

Liverpool Boys and Girls High School Upgrade Project

NSW Department of Education

Remedial Action Plan





We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.





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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
AMP	Asbestos Management Plan
AQ	Asbestos Quantification
ASS	Acid Sulfate Soil Risk
bgs	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CEC	Cation Exchange Capacity
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DGI	Data Gap Investigation
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
ENM	Excavated Natural Material
EPA	Environment Protection Agency
ESD	Ecologically Sustainable Development
ESL	Ecological Screening Level
FA	Fibrous Asbestos
ha	Hectares
HIL	Health Investigation Level
HSL	Health Screening Level
JBS&G	JBS&G Australia Pty Ltd
LBGHS	Liverpool Boys and Girls High School
LBHS	Liverpool Boys High School
LBP	Lead-Based Paint
LCD	Lead Containing Dust
LGA	Local Government Area
LGHS	Liverpool Girls High School
LOR	Limit of Reporting
LTEMP	Long Term Environmental Management Plan
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NOHSC	National Occupational Health and Safety Commission



OCPs	Organochlorine Pesticides
ODS	Ozone Depleting Substances
OPPs	Organophosphate Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity
PASS	Potential Acid Sulfate Soil
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Poly-fluoroalkyl Substances
PID	Photoionisation Detector
POEO Act 1997	Protection of the Environment Operations Act 1997
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
R&H SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
RAP	Remedial Action Plan
REF	Review of Environment Factors
REMP	Remediation Environmental Management Plan
RPD	Relative Percent Difference
RRE	Resource Recovery Exemption
RRO	Resource Recovery Order
SCA	Site Contamination Assessment
SINSW	School Infrastructure NSW
SMF	Synthetic Mineral Fibres
SVOCs	Semi-volatile Organic Compounds
TPA	Titratable Peroxide Acidity
TRH	Total Recoverable Hydrocarbon
TSA	Titratable Sulfidic Acidity
UCL	Upper Confidence Limit
VENM	Virgin Excavated Natural Material
WH&S	Work, Health and Safety
WHSP	Work Health and Safety Management Plan



Executive Summary

This Remedial Action Plan (RAP) has been prepared by JBS&G Australia Pty Ltd (JBS&G) on behalf the NSW Department of Education (SINSW, the Applicant) to outline the identified contamination present at the site and the necessary remedial works to be undertaken during the redevelopment of the Liverpool Boys High School and Liverpool Girls High School (LBGHS), at 18 Forbes Street, Liverpool NSW, 217.

This report accompanies a Review of Environment Factors (REF) that seeks approval for redeveloping the LBHS and LGHS into a single co-educational school, including:

- Demolition;
- Construction and operation of a six-storey school building, including school hall and gymnasium;
- Associated parking and building services;
- Tree removal;
- Associated landscaping and play spaces;
- Augmentation of service infrastructure; and
- Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the REF prepared by Ethos Urban for a full description of works.

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973 m².

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's southwest comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts.

With consideration to the specific RAP scope of works, JBS&G was engaged by Meinhardt (the client) on behalf of the NSW Department of Education for the preparation of a RAP at a portion of LBGHS. The portion of the broader site which is subject to this plan and herein referred to as 'the site' comprises an area of approximately 3.3 hectares (ha). The site location and layout are shown on **Figures 1** and **2**, respectively.

This site has been subject to previous environmental investigation, comprising a site contamination assessment (SCA) covering the whole site area (Coffey 2019a¹) and a concurrent asbestos and hazardous materials pre-demolition survey (Coffey 2019b²). Based on an Environmental Peer Review and Strategic Advice

¹ Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a)

² Asbestos and Hazardous Materials Pre-Demolition Survey, Department of Education (School Infrastructure) NSW, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 22 November 2019 (Coffey 2019b)



(JBS&G 2023³), a Data Gap Investigation (DGI) (JBS&G 2025⁴) was conducted which further characterised the extent of friable asbestos contamination within the Block A crawl space, identified an isolated area of asbestos impacted fill material behind a central retaining wall, and included an assessment of potential acid sulfate soil (PASS) conditions.

To facilitate the redevelopment of the site, the identified site contamination issues and potential unexpected contamination finds will require remediation/management to enable the site to be suitable for the ongoing secondary educational land use and the proposed redevelopment outlined in **Section 1.2.**

The RAP documented herein has been prepared with reference to relevant guidelines made or endorsed by the NSW Environment Protection Agency (EPA) inclusive of National Environment Protection Council (NEPC) (2013⁵) and the Remediation of land requirements of *State Environmental Planning Policy (Resilience and Hazards) 2021* (R&H SEPP).

it is considered that the proposed actions outlined in this RAP conform to the requirements of the Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd Edition) (EPA 2017) because they are: technically feasible; environmentally justifiable; and consistent with relevant laws policies and guidelines endorsed by NSW EPA.

Subject to the successful implementation of the measures described in this RAP and with consideration to the Limitations presented in **Section 12**, it is considered that the site can be made suitable for the intended uses and that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment.

³ Environmental Peer Review and Strategic Advice – Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023 (JBS&G 2023).

⁴ Data Gap Investigation, Liverpool Boys and Girls High School, Prepared for School Infrastructure NSW, care of Meinhardt, by JBS&G Australia Pty Ltd dated 31 January 2025 (JBS&G 2025).

⁵ National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013. National Environment Protection Council (NEPC 2013).



1. Introduction & Objectives

1.1 Introduction and Background

This Remedial Action Plan (RAP) has been prepared by JBS&G Australia Pty Ltd (JBS&G) on behalf the NSW Department of Education (SINSW, the Applicant) to outline the identified contamination present at the site and the necessary remedial works to be undertaken during the redevelopment of the Liverpool Boys High School and Liverpool Girls High School (LBGHS), at 18 Forbes Street, Liverpool NSW, 217.

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With consideration to the specific RAP scope of works, JBS&G was engaged by Meinhardt (the client) on behalf of the NSW Department of Education for the preparation of a RAP at a portion of LBGHS. The portion of the broader site which is subject to this plan and herein referred to as 'the site' comprises an area of approximately 3.3 hectares (ha). The site location and layout are shown on **Figures 1** and **2**, respectively.

This site has been subject to previous environmental investigation, comprising a site contamination assessment (SCA) covering the whole site area (Coffey 2019a⁶) and a concurrent asbestos and hazardous materials pre-demolition survey (Coffey 2019b⁷). Based on an Environmental Peer Review and Strategic Advice

⁶ Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a)

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(JBS&G 2023⁸), a Data Gap Investigation (DGI) (JBS&G 2025⁹) was conducted which further characterised the extent of friable asbestos contamination within the Block A crawl space, identified an isolated area of asbestos impacted fill material behind a central retaining wall, and included an assessment of potential acid sulfate soil (PASS) conditions.

To facilitate the redevelopment of the site, the identified site contamination issues and potential unexpected contamination finds will require remediation/management to enable the site to be suitable for the ongoing secondary educational land use and the proposed redevelopment outlined in **Section 1.2.**

The RAP documented herein has been prepared with reference to relevant guidelines made or endorsed by the NSW Environment Protection Agency (EPA) inclusive of National Environment Protection Council (NEPC) (2013¹⁰) and the Remediation of land requirements of *State Environmental Planning Policy (Resilience and Hazards) 2021* (R&H SEPP).

1.2 Proposed Works and Redevelopment Plans

Based on communication with the client and proposed redevelopment plans shown in Appendix A the following works are anticipated:

- Demolition of existing buildings, structures, trees and pedestrian pathways;
- Alteration and augmentation of services including:
 - Water, sewer, and fire services;
 - Electrical services;
 - Telecommunications infrastructure;
 - Stormwater services;
 - On-site detention;
- Remediation of impacts within the REF boundary identified in JBS&G (2025);
- Bulk earthworks predominantly associated with site levels where new buildings are proposed; and
- Construction of a new interconnected multi-storey infrastructure in the northwest, a covered outdoor learning space, hall and library in the northeast, open recreational spaces including a games field extending from the centre to the south of site and on-grade car parking along the western boundary for ongoing use as a secondary school.

1.3 Objectives

The objectives of this RAP are to:

Define the conceptual site model (CSM) for the site and intended use, including identification of
potential areas of contaminant exposure with consideration to the most conservative land use
applicable to the site, being ongoing secondary educational land use (Recreational C), which includes
developed open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and
footpaths (NEPC 2013);

⁸ Environmental Peer Review and Strategic Advice – Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023 (JBS&G 2023).

⁹ Data Gap Investigation, Liverpool Boys and Girls High School, Prepared for School Infrastructure NSW, care of Meinhardt, by JBS&G Australia Pty Ltd dated 31 January 2025 (JBS&G 2025).

¹⁰ National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013. National Environment Protection Council (NEPC 2013).



- Define the extent of additional characterisation/validation activities required to determine the suitability of site soils for potential beneficial reuse at the site;
- Determine the extent of remedial works required to make the site suitable for the proposed redevelopment;
- Establish a framework and methodologies to validate the remediation/management of site
 contamination identified as posing a potential risk, including protocols for addressing unexpected
 contamination finds including asbestos as may be encountered; and
- Include provision for management of environmental and safety risks during the implementation of the remedial works, and guidance for the any requirements of ongoing management of impacted materials retained on the site.

1.4 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment; and
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

1.5 REF Deliverables Requiring Reporting

This RAP report accompanies a broader REF that seeks approval for the proposed redevelopment of LBGHS and addresses the following REF deliverables outlined below in **Table 1.1.**

Table 1.1: REF Deliverable Requirements

Requirement	Υ	N	N/A	Comments
Contamination				
 Have either of the following been prepared to inform the REF: a Preliminary Site Investigation (PSI) and/or Detailed Site Investigation (DSI) that conclude that there is a low risk of contamination and that the site is suitable for the use of the site as a school; or 				RAP prepared, following the findings of the SCA and DGI.
a PSI and/or DSI and a RAP?				
Does the PSI, DSI and RAP address all the potential sources of contamination mentioned in the various report?	\boxtimes			See Section 3 and Section 4.
If the DSI or RAP identifies that limited further testing is required, has this been incorporated as a mitigation measure in the REF?				No further testing required to address data gaps.
If remediation is required, does the REF determine if the remediation is Category 1 or 2 having regarded to the Resilience and Hazards SEPP?	×			See Section 10 .
Does the REF include an interim statement from a Site Auditor confirming that the RAP is appropriate?			⊠	
If no interim statement, does the RAP set out actions to remediate all potential sources of contamination?	\boxtimes			See Section 5, Section 6, Section 7 and Section 8.



Does the REF summarise investigations undertaken and conclude that contamination risk has been appropriately addressed in accordance with the Hazards and Resilience SEPP?	×		See Section 3 and Section 4.
Has the PSI, DSI and/or RAP concluded that the proposal would not be likely to result in significant environmental effects as a result of contamination and/or contamination management?	X		See Section 11 .
Does the REF list any mitigation measures identified in the assessment and incorporate them into the design where applicable?	×		See Appendix D .



2. Site Identification and Setting

2.1 Site Identification

The site details are summarised in Table 2.1. The location of the site is provided in Figure 1.

Table 2.1: Site Identification Details

Lots/DPs	Part of Lot 1 DP 1137425				
Site Address	18 Forbes Street, Liverpool, NSW				
Local Government Authority	Liverpool City Council				
Site Area	Approximately 3.3 hectares				
Approximate MGA Coordinates	E: 308799.90				
(GDA2020 MGA56) (Site Centre)	N: 6245109.97				
Site Zoning	Zone SP2 - Infrastructure				
Proposed Use	Secondary Educational Land Use (high school)				
Historical and Current Use	Secondary Educational Land Use (high school)				

2.2 Surrounding Land Use

The current land uses of nearby properties within the surrounding areas are outlined below.

- **North:** Lachlan Street, High density residential housing, and beyond, Hume Motorway and Warwick Farm Station;
- East: Gulyangarri Public School, Burnside Drive, T2/T3/T5 suburban railway lines, and commercial/industrial warehouses and Liverpool Water Recycling Plant;
- South: Liverpool Girls High School, Liverpool Hospital, Liverpool TAFE, rail corridor, and Georges River;
- West: Forbes Street, high density residential Housing and church.

