assessor. Access to the asbestos removal area for inspections or similar by other work parties will only be allowed during 'tools down' periods under the direct supervision and control of the Asbestos Removal Contractor Supervisor.

13.4 EXCAVATION PROCEDURES

All works that disturb asbestos materials shall be conducted under asbestos site controls and supervision of a suitably licensed asbestos removalist. Friable asbestos impacted material located within AEC-R04 is required to be managed under the supervision of a Class A Licenced Asbestos Removal Contractor. Remaining non-friable asbestos impacted soils within the Site are suitable for management under the supervision of a Class B Licenced Asbestos Removal Contractor. Excavation of stockpiled material is to be conducted in a manner that minimises handling and the potential for dust generation. Dust generation is expected to be greatest during mechanical excavation when loading into trucks and placement within the cell. Where practical material shall be loaded from the point of excavation to avoid multiple handling events. Water spray should be conducted prior to commencing works to adequately wet the proposed works area and continue spraying as required during works to maintain wet soil conditions and reduce airborne dust generation. Works should be supervised by an asbestos trained spotter to direct the excavations, monitor dust suppression and identify any hazards.

13.5 DUST SUPPRESSION

Dust suppression techniques shall be employed, with the objective that there shall be no visible generation of dust. The factors that contribute to dust generation include:

- Wind blowing across a cleared surface of the ground;
- Loose stockpiled material;
- The movement of machinery over the loose unsealed surface of the working site; and
- Trucks transporting material.

During the remediation works, the following methods will be employed to minimise dust generation and distribution:

- Dampening the surface of the site and work area with a water spray/cart or similar control;
- Protecting any exposed materials by covering and/or wetting down the surface;
- Ceasing work in strong winds;
- Undertaking the loading or unloading of soil/fill as close as possible to the point of excavation to prevent the spread of loose material around the site; and

- Trucks transporting material to and from the site must be covered at all times in accordance with the Code of Practice.

13.6 CONTROL AIR MONITORING

Air monitoring is required daily during all friable asbestos works. Air monitoring will be implemented as required upon commencement of removal works and maintained until such time that sufficient evidence from the monitoring results demonstrates that the site controls are effective, and the works do not present an unacceptable risk to site users. The air monitoring results will also provide a measurable trigger for upgrading site controls or identifying cease work conditions.

The collection and analysis of air monitoring samples should be conducted under supervision of a licensed asbestos assessor and in accordance with the National Occupational Health and Safety Commission (NOHSC) "Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust [NOHSC: 3003 (2005)]. Calibrated air monitoring pumps shall be installed at the boundary fences of the exclusion zone for the designated asbestos works area and within the closed cabin of any plant supported by a daily field blank for QAQC purposes. Upon completion filter samples shall be submitted to a NATA accredited laboratory for fibre count analysis. The results of air monitoring shall be applied to:

- Compare results of air monitoring against the trigger levels outlined in **Table 13**;
- Continue to revise and update the air monitoring program based on progressive results, including the frequency and location of sample points; and
- Air monitoring results shall be made available to employees. Reports shall be printed and appended to the notice board.

Table 13: Air Monitoring Trigger Levels

Trigger Level	Fibre Concentration	Asbestos Management Action
(I)	<0.01 fibres/mL.	***Continue*** works and maintain effective site controls.
(II)	Between 0.01 -0.02 fibres/mL	***Review*** site control measures and introduce more stringent controls. Notify Asbestos Assessor to advise on improved site controls.
(III)	≥ 0.02 fibres/mL.	***Stop Work***. ***Notify*** Safe Work NSW. Identify the cause of the elevated concentrations and update site protocols for approval by Asbestos Assessor prior to recommencing works.

13.7 STOCKPILE MANAGEMENT

The movement and stockpiling of asbestos contaminated materials needs to be carefully managed and monitored to prevent cross contamination of soils. The management and tracking of stockpiled materials on site shall be the responsibility of the remedial works contractor. If material needs to be stockpiled prior to loading onto trucks, it should be relocated onto hardstand or plastic sheeting to reduce the potential for cross contamination. The management and tracking of stockpiled materials should be recorded on a site diagram and daily site logs. These documents should be kept in the site office. The daily site log should record the area in which work was conducted for that day, general description of the works completed, movement of materials onsite, movement of materials offsite, etc. The site diagram will record the locations and types of the stockpiled materials.

13.8 WASTE DISPOSAL

Any asbestos materials intended for disposal offsite, must be classified in accordance with the NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying Waste. The transportation and disposal of asbestos contaminated wastes shall be to a landfill licensed to receive asbestos waste and in accordance with the requirements of Section 29 of the Protection of the Environment Operations (Waste) Regulation.

- Waste is required to be covered/wrapped in two (2) layers of 200 micron (0.2mm) plastic or contained in approved FIBC/Bulka bags;
- Bulk soil and fill may be wet down and transported in covered skip bins or leak proof trucks with automatic load covers; and
- Copies of waste disposal dockets and related transport logs (including vehicle registration, times & dates) must be kept on Site and appended to the final clearance certificate and/or validation report.

Should it be necessary to temporarily store asbestos waste prior to transport to the waste facility then all plastic bags containing the waste shall be held in leak-proof metal containers or bins suitably marked and held in a secured area displaying appropriate warning signs.

Asbestos waste shall be collected and double bagged in heavy duty, low density polyethylene 0.2 mm thick bags. A maximum bag size of 1200 mm (length) x 900 mm (width) shall be observed and bags shall be filled to no more than 50 per cent capacity. The loaded weight of the bag shall not exceed 20 kg. Each bag or other container shall be labelled on its outermost surface with warning statements. Bags or primary containers which have held asbestos material shall not be re-used, and containers marked as above shall not be used for any other purpose. Transport of asbestos waste material shall be done so in plastic lined leak-proof vehicles or in air leak proof vehicles that are covered so that no spillage or dispersal of the waste to the atmosphere occurs. Care must be taken to ensure that the integrity of the plastic bags is not damaged during handling or transportation. In particular, bags of asbestos waste shall not be thrown or dropped from a height, (which may rupture the bag). Vehicles may be checked for cleanliness prior to leaving the Site. Controlled wetting of waste shall be employed, where practicable, to reduce dust emission during bag sealing and in cases of accidental bag rupture, during transportation. Excessive water logging shall be avoided as the excess of contaminated water may leak out of the bags, thereby creating a future source of airborne dust.

13.9 DECONTAMINATION PROCEDURES

The requirements for decontamination facilities and procedures are outlined in the following sub-sections.

13.9.1 Decontamination Area

A decontamination area should be established on site for the use of the personnel conducting the asbestos clean-up works. The decontamination area will comprise a segregated area where the contaminated work clothing and respirators are removed and discarded. This area is to be connected to the segregated asbestos removal area and all access to and from work area should be done via this 'change room' area. The decontamination area must not be used for purposes other than decontamination. It must not be used as a materials storage area. All personnel leaving the asbestos work area must use the Change Area prior to leaving the site. Personal protective equipment (PPE) is to be provided to all personnel working in the Designated Work Areas and must be available within the decontamination area. PPE requirements shall be in accordance with the standards for the type of asbestos removal work detailed in this RAP. All personnel working within the Designated Removal Area will be required to decontaminate before leaving the designated work area and at the end of each work shift (i.e. before exiting the area for morning tea, lunch and afternoon tea or bathroom visits) and at the end of the work day.

13.9.2 Disposal of PPE

No employee is permitted to remove any disposable protective clothing from the works area. Contaminated overalls and PPE is to be disposed of with the asbestos contaminated waste materials in appropriately labelled waste bins or bags.

13.9.3 Equipment Decontamination

- All equipment used during the removal operations should be decontaminated by using both wet and dry decontamination procedures, in accordance with the Safe Work Australia (2016) Code of Practice: How to Safely Remove Asbestos (approved under Section 274 of the Work Health and Safety Act, 2011) before they are removed from the asbestos work areas;
- Trucks used to transport asbestos impacted material shall be decontaminated before leaving source and receiving areas. Geotextile material shall be laid to ensure that plant and trucks do not track over exposed contaminated soil. If required, truck tyres should be washed down in the designated decontamination area prior to leaving Site. The decontamination must be carried out such that cross contamination to clean Site soils does not occur; and
- Once excavators have loaded the final truck, the excavator bucket and tracks are to be decontaminated in the designated decontamination area. The decontamination area is to be covered with geotextile, plastic sheeting or similar material, where the excavator will drive on to for decontamination. The decontamination will involve brushing and hosing to remove soil from the tracks and bucket. Following decontamination the ground sheeting material is to be rolled up and placed in the final truck for offsite disposal.

14.0 SITE MANAGEMENT PLAN

The following section provides guidance on site management systems and procedures with reference to the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004). For areas of the Site where asbestos containing materials (ACM) are present, be it identified or suspected, Site works and protocols must be undertaken in accordance with **Section 13.0: Asbestos Removal Controls**.

ENRS note that this Site Management Plan is not a replacement to any existing Site Management Plans and should only be referred to during to the remediation scope of works outlined in **Section 11.2**.

14.1 STAKEHOLDERS ENGAGEMENT

Stakeholders or persons or party affected by this RAP should be notified by the Project Manger (the client) at each stage of the remediation process.

14.2 CORRECTIVE ACTIONS FOR ENVIRONMENTAL ISSUES

If an unexpected environmental arises the Unexpected Find Protocol (UFP) provided in **Appendix D** should be followed. If the issue involves potential asbestos containing materials (ACM) as *SafeWork NSW* licence asbestos assessor should notified. If asbestos materials are to disturbed, an apparently licenced asbestos removal contractor should be engaged.

14.3 STORMWATER MANAGEMENT PLAN

Erosion and run-off control measures shall be implemented during all stages of the remediation works to prevent stormwater and/or surface water runoff entering or leaving the works area. At no stage shall run-off from the works area be permitted to enter stormwater drains or the surrounding environment without the consent of the appropriate regulatory authority. Controls measure shall include but not be limited to the use of bunding materials including silt fencing; hay bales; and/or oil absorbing booms, as required. Different controls might be necessary at different stages over the construction phase as the nature of the site changes, e.g. changing drainage patterns, moving stockpiles to different places, etc. Controls shall be established in accordance with the *Erosion and Sediment Control – A Field Guide for Construction Site Managers* (Witheridge;2012).

In summary the Four (4) Basic Principles for sediment and erosion control are:

- Make sure everyone working on the site understands how important it is to not pollute stormwater;
- Do not disturb more of the site than required;
- Install erosion and sediment controls before starting work; and
- Maintain your erosion and sediment control works throughout the construction phase.

14.3.1 Installation of Controls

Before works start, set up the erosion and sediment controls and install a warning signs with penalty notices. Make sure that all site workers understand their individual responsibilities in preventing pollution. A recommended sequence for setting up controls is:

(i) Establish a single stabilised entry/exit point to the site;

(ii) Install sediment fences along the low side of the site;

(iii) Divert upslope water around the site and, if necessary, stabilise the channels and outlet;

(iv) Put up barriers to fence off areas where no disturbance is required;

(v) Ensure that stockpiles are on site land – not the footpath or the next-door neighbours land. Where necessary, seek approval from Council or your neighbour(s) for any offsite stockpiles. Ensure stockpiles have appropriate erosion and sediment controls;

(vi) Install onsite waste receptacles, such as skips or bins, and wind-proof litter receptacles, etc.;

(vii) Commence site works;

(viii) Stabilise any exposed earth works progressively.

14.3.2 Maintenance of Controls

Best practice includes anticipation of the likely risks and being prepared for unusual circumstances, e.g. having spare sediment fence material on the site. All erosion and sediment control works should be checked at least once each week and after each rainfall event to ensure they are working properly. Maintenance might include:

(i) Removing sediment trapped in sediment fences, catch drains or other areas;

(ii) Topping up the gravel on the stabilised access;

(iii) Repairing any erosion of drainage channels; and

(iv) Repairing damage to sediment fences.

14.3.3 Finalisation of Works

Ensure that the Site is stabilised, and no exposed soil remains before removing the erosion and sediment controls. If backfilling and landscaping is not completed before handing over the site to the owners, ensure they are aware of their responsibilities to prevent pollution.

14.4 SOIL MANAGEMENT

The management and tracking of soil materials shall be the responsibility of the remedial works contractor. If material needs to be stockpiled prior to loading onto trucks, it must be relocated onto hardstand or plastic sheeting to reduce the potential for cross contamination. The management and tracking of stockpiled materials should be recorded on a site diagram and daily site logs. These documents should be kept in the site office. The daily site log should record the area in which work was conducted for that day, general description of the works completed, movement of materials onsite, movement of materials offsite, etc. The site diagram will record the locations and types of the stockpiled materials.

14.4.1 Acid Sulfate Soils Management Plan (ASSMP)

Given the Sites proximity to mapped areas of Acid Sulfate Soils (ASS) as outlined in **Section 2.6**, it is recommended that future Site works are conducted in accordance with a Site-specific Acid Sulfate Soils Management Plan (ASSMP). The ASSMP should be prepared by a suitably qualified Environmental Consultant in accordance with the NSW Acid Sulfate Soils Management Advisory Committee (ASSMAC;1998) guidelines, and with consideration of the NSW RTA (2005) Guidelines for the Management of Acid Sulfate Materials, and where appropriate the WA Department of Environment and Conservation (DEC;2013) guidelines for Identification and Investigation of Acid Sulphate Soils and Acidic Landscapes.

14.5 TRAFFIC CONTROL PLAN

Movement of excavation equipment, trucks and other vehicles involved in the remediation works, to and from the site will be strictly controlled and restricted to a minimum and only take place during appropriate working hours.

All trucks carting soil material are to have their loads covered. No trucks will be allowed to leave the site without covers on. Trucks without load covers are not to be admitted to the site during the removal of waste materials from the site.

All vehicles will be visually free of soil before permission to leave a remediation area is granted.

14.6 NOISE CONTROL

Noise control methods may vary dependent upon the equipment being used for particular remedial activities. Recommended methods include:

- Site work will be restricted to the hours specified in this RAP;
- The use of construction vehicles on-site will be kept to a minimum;
- All equipment in operation in open areas on-site shall comply with the requirements of AS 2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*; and
- NSW EPA Interim Construction Noise Guidelines (DECC 2013).

14.7 ODOUR CONTROL

During the course of any remediation works odour control measures shall be undertaken to ensure that possible odours generated on-site are controlled to within acceptable levels. Control measures shall consider the site conditions, and are likely to include (but not necessarily be limited) to the following:

- The prevailing weather conditions shall be considered in the manner in which work is undertaken;
- Plastic sheeting will be made available at all times on-site to allow for any excavated or disturbed contaminated soils to be covered, if necessary to reduce odour;
- Stockpiled contaminated materials will be removed from the Site as soon as practical/or will be securely covered; and
- Use of portable misting system in conjunction with application of odour control.

14.8 WORK HEALTH & SAFETY PLAN

This RAP establishes the standard health and safety procedures for the personnel involved in remedial works. The levels of protection and the procedures specified in this plan are based on the available information and represent the minimum health and safety requirements to be observed by all personnel involved in remediation works and on site activities during remediation works with respect to contamination. Higher levels may be necessary due to unforeseeable site conditions or personal preferences. Employees and their subcontractors must read this document carefully and complete a sign off sheet prior to site activity.

The ultimate responsibility and authority for the health and safety of the individual rests with the individual themselves and their colleagues. Each employee is responsible for exercising utmost care and good judgment in protecting his/her own health and safety and that of fellow employees. It is the responsibility of the employer to bring any observed potentially unsafe condition or situations to the attention of the Project Manager.

Should employees find themselves in a potentially hazardous situation, the employee shall immediately discontinue the hazardous procedure and take effective corrective or preventative action.