2.3 Natural Site Setting

The environmental setting of the site as outlined in JBS&G (2025) is presented in Table 2.2.

Table 2.2: Summary of Environmental Characteristics

Environmental Aspect	Characteristics				
Topography	Review of NSW Topographic Maps available through NSW Spatial Services ¹¹ indicated that the site is sloping from the north-west to the south-east, in the direction of Burnside Drive and the rail corridor. The site lies at elevations between 9 m Australian Height Datum (AHD) in the south-east of the site and 14 m AHD in the north-west. The site is consistent with the general topography of the area which slopes south-east towards the Georges River located approximately 400 m to the south of the site, as indicated in Figure 1 .				
Geology	Based on a review of the Penrith 1:100,000 Soil Landscape Sheet (NSW DP&E 2010a ¹²) the assessment area is within the Blacktown Residual soils landscape, which generally comprise of shallow to moderately deep hardsetting mottled texture contrast soils, Red and Brown Podzolic Soils on crests grading to Yellow Podzolic Soils on lower slopes and drainage lines.				

¹¹ NSW Topographic Maps. Spatial Services | Department of Customer Service, accessed 27 November 2024.

¹² Soil Landscape Series Sheet Penrith 1:100,000 sheet, The Soil Conservation Service of NSW, now Department of Planning and Environment 2010 (NSW DP&E 2010a)



	Based on a review of the Penrith 1:100,000 Geological Sheet (NSW DP&E 2010b ¹³), the area of investigation is underlain by Triassic Bringelly Shale, comprised of shale, carbonaceous claystone, claystone, laminate, fine to medium grained sandstone, coal and tuff. Bringelly Shale usually weathers to form moderately to highly reactive clay soils. Geology anticipated to the east of the site is Tertiary clayey quartzose sand, and clay. Previous investigations (Coffey 2019a and JBS&G 2025) reported fill material comprising of clay and clayey sand soils. These materials were noted to extend to depths of up to 0.6 m below ground surface (bgs). Anthropogenic inclusions were noted within this material, comprising of ash. Natural material was identified underlying fill materials comprising clay and clayey sands.
Acid Sulfate Soils	The site is reported to lie within an area of no known occurrence of Acid Sulfate Soil Risk (ASS) according to 1:25,000 Acid Sulfate Soils Risk Mapping, 2 nd ed., Department of Land and Water Conservation, Sydney (DLWC 1998). This is consistent with the site's location and geological setting.
	Based on the ASS Risk Map classification, no further consideration for management of acid sulfate soil is required. During the DGI (JBS&G 2025), no ASS were identified as part of soil sample analysis.
Hydrology	The nearest surface water receptor is the Georges River, located approximately 400 m south of the site. There is the rail corridor with elevated rail lines and are several roads with urban drainage systems between the site and the river.
	The site is comprised of a south-eastern sloping landscape. As the surface of the site is a combination of sealed and unsealed surfaces, rainfall within the site is expected to be collected by stormwater drainage systems in most sealed areas, which would otherwise flow downgradient of the site and infiltrate into the ground surface.
Hydrogeology	Groundwater is anticipated to be intermittently present as perched water at/near the residual clay soil and shale bedrock interface, with deeper groundwater in permeable zones in shale bedrock. Seepage groundwater flow is anticipated to be to follow local topography to the south/south-east, towards the Georges River. The presence of perched seepage groundwater will be largely influenced by local rainfall. No groundwater inflows were observed during advancement of sample locations as part of historic investigations (Coffey 2019a and JBS&G 2025)

2.4 Summary of Site History

A detailed site history is documented in the SCA (Coffey 2019a), as summarised in **Section 3**. A summary is provided below, including information from aerial photographs up to 2024.

The site appeared to be a cleared parcel of land between the 1930s and 1950s with three residential structures positioned along the eastern and western boundaries. Construction of the school infrastructure commenced in the early 1950s and continued through to the mid-1960s, where these buildings remain in-use to present day. The site remained relatively unchanged up to 2024 with minor additions of smaller buildings and recreational spaces to accommodate for the growing capacity of the school over the years.

There was no evidence of contaminated land notices/records pertaining to the site, which was not listed on the EPA's public contaminated land register.

¹³ Geological Series Sheet 9030 Penrith 1:100,000 sheet, NSW Department of Minerals and Energy Sydney, now Department of Planning and Environment 2010 (NSW DP&E 2010b)



3. Previous Investigations

The following reports were reviewed and considered as part of this DGI report:

- Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a);
- Asbestos and Hazardous Materials Pre-Demolition Survey, Department of Education (School Infrastructure) NSW, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 22 November 2019 (Coffey 2019b);
- Environmental Peer Review and Strategic Advice Liverpool Boys and Girls High School, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023 (JBS&G 2023); and
- Data Gap Investigation, Liverpool Boys and Girls High School, Prepared for School Infrastructure NSW, care of Meinhardt, by JBS&G Australia Pty Ltd dated 31 January 2025 (JBS&G 2025).

3.1 Site Contamination Assessment

SINSW engaged Coffey to undertake a SCA for the site as part of the wider Liverpool Education Precinct Development requiring an assessment for potential site contamination risks for the proposed development of Liverpool Primary School. Given the proposed land use for primary education, the investigation adopted assessment criteria associated with the residential with garden/accessible soils and primary schools land use scenario (Residential A) under NEPC (2013). JBS&G notes the current development only includes secondary (high) school facilities, which are treated under NEPC (2013) within the less sensitive Recreational C land use scenario.

Desktop review of regulatory records, and historical maps and imagery have identified contaminants of potential concern (COPC) and areas requiring investigation to be areas of fill, impacts from historical use of pesticides or herbicides, and potential asbestos or lead contamination as a result of poor demolition practices and weathering of building materials.

An intrusive site investigation was conducted with combination of a systematic grid and targeted sample location approach, where 29 sample locations were advanced across the site as test pits (11), boreholes (10), surface grab samples (5) and hand augers (3). Coffey (2019a) sample locations within the current site boundary are shown on **Figure 3**.

From the samples submitted for laboratory analysis, results of the soil sampling were assessed against relevant NEPC (2013) criteria and noted the following:

- All sample results reported concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX), total
 recoverable hydrocarbons (TRH), semi-volatile organic compounds (SVOCs), polycyclic aromatic
 hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs) and
 organophosphate pesticides (OPPs) below the laboratory limit of reporting (LOR).
- Concentrations of heavy metals were reported at most locations below the respective assessment criteria, with the exception of:
 - Copper (A08570) and zinc (A08509) exceeding ecological investigation levels (EILs) for urban residential and public open space for aged soils; and
 - o Arsenic (TP07_0.1-0.2) exceeding health investigation levels (HILs) for residential soils.
- Asbestos was reported at sample location A08750 below the detection limit of 0.01 %w/w.



Based on these results, Coffey concluded the following:

- Asbestos reported in sample A08570 is considered friable asbestos in accordance with NEPC (2013) guidelines. The risks associated are currently reduced for students, considering access to the impacted area is restricted by a locked doorway. Maintenance workers with access to the sub-floor area could be exposed to asbestos, if soils were disturbed.
- Localised hotspot of arsenic (TP07_0.1-0.2) is present in shallow soils located on the school oval. The extent of arsenic in soil warrants further investigation and assessment considering the potential risk via ingestion/inhalation and dermal contact exposure.
- Exceedances of copper and zinc are considered to be a result of residual metal wastes from building maintenance/construction. Corroded metal was reported to be within the location of the zinc exceedance. At present these exceedances are not expected to present an ongoing risk to ecology due to its location within the sub floor void beneath the buildings.

It is noted total chromium (III+VI) was reported in two samples (BH25_0.1-0.2 and BH26_0.1-0.2) at levels exceeding the adopted site criteria for hexavalent chromium (VI), however, were not reported as contamination, presumably as hexavalent chromium (VI) was reported below the laboratory limit of reporting (LOR) and the adopted criterion which applies specifically to hexavalent chromium (VI). It is noted that the reported total chromium concentrations do not exceed the chromium VI criterion associated with a secondary educational land use as is relevant to the current proposed ongoing land use.

Regarding the asbestos impacted sample location A08570, this location was noted in the SCA text as being present in the crawl space of Block A within LBHS. However, the sample location was instead shown on Figure 3 of the SCA to be in the footprint of a building within LGHS and another sample location (A08526) within the LBHS Block A footprint. Given the ambiguity of the which sample location was located within the LBHS Block A footprint and the potential for mislabelling of sample location names, the impact was conservatively assumed to be associated with the LBHS and the identified asbestos impacted A08570 assumed to be located within LBHS Block A footprint in the position of A08526 as noted in the SCA. This is consistent with the body text of the SCA and descriptions of this impact. Given this assumption, the copper concentration reported for sample location A08570 exceeding ecological criteria were considered to also be present in the crawl space of Block A of the boy's campus and within the boundary of the current investigation.

Of the sample locations which reported elevated concentrations of contaminants it is noted that only sample location A08570 and BH26 are located within the current site boundary. It is also noted that the chromium concentrations reported in BH26 fall below the relevant assessment criteria where a secondary educational land use is adopted.

Regarding the arsenic concentration exceeding health and ecological criteria at sample location TP07, this location is noted to be external to the current site boundary and below an on-grade hardstand car parking area.

Tabulated analytical results are included in **0**.

Based on the conclusions of the SCA, recommendations were made to pursue further characterisation of the extent of arsenic and asbestos contamination to effectively determine the potential risks associated to site users, and to delineate and determine the level of remediation and/or management required prior to development.

3.2 Asbestos and Hazardous Materials Pre-Demolition Survey

Coffey conducted an asbestos and hazardous materials pre-demolition survey into the presence and likely risks of exposure to hazardous materials within the Liverpool Boys High School site. The hazardous materials survey involved the investigation and identification of Hazardous Materials inclusive of asbestos containing material (ACM). Other hazardous materials included Lead-Based Paint systems (LBP), Lead Containing Dust (LCD),



Synthetic Mineral Fibres (SMF), Polychlorinated Biphenyls in light capacitors and Ozone Depleting Substances (ODS) in accessible areas.

Based on site survey and laboratory analysis results, a register of hazardous materials was produced, in accordance with the requirements of the relevant Codes of Practice and Guidance Notes. Asbestos or other Hazardous Materials remaining in situ will need to be detailed in the site-specific Hazardous Materials Register and Asbestos Management Plan as required by the Work Health and Safety Regulation, 2017.

The following hazardous materials and the form in which they take were identified during the asbestos and hazardous material pre-demolition survey as:

- Asbestos Containing Materials: Gable verge lining, vinyl floor tiles, security door lining, electrical backing board lining, ceiling panels, wall linings, heater unit insulation, waterproofing membrane, window caulking, eaves, awnings, and gaskets;
- Lead Based Paint: Concentrations of lead-based paint ranged from 0.13 %w/w to 0.41 %w/w identified with interior and exterior surfaces of the buildings onsite;
- Lead Containing Dust: Concentrations of lead containing dust ranged from 250 mg/kg to 2,700 mg/kg identified within the interiors of the buildings onsite;
- Synthetic Mineral Fibres: Suspected to be present in hot water units, ceiling battings, ceiling ducts, and roof sarking;
- Ozone Depleting Substances: Various air conditioning units located on the exterior of the buildings and interior ducting of the buildings onsite; and
- Polychlorinated Biphenyls: throughout the school, open, caged and cased light fittings.

3.3 Environmental Peer Review and Strategic Advice

JBS&G was engaged by SINSW, care of Colliers, for the provision of environmental/contamination peer review and strategic advice to facilitate the redevelopment of the site. Advice followed JBS&G's review of the key findings identified in the SCA completed by Coffey (2019a), to assist with future contaminated land investigations and strategic planning for the redevelopment of the LBHS and LGHS.

JBS&G agreed with the following data gaps recommended by Coffey (2019a) within the SCA:

- Further characterisation and systematic sampling to assess the extent of arsenic contamination within surface soils adjacent to sample location TP07. This will determine the level of remediation and/or management required prior to development.
- Further characterisation and systematic sampling of the subfloor soils beneath Block A to be undertaken to further assess the potential risks to site users and contractors from asbestos. This should include sieving of soils to allow for assessment against relevant land-use NEPC (2013) criteria.

Additional data gaps were identified by JBS&G after review of key SCA findings which addresses:

- Additional sampling within the Block A crawl space (LBHS) to further characterise the extent of friable asbestos contamination identified by the SCA;
- Additional intrusive sampling to further characterise surface and subsurface soils across the site (utilising test pits in soft-scaped areas and boreholes in hardscaped areas) to ensure sufficient data coverage for the site and to bring the total number of samples into closer alignment with the NSW EPA (2022) Contaminated land guidelines: Sample design part 1 application; and
- Assessment of PASS conditions to address data gaps outlined in SCA and JBS&G (2023).



Following these investigations, JBS&G recommended that a RAP be prepared to outline the remediation of the arsenic contamination historically identified and any further contamination that may be identified as part of any future in-ground investigations.

3.4 Data Gap Investigation

JBS&G was engaged by Meinhardt on behalf of SINSW for the completion of a contaminated land DGI at LBGHS to further characterise the extent of friable asbestos contamination within the Block A crawl space, further characterise surface and subsurface soils across the site and include an assessment of PASS conditions.

The data gap was undertaken with consideration to the revised site boundary consistent with the proposed development boundary and the ongoing secondary educational land use.

In total, 24 sample locations were advanced across the redevelopment site area as part of this DGI, including nine (9) test pits and ten (10) boreholes across accessible site areas and five (5) surface soil samples within the sub-floor area of Block A. Sample locations were advanced utilising a combination of a targeted and stratified approach in order to achieve a broad data coverage of the site and target known impacted areas and those areas with higher potential for contamination. It is noted that the northern portion of the Block A subfloor space was unable to be inspected and sampled due to access restrictions.

From the samples submitted for laboratory analysis, results of the soil sampling were assessed against relevant NEPC (2013) criteria and noted the following:

- All individual or 95% upper confidence limit (UCL) heavy metal concentrations were below the adopted human health and ecological assessment criteria;
- All TRH and BTEX concentrations were reported below the adopted human health and ecological
 assessment criteria, with silica gel clean-up (SGC) confirming one initially-elevated TRH >C16-C34
 fraction concentration within sample BH103_0.0-0.1 of 1900 mg/kg had a natural organic rather than
 petroleum source and the result was <LOR after clean-up;
- All PAH and OCP/OPP concentrations were reported below the adopted human health and ecological assessment criteria;
- ACM was identified in two sample locations, with concentrations of ACM exceeding the health screening levels (HSL) criterion for asbestos within soils at TP105_0.1-0.6 (0.123 %w/w) and exceeding the HSL criterion of 'no visible asbestos within surface soils' at TP107_0.0-0.2. Noting that a singular fragment was identified at TP107, inspection of surrounding area was conducted, and no additional ACM materials were identified. Asbestos fragments were removed from the site for weighing as part of the asbestos quantifications (AQ). Fragments of bonded ACM were also identified throughout subfloor soils below Block A of LBHS; and
- All representative natural soil samples reported Titratable Peroxide Acidity (TPA) below the adopted action criterion for fine soils (based on 1-1000 tonnes disturbed) of 62 mol H⁺/t, with the exception of TP108_1.4-1.5 (76 mol H⁺/t). However, Titratable Sulfidic Acidity (TSA) was reported below LOR and adopted criterion of 62 mol H⁺/t. Peroxide Oxidisable Sulfur (% S_{POS}) at TP108_1.4-1.5 was below the adopted site action criterion for fine soils of 0.1 % S_{POS} (based on 1-1000 tonnes disturbed). While the TPA at TP108 location exceeded action criteria, the lower TSA and lack of oxidisable sulfur indicates the natural soil at TP108 is acidic but not acid sulfate.

Tabulated analytical results are included in 0.

Based on these results and in contrast with the SCA (Coffey 2019a), JBS&G determined the following:

 Additional characterisation activities conducted as part of the DGI reported achieved appropriate sampling density and spread in order to characterise the site surface and sub-surface soils;



- Characterisation activities conducted as part of the DGI reported COPC concentrations consistent with those identified by previous investigations, and confirmed there was no presence of PASS;
- ACM was reported at concentrations exceeding health criteria at two sample locations (TP105 and TP107). ACM fragments were removed from the sample locations as part of AQ. It is noted that only a single fragment was reported in TP107 and that no other ACM fragments were visible within excavated soils, the test pit excavation walls and base or the surrounding area. Given this, this sample location was not considered to represent contamination requiring remediation as the single asbestos fragment was removed as part of the investigation. ACM present in TP105 was observed within fill located behind the retaining wall and north of Block A. Similar fill material was identified at BH109. Whilst no further ACM fragments were observed at this northern location, given the similarity of fill it is conservatively assumed that asbestos contaminated fill is present behind the retaining wall north of Block A; and
- All individual or 95% UCL chemical COPC concentrations reported as part of this investigation were below the adopted human health and ecological assessment criteria. The copper exceedance historically reported at sample location A08570 has been conservatively assumed to be present in the footprint of Block A within the site and represents an exceedance of the ecological criteria adopted as part of the current investigation. It is noted that these impacted surface soils are the same as those impacted with asbestos already requiring management, and as such will be appropriately managed concurrently.

It was considered that the data gaps identified in the SCA and Peer Review had been adequately addressed and the site characterised, and that the site can be made suitable for secondary educational land use subject to the remediation of identified asbestos and copper contamination guided by a RAP documenting the known extent of contamination and a remedial approach consistent with current relevant legislation and guidelines.



4. Conceptual Site Model (CSM)

Based on the findings of previous investigations, the following CSM has been developed for site.

4.1 Areas of Environmental Concern

Based on the review of the site history and of previous investigations, JBS&G's assessment and understanding of site conditions, potential areas/aspects of environmental concern (AEC) and associated COPCs have been identified and summarised in **Table 4.1**.

Table 4.1: Areas of Environmental Concern and Associated Contaminants of Potential Concern

Areas of Environmental Concern	Contaminants of Potential Concern
Uncontrolled Fill	Heavy Metals, and Asbestos
Poor demolition practices or deterioration of buildings present	Heavy Metals, and Asbestos

4.2 Contaminated Media

Soil contamination identified at the site was assessed with respect to the applicable land use criteria, pursuant to NEPC (2013) – developed open space or recreational areas, which includes secondary education facilities (HIL/HSL C, NEPC 2013).

Borehole and test pit logs (Appendix C) from Coffey (2019a) and JBS&G (2025) identified fill across the site with an average depth of 0.4-0.5m bgs, using data from 43 sample locations. All sample locations terminated into natural soils, which generally comprised orange/brown/grey/red silty/sandy clay with minor inclusions of rootlets and shale gravels.

ACM was identified in two sample locations by JBS&G (2025), with concentrations of ACM exceeding the HSL criterion for asbestos within soils at TP105_0.1-0.6 and exceeding the HSL criterion of 'no visible asbestos within surface soils' at TP107_0.0-0.2. Noting that a singular fragment was identified at TP107, inspection of surrounding area was conducted, and no additional ACM materials were identified. As noted above, asbestos fragments were removed from the site for weighing as part of AQ. Fragments of bonded ACM were also identified throughout subfloor soils below Block A of Liverpool Boys High School in proximity to where friable asbestos was historically reported in representative surface soils samples. Asbestos impacts within soils at TP105 are considered to be the result of uncontrolled filling with fill of unknown origin to construct the raised level associated with the nearby retaining wall.

The asbestos and copper exceedance reported at sample location A08570 by Coffey (2019a) and the asbestos impacts within surface soils in the Block A crawl space reported by JBS&G (2025) are considered to be a result of residual wastes from building maintenance/construction and/or poor demolition practices. The asbestos reported in this sample is considered friable asbestos in accordance with NEPC (2013) guidelines. As noted in **Section 3.1,** these exceedances are not expected to present an ongoing risk to ecology considering its location in a sub-floor area restricted by a locked doorway.

As noted in **Section 3**, no impacts to natural soils were identified during previous investigations. No assessment of groundwater, ground gas or soil vapour was undertaken as part of previous investigations, however, given the limited quantities of fill, the presumed depth to groundwater and the restriction of non-volatile contamination to surface soils, the risk of potential contamination to these media is considered low.

4.3 Potential for Migration, Exposure Pathways and Receptors

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:



- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The contaminants identified as part of the site history review, detailed site inspection and previous investigations are in solid form (i.e. asbestos and heavy metals).

These contaminants are noted to be present within covered areas of the site either underlying hardstand areas or below building footprints.

Furthermore, friable asbestos identified in the sub-floor area is restricted by a locked doorway, therefore reducing the potential for these asbestos impacted surface soils to be disturbed. The potential migration of asbestos fibres via dust is considered low given the restricted access of the sub-floor area.

Given the covered nature of the known contaminants the potential for rainwater infiltration is considered low.

In the limited areas where rainfall penetrates the surface soils in periods of extreme rainfall, this movement may result in vertical migration of contaminants through the soil profile to the soil-bedrock interface, this is likely to be intermittent and dependent on rainfall. Low permeability clay soils would limit vertical migration.

No elevated concentrations of COPC were noted within natural underlying soils.

Given the above lines of evidence, the potential for groundwater to pose an unacceptable risk to human and ecological health either on-site or at a downgradient receptor is considered to be low, and as such does not require further assessment.

Where any potential impacts to soil vapour are present it is anticipated that these would migrate along preferential pathways created by subsurface infrastructure within fill material and through cracks present within deeper natural shale materials. No elevated volatile contaminant concentrations were reported in previous investigations.

Sensitive receptors at the site under the current site conditions and in the immediate vicinity are considered to include:

- Future users of non-paved areas who may potentially be exposed to COPC through direct contact with impacted soils and/or inhalation of dusts / fibres associated with impacted soils; and/or
- Excavation / construction / maintenance workers conducting activities at the site, who may potentially
 be exposed to COPCs through direct contact with impacted soils present within excavations and/or
 inhalation of dusts / fibres associated with impacted soils including those in Block A subfloor areas; and
- Flora species to be established on the vegetated areas of the site.



5. Remedial Options

5.1 Remediation Objectives

The goal for the remediation and/or management of environmental impact is to:

- Remove unacceptable risks to human populations from contaminated fill materials/soil contamination;
 and
- Undertake remedial works, and associated site development works (i.e. bulk excavation, waste disposal, etc.) in a manner that best complies with the principles of ecologically sustainable development (ESD).

5.2 Extent of Remediation

Based on the appraisal of site contamination presented in **Section 4.2**, the approximate extent of contamination requiring remediation at the site based on currently available data is presented in Table 5.1. It is noted that the remedial extents will in practice be guided by validation outcomes. Approximate remedial extents are shown on **Figure 6**.

Table 5.1: Extent of Remediation

Location	Report Reference	Lateral Extent (m²) assumed	Depth of Remediatio n	Approximat e Volume (m³)	Contamina nt	Material	Remedial Strategy
Block A - Crawl Space	Coffey (2019a)/ JBS&G (2025)	1200	0.0-0.1	120	Copper and Asbestos (friable and non-friable)	Fill	See Section 5.4 .
North- western retaining wall	JBS&G 2025	700	0.0-0.6	420	Asbestos (non- friable)	Fill	See Section 5.4.

Due to the presence of multiple contaminants within the fill, the remedial option will need to be applicable to all contamination.

It is noted that with regards to Block A, the eastern most portion of the building footprint is underlain by learning spaces through which the crawl space is accessed to the west of these spaces. The extent of the crawl space as requiring remediation has been identified on **Figure 6**.

5.3 Assessment of Remedial Options

NEPC 2013 lists the following order of preference for soil remediation and management, which is endorsed by EPA:

- On-site treatment of the contamination so that it is either destroyed or the associated risk is reduced to an acceptable level;
- Off-site treatment of excavated soil so that the contamination is either destroyed or the associated risk is reduced to an acceptable level, after which the soil is returned to the site;
 - Or, if these are not practicable,
- Consolidation and isolation of the soil on-site by containment within a properly designed barrier; or
- Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with appropriate material; or



• Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

Remedial options have been assessed for the proposed development as detailed in Table 5.2 following.