14.8.1 Personal Hygiene

The following personal hygiene and work practice guidelines are intended to prevent injuries and adverse health effects. These guidelines represent the minimum standard procedures for reducing potential risks associated with this project and are to be followed by general personnel and subcontractors on site during excavation works, as follows:

- A complete field first aid kit will be maintained on site;
- Eating, drinking, smoking, taking of medicine, chewing gum or tobacco is prohibited in the immediate vicinity of the primary remedial works;
- All employees involved in the primary remedial works are to wear long longs (long sleeve shirts and trouser pants);
- Avoid touching contaminated soil with hands. If dermal contact is made wash the affected area with soap and water immediately;
- Hands and if necessary, face will be thoroughly washed before eating or putting anything in your mouth;
- Always be alert to potential changes in exposure conditions such as strong odours, unusual appearance in soil, etc; and
- The site induction should include decontamination procedures and WH&S procedures for all staff involved with contaminated material.

14.8.2 Potential Hazards

Potential Hazards include:

- Inhalation of asbestos fibres;
- Inhalation of volatile contaminant vapours;
- Exposure and possible absorption through the skin of contaminants;

- Slips, trips, bumps falls, cuts, falling objects, crushing injuries, etc. typical of every construction - related job site; and
- Physical hazards such as noise and hot weather.

Exposure through the ingestion route can be controlled effectively by preventing dermal contact, good personal hygiene habits and the restrictions on smoking, eating and drinking in contaminated areas. The use of appropriate personal protective clothing and conscientious personal decontamination procedures can eliminate the risk of skin exposure. All soil and water should be treated as if it were contaminated.

14.8.3 Personal Protective Equipment

The level of personal protective clothing required at the site during remediation will consist of the following:

- Steel toed boots;
- Hard hat;
- Respirator suitable for volatile chemicals (eg P3 ABEK)
- P2 dust mask if required;
- Hearing protection if required;
- Safety glasses if required;
- Safety vest;
- Long sleeved shirts, trousers; and
- Gloves as dermal barrier if required.

Site personnel and subcontractors are expected to provide their own personal protective clothing and equipment equivalent to those recommended above.

14.9 HOURS OF OPERATION

The timing of various stages of the works needs to be agreed in advance with the ***Site Manager*** so that appropriate traffic operating plans can be put in place for the duration of the works. All Works, including the arrival and departure of heavy vehicles, shall be restricted to the following working hours:

- Monday to Saturday, 7:00 am to 6.00 pm
- Sunday and Public Holidays, no works pending prior approval.

Should the contractor wish to work outside the above working hours, the contractor shall obtain written approval from the ***Site Manager*** prior to the work occurring.

14.10 CONTINGENCY PLAN

The following procedures have been established to deal with unforeseen circumstances. Site employees and subcontractors should familiarise themselves with the nearest medical facilities. In the event of an emergency the procedures specified below will be followed. If an unanticipated, potentially hazardous situation arises as indicated by instrument readings, visible contamination, unusual or excessive odours etc., site personnel and subcontractors shall follow the **Unexpected Find Protocol** (**UFP**) provided in **Appendix D.**

- Temporarily cease operations;
- Move away to a safe area and assess the situation.

The unexpected conditions that could feasibly occur at the site include:

- The uncovering of greater amounts of ground contamination than presently estimated;
- The uncovering of presently unknown types of contamination;
- The generation of unacceptable levels of dust;
- The generation of unacceptable odours;
- The generation of unacceptable noise and/or vibration levels; and
- Spills and leaks of hazardous materials.

Procedures that will be used to address these contingencies are provided in the following sections of this document.

14.10.1 Emergency – DIAL 000

In the event of an emergency situation, employees shall contact the local fire brigade or paramedics by dialling 000.

14.10.2 Fire and Explosion

In the event of fire or explosion, if the situation is readily controllable with available resources, take immediate action to do so. This may include;

- Assessment to determine whether the situation is controllable;
- If the situation is controllable, dispatch fire-fighting equipment to the site of the fire and take immediate action;
- Attempting to put out the fire using methods compatible with the burning materials;
- Isolating the fire to prevent spreading, if possible; and
- If the situation is not immediately controllable, notify the local fire department (000) and evacuate all non-essential personnel from site.

14.10.3 Increased Volumes of Contaminated Material

The vertical and horizontal extent of any contaminated soil shall be subject to progressive assessment during remediation excavation works. In the case of a significant increase in the volume of Waste identified during primary remedial works, a review of the remediation strategy should be undertaken by the Project Manager.

14.10.4 Unknown Types of Materials

The presence of unknown materials would be highlighted during remedial works by the observation of any unusual physical/sensory characteristics of the "impacted" soils and/or validation sampling. In the event that any significant unknown type of material is identified at the site, an assessment of the influence of the material on the remedial works would be undertaken. If required, a variation to the RAP will be made. If evidence suggests that the level and extent of contamination is significantly greater than assumed, further investigations will be performed to determine its extent. Once it is identified, the impacted material shall be remediated.

14.10.5 Unforeseen Circumstances

The Health and Safety procedures specified in this plan are based on available data, which suggest minimal potential for worker exposure to significant levels of hazardous substances. Should substantially higher levels of contamination be encountered in the soil or groundwater, or should situations arise which are obviously beyond the scope of the minimal monitoring specified herein, work activities will be modified or if necessary halted pending discussion with the ENRS representative.

14.11 MONITORING & REVIEW OF SMP

Based on the dynamic nature of construction projects, Site Management Plans require regular review during the timeline of a project, and amendment where required. Review timings depend on the nature and scale of the project, however are typically undertaken when;

- There is a change in the scope of the project;
- Following significant environmental events;
- When there is a need to improve performance in the area of environmental impact;
- At the completion of environmental audits; and
- At the end of a project (to allow for improvements in subsequent projects).

15.0 WASTE MANAGEMENT

All contaminated soils shall be stockpiled and sampled for classification in accordance with the NSW EPA Waste Classification Guidelines (EPA;2014). Material assessed as suitable for re-use in accordance with the relevant soil criteria shall be backfilled to minimise waste generation. Material classified as waste shall be remediated on site or be removed from the site and disposed in accordance with EPA requirements.

15.1 SOIL WASTE

All material leaving the site shall be completely and securely covered to prevent loss of loose material from the vehicle and tracked appropriately. Only vehicles which are appropriately licensed, have clean exterior bodywork and which will not pollute the offsite transportation corridors shall be permitted to leave the site.

Any material removed from the Site shall be transported in accordance with government regulations and the requirements of the WorkCover Authority. All offsite truck movements shall occur during normal working hours. All trucks carrying loads of impacted soil material off-site shall be licensed to transport the materials and tracked in accordance with EPA requirements and State Government regulations. All materials leaving the Site shall be tracked in accordance with the requirements of this RAP. Disposal of waste materials shall only be undertaken at appropriate NSW EPA licensed facilities which have been approved by the Project Manager.

15.2 LIQUID WASTE

Excavations should be backfilled and or covered to minimise rainfall entering the excavations. Should water accumulate in excavations the water must be sampled, tested and assessed against ANZECC guidelines to document suitability for disposal to stormwater in accordance with Council requirements and the POE Act. Should the waters be assessed as unsuitable for release to stormwater the water should be classified as liquid waste and disposed in accordance with EPA requirements. Copies of disposal receipts should be retained by the project manager and provided to ENRS to document the validation process.

16.0 RESPONSIBILITIES

16.1 REGULATORY COMPLIANCE

The following regulatory compliance requirements are required for the scheduled remediation works:

- Friable asbestos works: Class A Licenced Asbestos Removal Contractor;
- Bonded (non-friable) asbestos works: Class B Licenced Asbestos Removal Contractor;
- Environmental assessment and reporting: Undertaken in accordance with the requirements outlined by the NSW EPA (2020) guidelines for Consultants Reporting on Contaminated Land, SafeWork NSW Code of Practice How to Safely Remove Asbestos, *NSW State Environment Planning Policy No. 55* (SEPP55), Ministerial Direction 2.6 – Contaminated Land and Local Council regulation;
- All environmental reports, including this RAP, the future validation report, clearance certificate and EMP, require signoff by the regulator and Environmental Auditor;
- The transportation and disposal of asbestos contaminated waste shall be to a landfill licenced to receive asbestos waste and occur in accordance with the requirements of Section 29 of the Protection of the Environment Operations (POEO) (Waste) Regulation.

16.2

16.2 CONTACT PERSONS

Role / Position	Contact Details
Project Manager	Allen Price & Scarratts Pty Ltd on behalf of Pearce & Campbell
Environmental Consultant	Christopher Allen and Rohan Last on behalf of ENRS Pty Ltd
Primary Remediation Contractor	TBC
Asbestos Removal Supervisor	TBC

16.3 COMMUNITY RELATIONS

All community or media enquiries are to be directed to the **Site Manager** in the first instance. No contact or communication on the project is to be made with the media without the written permission of the Site Manager.

17.0 REPORTING REQUIREMENTS

This section outlines the environmental reporting elements which are required throughout the remediation works. In addition to the below, a Site Management Plan (SMP) may be required for ongoing management of contamination at the site, if any remains.

17.1 CLEARANCE CERTIFICATES

Progressive Clearance Certificates shall be required at key milestones throughout the works for:

- Clearance certificates prior to entry to any portion of a removal site without asbestos PPE or any non-asbestos removal works;
- Clearance certificates required for plant & equipment prior to leaving the site or commencing non-asbestos works.

It is important to note that the Asbestos Assessor has the right to stop the project if work is not being carried out in accordance with the Site-specific agreed procedures identified in this RAP and/or ARCP.

17.2 CONTROL AIR MONITORING

Results of control air monitoring shall be reported upon receipt of laboratory results and posted on the site notice board or made readily available to site personnel.

17.3 SOIL & WASTE MANAGEMENT

All material removed and imported to the Site from the Site shall be accompanies by a Waste Classification Certificate.

It is assessed that sufficient soil testing was undertaken during the Contamination Assessment (ENRS, 2021) to provide an in-situ waste classification in accordance with NSW EPA Guidelines (EPA, 2014). If greater than expected volumes of waste are generated additional testing may be required to characterise the material.

The following points summarise the key reporting requirements for documenting the waste management and classification during the remediation process:

- Soil classification certificate required for any imported backfilling material to confirm it's suitability for re-use on site for the proposed land use (i.e. levels below relevant Site Assessment Criteria such as NEPM HILs). Materials must comply with the relevant development consent conditions;
- Waste classification letter report including, Chain of Custody and laboratory certificates, shall be prepared by a suitably qualified and experienced environmental professional, and submitted to the receiving waste facility;
- Copies of waste disposal dockets from landfill facility to be maintained with site records and incorporated within the final validation report; and
- Movement of the asbestos contaminated material between the holding area and encapsulation area should be documented within a materials tracking form. A tracking form in provided in **Appendix B**.

18.0 VALIDATION SAMPLING & ANALYSIS QUALITY CONTROL PLAN (SAQP)

18.1 DATA QUALITY OBJECTIVES

Data Quality Objectives (DQO) are required to define the quality and quantity of data needed to support management decisions. The process for establishing DQO's is documented by Australian Standard: AS 4482.1-2005 and referenced by the National Environment Protection (Assessment of Site Contamination) Measure (NEPC;2013). The DQO's for the validation sampling program were developed with the following procedure:

18.1.1 Step 1: State the Problem

Site works to date have identified seven (7) AECs within the Site where ground conditions are unsuitable for the proposed land use, as summarised below:

- AEC-R01: Shallow soils/fill containing fragments of non-friable asbestos;
- AEC-R02: Stockpiled material containing exceedances of the SAC for heavy fraction hydrocarbons;
- AEC-R03: Shallow soils/fill containing fragments of non-friable asbestos, and exceedances of the SAC for isolated heavy metals (lead);
- AEC-R04: Gravel ring-road containing friable asbestos;
- AEC-R05: Shallow soils/fill containing fragments of non-friable asbestos and exceedances of the SAC for heavy metals (lead);

- AEC-R06: Uncontrolled fill adjacent to a localised waterway containing fragments of non-friable asbestos and exceedances of the SAC for heavy metals (lead, zinc); and
- AEC-R07: Shallow soils containing fragments of non-friable asbestos and exceedances of the adopted SAC for pathogens and heavy fraction hydrocarbons.

Remediation works and subsequent validation sampling are required in order remove contaminated soils from the above AECs and confirm the Site's suitability for the proposed development.

18.1.2 Step 2: Identify the Decision/Goal of the Study

The primary goals / objectives of the remediation and validation program are to:

- Confirm the vertical and lateral extent of contaminated material within the identified AECs;
- Remediate the identified AECs as per the methodology documented within the project RAP; and
- Validate the remediated AECs as suitable for the proposed development.

18.1.3 Step 3: Identify the Information Inputs

The results from the validation sampling for the contaminants of potential concern (CoPC) shall be used to inform the decision regarding the Site suitability for the proposed land use, and the requirement for any further remediation works, if necessary. In addition, the following inputs are required:

- The nominated assessment criteria;
- The geological and hydrogeological conditions; and
- The completion of a Site Validation Report.

18.1.4 Step 4: Define the Study Boundaries

The areas subject to remediation works and validation sampling are AEC-R01, AEC-R02, AEC-R03, AEC-R04, AEC-R05, AEC-R06 and AEC-R07 as described in **Figure 6**.

18.1.5 Step 5: Develop the Analytical Approach

Results from the validation sampling of the revised AECs will be compared against tier 1 Site Assessment Criteria for NEPM 'A': Residential land use sites. This will comprise:

- National Environment Protection (Assessment of Site Contamination) measure 2013 Health Investigation (HIL) and Screening (HSL) (category 'A') as the basis for health screening at the tier 1 level; and
- ASC NEPM (2013) Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater aesthetic criteria, which reference 'no visual or olfactory evidence of contamination' for unrestricted residential land use.

18.1.6 Step 6: Specify Performance or Acceptance Criteria

To ensure the quality of the environmental data collected during the remediation and validation program, detailed quality assurance and quality control (QA/QC) measures will be applied. The QA/QC measures will be followed from the inception of the project, during intrusive fieldworks, laboratory analysis of samples and data reporting. The QAQC measures to be adopted are documented in detail below within **Sections 18.2 - 18.5**.

18.1.7 Step 7: Develop the Plan for Obtaining Data

The seventh and final step involves identifying the most effective sampling and analysis design for generating the data that is required to satisfy the data quality objectives. The proposed validation sampling program is based on and accounts for the following key points:

- The primary CoPC (asbestos) has been identified during previous Site investigations;
- The source of the primary CoPC is known (demolition of buildings previously present on Site, historical deposition of uncontrolled fill);
- There vertical and lateral distribution of hotspot areas within R-AEC01 and R-AEC02 are estimated, but not confirmed; and
- The results will be compared to Tier 1 screening criteria for the proposed land use – NEPM 'A' residential with accessible soils.

Indicators (DQI) used to identify that data obtained during the proposed remediation and validation program has been done so in a way which meets project data quality objectives (DQO) are summarised in **Table 14** below.

Table 14: Data Quality Objectives

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

18.2 SAMPLING METHODOLOGY

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

18.3 SAMPLING EQUIPMENT DECONTAMINATION

Reusable sampling equipment such as solid flight augers and hand tools will be decontaminated between samples by washing with phosphate free detergent (Decon 90) followed by a rinse with potable water. Asbestos in soil screening sampling equipment will be decontaminated by wiping down with a cloth rag wet with detergent solution prior to being dried with a separate cloth rag. Both rags to be placed in asbestos waste bags and disposed of in accordance with SafeWork NSW Code of Practice at a suitable licenced facility.

18.4 FIELD QUALITY ASSURANCE & QUALITY CONTROL

The Quality Assurance and Quality Control (QA/QC) protocols used during the fieldwork are provided in **Table 15**. Sample Chain of Custody (COC) documentation and a summary of Relative Percentage Differences (RPD) between primary samples, blind field duplicates and interlaboratory duplicates will be appended to the Validation Report.

Table 15: Field QAQC

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

18.5 LABORATORY ANALYTICAL METHODS

Analysis of soil samples will be conducted by Australian Laboratory Services (ALS) and Envirolab Services (ELS). Both laboratories are NATA accredited for the selected analysis. Laboratory QA/QC results will be detailed in an appendix of the Validation Report.

18.6 VALIDATION SAMPLING PROCEDURE

The procedure for clearance and validation sampling will include:

- A visual clearance inspection undertaken by a licensed asbestos assessor. The inspection should comprise at least two (2) passes supported by raking to a depth of ~10cm, with a 90° direction change between the passes.
- Soil validation samples for ASBINS should be collected from the surface of excavation footprints. Validation sampling should be undertaken with consideration of Table 8 of the Western Australia Department of Health: Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia (WA DOH, 2009), as summarised below:
    - Visually inspecting the walls and base of the excavation to confirm absence of ACM;
    - Collection of either one sample from the base, or one sample per every 25m2 of the base, whichever is greater. Or for larger areas sample density to be selected in accordance with AS4482.1-2005 Table E1;
    - Per sample location, 10 litres of material shall be spread out for inspection on a contrasting colour material, or sieved through a 7 mm sieve, and any ACM picked out and placed into a labelled zip lock bag for later weighing by a contract laboratory;
    - One (1) wetted 500 ml sub sample will be collected for laboratory analysis for asbestos identification (AS4964-2004); and
    - Where asbestos is detected in any sample, the concentration of asbestos as fragments (ACM) and as loose fibres (FA or AF) will be compared with the validation assessment criteria.

Should no suspected ACM be observed during visual inspection, and none of the samples reveal the presence of asbestos fibres and airborne asbestos concentrations are acceptable, a clearance certificate can be issued and the area may be deemed safe for re-entry without asbestos specific PPE.

The validation sampling plan for the revised AECs will also include analysis for the following;

- AEC-R01: Samples to be analysed for asbestos;
- AEC-R02: Samples to be analysed for Total Recoverable Hydrocarbons;
- AEC-R03: Samples to be analysed for asbestos and lead;
- AEC-R04: Samples to be analysed for asbestos;
- AEC-R05: Samples to be analysed for asbestos and lead;
- AEC-R06: Samples to be analysed for asbestos, lead and zinc; and
- AEC-R07: Samples to be analysed for asbestos and heavy fraction hydrocarbons.

Additional testing for chemical Contaminants of Potential Concern (CoPCs) shall be determined based on the results of preliminary investigations and field screening during site works. Analysis shall be carried out by a NATA certified laboratory for the specified analytical method. QA/QC analysis is recommended at the standard rate of 1 per 10 samples.

Should no asbestos be detected through laboratory analysis of soil samples and visual clearance inspections, and none of the additional validation samples report chemical concentrations of CoPC above the Site Assessment Criteria, a validation report can be prepared, and remediation works at the Site deemed to have been successful.

18.7 CONTINGENCY PROCEDURES

The following contingency procedures are to be followed if data obtained during the proposed remediation and validation program does not meet the stated data quality objectives:

- Review the discrepancy: Can the variation to the data quality objective be explained or justified, and does the variation impact the validity of the data?
- If the variation cannot be explained or justified, or if the variation does impact the validity of the data, the impacted sample (or sample set) will be voided, and validation sampling is required to be recompleted.

18.8 VALIDATION REPORT

A final validation report is required to be prepared in accordance with the NSW EPA (2020) guidelines for consultants reporting on contaminated sites and submitted to the Site Auditor for endorsement. The validation report should also include information confirming that all NSW EPA and other regulatory authorities' licence conditions and approvals have been met. In particular, documentary evidence is needed to confirm that any disposal of soil off-site has been undertaken in accordance with this RAP.

The validation report must:

- Clearly describe the remedial works undertaken, the validation carried out and the final condition of the site. Whilst the primary remediation goal is to validate the removal of contaminated soil, the validation report is required to consider the wider site area beyond the specific AEC's and provide an overall assessment of the site suitability for the proposed residential development;
- Confirm statistically that the remediated site complies with the remediation criteria set for the site (for guidance, see Contaminated Sites Sampling Design Guidelines (EPA 1995) (or update made under the CLM Act);
- Assess the results of the post-remediation testing against the remediation criteria stated in the remedial action plan. Where these criteria have not been achieved, reasons must be stated and additional site work proposed to achieve the original objectives, or a management plan put in place.

18.9 SURVEYING OF ENCAPSUALTION CELL & ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Upon completion of the encapsulation works the area shall be surveyed and an EMP prepared to document the protocols for managing and monitoring the capped area. Protocols shall include:

- Survey plan;
- Warning signage;
- Induction requirements for contractors on site;
- No dig policy;
- No deep rooted vegetation;
- Regular inspection and surveys to ensure the integrity of the capping layer;

- Requirements to document the encapsulation area and any remaining contamination on the Section 149 Planning Certificate.

19.0 CONCLUSIONS & RECOMMENDATIONS

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

19.1 CONCLUSIONS

- The tasks completed during this investigation have met the project objectives set out in **Section 1.1**;
- Based on the proposed residential subdivision for the Site, NEPM HIL 'A' was considered the most appropriate Site Assessment Criteria.
- Based on the results of the previous environmental assessments as documented in **Section 3.1** and **Section 4.0** a total of 3,345m^3 or ~5,686.5 tonnes of material requires remediation to make the Site suitable for the proposed development:
- In assessing and determining the optimal remediation options available to the project a range of factors were considered as outlined in **Section 9.3** of this report. The selected final remediation strategy for the project is a combination of;
  - ***Off-Site Disposal*** (approximately 295m^3)
  - ***Onsite Encapsulation*** (approximately 3050m^3)
- ENRS consider the adopted remediation strategy appropriate for the current concentrations and volumes of contaminated soil present at the Site. Completing remediation works in line with this report will help ensure the Site can be made suitable for the proposed land use in a feasible and practical manner.

19.2 RECOMMENDATIONS

- Remediation and clearance works to be conducted prior to the commencement of construction;
- Remediation works must be carried out in accordance with this RAP once approved by the Site's appointed NSW EPA Site Auditor and Regulator (Kiama Municipality Council);
- Remediation of asbestos impacted material from AEC-R04 must be managed as friable asbestos under supervision of a Class A licenced removal contractor;
- Future Site works to be conducted in accordance with an Acid Sulfate Soils Management Plan (ASSMP) to be prepared by a suitably qualified Environmental Consultant;
- All waste removed from the Site must be disposed of at an appropriately licenced facility. Material disposed off-Site will need to be accompanied by a waste classification certificate prepared in accordance with the NSW EPA Waste Classification Guidelines (2014);
- All asbestos works must be completed in accordance with the Code of Practice; How to Safely Remove Asbestos (SafeWork NSW, 2019);
- A clearance certificate is required from an appropriately licenced asbestos assessor (LAA) for asbestos removal areas prior to re-occupation without asbestos specific PPE;

- Upon completion of remediation works, the stockpile holding area must be cleared by an asbestos assessor and the encapsulation cell documented within an Environmental Management Plan (EMP);
- Should any change in Site conditions or incident occur which causes a potential environmental impact, a suitable environmental professional should be engaged to further assess the Site and consider requirements for any additional assessment; and
- This report must be read in full in conjunction with the attached Statement of Limitations.

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LIMITATIONS

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

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

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

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

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

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

TABLES

ENRS
ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

Table 16: Total Concentration Results - Soil
Allen Price & Scarratts: 48 Campbell St, Gerringong

Part 1: Organochlorine Pesticides (OCP), OPP, PCBs, Phenols, BTEX, Total Recoverable Hydrocarbons

Analyte / Area	ID / Depth (m)	Date	Aldrin	Dieldrin	Chlordane	DDT, DDD & DDE	Endrin	Endosulfan	Heptachlor	Methoxychlor	Organophosphate Pesticides (OPP)	Total PCB's	Total Phenols	Benzene	Toluene	Ethyl benzene	m+p-Xylene	o-Xylene	TRH C6-C9	TRH C10-C36	F1 TRH C6-C10	F2 TRH C10-C16	F3 TRH C16-C34	F4 TRH C34-C40	Total TRH C10-C40
Site Assessment Criteria - NEPM (2013) Soil Investigation Levels (mg/Kg)																									
EIL/ESL (Areas of ecological significance)	Coarse		-	-	-	3	-	-	-	-	-	-	-	*10*	*10*	*1.5*	*10*	*10*	-	-	*125*	25	-	-	-
	Fine		-	-	-	3	-	-	-	-	-	-	-	*10*	*65*	*40*	*1.6*	*1.6*	-	-	*125*	25	-	-	-
HIL'A' (Resi.,Prim. Sch. & Accessible Soil)			6	6	50	240	10	270	6	300	160	1	3000	-	-	-	-	-	-	-	-	-	-	-	-
HSL 'A' & 'B' — SAND	0-1m		-	-	-	-	-	-	-	-	-	-	-	0.5	160	55	40	40	-	-	45	110	-	-	-
	1-2m		-	-	-	-	-	-	-	-	-	-	-	0.5	220	NL	60	60	-	-	70	240	-	-	-
	2-4m		-	-	-	-	-	-	-	-	-	-	-	0.5	310	NL	95	95	-	-	110	440	-	-	-
	>4m		-	-	-	-	-	-	-	-	-	-	-	0.5	540	NL	170	170	-	-	200	NL	-	-	-
HSL 'A' & 'B' — SILT	0-1m		-	-	-	-	-	-	-	-	-	-	-	0.6	390	95	95	NL	-	-	40	230	-	-	-
	1-2m		-	-	-	-	-	-	-	-	-	-	-	0.7	NL	210	210	NL	-	-	65	NL	-	-	-
	2-4m		-	-	-	-	-	-	-	-	-	-	-	1	NL	NL	NL	NL	-	-	100	NL	-	-	-
	>4m		-	-	-	-	-	-	-	-	-	-	-	2	NL	NL	NL	NL	-	-	190	NL	-	-	-
HSL 'A' & 'B' — CLAY	0-1m		-	-	-	-	-	-	-	-	-	-	-	0.7	480	NL	110	110	-	-	50	280	-	-	-
	1-2m		-	-	-	-	-	-	-	-	-	-	-	1	NL	NL	310	310	-	-	90	NL	-	-	-
	2-4m		-	-	-	-	-	-	-	-	-	-	-	2	NL	NL	NL	NL	-	-	150	NL	-	-	-
	>4m		-	-	-	-	-	-	-	-	-	-	-	3	NL	NL	NL	NL	-	-	290	NL	-	-	-
Management Limits (Resi., parkland & public space)	Coarse		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	700	1000	2500	10000	-
	Fine		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	800	1000	3500	10000	-
EIL / *ESL* (Urban residential & public space)	Coarse		-	-	-	180	-	-	-	-	-	-	-	*50*	*85*	*70*	*105*	*105*	-	-	*180*	*120*	*300*	*2800*	-
	Fine		-	-	-	180	-	-	-	-	-	-	-	*65*	*105*	*125*	*45*	*45*	-	-	*180*	*120*	*1300*	*5600*	-
Total Concentrations - PQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.1	0.5	0.2	0.5	0.5	0.5	0.5	10	50	10	50	100	100	50
Area	ID / Depth (m)	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
AEC01	A1/TP1-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC04	A4/TP1-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC06	A6/TP1-0.1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC07-08	A7-8/SP1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**300**	<10	<50	**230**	**120**	**350**
AEC09	A9/TP1-0.1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC10	A10/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**140**	<100	**140**
	A10/DUP1-0.2		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A10/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**150**	<10	<50	**200**	<100	**200**
AEC11	A11/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A11/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**130**	<100	**130**
AEC12	A12/SP1-1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC13	A13/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC14	A14/TP1-0.1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A14/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC15	A15/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**140**	<100	**140**
	A15/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**120**	<100	**120**
	A15/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A15/TP4-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**120**	<10	<50	**180**	<100	**180**
	A15/TP5-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A15/TP6-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**120**	<100	**120**
AEC16	A16/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**260**	<10	<50	**200**	**110**	**310**
AEC17	A17/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A17/SP1-1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A17/TP3-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A17/TP3-0.7		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC18	A18/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A18/DUP2-0.2		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A18/TP2-0.4		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A18/TP4-0.6		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC19	A19/TP2-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A19/TP2-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**180**	<10	<50	**210**	**130**	**340**
	A19/TP4-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A19/TP4-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC20	A20/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**340**	<10	<50	**290**	**130**	**420**
	A20/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**200**	<10	<50	**220**	**150**	**370**
	A20/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC22	A22/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC23	A23/TP1-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A23/DUP3-0.3		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC24	A24/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC25	A25/TP1-0.5		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A25/TP3-0.5		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC28	A28/TP1-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A28/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**120**	<10	<50	**120**	**100**	**220**
	A28/TP5-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A28/TP5-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.8	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**750**	<10	<50	**440**	**470**	**910**
AEC29	A29/TP1-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A29/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A29/TP2-0.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	A29/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.8	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**110**	<10	<50	**150**	<100	**150**
	A29/TP2-0.6		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC30	A30/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC31	A31/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC32	A32/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/DUP4-0.2		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP4-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP5-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP6/0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP7/0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP8-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/TP9-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A32/DUP5-0.2		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC33	A33/TP1-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A33/TP2-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A33/TP3-0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC34	A34/TP1-0.1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A34/TP2-0.1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A34/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A34/TP4-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC35	A35/TP2-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**110**	<10	<50	**140**	<100	**140**
	A35/TP3-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**100**	<10	<50	**160**	<100	**160**
	A35/TP5-0.2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
	A35/DUP6-0.2		----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50
AEC36	A36/SP1-1		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.8	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**470**	<10	<50	**370**	**190**	**560**
	A36/SP1-2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**140**	<100	**140**
95% Upper Confidence Limit Calculations (mg/Kg)																									
Number of samples			70	70	70	70	70	70	70	70	70	70	70	77	77	77	77	77	77	77	77	77	77	77	77
Maximum			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.1	0.05	0.4	0.1	0.25	0.25	0.25	0.25	5.	750.	5.	25.	440.	470.	910.
Minimum			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.1	0.05	0.25	0.1	0.25	0.25	0.25	0.25	5.	25.	5.	25.	50.	50.	25.
Standard deviation			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.031	0.	0.	0.	0.	0.	0.	112.036	0.	0.	76.293	53.412	143.41
Coefficient of Variation			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.119	0.	0.	0.	0.	0.	0.	1.766	0.	0.	0.875	0.848	1.652
t statistic at a=0.05			1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.667	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665
Average			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.1	0.05	0.256	0.1	0.25	0.25	0.25	0.25	5.	63.442	5.	25.	87.143	62.987	86.818
95% UCL average			**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.1**	**0.1**	**0.05**	**0.263**	**0.1**	**0.25**	**0.25**	**0.25**	**0.25**	**5.**	**84.702**	**5.**	**25.**	**101.62**	**73.122**	**114.032**

Part 2: Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Microbiological, Nutrients/Anions, Asbestos