Table 5.2: Assessment of Remedial Options

Option of Treatment	Applicability	Assessment
Option 1: Onsite treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level.	Asbestos No methodologies are available for the onsite treatment of soils impacted with friable asbestos. Contamination will not be able to be separated to allow for onsite treatment for those impacted surface soils within the Block A crawl space. Asbestos present in non-friable ACM forms can be remediated by screening to remove ACM. However, the extent of ACM content and thus the area and volume of impact, where large, reduces the potential effectiveness of screening processes. In addition, if friable asbestos impacts are identified, picking is not viable, while disturbing friable asbestos impacted material increases the risk of exposure to site workers and migration of fibres within the works area. Copper Metals (copper) are unable to be destroyed. However, there are a number of microencapsulation treatment technologies which can reduce the mobility of the identified inorganic contaminants of concern (e.g. cement stabilisation).	Asbestos Not a suitable option as there is not a viable treatment method available for the treating friable impacted soils for remediation of surface soils within the Block A crawl space. Whilst this option may be considered for the in-situ non-friable asbestos impacted fill material behind the retaining wall, it is not considered suitable given it is labour intensive and requires the space and timeline to allow for treatment of soils to occur. Copper Not a suitable option. Metals (copper) are unable to be destroyed, so this is not an option which is able to be considered. Microencapsulation is not considered necessary given the absence of identified groundwater impacts requiring remediation. Additionally, copper impacts are noted to be co-mingled with friable asbestos, which as stated above, are unable to be treated onsite.
Option 2: Offsite treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to site.	Asbestos No offsite facilities able to treat asbestos impacted soil to enable it to be returned to site for reuse. Copper Metals (copper) are unable to be destroyed. However, there are a number of microencapsulation treatment technologies which can reduce the mobility of the identified inorganic contaminants of concern (e.g. cement stabilisation).	Asbestos Not a suitable option. There is no treatment method or offsite treatment facility available for asbestos impacts. On this basis, off site treatment of impacted fill material is considered not to be a viable option. Copper Not a suitable option. As noted above copper impacted soils are co-mingled with friable asbestos which are unable to be treated.
Option 3: On-site in situ management of the soil by	Asbestos and Copper Fill materials have been found to contain concentrations of asbestos and copper that are able to be readily managed at the site. The impacted soils	Asbestos and Copper This is the preferred option for the impacted soils.

physical separation, an ongoing management.	are suitable for retention on the site in areas where human/ecological exposures can be restricted. Containment of asbestos requires long term management and notification on title and planning certificates which can devalue land and impose restrictions on future land use and requires to be legally enforceable. However this approach is noted to align with the ESD objectives of the project, given thea reduced requirement for material	The retention of the materials will reduce the waste generation and resource requirements of the remediation of the site, as consistent with the ESD objectives. The proposed redeveloped site will be subject to areas of buildings, carparks, and pavements which will provide areas for containment and physical separation between users of the redeveloped site and retained fill materials.
	movement from the site, lower labour requirements than available treatments and the suitability of the methodology within the project timeframes.	Additionally, should unexpected finds be identified at the site during remediation/civil works, then this option is the preferred option.
Option 4:	Asbestos and Copper	Asbestos and Copper
Removal of contaminated	There are currently suitably licensed waste facilities in the region capable of accepting the identified contaminants within fill materials.	Not the preferred approach as not consistent with ESD and waste minimisation principles.
soil/infrastructure to an approved site or facility, followed where necessary by replacement with clean fill.		If isolated unexpected finds are identified, this would be an appropriate approach if on site retention were not feasible due to the nature of contaminants.



5.4 Preferred Remedial Strategy

With consideration to the assessment of the established hierarchies for soil remediation options presented in **Section 5.3** and to the site-specific contaminants and environmental setting, the preferred strategy for remediation of the identified contamination is as follows:

• <u>Isolated contamination by asbestos and heavy metals</u>, and the preferred strategy for remediation is onsite in situ management of the soil by physical separation, and ongoing management (i.e. cap and contain).

This approach allows for asbestos and copper contamination/impacts to be permanently contained below a properly designed physical barrier, subject to ongoing passive management upon completion of the works via implementation of a long-term Environmental Management Plan (LTEMP). This approach is considered the most cost effective, risk adverse and is in keeping with the principles of ESD.

The LTEMP is required to be prepared following completion of the validation works. Once approved, the LTEMP is required to be provided to council for inclusion on the Section 10.7 planning certificate instrument. JBS&G understands the site owner is accepting of the LTEMP upon completion of development works.

It is noted that this remedial approach is likely to be suitable for management of unexpected finds that may be encountered during redevelopment works.



6. Remediation Plan

6.1 Site Establishment

All safety and environmental controls are to be implemented as the first stage of remediation works. These controls will include, but not be limited to:

- Locate and isolate all required utilities in the proximity of the works;
- Assess need for traffic controls;
- Work area security fencing;
- Site signage and contact numbers;
- Sediment fencing (attached to security fencing); and
- Stormwater runoff and sediment controls.

6.2 Remedial Works

The following sections outline the scope of remedial works (relevant to Table 5.1) required to address the identified contamination/impacts at the site.

6.2.1 Impacted Soils 'Cap & Contain'

A 'cap and contain' physical separation strategy is deemed appropriate for the contaminants onsite. Contaminated fill may be retained within a suitable area of the site, i.e. below sufficient capping material, hardstand or engineered slab, restricting dermal and oral contact, as well as limiting the percolation of surface waters through the materials.

The principle of the on-site containment approach is to retain materials in-situ by providing physical separation between contaminated fill/soil materials and receptors (e.g. site users, flora, fauna etc). The physical separation approach prevents direct contact via permanent pavements/minimum soil thickness arrangement (i.e. physical separation), and implementation of a long-term EMP to maintain the physical separation arrangements.

Implementation of a 'physical separation' strategy as indicated in ANZECC (1999¹⁴), in conjunction with appropriate control measures, are appropriate with respect to management of the health risk for contaminants at the site based on the current assumptions. However, assessment of unexpected contamination finds will be required to consider ANZECC (1999) guidelines, particularly for any contaminants that have not been identified previously at the site.

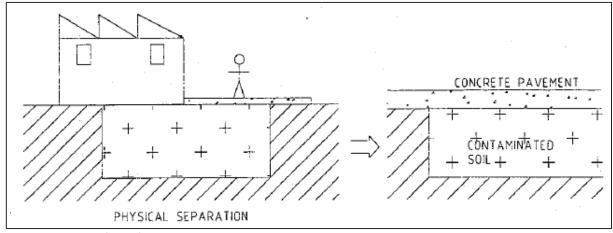
The minimum typical requirements in ANZECC (1999) for physical separation (i.e., capping layer) include:

- Permanent concrete floor slab or asphalt surfaced pavement. The pavement outside of the building/basement footprint shall be underlain by a marker layer; or
- A thickness of soil that is unlikely to be penetrated by future users of the site under the intended land
 use, underlain by a layer of 'marker layer' in areas of exposed site soil (i.e., landscaped beds). A minimum
 soil cover thickness of 0.5 m is commonly adopted however thinner soil cover may be acceptable where
 site constraints limit separation thickness and additional controls are implements (e.g., geogrid on top
 of marker layer).

¹⁴ Guidelines for the Assessment of On-site Containment of Contaminated Soil. Australian and New Zealand Environment and Conservation Council, September 1999 (ANZECC 1999).



As shown schematically below:



Source: ANZECC (1999)

Given the specific development plans as understood at the time of preparation of this RAP, the proposed use of the site, the following physical separation arrangements are to be implemented within the extent of the site inclusive of accessible / open space areas:

- Where the proposed design allows material can remain where it is currently located, and a 'cap' can be placed above the material as outlined below;
- Cover of fill materials by permanent paved areas (includes concrete, asphalt, pavers and synthetic grass areas) – installation of a marker layer underlying the depth of the pavement/subgrade and overlying potentially contaminated material;
- Covering of fill materials in landscaped areas;
 - For grassed and shrub areas of the site, either:
 - Installation of the marker layer at a minimum depth of 0.3 m below final finished site levels;

OR

- Installation of the geogrid (geosynthetic materials that have an open grid-like appearance, and which make casual penetration more difficult) at a minimum depth of 0.2 m below final finished site levels;
- o Installation of the marker layer at a minimum depth of 0.7m below final finished site levels in areas of new tree planting (or as required for the depth of the plant's root-ball) and use of environmentally suitable materials placed above to the final levels;
- In areas of existing plants that are to be retained, removal of at least 0.1m of impacted soils, installation of the marker layer at a minimum depth of 0.1m, and placement of wet-pour rubber or similar material to the finish level; and
- Within underground services trenches in the event underground services are to be installed, the service infrastructure will require to be installed above a marker layer within suitable materials for potential human and/or ecological exposure. The marker layer is to be placed at the base and covering the walls of the trenches to the elevation of the surrounding area marker layer.

The marker layer shall consist of contrasting brightly coloured (e.g. orange) geofabric of suitable tensile strength and durability to ensure it remains intact upon completion of development works and into the future. The specific details of the proposed marker layer material will require to be approved by the validation consultant prior to application and the details then included in the validation report and LTEMP documents in addition to survey plans showing the extent of its application both laterally and vertically within the site.



Material above the marker layer extending to the final finished ground level will be required to be environmentally suitable material for human and/or ecological exposure (as appropriate). These physical separation arrangements shall generally comprise growing media but may potentially comprise material originating from within the site validated as suitable for reuse in accordance the requirements outlined in **Section 7.4**, imported virgin excavated natural material (VENM), excavated natural material (ENM) or other material subject to a resource recovery order (RRO)/resource recovery exemption (RRE) issued by the EPA.

Where materials are proposed to be imported for use at the site under an EPA RRO/RRE (i.e. imported to the site), fill material will need to be further assessed for land use suitability. Sampling densities and analysis for COPC will be dependent on the volume, material type, source and subject to the Environmental Consultant's endorsement and acceptance.

Installation of physical separation arrangements shall be defined by survey as completed by a registered surveyor and/or building as-built drawings sufficient to identify:

- The lateral extent and upper depth height of known environmentally impacted materials (i.e. residual fill materials underlying the cover) within each remediation area/stage;
- The lateral extent and type of cover (e.g. permanent pavement, validated fill material, etc) within the remediation area/stage; and
- Confirmation, by photos or otherwise, of the installation of the 'marker layer' underlying the cover (as required).

6.2.2 Validation of Capping Layer

Soils which are to be capped will be subject to the following data recording process for future reference purposes:

- A location plan of the placed materials with co-ordinates based on an agreed grid system (e.g., GPS or relative to the lot boundaries);
- Survey in m AHD of the following:
 - Base of the placement location(s) prior to the material placement;
 - Placement locations once all materials have been placed;
 - Marker layers:
 - Capping layers; and
 - Subsequently the total placed volume of materials.
- Visual inspection and photographic record of the capping.

6.2.3 Validation & Backfilling of Remedial Excavations

Following the advice of the supervising environmental consultant that remedial excavations have been advanced to acceptable extents validation samples will be required to confirm that contaminated material has been successfully removed.

Upon confirmation of validation, where required excavations will be reinstated using suitable materials sourced from within the site (non-contaminated), or alternatively validated imported materials. If left without reinstatement, safety controls will be required to the excavation (e.g. temporary fencing, or grading surround levels).



6.2.4 Environmental Management Plan (EMP)

In addition to the requirements of the validation report as per **Section 7.5**, the retention of contaminated soils at the site (i.e. exceeding land use criteria) will result in passive long term EMP requirements for portions of the site at the completion of the final development works, if this method is employed.

The EMP will need to be prepared with consideration to the EPA's Site Auditor Guidelines 3rd Edition (NSW EPA 2020a) and the Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA 2020b) to detail the ongoing management and monitoring requirements applicable to specific portions of the broader site. The details of the nature and extent of the management requirements will not be known until remediation/management works are conducted, and the validation data obtained.

It is anticipated that the EMP will be prepared for the relevant portions of the site following the completion of the Validation Report.

The EMP will document the following elements:

- A statement of the objectives of the EMP i.e., to ensure continued suitability of the site following remediation.
- Identification of residual environmental contamination issues at the site that require ongoing management/monitoring to meet the EMP objectives, including the type of contamination and location within the site (including a survey plan of final capping extent prepared by a registered surveyor).
- Documentation of environmental management measures which have been implemented to address the identified environmental issues at the site.
- Description of management controls to limit the exposure of site users to known impacted material to acceptable levels.
- Description of responsibilities for implementing various elements of the provisions contained in the FMP.
- Timeframes for implementing the various control/monitoring, etc. elements outlined in the EMP.
- Environmental monitoring and reporting requirements (if required) for the future management of environmental impact underlying the site including:
 - Appropriate monitoring locations and depth within and down-gradient of any residual contamination;
 - o Relevant assessment criteria to be used in evaluating monitoring results;
 - Frequency of monitoring and reporting;
 - Process for reviewing monitoring data and how decisions will be made regarding the ongoing management strategy;
 - The length of time for which monitoring is expected to continue;
 - The regulatory authorities involved and the management inputs required from each;
 - The integration of environmental management and monitoring measures for soil;
 - Health and safety requirements for particular activities;
 - A program of review and audits;
 - The provisions in the EMP are feasible (i.e. able to be implemented) and able to be legally enforceable (i.e., a mechanism exists, such as development consent conditions, Section 88b instruments, etc to give the plan a basis in law); and



- The relevant consent authority (where appropriate) is satisfied that the inclusion of a development consent condition relating to the implementation of the long term EMP is acceptable.
- Corrective action procedures to be implemented where long term EMP assessment criteria are breached.

6.2.5 Off-site Disposal of Material

Any material requiring disposal, including any unexpected finds that are deemed as not suitable for on-site retention, shall be classified in accordance with *Waste Classification Guidelines* NSW EPA (2014a) and relevant waste regulations by the Remediation Consultant. Disposal of waste to licensed waste facilities in accordance with relevant waste regulations will be undertaken by the Contractor. All waste tracking documentation including disposal dockets must be maintained by the Contractor and must be provided to the Principal and the Remediation Consultant for inclusion in the validation report.

Where in-situ waste classifications have been undertaken, appropriately documented inspections of the material by the environmental consultant during excavation to confirm consistency with the classification will be required.

6.2.6 Materials Importation

In accordance with the current NSW EPA policy, only material that does not represent an environmental or health risk at the receiving site may be considered for resource recovery. Imported materials will only be accepted to the site for reinstatement of remediation excavations if they meet the restrictions placed on these materials and meet the definition of:

- VENM as defined in the Protection of the Environment Operations Act (1997) Schedule 1; or
- ENM as defined in the ENM Exemption/Order; or
- Resource recovery materials as per an EPA exemption.

All material imported onto the site for remediation excavation reinstatement are required to be accompanied by appropriate documentation that has been verified by the appointed site contamination (environmental) consultant <u>prior to importation to the site</u>.

It should be noted that quarried natural materials are not considered to be a 'waste' under the Protections of the Environment Act 1997 (POEO Act 1997) and therefore do not require full characterisation in accordance with the imported VENM procedure. Nonetheless, the appointed Environmental Consultant should be notified and supplied with source site documentation (i.e. VENM certificate or similar) for each quarry source site prior to importation to the site.

Reference should be made to **Section 7.2.6** for imported material characteristics, sampling densities, analytes and compliance with relevant EPA made or endorsed guidelines.

6.2.7 Asbestos Air Monitoring

During the excavation works involving asbestos impacted site fill materials, asbestos air monitoring will be conducted on the perimeter of all established asbestos works areas. It is noted that depending on the scope of asbestos works, weather conditions and the timing of works in relation to school operating hours, it may be the preference of the client to also undertake perimeter asbestos air monitoring at the boundary of the site, with particular consideration to the proximity to the adjacent learning spaces/recreational areas. Additional downwind monitoring locations will be included in the air monitoring program as required.

Air monitoring will be conducted in accordance with the requirements of the National Occupational Health and Safety Commission (NOHSC) Asbestos Code of Practice and Guidance Notes, in particular the Guidance note for the estimation of airborne asbestos dust [NOHSC 3002:2005] as detailed in **Section 9.2.2**.



6.3 Validation

Validation of the remedial works will be conducted by the Environmental Consultant to demonstrate the remediation objectives have been achieved. This will include validation analytical data as well as observation of marker layer and capping placement and client/contractor-provided survey data to confirm containment extent and thickness as described in **Section 6.2.1**. Details of the validation program are provided in **Section 7**.



7. Validation Plan

7.1 Overview

Validation data is required to be collected to verify the effectiveness of the remedial works and document the final site conditions as being suitable for the proposed future use.

The following sections establish the data quality objectives (DQOs) to be adopted during validation of the site remediation works.

7.2 State the Problem

Historical activities at the site have resulted in contamination within the fill material and surface soils that require remediation so that the site can be made suitable for the proposed ongoing secondary educational land use.

During remediation activities, sufficient validation of site activities is required to demonstrate that the identified environmental and health-based risks to site users have been adequately managed to render the site suitable for the applicable land use scenarios, as outlined in **Section 7.4**.

7.2.1 Identify the Decision

The decisions which are required to be made for validation of the site are:

- Has all identified contamination at the site been successfully remediated?
- Has off-site disposal of material (where required) been completed in accordance with relevant regulatory frameworks?
- Are imported soils (where required) suitable for their proposed use?
- Is an EMP required to address long term management of residual contamination at the site?
- Is the site suitable for the proposed uses?

7.2.2 Identify Inputs to the Decision

The inputs to the decisions are:

- Previous investigation reports (Section 3);
- Detailed plans (Appendix A) provided by the client appropriate to identify the design details;
- Field observations in relation to inspection of excavated fill, excavation bases, walls and stockpiles for odours, sheen, discolouration, and other indicators of potential contamination;
- Soil characterisation/validation analysis data collected from the base and walls (where accessible or present) of remedial works area excavations;
- Waste classification and/or material characterisation data obtained during assessment of fill materials/soils;
- Materials tracking records;
- Importation assessment data and criteria;
- Disposal dockets and relevant documents in relation to appropriate disposal of material to be removed from site/site as part of the remediation works (landfill dockets, beneficial reuse/recycling dockets);



- Where contaminated materials are retained as part of the remedial strategy, survey data of marker layer installation and caping extent and thickness to validate physical separation from site users to insitu/retained fill (if required); and
- Data quality indicators as assessed by quality assurance/quality control (QA/QC).

Specifically, sufficient data needs to be collected from each of the identified potentially impacted media (e.g. fill material) across the site for associated COPC.

7.2.3 Define the Study Boundaries

The site is legally identified as Part of Lot 1 DP 1137425 and covers an area of approximately 3.3 ha.

A plan showing the location of the site is provided as **Figure 1**, and a plan showing the boundaries of the site is provided as **Figure 2**.

The vertical extent of the remediation works is anticipated to be up to approximately 0.6 m bgs to address contamination within the fill profile.

7.2.4 Develop a Decision Rule

Decision rules are provided following for each of the decisions:

- Has all identified contamination at the site been successfully remediated?
 - o If assessment of field observations, analytical results and other validation inputs with site validation requirements indicates remedial works have effectively resulted in the management of identified contaminated risks in accordance with the requirements of the RAP, then the decision will be **Yes**. Otherwise, the decision will be **No**, and additional assessment and/or remediation will be required to demonstrate the objectives of the RAP have been achieved.
- Has off-site disposal of material (where required) been completed in accordance with relevant regulatory frameworks?
 - If assessment of field observations, material tracking records, survey data (as required) waste classification assessments and third-party documentation satisfies the requirements of relevant regulatory frameworks and the requirements of the RAP, the decision will be Yes. Otherwise, the decision will be No.
- Are imported soils (where required) suitable for their proposed use?
 - o If imported soils are comprised of VENM, ENM or material covered by an exemption and they are used in accordance with the relevant exemptions, and analyte levels within the soils meet all the adopted validation criteria (Section 7.4) then the decision will be Yes. Otherwise, the decision will be No.
- Is an EMP required to address long term management of residual contamination at the site?
 - Evaluation of the presence of residual fill material will be undertaken at the completion of the works. If the evaluation identified material with elevated contaminant concentrations on site beneath the physical barrier (if required), the answer to the decision is Yes. Otherwise, the answer to the decision is No.
- Is the site suitable for the proposed uses?
 - o Is the answer to any of the above decisions No? If No, can the outstanding issues be appropriately addressed by incorporation into the proposed EMP? If the answer to the above is Yes, or if the issues can be appropriately addressed by incorporation into the proposed EMP, the answer to the above decision is **Yes**, subject to implementation of the EMP. Otherwise, the answer to the decision is **No** and further remediation may be required.



7.2.5 Specify Limits of Decision Error

This step seeks to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting inherent uncertainty in the data. Data generated during this project needs to robust and reliable to facilitate decisions to be made with confidence.

Specific limits for this project were adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), appropriate data quality indicators (DQIs) used to assess QA/QC and standard JBS&G procedures for field sampling and handling.

To assess the useability of the data prior to making decisions, the data were assessed against pre-determined DQIs to assess precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error will be 95% compliance with DQIs.

The QA/QC program is documented in Table 7.1.

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



Table 7.1: Summary of Data Quality Indicators for Soil Validation Program

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	1 / 20 samples	<30% RPD ¹
Blind duplicates (inter laboratory)	1 / 20 samples	<30% RPD ¹
Laboratory Duplicates	1 / 20 samples	<30% RPD ¹
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	_2
Samples extracted and analysed within holding times.	All samples	Soil: organics (14 days), inorganics (6 months)
Laboratory Blanks	1 per lab batch	<lor< td=""></lor<>
Trip spike	1 per lab batch	70-130% recovery
Storage blank	1 per lab batch	<lor< td=""></lor<>
Field blank ³	1 per lab batch	<lor< td=""></lor<>
Rinsate sample	1 per sampling event/media	<lor< td=""></lor<>
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All Samples
Standard analytical methods used for all analyses	All Samples	NATA accreditation
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples ²
Limits of reporting appropriate and consistent	All Samples	All samples ²
Sample description and COCs completed and appropriate	All Samples	All samples ²
Appropriate documentation	All Samples	All samples ²
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR<= Site assessment criteria

¹ If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

7.2.6 Optimise the Design for Obtaining Data

The purpose of this step is to identify a resource-effective field validation sampling design that generates data that are expected to satisfy the decision performance criteria, as specified in the preceding steps of the DQO

 $^{^{2}}$ A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

³ Only applicable for Per- and Polyfluoroalkyl Substances (PFAS).



process. The output of this step is the sampling design that will guide development of the field sampling and analysis plan. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.

The remediation validation and subsequent laboratory analysis program as outlined in the following sections will need to be implemented during site remediation activities to demonstrate the successful completion of works in compliance with the RAP goals. The validation/characterisation sampling and analytical program for the site is outlined in Table 7.2.

In addition to the sampling and analytical program, validation of the marker layer and capping placement is required to validate the site. Visual inspections and photographic log of the placed marker layers and survey of the marker layer and of the extent and thickness of capping layer by the Contractor are required to be included in the Validation Report.