Analyte / Area	ID / Depth (m)	Naphthalene	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total Positive PAHs	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	E.Coli	Faecal Coliforms	Salmonella Sp.	Ammonia	Nitrate	Nitrite	Sulfate as SO4 2-	Chloride	FA & AF (Friable Asbestos)	Bonded ACM	< ASC NEPM Suitability for Re-Use On Site
Site Assessment Criteria - NEPM (2013) Soil Investigation Levels (mg/Kg)																								
EIL/ESL (Areas of ecological significance)	Coarse	10	*3*	-	-	40	-	-	270 (pH8)	470	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Fine	10	*3*	-	-	40	-	-	270 (pH8)	470	-	-	-	-	-	-	-	-	-	-	-	-	-	
HIL'A' (Resi.,Prim. Sch. & Accessible Soil)		-	-	3	300	100	20	100	6000	300	40	400	7400	100****	1000****	0.0	-	130000**	7800**	-	-			
HSL 'A' & 'B' — SAND	0-1m	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	1-2m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	2-4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	>4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
HSL 'A' & 'B' — SILT	0-1m	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	1-2m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	2-4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	>4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001%	0.01%	
HSL 'A' & 'B' — CLAY	0-1m	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	1-2m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	2-4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	>4m	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Management Limits (Resi., parkland & public space)	Coarse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
EIL / *ESL* (Urban residential & public space)	Coarse	170	*3*	-	300	100	-	-	800(pH8)	1100	-	-	-	-	-	-	-	-	-	-	-			
	Fine	170	*3*	-	300	100	-	-	800(pH8)	1100	-	-	-	-	-	-	-	-	-	-	-			
Total Concentrations - PQL		0.5	0.5	0.5	0.5	5	1	2	5	5	0.1	2	5	10	10	10	20	0.1	0.1	10	10	0.001		
Area	ID / Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MPN/g	MPN/g	MPN/g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% w/w		
AEC01	A1/TP1-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	**8**	**169**	**11**	<0.1	**8**	**50**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC04	A4/TP1-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	**13**	**52**	**15**	<0.1	**3**	**13**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC06	A6/TP1-0.1	<0.5	<0.5	**1.2**	**1.1**	<5	<1	**16**	**65**	**32**	<0.1	**9**	**68**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC07-08	A7-8/SP1	<0.5	<0.5	**1.2**	<0.5	**8**	<1	**23**	**92**	**124**	**0.2**	**12**	**229**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC09	A9/TP1-0.1	<0.5	<0.5	**1.2**	<0.5	**17**	<1	**32**	**110**	**198**	**0.1**	**13**	**311**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC10	A10/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**13**	**82**	**71**	<0.1	**9**	**144**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A10/DUP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**10**	**75**	**46**	<0.1	**7**	**104**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A10/TP2-0.2	<0.5	**0.7**	**1.5**	**6.5**	**7**	<1	**14**	**82**	**119**	<0.1	**9**	**148**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC11	A11/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**20**	**81**	**84**	**0.1**	**10**	**160**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A11/TP2-0.2	<0.5	<0.5	**1.2**	**0.8**	<5	<1	**18**	**86**	**74**	<0.1	**9**	**159**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC12	A12/SP1-1	<0.5	<0.5	**1.2**	<0.5	<5	<1	**11**	**119**	**106**	<0.1	**8**	**149**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC13	A13/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**23**	**89**	**39**	**0.1**	**12**	**143**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC14	A14/TP1-0.1	<0.5	<0.5	**1.2**	**1**	**11**	**1**	**40**	**117**	**77**	**0.1**	**19**	**550**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A14/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	**11**	<1	**37**	**119**	**95**	<0.1	**14**	**1200**	----	----	----	----	----	----	----	----	0.0000%	0.0002%	
AEC15	A15/TP1-0.2	<0.5	<0.5	**1.2**	**3.7**	**12**	<1	**23**	**123**	**404**	**0.4**	**11**	**1410**	----	----	----	----	----	----	----	----	0.0000%	0.0004%	> SAC
	A15/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	**6**	<1	**25**	**128**	**105**	**0.1**	**16**	**345**	----	----	----	----	----	----	----	----	0.0000%	0.0025%	
	A15/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	**9**	**2**	**25**	**110**	**262**	**0.2**	**19**	**977**	----	----	----	----	----	----	----	----	0.0000%	0.0067%	
	A15/TP4-0.2	<0.5	**0.7**	**1.5**	**6.8**	**10**	**1**	**30**	**178**	**463**	**1**	**15**	**1060**	----	----	----	----	----	----	----	----	0.0000%	0.0030%	
	A15/TP5-0.2	<0.5	<0.5	**1.2**	<0.5	**6**	<1	**28**	**98**	**116**	**0.2**	**13**	**410**	----	----	----	----	----	----	----	----	0.0000%	0.0121%	
	A15/TP6-0.2	<0.5	**0.6**	**1.4**	**6.3**	**6**	<1	**20**	**126**	**141**	**0.3**	**12**	**297**	----	----	----	----	----	----	----	----	0.0000%	0.0027%	
AEC16	A16/TP1-0.2	<0.5	<0.5	**1.2**	**0.6**	<5	<1	**16**	**105**	**27**	<0.1	**10**	**204**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC17	A17/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**26**	**72**	**29**	**15.5**	**14**	**53**	----	----	----	----	----	----	----	----	0.0000%	0.0135%	> SAC
	A17/SP1-1	<0.5	<0.5	**1.2**	<0.5	**5**	<1	**22**	**10**	**8**	<0.1	**5**	**28**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A17/TP3-0.3	<0.5	<0.5	**1.2**	<0.5	**9**	**3**	**24**	**183**	**630**	**0.6**	**17**	**2930**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A17/TP3-0.7	<0.5	<0.5	**1.2**	<0.5	<5	<1	**34**	**65**	**22**	<0.1	**15**	**50**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC18	A18/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**181**	<5	<0.1	**5**	**38**	----	----	----	----	----	----	----	----	0.0000%	0.0001%	< SAC
	A18/DUP2-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**184**	<5	<0.1	**5**	**37**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A18/TP2-0.4	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**294**	**6**	<0.1	**6**	**42**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A18/TP4-0.6	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**185**	<5	<0.1	**5**	**36**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC19	A19/TP2-0.1	----	----	----	----	----	----	----	----	----	----	----	----	<13	<13	**Not Detected**	----	----	----	----	----	0.0000%	0.0017%	> SAC
	A19/TP2-0.3	<0.5	<0.5	**1.2**	<0.5	**15**	<1	**18**	**125**	**58**	<0.1	**14**	**660**	----	----	----	----	----	----	----	----	0.0000%	0.0031%	
	A19/TP4-0.1	----	----	----	----	----	----	----	----	----	----	----	----	**>35000**	**>35000**	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	
	A19/TP4-0.2	<0.5	<0.5	**1.2**	<0.5	**6**	<1	**24**	**80**	**27**	<0.1	**15**	**170**	----	----	----	----	----	----	----	----	0.0000%	0.0003%	
AEC20	A20/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	**6**	<1	**27**	**111**	**268**	**0.1**	**12**	**446**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A20/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**10**	**133**	**44**	<0.1	**7**	**113**	----	----	----	----	----	----	----	----	0.0000%	0.0005%	
	A20/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	**5**	<1	**22**	**124**	**101**	**0.2**	**14**	**228**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC22	A22/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**14**	**158**	**49**	**0.1**	**9**	**147**	----	----	----	----	----	----	----	----	0.0000%	0.0003%	< SAC
AEC23	A23/TP1-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**226**	<5	<0.1	**6**	**42**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A23/DUP3-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**174**	<5	<0.1	**5**	**37**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC24	A24/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**24**	**92**	**26**	**0.1**	**12**	**52**	----	----	----	----	----	----	----	----	0.0000%	0.0034%	< SAC
AEC25	A25/TP1-0.5	<0.5	<0.5	**1.2**	<0.5	<5	<1	**27**	**71**	**27**	<0.1	**9**	**56**	<14	<14	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A25/TP3-0.5	<0.5	<0.5	**1.2**	<0.5	<5	<1	**22**	**75**	**24**	**0.1**	**11**	**47**	<14	<14	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	
AEC28	A28/TP1-0.1	----	----	----	----	----	----	----	----	----	----	----	----	**>29000**	**>29000**	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	> SAC
	A28/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**8**	**148**	**17**	<0.1	**7**	**87**	----	----	----	<20	**6.1**	<0.1	**200**	**100**	0.0000%	0.0000%	
	A28/TP5-0.1	----	----	----	----	----	----	----	----	----	----	----	----	**>48000**	**>48000**	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	
	A28/TP5-0.3	<0.8	<0.8	**1.9**	<0.5	<5	<1	**13**	**69**	**38**	<0.1	**8**	**241**	----	----	----	<20	**4.8**	**0.1**	**370**	**800**	0.0000%	0.0000%	
AEC29	A29/TP1-0.1	----	----	----	----	----	----	----	----	----	----	----	----	**>42000**	**>42000**	**Not Detected**	----	----	----	----	----	0.0000%	0.0002%	> SAC
	A29/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	**6**	<1	**30**	**104**	**46**	<0.1	**19**	**118**	----	----	----	----	----	----	----	----	0.0000%	0.0002%	
	A29/TP2-0.1	----	----	----	----	----	----	----	----	----	----	----	----	**7800**	**7800**	**Not Detected**	----	----	----	----	----	0.0000%	0.0000%	
	A29/TP2-0.2	<0.8	<0.8	**1.9**	**2.4**	<5	<1	**13**	**74**	**39**	<0.1	**9**	**319**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A29/TP2-0.6	<0.5	<0.5	**1.2**	<0.5	<5	**1**	**37**	**90**	**20**	**0.1**	**14**	**23**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC30	A30/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**25**	**90**	**28**	**0.1**	**12**	**186**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
AEC31	A31/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	**7**	<1	**31**	**133**	**241**	**0.3**	**17**	**331**	----	----	----	----	----	----	----	----	0.0000%	0.0144%	> SAC
AEC32	A32/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**33**	**79**	**29**	**0.1**	**12**	**54**	----	----	----	----	----	----	----	----	----	----	< SAC
	A32/DUP4-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**26**	**78**	**27**	**0.1**	**13**	**50**	----	----	----	----	----	----	----	----	----	----	
	A32/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**25**	**84**	**24**	**0.1**	**13**	**79**	----	----	----	----	----	----	----	----	----	----	
	A32/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**27**	**126**	**24**	**0.1**	**15**	**64**	----	----	----	----	----	----	----	----	----	----	
	A32/TP4-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**24**	**119**	**25**	**0.1**	**15**	**73**	----	----	----	----	----	----	----	----	----	----	
	A32/TP5-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**23**	**71**	**20**	**0.1**	**12**	**22**	----	----	----	----	----	----	----	----	----	----	
	A32/TP6/0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**29**	**63**	**28**	**0.1**	**13**	**32**	----	----	----	----	----	----	----	----	----	----	
	A32/TP7/0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**30**	**93**	**24**	**0.1**	**14**	**39**	----	----	----	----	----	----	----	----	----	----	
	A32/TP8-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**28**	**60**	**18**	<0.1	**11**	**20**	----	----	----	----	----	----	----	----	----	----	
	A32/TP9-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**24**	**63**	**18**	<0.1	**10**	**32**	----	----	----	----	----	----	----	----	----	----	
	A32/DUP5-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**24**	**62**	**18**	<0.1	**10**	**33**	----	----	----	----	----	----	----	----	----	----	
AEC33	A33/TP1-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**4**	**209**	**10**	<0.1	**8**	**62**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	< SAC
	A33/TP2-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	**4**	**205**	**10**	<0.1	**7**	**55**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
	A33/TP3-0.3	<0.5	<0.5	**1.2**	<0.5	<5	<1	**8**	**217**	**9**	<0.1	**8**	**61**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
AEC34	A34/TP1-0.1	<0.5	<0.5	**1.2**	<0.5	<5	<1	**4**	**262**	**6**	<0.1	**7**	**47**	----	----	----	----	----	----	----	----	0.0000%	0.0006%	> SAC
	A34/TP2-0.1	<0.5	<0.5	**1.2**	<0.5	<5	<1	**5**	**165**	**11**	<0.1	**7**	**57**	----	----	----	----	----	----	----	----	0.0000%	0.0005%	
	A34/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**13**	**168**	**19**	<0.1	**12**	**59**	----	----	----	----	----	----	----	----	0.001%	0.0003%	
	A34/TP4-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	<2	**319**	<5	<0.1	**5**	**38**	----	----	----	----	----	----	----	----	0.0000%	0.0004%	
AEC35	A35/TP2-0.2	<0.5	<0.5	**1.2**	<0.5	**15**	**11**	**39**	**133**	**186**	**0.3**	**31**	**1930**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	> SAC
	A35/TP3-0.2	<0.5	<0.5	**1.2**	<0.5	**21**	**15**	**90**	**119**	**425**	**0.1**	**39**	**13700**	----	----	----	----	----	----	----	----	0.0000%	0.0022%	
	A35/TP5-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**16**	**94**	**16**	**0.1**	**11**	**76**	----	----	----	----	----	----	----	----	----	----	
	A35/DUP6-0.2	<0.5	<0.5	**1.2**	<0.5	<5	<1	**16**	**97**	**23**	**0.1**	**11**	**128**	----	----	----	----	----	----	----	----	----	----	
AEC36	A36/SP1-1	<0.8	<0.8	**1.9**	<0.5	**14**	<1	**23**	**41**	**7**	<0.1	**3**	**104**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	> SAC
	A36/SP1-2	<0.5	<0.5	**1.2**	<0.5	**29**	<1	**48**	**88**	**30**	<0.1	**12**	**154**	----	----	----	----	----	----	----	----	0.0000%	0.0000%	
95% Upper Confidence Limit Calculations (mg/Kg)																								
Number of samples		77	77	77	77	77	77	77	77	77	77	77	77	4	4	0	2	2	2	2	2	-	-	
Maximum		0.4	0.7	1.9	6.8	29.	15.	90.	319.	630.	15.5	39.	13700.	7800.	7800.	0.	10.	6.1	0.1	370.	800.	-	-	
Minimum		0.25	0.25	1.2	0.25	2.5	0.5	1.	10.	2.5	0.05	3.	13.	6.5	6.5	0.	10.	4.8	0.05	200.	100.	-	-	
Standard deviation		0.029	0.086	0.144	1.295	5.182	2.6	15.742	57.564	122.698	1.759	6.343	2200.908	3896.583	3896.583	#DIV/0!	0.	0.919	0.035	120.208	494.975	-	-	
Coefficient of Variation		0.114	0.315	0.117	2.158	1.	2.397	0.753	0.472	1.546	5.644	0.545	3.688	1.993	1.993	#DIV/0!	0.	0.169	0.471	0.422	1.1	--	-	
t statistic at a=0.05		1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	1.665	2.353	2.353	#NUM!	6.314	6.314	6.314	6.314	6.314	-	-	
Average		0.256	0.272	1.238	0.6	5.182	1.084	20.909	121.935	79.377	0.312	11.636	596.727	1955.125	1955.125	#DIV/0!	10.	5.45	0.075	285.	450.	-	-	
95% UCL average		**0.261**	**0.288**	**1.265**	**0.846**	**6.165**	**1.578**	**23.896**	**132.858**	**102.66**	**0.645**	**12.84**	**1014.375**	**6540.163**	**6540.163**	**#DIV/0!**	**10.**	**9.554**	**0.233**	**821.669**	**2659.813**	No Asbestos Detected		

Do Not average ACM

Notes: Basis for NEPM (2013) ESL for B(a)P has been rescindered. Recommend application of HSL 'A' 3 mg/kg pending publication of updated ESL.
** US EPA Regional Screening Levels November 2019
***Dutch Soil Remediation Circular (2009), adopted in the absence of NEPM EIL
**** NSW EPA (2000) Biosolids Guidelines. T3-5 Stabilisation Grade A Microbiological Standards

TABLE 17: Surface Sater Monitoring Event Results
48 Campbell Street, Gerringong, NSW