Table 7.2: Remediation Validation Program

Remediation valida			A 1 11 10 11
Item	Sampling Frequency		Analytical Suite
Removal of Contaminated Fill			
In-situ Asbestos Contaminated	Material Behind North	western Retaining Wall	
	Excavation Floors	Excavation Walls	
Exposed ground surface (following excavation of non- friable asbestos contaminated fill) (Excavation less than 100 m ² extent)	Fo ex Visual, and 1 per 25 m ² or Minimum 1 x sample per base	1 per 5 m lineal (from each distinct horizon/material type/1 m vertical soil profile) Minimum 1 x sample per wall If excavation is shallow, i.e. wall height ≤ 0.2 m, then wall samples are not required.	Visual Inspection by JBS&G + AQ
Exposed ground surface (following excavation of non- friable asbestos contaminated fill) (Excavation greater than 100 m² extent)	Fo ex Visual, and 1 per 100 m ² or Minimum 1 x sample per base	1 per 10 m lineal (from each distinct horizon/material type/1 m vertical soil profile) Minimum 1 x sample per wall If excavation is shallow, i.e. wall height ≤ 0.2 m, then wall samples are not required.	Visual Inspection by JBS&G + AQ
Block A Crawl Space Surface Soi	ls		
	Excavation Floors	Excavation Walls	
Exposed ground surface (following excavation and excavation of friable and non- friable asbestos and copper contaminated surface soils)	Visual, and 1 per 100 m ² or Minimum 1 x sample per base	1 per 10 m lineal (from each distinct horizon/material type/1 m vertical soil profile) Minimum 1 x sample per wall If excavation is shallow, i.e. wall height ≤ 0.2 m, then wall samples are not required.	Visual Inspection by JBS&G + Copper Asbestos (NEPM protocol: 500 mL)
Footprints of Temporary Reloca	ted Asbestos Contami	nated Fill Material	
	Stock	cpile Footprints	
Exposed Ground Surface	Visual, and 1 per 25 m ² or		Visual Inspection by JBS&G +



(following temporary relocation, prior to final placement) (Not required where stockpiled on geofabric)	Minimum 1 x sample per base	Asbestos (NEPM protocol: 500 mL)
Footprints of Temporary Reloca	ated Asbestos and Copper Contaminated Fill Material	
	Stockpile Footprints	
Exposed Ground Surface (following temporary relocation, prior to final placement) (Not required where stockpiled on geofabric)	Visual, and 1 per 25 m ² or Minimum 1 x sample per base	Visual Inspection by JBS&G + Copper Asbestos (NEPM protocol: 500 mL)
Export of Materials		
Offsite Disposal		
Classified in accordance with EPA (2014a) Waste Guidelines	Soils requiring classification for off-site disposal will be sampled by JBS&G as per the sampling density for stockpiled materials in EPA (2022), including use of existing (previous) data where available.	Heavy metals PCB and OCP TRH and BTEX PAH Asbestos (presence/absence: 40 g) (Except where asbestos is already visible) Toxicity characterisation leachate procedure (TCLP) heavy metals and PAHs (if required)
Materials Importation		
Imported VENM	If adequate source site documentation is available (see Section 7.4.2), then no sampling is required, beyond visual inspection at the source site and when the material arrives to site. Minimum of 3 samples per source site/material type, with a subsequent frequency of one sample per 1000 m3 for volumes greater than 3,000 m3.	TRH and BTEX PAH Heavy Metals OCPs and PCBs Asbestos (NEPM protocol: 500 mL) (Sampling and analysis only required following failure to complete a source site inspection and received adequate supplier documentation)
Quarried natural materials (e.g. blue metal, sandstone, shale)	Confirmation that the material is quarried natural soil/rock product (not waste) prior to importation, and visual confirmation.	Source site inspection required
Recycled materials	Letter showing compliance with the relevant RRO and relevant waste recovery order/exemption from the source facility and supplemented with analytical data at a density of 3 samples per material type/batch up to 2,000m³ then 1 sample per 500m³ thereafter	TRH/BTEX PAH Heavy Metals OCPs/PCBs



			Asbestos (NEPM protocol: 500 mL)
Imported ENM	As per the ENM order/e by the source site/supp	exemption (to be provided lier).	As per the ENM order/exemption + Asbestos (500 mL) OCPs/OPPs/PCBs
Growing Media	Minimum 1/70 m ³ with samples per source/end inspection at the site or to site.		Heavy Metals TRH/BTEX VOC PAHs OCP/PCB pH Asbestos (500 mL) Cation Exchange Capacity (CEC) Clay (%).
Unexpected Finds ¹			
	Excavation Floors	Excavation Walls	
Unexpected Find	1 per 25 m²	1 per 5 m lineal	As appropriate, depending on the location and characteristics of the unexpected find

¹The proposed sampling frequency for any unexpected find may require amendment based on observations made.

7.3 Sample Methodology

7.3.1 Sample Handling

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination shall be noted on field reporting sheets/field logs.

Collected samples shall be immediately transferred to sample containers of appropriate composition. Sample labels shall record sample identification number and date and time of sampling. Sample containers shall be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form shall be completed and forwarded with the samples to the testing laboratory, containing the following information:

- Sample identification;
- Signature of sampler;
- Date of collection;
- Type of sample;
- Number and type of container;
- Inclusive dates of possession; and
- Signature of receiver.

7.3.2 Asbestos Quantification

Where AQ is required for further characterisation/validation purposes, the following methodology is required to be undertaken by the Environmental Consultant:

²Where analytical data is provided by the quarry for the imported material, this data is to be provided as part of site validation.



- Consistent with the sampling frequency outlined above, enough soil will be collected to enable the AQ sampling (minimum 10 L sample);
- At each sample location, observable bonded ACM and fibrous asbestos (FA) will be quantified using methods advised in WA DoH (2009¹⁵). Specifically, given that the fill-based soil is known to be fine grained, fill based soil will be quantified by spreading the material for inspection on a contrasting colour material (e.g., plastic sheeting);
- A minimum of one 10 L sample of spoil will be spread at a thickness of not more than 100 mm onto the
 contrasting colour material. All observable bonded ACM and FA per sample location will be collected in
 separate sample bags (i.e., one sample bag for bonded ACM and one sample bag for FA per each sample)
 for weighing to enable asbestos soil concentrations to be calculated;
- The approximate mass of the soil volume will be calculated using a soil density of 1.6 g/cm³ 16, which is based on the predominant fill type at the site being sand dominated. Should other soil types become apparent during validation works, an adjusted soil density may be applied, reflective of the soil types encountered;
- At least one discrete 500 ml sample will be collected for laboratory asbestos analysis per 1 m depth interval at each sampling location (from the 10L sample), regardless of whether bonded ACM or FA is observed or not. Where possible, soil samples will be collected in the proximity of bonded ACM or FA;
- 500 ml samples will be laboratory analysed for asbestos in accordance with AS 4964-2004: Method for the Qualitative Identification of Asbestos in Bulk Samples;
- Bonded ACM and FA collected and bagged from each depth interval will be weighed in-house/at the
 testing laboratory using a calibrated scale with an accuracy of 0.01 g and the measured weight recorded;
 and
- A test pit log for each sampling location will be recorded, noting the presence (and type) or absence of
 observable asbestos, soil description, dimensions of test pit, volume of spoil sampled at each depth and
 other observable contamination indicators such as staining, malodorous materials, ash and slag.

Calculation of Bonded ACM or FA Concentration

Asbestos percentage will be calculated as per the formula below:

%w/w asbestos in soil = % asbestos content $x \frac{(bonded\ ACM\ or\ FA)(kg)}{soil\ volume\ (L)\ x\ soil\ density\ (kg/L)}$

For bonded ACM, an asbestos content of 15% will be used, in accordance with enHealth (2005). For FA, a conservative asbestos content of 100% will be used.

7.3.3 Field Photoionisation Detector (PID) Screening (if required)

Where soil validation/characterisation samples may be required for volatile contaminants (i.e., for unexpected finds relating to TRH, BTEXN, VOCs) will be screened on site during works using a PID to assess the presence of VOCs including petroleum hydrocarbons. Samples obtained for PID screening will be placed in a sealed plastic bag for a period of approximately 5 minutes to equilibrate prior to a PID being attached to the bag. Readings will then be monitored for a period of approximately 1 minute or until values stabilised and the stabilised/highest reading was recorded. PID reading will be recorded on field notes during each sampling

¹⁵ Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. Western Australia Department of Health. Dated May 2009 (WA DOH 2009), as endorsed by NEPC (2013).

¹⁶ Field Geologist' Manual (3rd Edition), The Australian Institute of Mining and Metallurgy, 1989, Table 7.3.3 (Bulking factors for expansion of common rock materials, after excavation).



event. The PID calibration will be checked prior to each sampling event and the outcome documented in field notes.

7.3.4 Field Duplicate and Triplicate Preparation and QA/QC Requirements

Field soil/groundwater/vapour duplicate and triplicate samples for the validation assessment (including for samples collected by JBS&G for imported materials characterisation) will be obtained during sampling using the procedures outlined above at a frequency of 1 in 20 primary samples for both field intra-laboratory duplicates and field inter-laboratory duplicates. The samples will be filled with no headspace to reduce the potential for loss of volatiles and separately labelled as the primary, duplicate and triplicate samples before being placed in the same chilled esky for laboratory transport. QA/QC samples will be taken for chemical contaminants but not required for asbestos.

Trip spike, storage blank, field blank and rinsate samples will be collected as per **Table 7.2**. Trip spike and storage blank samples will be analysed where primary samples require organic (volatile to semi-volatile) analysis.

7.3.5 Decontamination

Prior to the commencement of sampling activities, non-disposable sampling equipment, including sampling trowels will be cleaned with a high pressure deionized water/detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants are apparent on the equipment prior to the commencement of any sample collection works.

Representative rinsate samples will be collected from non-disposable sampling equipment (if required) following completion of each day of field sampling activities to determine the effectiveness of the decontamination procedures implemented on re-usable sampling equipment.

New nitrile gloves will be utilised for the collection of each soil sample to avoid cross contamination between samples and locations.

7.3.6 Laboratory Analyses

The testing laboratories are required to be accredited by the National Association of Testing Authorities (NATA) for the analysis they perform and must meet the data quality standards outlined in Table 7.2.

7.4 Soil Validation Criteria

7.4.1 Validation of In-Situ Soils

Given fill materials from across the site are proposed to be utilised for cut and fill across the site, analytical data from validation sampling at the lateral and vertical extents of remedial excavations shall be compared against the following criteria:

- HILs for recreational (HIL-C) land use including secondary schools;
- HSLs for direct contact with petroleum hydrocarbons for recreational land use including secondary schools;
- HSLs for Asbestos in Soil for recreational (HSL-C) land use including secondary schools;
- Ecological Screening Levels (ESLs), coarse grained soil, urban residential and public open space land use scenario and includes secondary schools; and
- Site Specific EILs urban residential and public open space land use scenario and includes secondary schools.



As noted by CRC CARE (Technical Report No.39 17) a higher reliability ESL of 20 mg/kg for benzo(a)pyrene (B(a)P) is considered appropriate for the assessment of potential risks to ecological receptors and is consistent with NEPC (2013) guidance indicating heavier PAHs such as B(a)P are not readily taken up by plants. This ESL shall be adopted for the remedial works.

Table 7.3 below details derived soil EILs as per NEPC (2013) guidance. Note, pH and CEC are based on the average values reported as part of the DGI. All EIL values are in mg/kg unless otherwise specified.

Table 7.3: Derivation of Soil EILs

Physical Parameters	
pH (pH units)	CEC (meq/100g)
6.2	10.1
Investigation Levels	
	EIL
Contaminant	Urban Residential and Public Open Space Land Use (mg/kg)
Arsenic	100
Chromium (III)	190
Copper	190¹
DDT	180
Lead	1100
Naphthalene	170
Nickel	170 ²
Zinc	400 ³

¹ Selected utilising the pH value to determine the most conservative EIL

7.4.1.1 Application of Soil Assessment Criteria

For soils to be considered as meeting the health/ecological based assessment criteria (i.e., not posing an unacceptable risk), the following criteria will be adopted:

Either:

All contaminant concentrations were less than the adopted site assessment criteria,

Or:

- The upper 95% confidence limit on the average concentration for each analyte (calculated for samples
 collected from consistent soil horizons, stratigraphy, or material types) was below the adopted criterion;
- No single analyte concentration exceeded 250% of the adopted criterion; and
- The standard deviation of the results was less than 50% of the criterion.

7.4.2 Imported Materials

In accordance with current NSW EPA policy, only material that does not represent an environmental or health risk at the receiving site may be considered for resource recovery. Imported materials will only be accepted to

² Selected based on the value for CEC.

³ Selected based on value for pH and CEC resulting in the most conservative EIL.

¹⁷ CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene*. Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.



the site if they meet the restrictions placed on these materials and satisfy requirements outlined in **Section 6.2.6.**

All materials imported onto the site are required to be accompanied by appropriate documentation that has been verified by the appointed environmental consultant for consistency/satisfaction of the relevant resource recovery order/exemption.

Where imported material is proposed to be imported to site for growing media or general filling across large portions of the site, analytical data will also be required to be compared to site validation criteria defined in **Section 7.4.1**) to ensure they are fit for use.

VENM

It should be noted that quarried natural materials are not considered to be a 'waste' under the POEO Act, and are therefore exempt from the following protocol, with the exception that the appointed environmental consultant should be notified and supplied with source site documentation for each source site prior to importation to the site.

For VENM sourced to be imported from another site (i.e. not quarried natural material products), the environmental consultant will be required to review source site documentation with regard to the VENM definition provided to the POEO Act, prior to material being imported. Where source site documentation cannot adequately demonstrate materials comply with the definition of VENM without chemical testing, then chemical sampling will be requested. The analyses undertaken will be consistent with the COPCs anticipated from the source site historical review, with minimum analytes and sampling frequencies per Table 7.2.

Analytical data associated with VENM sampling shall comply with the following criteria:

- Heavy metals = background concentrations, as per Olszowy et. al. (1995) (background concentrations);
 and
- All other COPCs (except for pH an EC) = non-detect.

ENM

The analytes of OCPs/OPPs, PCBs and asbestos are required to be analysed in addition to those outlined in the ENM Order, with sampling frequencies per **Table 7.2**. Analytical data will require to be assess, against the applicable land use criteria to determine site suitability.

Recycled Materials

For recycled materials, sampling of materials as per a NSW EPA RRO/RRE is required to be undertaken by the facility in accordance with the exemption. In addition, where materials are proposed to be imported to the site under a NSW EPA RRO/RRE, the material will need to be further assessed by environmental consultant for land use suitability in accordance with the validation requirements nominated in **Section 7.4.1**. All imported materials (including recycled materials) will be required to be inspected once they arrive at the site for to ensure materials are consistent with the material documentation, and for indicators of contamination (visual/olfactory indicators of contamination).

Growing Media

Imported growing media will need to be assessed by the Environmental Consultant for land use suitability in accordance with the validation requirements nominated in **Section 7.2.6** against criteria discussed in **Section 7.4.1**.

7.4.3 Off-site Disposal of Soils

Materials shall be classified in accordance with EPA (2014a) Waste Classification Guidelines or an appropriate exemption as created under the *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Waste Regulation) and characterised in accordance with the requirements nominated in Table 7.2.



Material will require to be removed to a facility lawfully able to receive it.

7.5 Validation Report

At the completion of remediation works, a validation report will be prepared in general accordance with EPA (2017) and *Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA 2020a), documenting the works as completed.

Validation reports can be prepared on a staged basis to enable the validation of a portion of the site or can be completed for the entire site upon completion of remediation, subject to program delivery requirements.

This report/s will contain information including:

- Details of the remediation works conducted;
- Update relevant portions of the site description and CSM as relevant to the data gap investigation;
- Present all sampling field notes and laboratory data including calibration certificates for field monitoring equipment, environmental monitoring etc.;
- Undertake an assessment of QA/QC for analytical data generated by the works and identify data that is reliable for use in characterising site;
- Sort data into data sets as required by the decision rules;
- Assess whether sufficient data has been obtained to meet required limits on decision error;
- Undertake assessment to the decision rules and identify any environmental data which causes decision rules to be failed:
- Provide a summary of waste disposal activities and volumes of waste removed from the site including supply of Integrated Waste Tracking Solution records for asbestos impacted material disposed from the site, and all waste disposal dockets confirming final waste disposal/landfill destination;
- Provide a summary of material importation activities (general fill soil/crushed rock, growing media, earthworks aggregates, drainage backfill etc), including material source, type, assessment of suitability, approximate quantities, date of importation, visual inspections upon arrival to site and final placement location;
- Document any variations to the strategy undertaken during the implementation of the remedial works;
- Results of all environmental monitoring undertaken during the course of the remedial works;
- Survey of the site development layout showing the land use boundaries;
- Survey data for any cap and contain strategy employed at the site (if required);
- Details of any environmental incidents occurring during the course of the remedial works and the actions undertaken in response to these incidents;
- Identify the requirements for the long term EMP (where appropriate) including inclusion of a survey clearly identifying the extent of the retained impacted material and associated capping (as required); and
- Provide a clear statement on the suitability of the site (or portions thereof) for the proposed use and requirements for any ongoing monitoring/management (where applicable).

The report will serve to document the remediation works for future reference.



7.6 Environmental Management Plan

Where contaminated soil above land use criteria is contained/retained on site, a long term EMP must be prepared in accordance with the requirements outlined in the NSW Environment Protection Authority *Guidelines for the NSW Site Auditor Scheme (3rd edition, EPA 2017*). The objective/purpose will be to ensure ongoing suitability of the site for the proposed land use via identification and maintenance of cap/cover measures that form a physical barrier to the underlying contaminated soil.

The EMP will detail roles and responsibilities for future site operators/owners, provide management procedures for future intrusive works, and will operate for the life of the development to protect the human health and safety of site users, and to protect the environment – both on-site and off-site.

Enforcement of the EMP will be via appropriate notation on a planning certificate issued under s.10.7(2) of the Environmental Planning and Assessment Act.



8. Contingency Plan

In the unforeseen event that the proposed remediation works do not meet the validation criteria, or if the selected remedial strategy is unsuccessful, the following actions will be considered to ensure firstly the safety and health of people and the environment and secondly that the overall project objectives are achieved:

- Continued controlled excavation until validation is achieved; and
- Reassessment of remedial options for excavated materials, including:
 - o Current remediation approach (Cap and Contain); or
 - Offsite disposal (as per Section 7.4.3).

8.1 Change in Development Plans

In the event that the development plans are changed from those available at the time of preparation of this RAP, review of the suitability of the proposed remedial strategy will be required by the Environmental Consultant.

8.2 Unexpected Finds Protocol

Ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and / or in unexpected locations during remediation. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example:

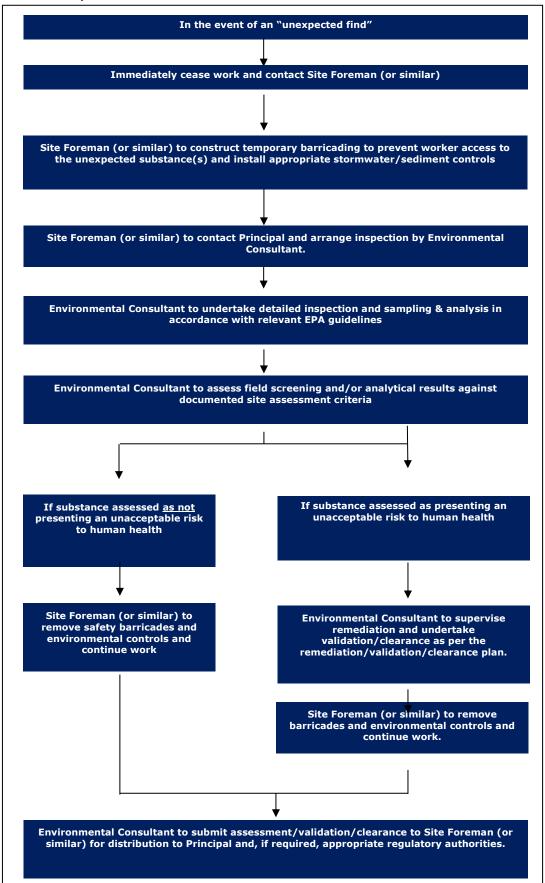
- Bottles / containers of chemicals (visible);
- Tar contaminated soils / fill materials (visible); and
- VOC contaminated soils (odorous) and vapours.

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances be identified (or any other unexpected potentially hazardous substance), the procedure summarised in **Flowchart 8.1** is to be followed.

An enlarged version of the unexpected finds protocol, suitable for use on-site, should be posted in the site office and referred to during the site-specific induction by the remedial / principal contractor.



Flowchart 8.1 - Unexpected Finds Protocol





9. Other Remediation Documents

9.1 Environmental Management

9.1.1 Preparation of a Remediation Environmental Management Plan (REMP)

Prior to commencement of remediation works, a REMP shall be prepared by the Principal Contractor or the Principal Contractor's Remediation Contractor, which documents the environmental monitoring and management measures required to be implemented during the remediation and construction related activities associated with the construction of the site.

The REMP shall address each of the nominated items in **Section 6.2** and shall include the Contingency Plan, referred to in **Section 8**, above. Additional environmental management requirements may be required as part of development consent.

9.1.2 Required Elements/Procedures

An assessment of the proposed activities and the associated elements required to be incorporated into the REMP is provided in Table 9.1. The REMP is required to address each of the required elements and procedures in full detail and to include detailed monitoring processes and procedures, corrective actions and reporting requirements.

Table 9.1: Required Elements of the REMP

Element	Specific Minimum Requirements to be included in REMP
1. Dust Control	Provisions for dust control if required.
2. Flora and Fauna	N/A
3. Heritage/Archaeological	N/A
4. Visual Impacts	N/A
5. Emergency Response	As appropriate.
	Procedures required for spill incident response including material storage breach.
6. Noise Control	Hours of operation.
	Boundary monitoring at commencement of work site activities with potential for environmental noise emissions.
	Potential noise monitoring at nearest receptors.
	Procedures for control and management of noise emissions, as appropriate (e.g., restricted hours).
7. Traffic	Controls on vehicle movements on public roads.
	Controls on transport in asbestos exclusion zones (if required)
8. Protection of Adjoining Structures	N/A
9. Odour Control	Procedures for management of potentially odorous works.
10. Handling of Contaminated Soil and Groundwater	Soil and water (if encountered) management (stockpiling, site access, excavation pump out, reinstatement).
11. Soil Storage/Placement Areas	Soil and water management (stockpiling, site access, excavation pump out, reinstatement).
	Bunding.
	Heavy vehicle/personnel decontamination.
	Interim storage requirements for materials requiring later treatment.



Element	Specific Minimum Requirements to be included in REMP
	Site drainage requirements, incorporating clean/dirty areas and modifications to existing surface water and drainage controls beneath retained pavements.
	Monitoring as required.
12. Sediment Control	Bunding. Collection/treatment/handling impacted sediments.
13. Operation of Site Office	As appropriate.
14. Asbestos Works	Required notifications, permits, signage and exclusion zones. Required personal (e.g. Class A or B removalist).
	PPE and decontamination.
	Staging of asbestos and non-asbestos works.
15. Environmental Monitoring	Monitoring of dusts, noise, odour and fibres (if required). Monitoring as required for vibration and water releases. Inspection checklists and field forms.
16. Environmental Criteria	Soil criteria as sourced from RAP.
17. Material Classification	As detailed in this RAP.
18. Waste Management	All waste materials classified in accordance with the RAP are required to be disposed of at a licensed waste facility that are lawfully able to accept such materials. Material tracking in the form of disposal dockets will be required for the purposes of satisfying the validation report.
19. Community Relations Plan	Client to provide project specific communication protocols, incorporating nomination of specific contact persons & details and requirements for communications/response register.
20. Incident Reporting	As appropriate, including standard form/checklist.
21. Security and Signage	Secure site perimeter.
	Site boundary signage.
	Remediation exclusion zone signage where required.
22. EMP Review	As appropriate.
23. Training	As appropriate.
	Contamination awareness training for all workers.
24. Contact Details	Company/personnel details, including names/phone numbers for:
	- Principal Contractor
	- Site Auditor (if involved)
	- Environmental Consultant
	- Contractor
	- OH&S Compliance
	- Environmental Compliance



9.2 Health and Safety

9.2.1 Work Health and Safety Management Plan

A work health and safety management plan (WHSP) shall be prepared by the Remediation Contractor prior to commencement of remediation works. The plan shall contain procedures and requirements that are to be implemented as a minimum during the works, in addition to the Contingency Plan, referred to in **Section 8**.

The objectives of the WHSP are:

- To apply standard procedures that minimises risks resulting from the works;
- To ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other site workers and the general public.

These objectives will be achieved by:

- Assignment of responsibilities;
- An evaluation of hazards;
- Establishment of personal protection standards, mandatory safety practices and procedures;
- Monitoring of potential hazards and implementation of corrective measures; and
- Provision for contingencies that may arise while operations are being conducted within the site.

9.2.2 Asbestos Works

All asbestos associated works shall be undertaken in accordance with the *Work Health and Safety Regulation 2014* (WHS Regulation), SafeWork NSW (2022) *Code of Practice: How to Safely Remove Asbestos*, and SafeWork NSW (2022) *How to Manage and Control Asbestos in the Workplace*.

During the remedial works and only following the positive detection of asbestos impact present in site soils, perimeter asbestos in air monitoring will be conducted at each applicable remedial works area boundary when soil with asbestos is being disturbed. Air monitoring will be conducted on a daily basis at relevant locations whilst disturbance of asbestos contaminated areas takes place.