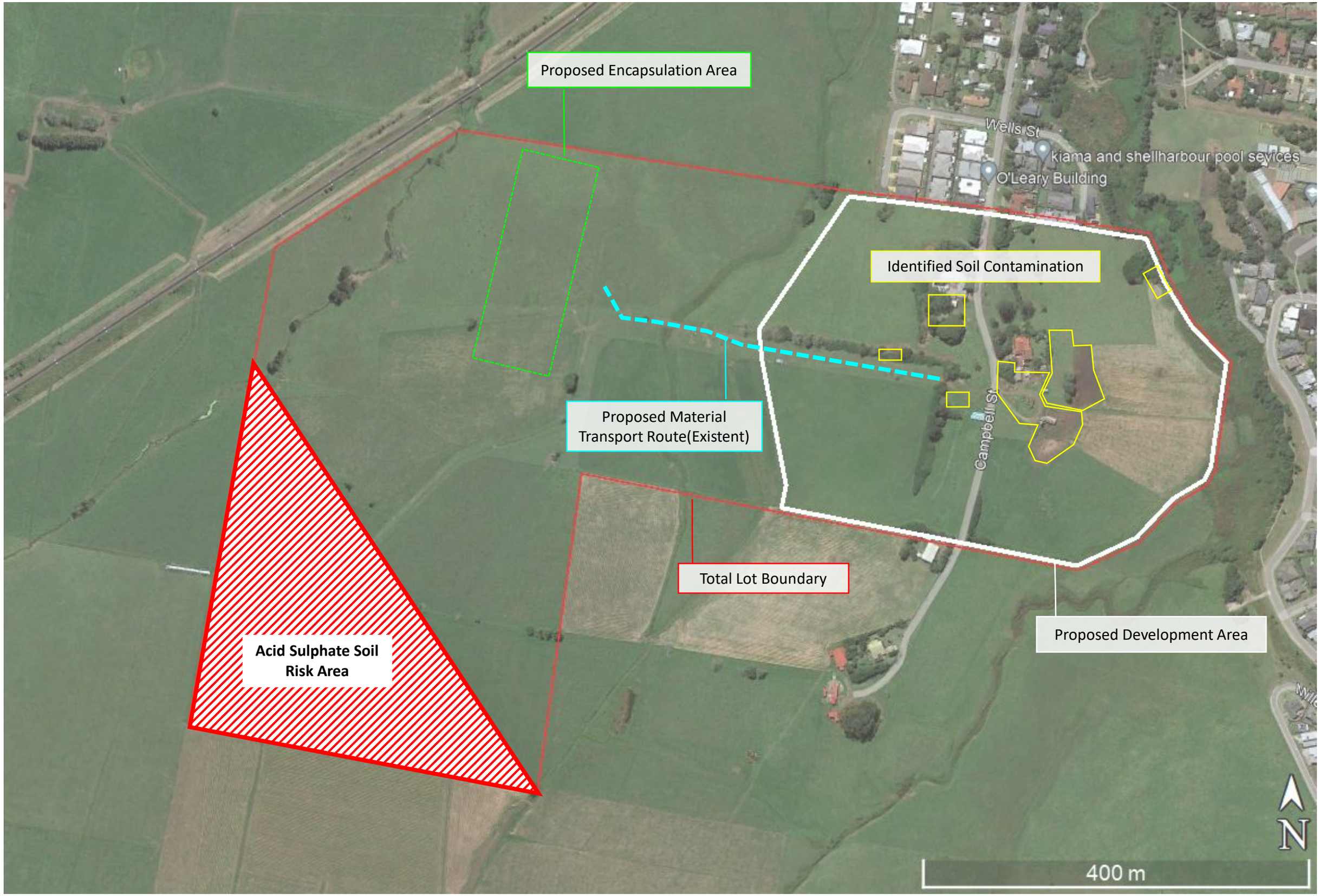
			Arsenic - Dissolved	Cadmium - Dissolved	Chromium - Dissolved	Copper - Dissolved	Lead - Dissolved	Mercury - Dissolved	Nickel - Dissolved	Zinc	TRH C6 - C9	TRH C10 - C36	F1 TRH C6 - C10	F2 TRH >C10 - C16	F3 TRH >C16 - C34	F4 TRH >C34 - C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-xylene	Naphthalene	Benzo (a) Pyrene	Total PAH	Ammonia	Fluoride	Sulphate, SO4 (mg/L)	Nitrate as N in water	Reactive Phosphorus as P	pH - Lab	Electrical Conductivity (Lab)	Comment
ANZECC 2000 -Trigger Values for Freshwater (Protection of 95% of Species)			24 (As III)	0.2 (HMTV 0.29)	1.0 (HMTV 1.39)	1.4 (HMTV 1.98)	3.4 (HMTV 15.52)	0.6	11	8 (HMTV 11.29)	-	-	-	-	-	-	950	-	-	200	350	16	-	-	0.9	-	-	0.7	0.02	6.5 - 8.0	2200	
ANZECC 2000 - Trigger Values for long-term Irrigation			100	10	100	200	2000	2	200	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Australian Drinking Water Guidelines (2016)[C]		Health	10	2	50	2000	10	1	20	-	-	-	-	-	-	-	1	800	300	600	600	-	0.01	-	-	1.5	500	50	-	-	-	
		Aesthetic	-	-	-	1000	-	-	-	3000	-	-	-	-	-	-	-	25	3	20	20	-	-	-	0.5	-	250	-	-	-	-	Comment
Lab Report No.	Sample ID.	Date Sampled																														
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	20	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH units	µS/cm	
		Limit of Reporting	1	0.1	1	1	1	0.1	1	5	10	125	10	50	100	100	1	1	1	2	1	1	1	0.1	0.01	0.1	1	0.005	0.01	0.01	1	
EW2105036	A27-SW01	25/11/2021	<1	<0.1	<1	1	<1	<0.1	<1	<5	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	<0.5	<0.5	0.07	<0.1	5	0.01	<0.01	6.28	194	< SAC
EW2105036	A27-DUP01	25/11/2021	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC
EW2105036	A27-R01	25/11/2021	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC
ES2145701	A35/SW01	14/12/2021	5	6.7	3	30	18	<0.1	7	1940	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	<0.5	<0.5	----	----	----	----	----	6.53	278	> SAC
ES2145701	A35 / DUP2	14/12/2021	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC
ES2145701	A35 / R01	14/12/2021	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC
EW2200244	A35/SW NTH	18/01/2022	8	0.1	3	19	3	0.1	1	42	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	<0.5	<0.5	----	----	----	----	----	6.76	275	> SAC
EW2200244	A35/SW STH	18/01/2022	<1	<0.1	<1	<1	<1	<0.1	<1	<5	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	<0.5	<0.5	----	----	----	----	----	7.01	274	< SAC
EW2200244	A35/DUP3	18/01/2022	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC
EW2200244	A35/R02	18/01/2022	----	----	----	----	----	----	----	----	<20	<50	<20	<100	<100	<100	<1	<2	<2	<2	<2	<5	----	----	----	----	----	----	----	----	----	< SAC

Table 18: 48 Campbell Street, Gerringong
Test Pit Results with comparison against NEPM 2013 HSL 'A' for bonded ACM in soil <0.01%w/w

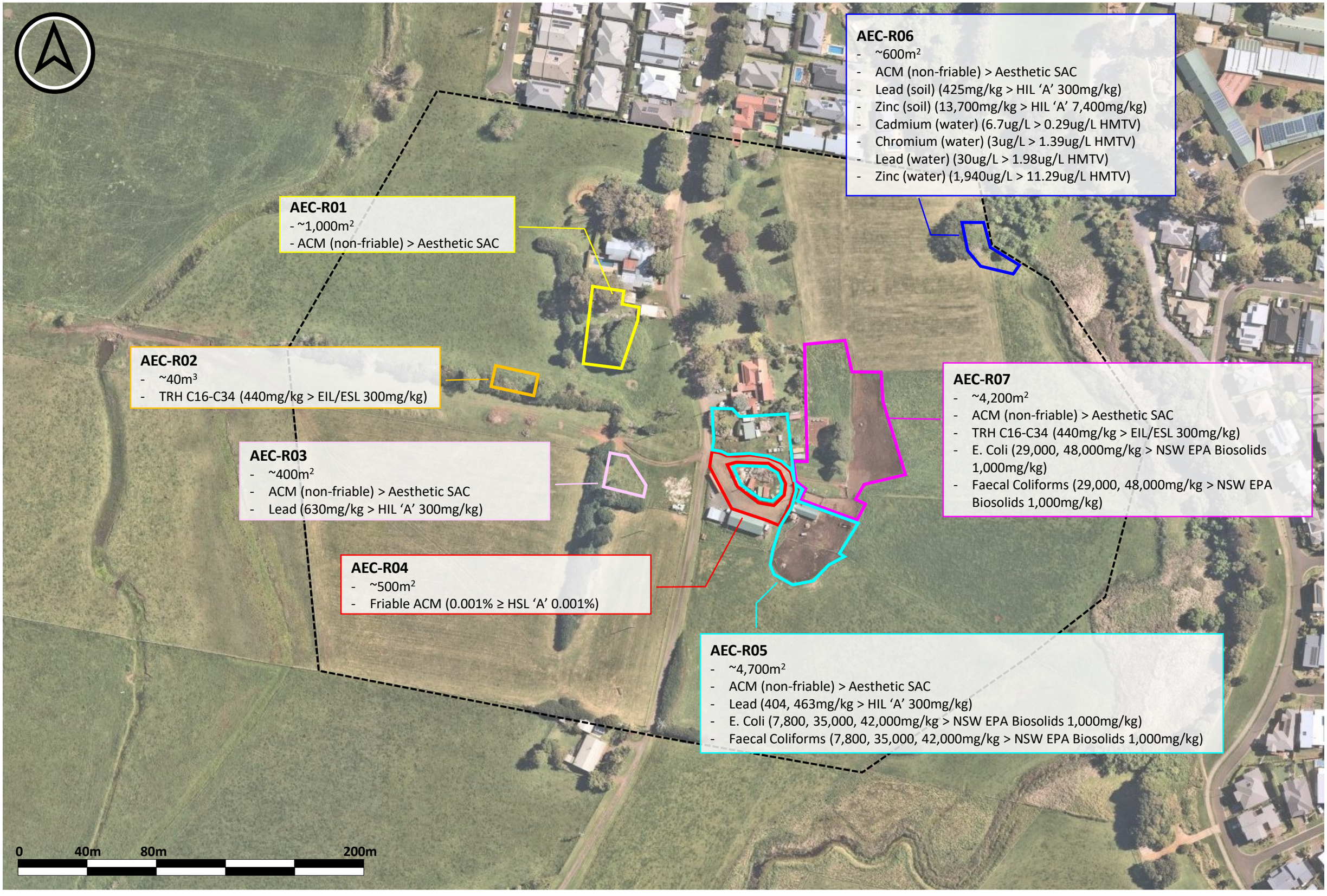
Test Pit ID	Date	Test Pit Dimensions			Soil Qty		Asbestos Concentration (Field screening)				Comparison against NEPM 2013 HSL c <0.01%w/w	NATA Laboratory Result (screening of >500 g samples sieved to 7mm from 10L)
		Length	Width	Depth	Volume (m^3)	Weight (kg)	No. Fragments	ACM (kg)	Asbestos content	W/W (%)		
A1/TP1	20/11/2021	1.5	0.45	0.8	0.54	972	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A1/TP2	20/11/2021	1.5	0.45	0.8	0.54	972	0	0	15%	0.0000%	< SAC	N/A
A4/TP1	20/11/2021	1.5	0.45	0.8	0.54	972	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A4/TP2	20/11/2021	1.5	0.45	0.8	0.54	972	0	0	15%	0.0000%	< SAC	N/A
A6/TP1	20/11/2021	1.5	0.45	1.0	0.68	1215	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A7-8/SP1	9/11/2021	0.5	0.50	0.4	0.10	180	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A9/TP1	9/11/2021	N/A	N/A	N/A	-	-	0	0	15%	N/A	< SAC	N/A
A10/TP1	9/11/2021	0.3	0.30	0.3	0.03	49	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A10/TP2	9/11/2021	0.3	0.30	0.3	0.03	49	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A11/TP1	9/11/2021	0.3	0.30	0.3	0.03	49	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A11/TP2	9/11/2021	0.3	0.30	0.3	0.03	49	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A12/SP1	20/11/2021	1.5	0.45	1.0	0.68	1215	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A13/TP1	20/11/2021	1.5	0.45	0.2	0.14	243	2	NAD	15%	N/A	< SAC	N/A
A13/TP2	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A13/TP3	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A13/TP4	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A13/TP5	14/12/2021	1.0	0.45	0.2	0.09	162	1	0.015	15%	**0.0014%**	**< SAC**	No Asbestos Detected
A13/TP6	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	N/A
A13/TP7	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	N/A
A13/TP8	14/12/2021	1.0	0.45	0.2	0.09	162	0	0	15%	0.0000%	< SAC	N/A
A14/TP1	19/11/2021	2.0	0.45	0.2	0.18	324	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A14/TP2	19/11/2021	1.5	0.45	0.4	0.27	486	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A14/TP3	19/11/2021	1.5	0.45	0.6	0.41	729	1	0.01	15%	**0.0002%**	**< SAC**	N/A
A31/TP1	19/11/2021	1.5	0.14	0.5	0.11	189	15	0.181	15%	**0.0144%**	**> SAC**	No Asbestos Detected
A15/TP1	19/11/2021	1.5	0.45	0.3	0.20	365	1	0.01	15%	**0.0004%**	**< SAC**	No Asbestos Detected
A15/TP2	19/11/2021	1.5	0.45	0.3	0.20	365	5	0.06	15%	**0.0025%**	**< SAC**	No Asbestos Detected
A15/TP3	19/11/2021	1.5	0.45	0.3	0.20	365	4	0.164	15%	**0.0067%**	**< SAC**	No Asbestos Detected
A15/TP4	19/11/2021	1.5	0.45	0.3	0.20	365	6	0.072	15%	**0.0030%**	**< SAC**	No Asbestos Detected
A15/TP5	19/11/2021	1.5	0.45	0.3	0.20	365	11	0.294	15%	**0.0121%**	**> SAC**	No Asbestos Detected
A15/TP6	19/11/2021	1.5	0.45	0.3	0.20	365	2	0.065	15%	**0.0027%**	**< SAC**	No Asbestos Detected
A16/TP1	20/11/2021	1.5	0.45	0.9	0.61	1094	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A17/TP1	20/11/2021	1.5	0.45	0.3	0.20	365	1	0.329	15%	**0.0135%**	**> SAC**	No Asbestos Detected
A17/TP2	20/11/2021	1.5	0.45	0.4	0.27	486	0	0	15%	0.0000%	< SAC	N/A
A17/TP3	14/12/2021	1.5	0.45	0.7	0.47	851	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A17/TP4	14/12/2021	1.0	0.45	0.6	0.27	486	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A17/TP5	14/12/2021	1.0	0.45	0.5	0.23	405	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A17/SP1	20/11/2021	N/A	N/A	N/A	-	-	2	NAD	15%	N/A	< SAC	No Asbestos Detected
A18/TP1	19/11/2021	2.0	0.45	0.9	0.81	1458	1	0.012	15%	**0.0001%**	**< SAC**	No Asbestos Detected
A18/TP2	19/11/2021	2.0	0.45	0.7	0.63	1134	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A18/TP3	19/11/2021	2.0	0.45	1.4	1.26	2268	0	0	15%	0.0000%	< SAC	N/A
A18/TP4	19/11/2021	2.0	0.45	1.1	0.99	1782	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A19/TP1	19/11/2021	1.2	1.20	0.2	0.29	518	9	0.06	15%	**0.0017%**	**< SAC**	N/A
A19/TP2	19/11/2021	1.5	0.45	0.4	0.27	486	16	0.099	15%	**0.0031%**	**< SAC**	No Asbestos Detected
A19/TP3	19/11/2021	1.5	0.45	0.4	0.27	486	0	0	15%	0.0000%	< SAC	N/A
A19/TP4	19/11/2021	1.5	0.45	0.4	0.27	486	1	0.011	15%	**0.0003%**	**< SAC**	No Asbestos Detected
A20/TP1	19/11/2021	1.5	0.45	0.3	0.20	365	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A20/TP2	19/11/2021	1.5	0.45	0.3	0.20	365	3	0.013	15%	**0.0005%**	**< SAC**	No Asbestos Detected
A20/TP3	19/11/2021	1.5	0.45	0.4	0.27	486	0	0	100%	0.0000%	< SAC	No Asbestos Detected
A20/TP4	19/11/2021	1.5	0.45	0.3	0.20	365	0	0	15%	0.0000%	< SAC	N/A
A22/TP1	20/11/2021	2.0	0.45	0.3	0.27	486	2	0.009	15%	**0.0003%**	**< SAC**	No Asbestos Detected
A23/TP1	20/11/2021	1.5	1.20	0.4	0.72	1296	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A24/TP1	20/11/2021	2.0	0.45	0.2	0.18	324	2	0.074	15%	**0.0034%**	**< SAC**	No Asbestos Detected
A25/TP1	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A25/TP2	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A25/TP3	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A25/TP4	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A28/TP1	20/11/2021	1.5	0.45	0.5	0.34	608	0	0	15%	0.0000%	< SAC	N/A
A28/TP2	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A28/TP3	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A28/TP4	20/11/2021	1.5	0.45	0.1	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A28/TP5	20/11/2021	0.5	0.45	0.3	0.07	122	0	0	15%	0.0000%	< SAC	N/A
A29/TP1	19/11/2021	1.5	0.45	0.4	0.27	486	1	0.007	15%	**0.0002%**	**< SAC**	No Asbestos Detected
A29/TP2	19/11/2021	2.0	0.45	0.4	0.36	648	1	0.008	15%	**0.0002%**	**< SAC**	No Asbestos Detected
A30/TP1	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A30/TP2	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	No Asbestos Detected
A30/TP3	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP1	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP2	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP3	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP4	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP5	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP6	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP7	20/11/2021	1.5	0.45	0.2	0.14	243	0	0	15%	0.0000%	< SAC	N/A
A32/TP8	9/11/2021	0.5	0.5	0.2	0.05	90	0	0	15%	0.0000%	< SAC	N/A
A32/TP9	9/11/2021	0.5	0.5	0.2	0.05	90	0	0	15%	0.0000%	< SAC	N/A
A34/TP1	19/11/2021	1.5	0.45	0.2	0.14	243	1	0.01	15%	**0.0006%**	**< SAC**	No Asbestos Detected
A34/TP2	19/11/2021	1.5	0.45	0.2	0.14	243	1	0.008	15%	**0.0005%**	**< SAC**	No Asbestos Detected
A34/TP3	19/11/2021	1.5	0.45	0.5	0.34	608	6	0.014	15%	**0.0003%**	**< SAC**	**0.001% > SAC**
A34/TP4	19/11/2021	1.5	0.45	0.4	0.27	486	4	0.013	15%	**0.0004%**	**< SAC**	No Asbestos Detected
A35/TP1	20/11/2021	1.5	0.45	0.3	0.20	365	0	0	15%	0.0000%	< SAC	N/A
A35/TP2	20/11/2021	1.5	0.45	0.4	0.27	486	0	0	15%	0.0000%	< SAC	N/A
A35/TP3	20/11/2021	1.5	0.45	0.4	0.27	486	2	0.071	15%	**0.0022%**	**< SAC**	N/A
A35/TP4	20/11/2021	1.5	0.45	0.3	0.20	365	0	0	15%	0.0000%	< SAC	N/A
A35/TP5	14/12/2021	1.5	0.45	0.3	0.20	365	0	0	15%	0.0000%	< SAC	N/A
A36/SP1	20/11/2021	N/A	N/A	N/A	-	-	1	NAD	15%	NAD	< SAC	No Asbestos Detected
A36/SP1	20/11/2021	N/A	N/A	N/A	-	-	0	0	15%	N/A	< SAC	No Asbestos Detected

$$\%w/w\ asbestos\ in\ soil = \frac{Std\ 15\%\ asbestos\ content \times bonded\ ACM\ (kg)}{soil\ volume\ (L) \times soil\ density\ (kg/L)}$$

FIGURES



ENRS ENVIRONMENT & NATURAL RESOURCE SOLUTIONS	Client:	**Allen Price & Scarratts**	Drawn:	**CA**	Figure:	**5**
	Project:	**ENRS2069**	Source:	**NearMaps**	Date:	**As Reported**
	Location:	**48 Campbell St, Gerringong, NSW.**	Scale:	**ScaleBar**	Title:	**Site Layout**
			Status:	**Rev 1**		



ENRS ENVIRONMENT & NATURAL RESOURCE SOLUTIONS	Client:	**Allen Price & Scarratts**	Drawn:	**CA**	Figure:	**6**
	Project:	**ENRS2069**	Source:	**NearMaps**	Date:	**As Reported**
	Location:	**48 Campbell St, Gerringong, NSW.**	Scale:	**ScaleBar**	Title:	**Site Plan – Revised Areas of Environmental Concern**
			Status:	**Rev 1**		

AEC-R01
- ~1,000m^2, ~0.2m deep (200m^3)
- Material to be encapsulated

AEC-R02
- ~40m^3 (stockpile volume)
- Material to be disposed off-Site

AEC-R03 (Hotspot)
- ~25m^2, ~1m deep (25m^3)
- Material to be disposed off-Site

AEC-R03 (Remaining)
- ~400m^2, ~1m deep (175m^3)
- Material to be encapsulated

0 10m 50m

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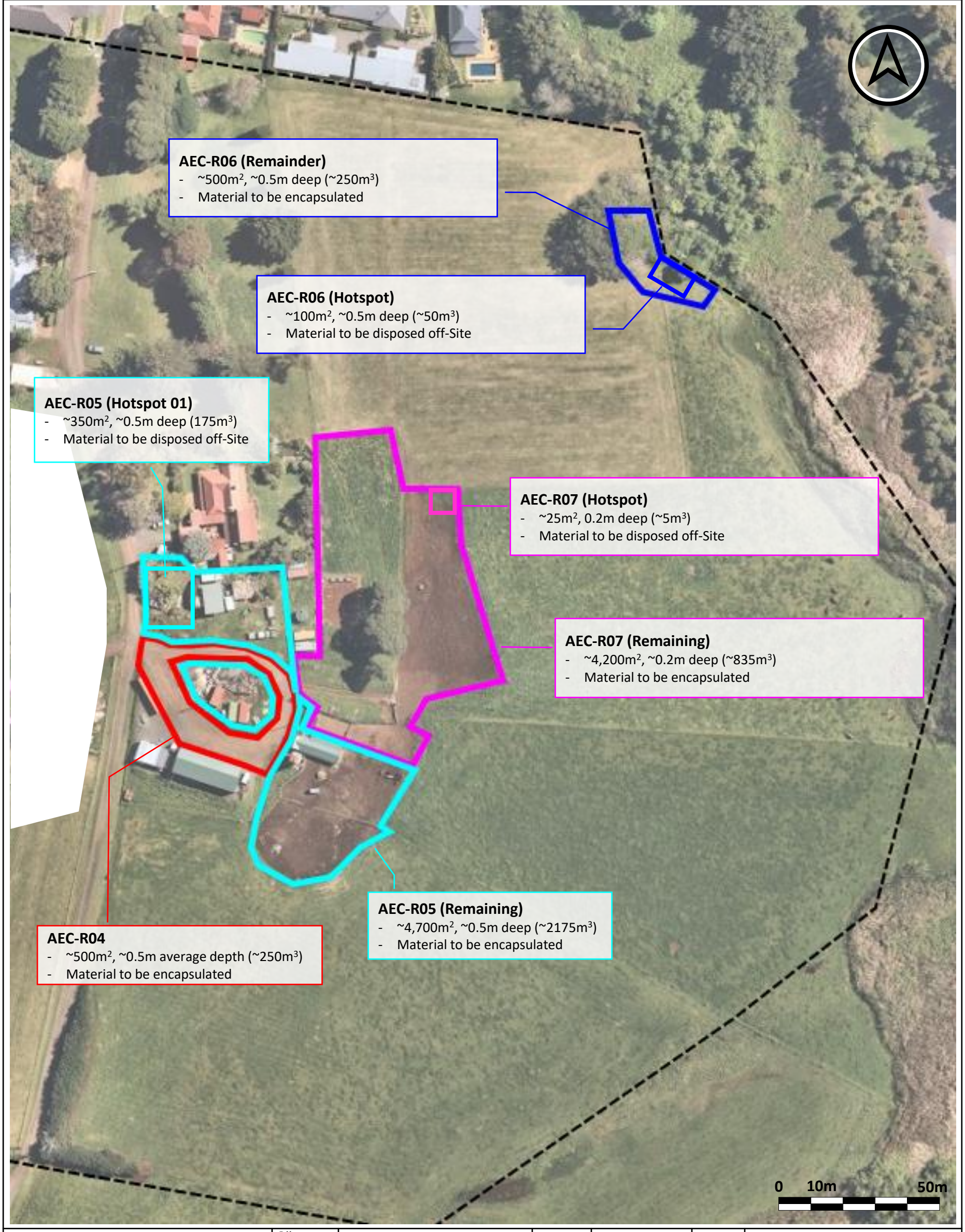
Client:	**Allen Price & Scarratts**	Drawn:	**CA**	Figure:	**7**
Project:	**ENRS2069**	Source:	**NearMaps**	Date:	**As Reported**
Location:	**48 Campbell Street, Gerringong, NSW**	Scale:	**Scale Bar**	Title:	**Remediation Areas (West)**
		Status:	**Rev 1**		



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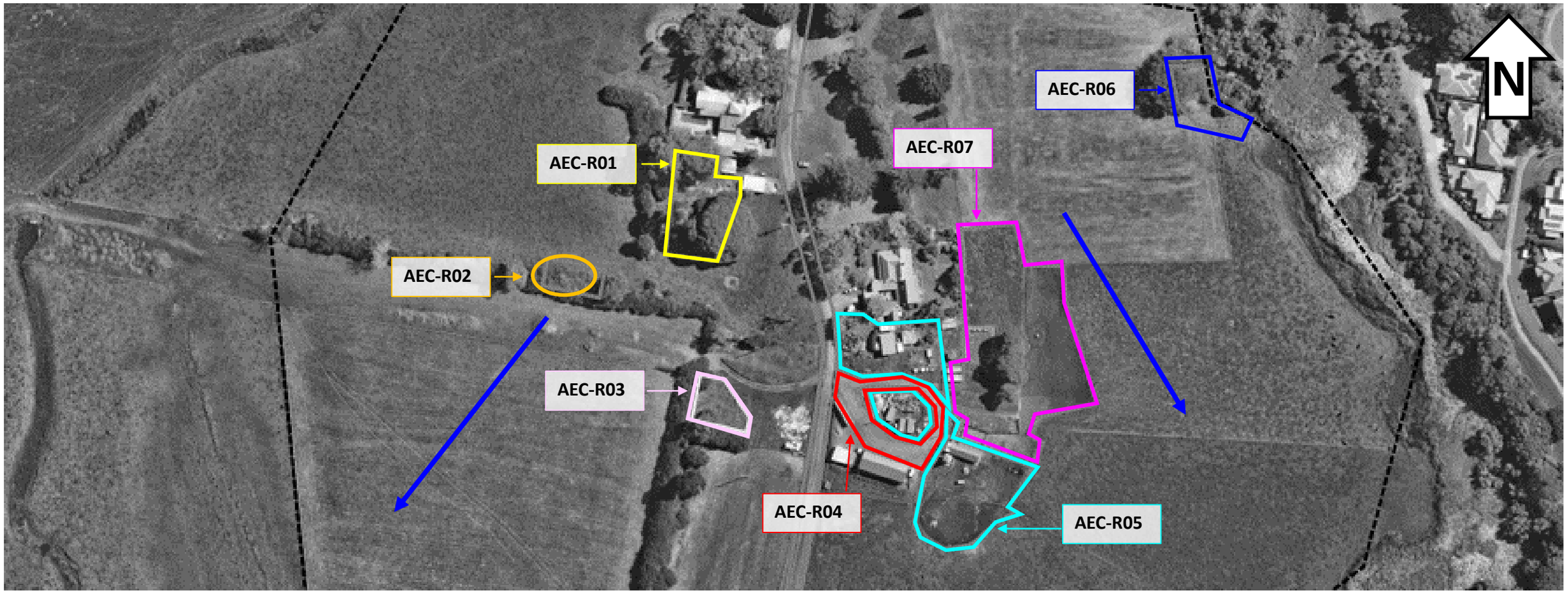
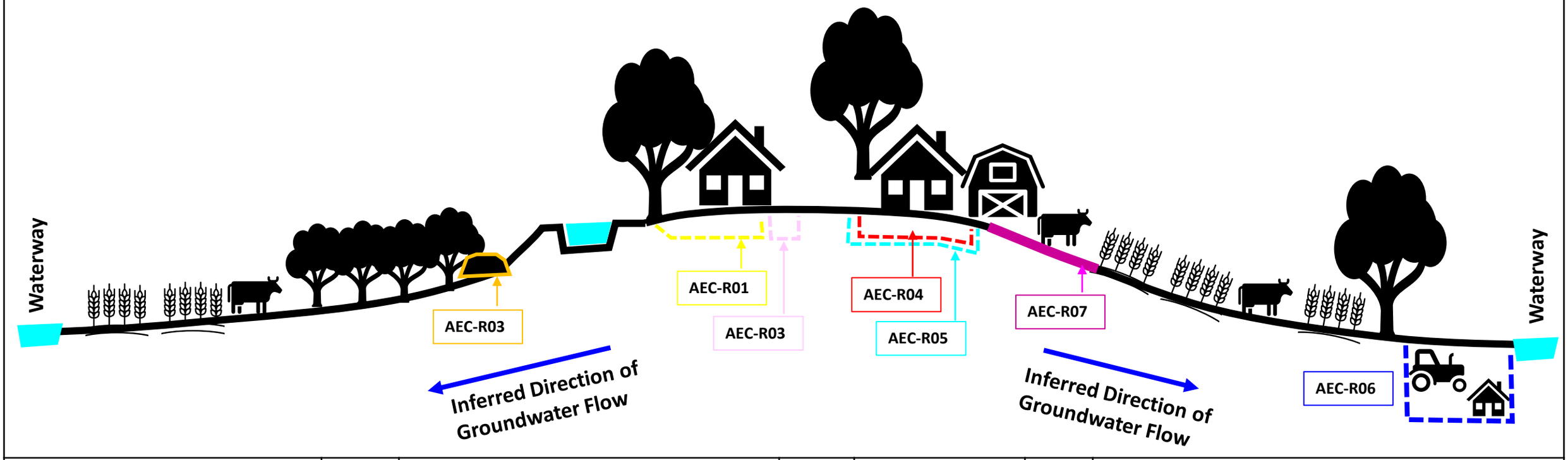
Client:	**Allen Price & Scarratts**	Drawn:	**CA**	Figure:	**8**
Project:	**ENRS2069**	Source:	**NearMaps**	Date:	**As Reported**
Location:	**48 Campbell Street, Gerringong, NSW**	Scale:	**Scale Bar**	Title:	**Remediation Areas (East)**
		Status:	**Rev 1**		





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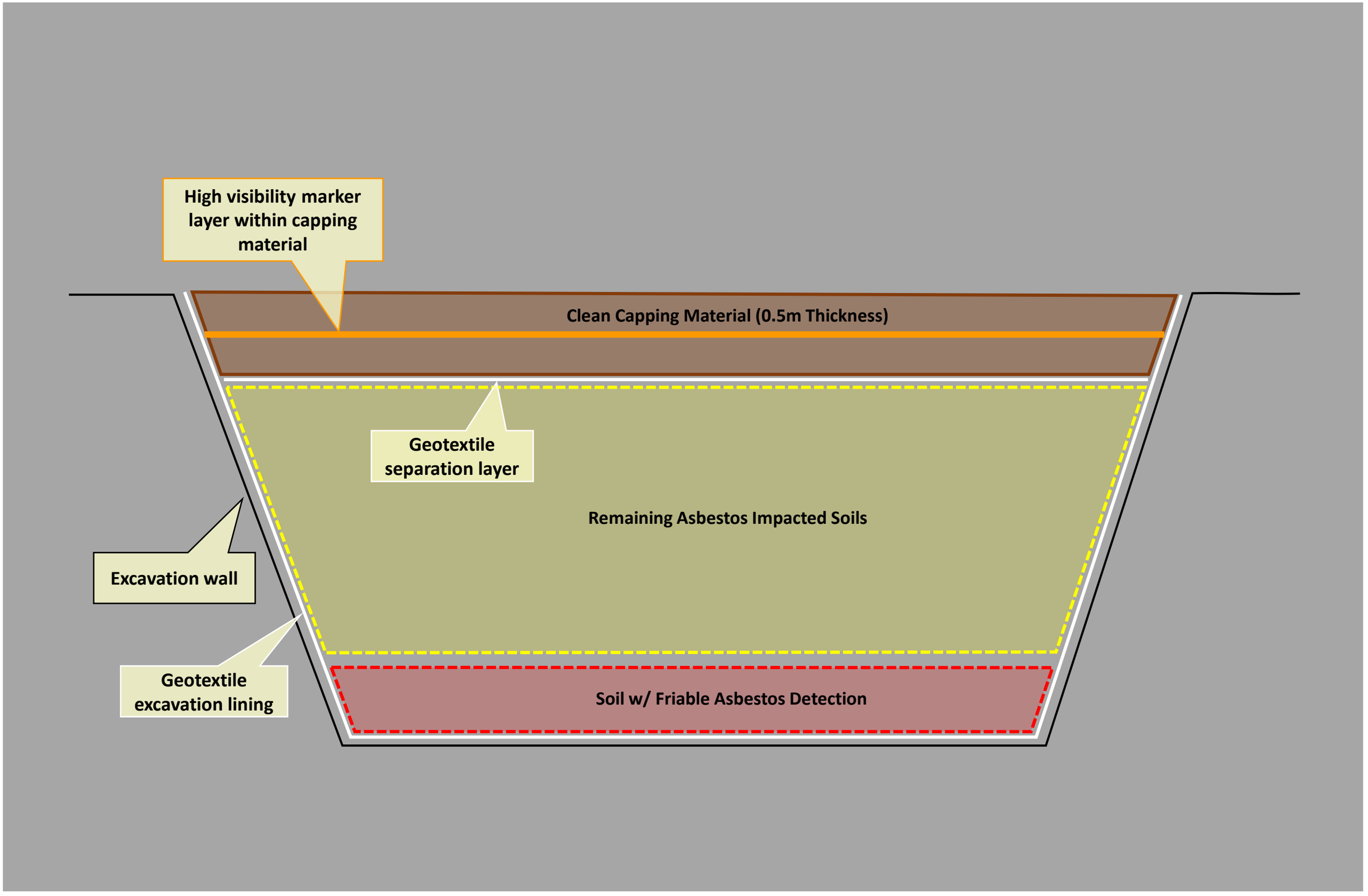
Client:	**Allen Price & Scarratts**	Drawn:	**CA**	Figure:	**9**
Project:	**ENRS2069**	Source:	**NearMaps**	Date:	**As Reported**
Location:	**48 Campbell St, Gerringong, NSW.**	Scale:	**NTS**	Title:	**Site Plan – Revised Conceptual Site Model (CSM)**
		Status:	**Rev 1**		



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Client:	**Allen Price & Scarratts**	Drawn:	**C.A**	Figure:	**10**
Project:	**ENRS2069**	Source:	**N/A**	Date:	**As Reported**
Location:	**48 Campbell Street, Gerringong, NSW**	Scale:	**Not to Scale**	Title:	**Encapsulation Cell Design (Conceptual)**
		Status:	**Rev 1**		

Appendix A

Photographic Record of Site Conditions

Photograph 01: Revised AEC01 (Site Area)

Photograph 02: Revised AEC-R01 (Asbestos in Soil Fragment)

Photograph 03: Revised AEC-R02

Photograph 04: Revised AEC-R03

Photograph 05: Revised AEC-R03

Photograph 06: Revised AEC-R03 (Surface ACM Fragment)

Photograph 07: Revised AEC-R04 (Gravel Ring Road, Friable Asbestos)

Photograph 08: Revised AEC-R04 (Gravel Ring Road, Friable Asbestos)

Photograph 09: Revised AEC-R05 (w/ ACM Fragments)

Photograph 10: Revised AEC-R05 (w/ ACM Fragments)

Photograph 11: Revised AEC-R05 (w/ ACM Fragments)

Photograph 12: Revised AEC-R06 (w/ Vehicle Engine)

Photograph 13: Revised AEC-R06 (w/ ACM Fragments)

Photograph 14: Revised AEC-R07

Appendix B

Test Pit Logs

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A1/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300137	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152385	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.7: FILL - presumed re-worked natural ground comprising silty SANDS, weathered rock / cobbles and some foreign materials.	A1/TP1-0.3	A1/TP1-0.3	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7	0.7 - 0.8: Sandy CLAY, red - brown. TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
t: 02 4448 5490 e: projects@enrs.com.au

ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A1/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300161	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152382	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.7: FILL - presumed re-worked natural ground comprising silty SANDS, weathered rock / cobbles and some foreign materials.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7	0.7 - 0.8: Sandy CLAY, red - brown. TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A4/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300229	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152371	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.7: FILL - presumed re-worked natural ground comprising sandy CLAY, weathered rock / cobbles and some foreign materials.	A4/TP1-0.3	A4/TP1-0.3	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7	0.7 - 0.8: Sandy CLAY, red - brown. TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
t: 02 4448 5490 e: projects@enrs.com.au

ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A4/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300243	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152369	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.7: FILL - presumed re-worked natural ground comprising sandy CLAY, weathered rock / cobbles and some foreign materials.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7	0.7 - 0.8: Sandy CLAY, red - brown. TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A6/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300302	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152343	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Residual agricultural lime.	A6/TP1-0.1	A6/TP1-0.1	0	-	-
0.2	0.1 - 0.2: Silty SAND, brown (topsoil).					
0.3	0.2 - 1.0: Sandy CLAY, red - brown.					
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A7-8/SP1

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300378	**LENGTH/WIDTH:**	0.5 X 0.5
NORTHING:	6152365	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Stockpiled material consisiting of silty SANDS, brown (topsoil) with rootlets and minor organic matter. Target depth reached.	A7-8/SP1	A7-8/SP1	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A9/TP1

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300364	**LENGTH/WIDTH:**	0.2 X 0.2
NORTHING:	6152424	**DEPTH:**	0.2

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SANDS, brown (topsoil). Inferred re-worked natural ground. Target depth reached.	N/A	A9/TP1-0.1	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A10/TP1

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300274	**LENGTH/WIDTH:**	0.3 X 0.3
NORTHING:	6152514	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SANDS, brown, becoming sandy CLAY. Inferred re-worked natural ground. Target depth reached.	A10/TP1-0.2	A10/TP1-0.2 Duplicate Triplicate	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A10/TP2

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300282	**LENGTH/WIDTH:**	0.3 X 0.3
NORTHING:	6152511	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SANDS, brown, becoming sandy CLAY. Inferred re-worked natural ground. Target depth reached.	A10/TP2-0.2	A10/TP2-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A11/TP1

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300288	**LENGTH/WIDTH:**	0.3 X 0.3
NORTHING:	6152490	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SANDS, brown, becoming sandy CLAY. Inferred re-worked natural ground. Target depth reached.	A11/TP1-0.2	A11/TP1-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A11/TP2

PROJECT No:	ENRS2069	**DATE:**	9/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	SHOVEL
EASTING:	300294	**LENGTH/WIDTH:**	0.3 X 0.3
NORTHING:	6152498	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SANDS, brown, becoming sandy CLAY. Inferred re-worked natural ground. Target depth reached.	A11/TP2-0.2	A11/TP2-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A12/SP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300243	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152418	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.8: Stockpiled material consisting of silty SANDS, with large quantities of foreign materials.	A12/SP1-1	A12/SP1-1	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8	0.8 - 1.0: Sandy CLAY, red - brown.					
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300256	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152445	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil) with some foreign material and fragments of fibre cement sheeting.	A13/TP1-F1	N/A	N/A	N/A	N/A
0.2		A13/TP1-F2				
0.3						
0.4	0.2 - 0.7: Sandy CLAY, red - brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP2

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300255	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152447	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	A13/TP2-0.2	A13/TP2-0.2	0	-	-
0.2	0.2 - 0.4: Sandy CLAY, red - brown.					
0.3						
0.4	TP terminated in natural ground.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP3

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300252	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152440	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	A13/TP2-0.2	N/A	N/A	N/A	N/A
0.2	0.2 - 0.4: Sandy CLAY, red - brown.					
0.3						
0.4	TP terminated in natural ground.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP4

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300251	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152426	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	A13/TP4-0.2	N/A	N/A	N/A	N/A
0.2	0.2 - 0.4: Sandy CLAY, red - brown.					
0.3						
0.4	TP terminated in natural ground.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP5

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300264	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152428	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil). Minor foreign materials including 1x ACM fragment within topsoil.	A13/TP5-0.2 A13/TP5-F1	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4	0.2 - 0.4: Sandy CLAY, red-brown.					
0.5						
0.6	TP terminated in natural ground.					
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP6

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300284	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152412	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil). 0.2 - 0.4: Sandy CLAY, red - brown. TP terminated in natural ground.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP7

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300270	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152411	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2	0.2 - 0.4: Sandy CLAY, red - brown.					
0.3						
0.4	TP terminated in natural ground.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A13/TP8

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300253	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152412	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2	0.2 - 0.4: Sandy CLAY, red - brown.					
0.3						
0.4	TP terminated in natural ground.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A14/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300360	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152347	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SANDs, brown (topsoil). Minor foreign mateirals.	A14/TP1-0.1	A14/TP1-0.1	0	-	-
0.2						
0.3	0.2 - 1.0: Sandy CLAY, red-brown.					
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0	TP terminated in natural ground.	N/A	A14/TP1-0.6	0	-	-
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A14/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300341	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152344	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Silty SAND, brown, with gravel and minor foreign materials.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4	0.4 - 0.8: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A14/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300331	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152356	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.6: Silty SAND, brown, with gravel and crusher dust.	A14/TP3-0.2	A14/TP3-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6	0.6 - 1.1: Sandy CLAY, red-brown.					
0.7						
0.8						
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300338	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152369	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting.	A15/TP1-0.2	A15/TP1-0.2	0	-	-
0.2						
0.3						
0.4	0.3 - 0.7: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300330	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152365	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting.	A15/TP2-0.2	A15/TP2-0.2	0	-	-
0.2						
0.3						
0.4	0.3 - 0.7: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300326	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152374	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting.	A15/TP3-0.2	A15/TP3-0.2	0	-	-
0.2						
0.3						
0.4	0.3 - 0.7: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP4

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300333	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152385	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting.	A15/TP4-0.2	A15/TP4-0.2	0	-	-
0.2						
0.3	0.3 - 0.8: Sandy CLAY, red-brown.					
0.4						
0.5						
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP5

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300331	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152380	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting.	A15/TP5-0.2	A15/TP5-0.2	0	-	-
0.2						
0.3						
0.4	0.3 - 0.7: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A15/TP6

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300331	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152380	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, darkl brown (topsoil) with foreign materials and fragments of AC sheeting. 0.3 - 0.6: Sandy CLAY, red-brown. TP terminated in natural ground.	A15/TP6-0.2	A15/TP6-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A16/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300277	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152375	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, dark brown (topsoil).	A16/TP1-0.1				
0.2	0.1 - 0.9: Sandy CLAY, red - brown.		A16/TP1-0.2	0	-	-
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9	TP terminated in natural ground.					
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300265	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152353	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil). 1x ACM fragment on surface adjacent to TP.	A17/TP1-0.2	A17/TP1-0.2	0	-	-
0.2						
0.3	0.3 - 0.9: Sandy CLAY, red - brown.					
0.4						
0.5						
0.6						
0.7						
0.8						
0.9	TP terminated in natural ground.					
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300279	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152346	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Sandy CLAY, red - brown (inferred re-worked natural)	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4	0.4 - 0.7: Silty SAND, brown (topsoil)					
0.5						
0.6						
0.7	0.7 - 1.1: Sandy CLAY, red - brown.					
0.8						
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
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3.0						
3.1						
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Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/TP3

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300272	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152353	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Silty SAND, brown (FILL) with foreign materials including tiles, glass and metal.	A17/TP3-0.3	A17/TP3-0.3	0	-	-
0.2						
0.3						
0.4	0.4 - 0.7: Sandy CLAY, red - brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.	-	A17/TP7-0.3	0	-	-
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/TP4

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300284	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152353	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil)	A17/TP4-0.3	-	-	-	-
0.2						
0.3	0.3 - 0.5: Sandy CLAY, red - brown.					
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/TP5

PROJECT No:	ENRS2069	**DATE:**	14/12/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300271	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152364	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil)	A17/TP5-0.3	-	-	-	-
0.2						
0.3	0.3 - 0.5: Sandy CLAY, red - brown.					
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A17/SP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300265	**LENGTH/WIDTH:**	N/A
NORTHING:	6152346	**DEPTH:**	N/A

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	Stockpiled material consisting of pale silty SAND and sandy CLAY. Foreign materials present including fragments of potential ACM (fibre cement sheeting)	A17/SP1-1	A17/SP1-1	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A18/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300342	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152333	**DEPTH:**	1.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.9: GRAVEL, fine - medium, with sand and crusher dust. ACM fragment on surface.	A18/TP1-0.2	A18/TP1-0.2 DUPLICATE TRIPLICATE	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9	0.9 - 1.2: Silty SAND, dark brown, with					
1.0						
1.1						
1.2	1.2 - 1.3: Sandy CLAY, red-brown.					
1.3	TP terminated in natural ground.					
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A18/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300355	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152324	**DEPTH:**	1.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.7: GRAVEL (fine - medium) with crusher dust.					
0.2						
0.3						
0.4		A18/TP2-0.4	A18/TP2-0.4	0	-	-
0.5						
0.6						
0.7	0.7 - 1.6: Sandy CLAY, red - brown.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4			A18/TP2-1.4	0	-	-
1.5						
1.6	TP terminated in natural ground.					
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A18/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300355	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152324	**DEPTH:**	1.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 1.4: GRAVEL (fine - medium) with crusher dust and some rootlets.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4	1.4 - 1.9: Sandy CLAY, red-brown.					
1.5						
1.6						
1.7						
1.8						
1.9	TP terminated in natural ground.					
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A18/TP4

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300330	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152326	**DEPTH:**	1.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 1.1: GRAVEL (fine - medium) with crusher dust.					
0.2						
0.3						
0.4						
0.5						
0.6		A18/TP4-0.6	A18/TP4-0.6	0	-	-
0.7						
0.8						
0.9						
1.0						
1.1	1.1 1.8: Sandy CLAY, red-brown.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8	TP terminated in natural ground.					
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A19/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300365	**LENGTH/WIDTH:**	1.2 X 1.2
NORTHING:	6152339	**DEPTH:**	0.4

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Grass overlying brown silty SAND (topsoil). ACM fragments in shallow surface soils. 0.2 - 0.4: Becoming sandy CLAY, red-brown. TP terminated in natural ground.	A19/TP1-F1	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A19/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300364	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152332	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Silty SANDS, brown (topsoil) with foreign materials. Fragments of ACM sheeting in shallow soils.	A19/TP2-0.3	A19/TP2-0.3	0	-	-
0.2						
0.3						
0.4	0.4 - 1.0: Becoming sandy CLAY, red-brown.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A19/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300373	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152329	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Oragnic matter, silty SANDS and manure. ACM over ground surface.	N/A	N/A	N/A	N/A	N/A
0.2	0.1 - 0.4: FILL, weathered rock and gravel.					
0.3	0.4 - 1.1: Sandy CLAY, red-brown.					
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A19/TP4

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300373	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152329	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: FILL, crushed/weathered rock and gravel. ACM over ground surface.	A19/TP4-0.1	A19/TP4-0.1	0	-	-
0.2		-	A19/TP4-0.2	0	-	-
0.3						
0.4	0.4 - 1.1: Sandy CLAY, red-brown.					
0.5						
0.6		-	A19/TP4-0.6	0	-	-
0.7						
0.8						
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A19/TP5

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300373	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152329	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Silty SAND, brown, with gravel. Fragments of ACM over ground surface.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4	0.4 - 0.9: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7						
0.8						
0.9	TP terminated in natural ground.					
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A20/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300351	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152376	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND (topsoil) with some gravel. Foreign mateiral present.	A20/TP1-0.2	A20/TP1-0.2	0	-	-
0.2						
0.3	0.3 - 0.8: Sandy CLAY, red-brown.					
0.4						
0.5						
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A20/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300354	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152368	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND (topsoil) with some gravel. Foreign mateiral present. ACM fragments on ground surface.	A20/TP2-0.2	A20/TP2-0.2	0	-	-
0.2						
0.3	0.3 - 0.8: Sandy CLAY, red-brown.					
0.4						
0.5						
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A20/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300367	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152381	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: Silty SAND, dark brown with some foreign materials. No ACM.	A20/TP3-0.2	A20/TP3-0.2	0	-	-
0.2						
0.3						
0.4	0.4 - 1.0: Sandy CLAY, red-brown.					
0.5						
0.6						
0.7						
0.8		N/A	A20/TP3-0.8	0	-	-
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A20/TP4

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300363	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152371	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Sandy CLAY, red-brown (presumed re-worked natural)	N/A	N/A	N/A	N/A	N/A
0.2						
0.3	0.3 - 0.45: Silty CLAY, dark brown.					
0.4						
0.5	0.45 - 0.9: Sandy CLAY, red-brown.					
0.6						
0.7						
0.8						
0.9	TP terminated in natural ground.					
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A22/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300269	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152446	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.15: Silty SAND, brown, with some gravel and blue metal. 0.15 - 0.3: Silty SAND, brown (topsoil). 0.3 - 0.5: Sandy CLAY, red - brown. TP terminated in natural ground.	A22/TP1-0.2	A22/TP1-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A23/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300280	**LENGTH/WIDTH:**	1.5 X 1.2
NORTHING:	6152452	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: GRAVEL (fine - medium) with crusher dust.	A23/TP1-0.3	A23/TP1-0.3	0	-	-
0.2						
0.3						
0.4	0.4 - 0.7: Sandy CLAY, red - brown.					
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
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2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A24/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300262	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152453	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil). ACM fragments present. 0.2 - 0.6: Sandy CLAY, red - brown. TP terminated in natural ground.	A24/TP1-0.2	A24/TP1-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A25/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300252	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152516	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil) 0.1 - 0.6: Silty SAND, red - brown (inferred natural ground)					
0.5		A25/TP1-0.5	A25/TP1-0.5	0	-	-
0.6	TP terminated in natural ground.					

0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A25/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300239	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152515	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil) 0.1 - 0.6: Silty SAND, red - brown (inferred natural ground) TP terminated in natural ground.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A25/TP3

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300238	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152503	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil) 0.1 - 0.6: Silty SAND, red - brown (inferred natural ground)					
0.5		A25/TP3-0.5	A25/TP3-0.5	0	-	-
0.6	TP terminated in natural ground.					

0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A25/TP4

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300249	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152501	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil) 0.1 - 0.6: Silty SAND, red - brown (inferred natural ground) TP terminated in natural ground.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A28/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300399	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152339	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.5: Gravel (medium - coarse) with crusher dust. No foreign materials or ACM.	-	A28/TP1-0.1	0	-	-
0.2		-	A28/TP1-0.2	0	-	-
0.3						
0.4						
0.5	0.5 - 0.9: Sandy CLAY, red - brown.					
0.6						
0.7						
0.8						
0.9	TP terminated in natural ground.					
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A28/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300413	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152399	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown, with organic matter/manure.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3	0.1 - 0.3: Silty SAND, red - brown					
0.4						
0.5	0.3 - 0.9: Sandy CLAY, red - brown.					
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A28/TP3

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300388	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152373	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil). 0.1 - 0.5: Becoming sandy CLAY, red-brown. TP terminated in natural ground.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A28/TP4

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300387	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152413	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown (topsoil). 0.1 - 0.5: Becoming sandy CLAY, red-brown. TP terminated in natural ground.	N/A	N/A	N/A	N/A	N/A
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A28/TP5

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300413	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152399	**DEPTH:**	0.9

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.1: Silty SAND, brown, with organic matter/manure.	-	A28/TP5-0.1	0	-	-
0.3	0.1 - 0.3: Silty SAND, dark brown (topsoil).	-	A28/TP5-0.3	0	-	-
0.7	0.3 - 0.9: Sandy CLAY, becoming red - brown.	-	A28/TP7-0.7	0	-	-
0.9	TP terminated in natural ground.					

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A29/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300361	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152308	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: FILL, silty sands, gravel, cobbles foreign materials and extensive fragments of AC sheeting.	A29/TP1-0.1	A29/TP1-0.1	0	-	-
0.2		-	A29/TP1-0.2	0	-	-
0.3						
0.4	0.4 - 1.0: Sandy CLAY, red - brown.					
0.5						
0.6						
0.7						
0.8						
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A29/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300373	**LENGTH/WIDTH:**	2.0 X 0.45
NORTHING:	6152296	**DEPTH:**	1.0

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: FILL, silty sands, gravel, cobbles foreign materials and extensive fragments of AC sheeting.	A29/TP2-0.1	A29/TP2-0.1	0	-	-
0.2		-	A29/TP2-0.2	0	-	-
0.3						
0.4	0.4 - 1.0: Sandy CLAY, red - brown.					
0.5						
0.6		-	A29/TP2-0.6	0	-	-
0.7						
0.8						
0.9						
1.0	TP terminated in natural ground.					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A30/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300255	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152224	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2	0.2 - 0.7: Sandy CLAY, red - brown.					
0.3						
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A30/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300263	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152223	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil). Minor foreign materials present (metal, burnt wood).	A30/TP2-0.2	A30/TP2-0.2	0	-	-
0.2	0.2 - 0.7: Sandy CLAY, red - brown.					
0.3						
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A30/TP3

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300270	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152221	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2	0.2 - 0.7: Sandy CLAY, red - brown.					
0.3						
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300345	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152269	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP2-0.2	0	-	-
0.3			Duplicate			
0.4			Triplicate			
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300436	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152314	**DEPTH:**	0.6

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP2-0.2	0	-	-
0.3						
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
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2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP3

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300474	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152410	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.7: Sandy CLAY, red - brown.	-	A32/TP3-0.2	0	-	-
0.3						
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP4

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300409	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152483	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.7: Sandy CLAY, red - brown.	-	A32/TP4-0.2	0	-	-
0.3						
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP5

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300190	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152467	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP5-0.2	0	-	-
0.3						
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP6

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300128	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152444	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP6-0.2	0	-	-
0.3						
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP7

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300199	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152333	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP7-0.2	0	-	-
0.3						
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP8

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300095	**LENGTH/WIDTH:**	0.5 X 0.5
NORTHING:	6152351	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP8-0.2	0	-	-
0.3						
0.4						
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

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Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A32/TP9

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300107	**LENGTH/WIDTH:**	0.5 X 0.5
NORTHING:	6152295	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: Silty SAND, brown (topsoil).					
0.2	0.2 - 0.5: Sandy CLAY, red - brown.	-	A32/TP9-0.2	0	-	-
0.3			Duplicate			
0.4			Triplicate			
0.5	TP terminated in natural ground.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A33/TP1

PROJECT No:	ENRS2069	**DATE:**	18/01/2022
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	Hand Auger / Shovel
EASTING:	300299	**LENGTH/WIDTH:**	0.3 x 0.3
NORTHING:	6152254	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Gravel with Sandy CLAY, tan.	A33/TP01-0.2	A33/TP1-0.2	0	-	-
0.2						
0.3	Target Depth Reached.					
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A33/TP2

PROJECT No:	ENRS2069	**DATE:**	18/01/2022
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	Hand Auger / Shovel
EASTING:	300314	**LENGTH/WIDTH:**	0.3 x 0.3
NORTHING:	6152369	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Gravel with Sandy CLAY, tan.					
0.2						
0.3	Target Depth Reached.	A33/TP02-0.3	A33/TP3-0.3	0	-	-
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A33/TP3

PROJECT No:	ENRS2069	**DATE:**	18/01/2022
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	Hand Auger / Shovel
EASTING:	300296	**LENGTH/WIDTH:**	0.3 x 0.3
NORTHING:	6152487	**DEPTH:**	0.3

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Gravel with Sandy CLAY, tan.					
0.2						
0.3	Target Depth Reached.	A33/TP03-0.3	A33/TP3-0.3 Duplicate Triplicate	0	-	-
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A31/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300346	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152351	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.5: Silty SANDS, brown, with gravel, foreign materials and fragments of AC sheeting.	A31/TP1-0.2	A31/TP2-0.2	0	-	-
0.2						
0.3						
0.4						
0.5	0.5 - 1.1: Sandy CLAY, red-brown.					
0.6						
0.7						
0.8						
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A34/TP1

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300342	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152363	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: GRAVEL (fine - medium) with crusher dust and potential slag. ACM fragments on ground surface.	A34/TP1-0.1	A34/TP1-0.1	0	-	-
0.2						
0.3						
0.4	0.2 - 0.7: Sandy CLAY, red - brown.					
0.5		-	A34/TP1-0.5	0	-	-
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A34/TP2

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300363	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152353	**DEPTH:**	0.8

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.2: GRAVEL (medium - coarse) with crusher dust and sand. ACM fragments on ground surface.	A34/TP2-0.1	A34/TP2-0.1	0	-	-
0.2	0.2 - 0.8: Sandy CLAY, red - brown.					
0.3						
0.4						
0.5						
0.6						
0.7						
0.8	TP terminated in natural ground.					
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A34/TP3

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300357	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152334	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.5: GRAVEL (medium - coarse) with sand and crusher dust. ACM fragments on ground surface.	A34/TP3-0.2	A34/TP3-0.2	0	-	-
0.2						
0.3						
0.4						
0.5	0.5 - 1.1: Sandy CLAY, red - brown.					
0.6						
0.7						
0.8		-	A34/TP3-0.8	0	-	-
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A34/TP4

PROJECT No:	ENRS2069	**DATE:**	19/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300332	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152347	**DEPTH:**	1.1

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: GRAVEL (fine - medium) with sand and crusher dust. ACM fragments on ground surface.	A34/TP4-0.2	A34/TP4-0.2	0	-	-
0.2						
0.3						
0.4	0.4 - 0.5: Silty SAND, dark brown.					
0.5	0.5 - 1.1: Sandy CLAY, red - brown.					
0.6						
0.7						
0.8		-	A34/TP4-0.5	0	-	-
0.9						
1.0						
1.1	TP terminated in natural ground.					
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A35/TP1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300495	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152476	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2						
0.3	0.3 - 0.7: Sandy CLAY, red - brown.					
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A35/TP2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300489	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152487	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.4: FILL - Silty SAND and sandy CLAY, brown, with extensive foreign materials including vehicle parts and engine and fragments of AC sheeting. 0.4 - 0.5: Presumed end of foreign materials. Test pit filled with water.	-	A35/TP2-0.2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A35/TP3

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300479	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152488	**DEPTH:**	0.5

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1 – 3.4	0 - 0.4: FILL - Silty SAND and sandy CLAY, brown, with extensive foreign materials including vehicle parts, metal roof sheets and fragments of AC sheeting. 0.4 - 0.5: Presumed end of foreign materials. Test pit filled with water.	A35/TP3-F1 A35/TP3-F2	A35/TP3-0.2	0	-	-

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A35/TP4

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300475	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152516	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil).	N/A	N/A	N/A	N/A	N/A
0.2						
0.3	0.3 - 0.7: Sandy CLAY, red - brown.					
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A35/TP5

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	2T EXCAVATOR
EASTING:	300497	**LENGTH/WIDTH:**	1.5 X 0.45
NORTHING:	6152471	**DEPTH:**	0.7

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	0 - 0.3: Silty SAND, brown (topsoil).	-	A35/TP5-0.2	0	-	-
0.2						
0.3	0.3 - 0.7: Sandy CLAY, red - brown.					
0.4						
0.5						
0.6						
0.7	TP terminated in natural ground.					
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

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ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A36/SP1-1

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300203	**LENGTH/WIDTH:**	N/A
NORTHING:	6152407	**DEPTH:**	N/A

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	Stockpiled material consisting of silty SANDS, green-waste and a variety of foreign materials (non-putrescible waste).	A36/SP1-1	A36/SP1-1	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

108 JERRY BAILEY ROAD ABN: 68 600 154 596
SHOALHAVEN HEADS NSW 2535
t: 02 4448 5490 e: projects@enrs.com.au

ENVIRONMENTAL INVESTIGATION LOG

TEST PIT ID: A36/SP1-2

PROJECT No:	ENRS2069	**DATE:**	20/11/2021
LOCATION:	48 Campbell St, Gerringong	**LOGGED BY:**	CA
CLIENT:	AP&S	**EXCAVATED BY:**	-
SURFACE RL:		**METHOD:**	5T EXCAVATOR
EASTING:	300216	**LENGTH/WIDTH:**	N/A
NORTHING:	6152405	**DEPTH:**	N/A

Depth (m)	(Interval m-m) Description (Soil TYPE, colour, consistency, grainsize, moisture, remarks)	Sample ID (Asbestos)	Sample ID (Chem)	PID Reading (ppm)	pH (field)	pH (FOX)
0.1	Stockpiled material consisting of silty SANDS, green-waste and a variety of foreign materials (non-putrescible waste).	A36/SP1-2	A36/SP1-2	0	-	-
0.2						
0.3						
0.4						
0.5						
0.6						
0.7						
0.8						
0.9						
1.0						
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2.0						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3.0						
3.1						
3.2						
3.3						
3.4						

Graphic Diagram

Notes:

Descriptions are based on observations and hand testing of grab samples.
Mechanical Tests were not performed unless otherwise stated

Appendix C

Materials Tracking Form

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

ENRS2069 – 48 Campbell Street, Gerringong – Excavated Material Tracking Sheet					
Date	**Area of Origin**	**Quantity of Material**	**Area of Placement**	**Stockpile ID**	**Asbestos Controls (Present/Absent)**

Appendix D

Unexpected Finds Protocol

UNEXPECTED FIND PROTOCOL

Step 1 Stop Work

Stop all work in the immediate area as soon as it is safe to do so and move to a designated meeting point;

Step 2 Notify

Immediately notify the Project Site Supervisor (PSS).

Step 3 Assess Safety Risk

Assess the potential risk to human health posed by the unexpected find and assess if evacuation or emergency services need to be contacted

Step 4 Exclusion Zone

Establish an exclusion zone around the impacted area. An example of a typical exclusion zone is a 10 metre radius with demarcation/barriers or fencing and warning signs at regular intervals and all points of entry. Some hazardous materials may require additional controls including, no smoking signage, and dust suppression

Step 5 Environmental Investigation

Contact an Environmental Professional to investigate the unexpected find and provide recommendations for immediate management controls (if any), and how to remediate and validate the Site area in accordance with contaminated site regulations and guidelines

Step 6 Remediate

Remediation works to be completed by suitably licensed contractor/s (where applicable);

Step 7 Validate / Clear

Validation in accordance with contaminated site regulations and guidelines

Step 8 Recommence Works

If it is deemed safe to do so, the environmental consultant will provide a validation report or clearance certificate for works to proceed in the affected area. If it is not considered to be safe, works must remain on hold until appropriate assessment, management, remediation and/or validation measures have been completed.