Air monitoring will be conducted during any ground disturbance activities within (asbestos) impacted soil within the site to verify that implementation of appropriate control measures have been successful at managing the risk of airborne fibre generation. Air monitoring will be undertaken in accordance with the requirements of the NOHSC Asbestos Code of Practice and Guidance Notes, in particular the *Guidance note* for the estimation of airborne asbestos dust [NOHSC 3002:2005].

Class A Asbestos Removalist are required to be present when working within the contaminated material at the site given the identification of friable asbestos. If fill containing friable asbestos is required to be relocated a Class A Licensed Asbestos Removalist will be required to undertake the works.

It will be the requirement of the appointed remedial contractor to obtain the appropriate approvals and prepare an asbestos management plan (AMP).

9.2.3 Additional Consideration of Chemical Contaminants

In addition to general assessment of the potential for exposure to chemical contaminants the WHSP should also include specific consideration of additional contaminants may be encountered in fill materials.

As a precautionary measure, the WHSP should include the requirement for the plan to be revised in the event of an unexpected find of contaminated material during remediation and/or construction.



When working with contaminated materials in general, care needs to be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation or absorption. The WHSP must detail the PPE and decontamination requirements to be followed to control the risks posed by potential exposure to chemical contaminants at/within the site.



10. Regulatory Approvals/Licensing

Environment Planning and Assessment Act 1979/SEPP (Resilience and Hazards) 2021

With consideration to *Liverpool Local Environmental Plan 2008*, the site and/or the remedial works are not considered to be:

- Designated development;
- On land declared to be a critical habitat;
- Likely to have a significant effect on a critical habitat or a threatened species, population or ecological community, or
- Development for which another State environmental planning policy or a regional environmental plan requires development consent, or
- In an area or zone to which any classifications to the following effect apply under an environmental planning instrument, including:
 - o coastal protection,
 - o conservation or heritage conservation,
 - o habitat area, habitat protection area, habitat or wildlife corridor,
 - o environment protection,
 - o escarpment, escarpment protection or escarpment preservation,
 - o floodway,
 - littoral rainforest,
 - o nature reserve,
 - o scenic area or scenic protection,
 - o wetland, or
- Proposed to be completed in a manner that does not comply with a policy made under the
 contaminated land planning guidelines by the council for any local government area in which the
 land is situated (or if the land is within the unincorporated area, the Minister).

As such, the remediation works are classified as Category 2 Remediation Works as per the meaning provided Chapter 4 Remediation of land in the R&H SEPP. Remediation will not require development consent under the *Environmental Planning and Assessment Act 1997*.

Notification of remediation works will be required to be given to Council at least 30 days prior to commencement, and Council requires notification within 30 days from completion of remediation works, consistent with R&H SEPP requirements.

The nature of remediation works is relatively straight forward, and it is considered most appropriate that remediation works is included with construction earthworks as ancillary to other development.

Environment Planning and Assessment Regulation 2000 – Schedule 3 Designated Development

It is not anticipated that the proposed remediation works will trigger the application of the regulation given that the works will not entail the treatment or storage of materials not originating from the site. Further, the proposed scope of works will not incinerate more than 1,000 m³ per year, will not treat and store more than 30,000 m³ of contaminated soil, and will not disturb an aggregate area of 3 ha of contaminated soil.



Protection of the Environment Operations Act 1997

All potential discharges from the remediation works will require to be maintained below applicable assessment criteria/threshold guidelines during the remediation works. This would apply to potential emissions in air and water. Levels of discharges are typically assessed at a site boundary.

Site specific environmental management plans, as prepared and maintained by remedial contractors, will require to ensure appropriate controls and monitoring criteria to assess compliance with these aspects.

The proposed remediation/validation activities are not required to be licensed under the POEO Act. The remediation area is less than 3 ha in area, does not propose handling of greater than 30,000 m³ of contaminated fill and hence does not trigger the licensing requirements.

Protection of the Environment Operations (Waste) Regulation 2014

The regulations make requirements relating to non-licensed waste activities and waste transporting. The proposed works on site will not require to be licensed. Section 48 of the Reg. requires that wastes be stored in an environmentally safe manner. It is also stipulated that vehicles used to transport waste must be covered when loaded.

Provision is provided in the POEO Waste Regulation and EPA (2014a) guidelines for the EPA to approve the immobilisation of contaminants in waste (if required with unexpected finds).

Waste Classification Guidelines (EPA 2014a)

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline. Where wastes require immobilisation prior to off-site disposal (to reduce the waste classification) an immobilisation approval shall be sought in accordance with Part 2 of this guideline. Immobilisations are only anticipated to be required with unexpected finds.

Asbestos Licensing requirements

Due to asbestos impacted fill at the site a Class A Asbestos Removalist is required to be present when working within the contaminated fill given the identification of friable asbestos.

A SafeWork notification regarding the scope of the removal works is required. It will be the requirement of the appropriate appropriate approvals and prepare an AMP.

11. Conclusions

11.1 Conclusions

Overall, it is considered that the proposed actions outlined in this RAP conform to the requirements of the Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd Edition) (EPA 2017) because they are: technically feasible; environmentally justifiable; and consistent with relevant laws policies and guidelines endorsed by NSW EPA.

Subject to the successful implementation of the measures described in this RAP and with consideration to the Limitations presented in **Section 12**, it is considered that the site can be made suitable for the intended uses and that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment.



11.2 Recommendations

It is recommended that the processes outlined in this RAP be implemented and that the following documentation be developed and implemented to ensure the risks and impacts during remediation works are controlled in an appropriate manner:

- A REMP, to document the monitoring and management measures required to control the environmental impacts of the works and ensure the validation protocols are being addressed; and
- A WHSP to document the procedures to be followed to manage the risks posed to the health of the remediation workforce.

Upon completion of the remediation works, the Validation Report/s are required to be prepared to verify remedial works were completed in accordance with this RAP.

11.3 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment; and
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

The mitigation measures required and relevant to the current investigation are included in Appendix D.



12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

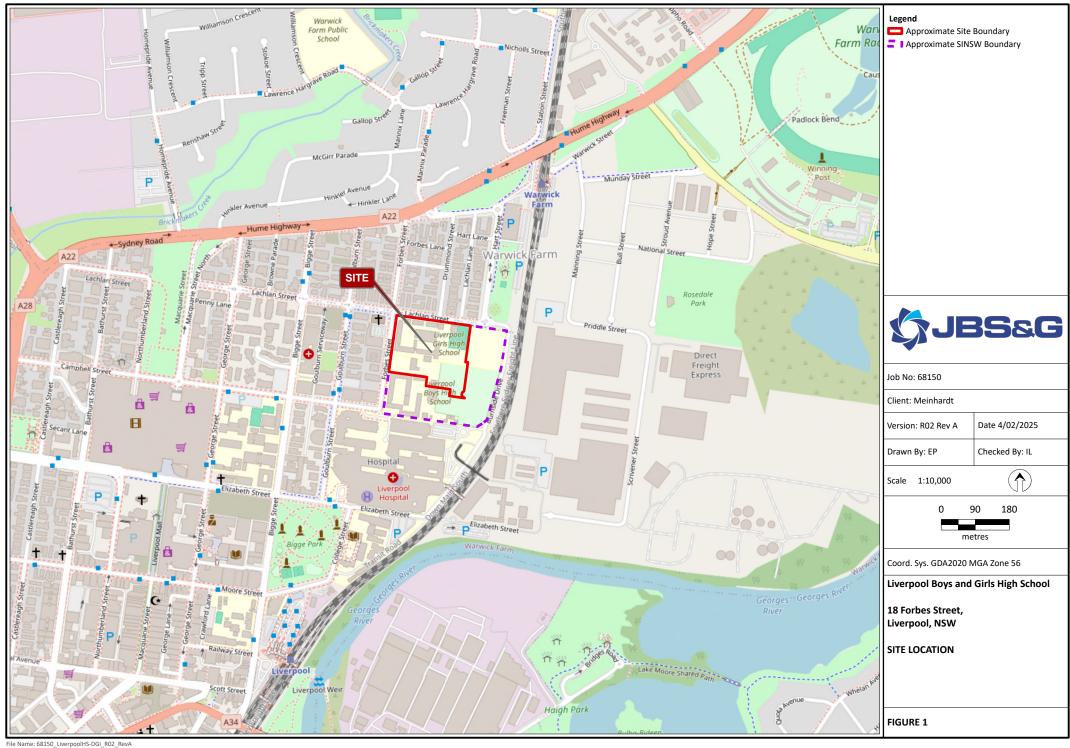
The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements or agreed scope of work.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.





Approximate Site Boundary

Approximate SINSW Boundary NSW Cadastre

Current Site Features

Building A

Proposed Site Features Proposed Building Footprint



Job No: 68150

Client: Meinhardt

Version: R02 Rev A

Date 4/02/2025

Drawn By: EP

Checked By: IL

Scale 1:1,750



0 10 20



Coord. Sys. GDA2020 MGA Zone 56

Liverpool Boys and Girls High School

18 Forbes Street, Liverpool, NSW

SITE LAYOUT

FIGURE 2



Approximate Site Boundary

Approximate SINSW Boundary

NSW Cadastre

Current Site Features

Building A

☐ Proposed Building Footprint

Historical Sample Locations (Coffey 2019a)

Test Pit

Borehole

Hand Auger

Sub Floor Grab Sample



Job No: 68150

Client: Meinhardt

Version: R02 Rev A Date 4/02/2025

Drawn By: EP Checked By: IL

Scale 1:1,750



0 10 20

metres

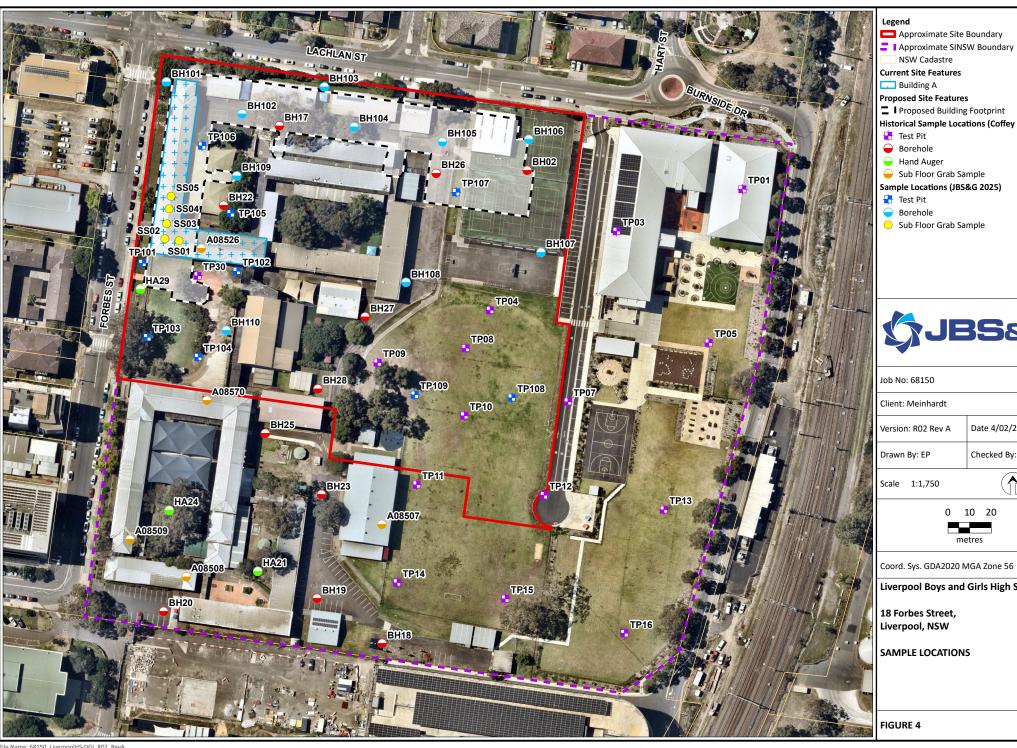
Coord. Sys. GDA2020 MGA Zone 56

Liverpool Boys and Girls High School

18 Forbes Street, Liverpool, NSW

HISTORICAL SAMPLE LOCATIONS

FIGURE 3



Historical Sample Locations (Coffey 2019a)



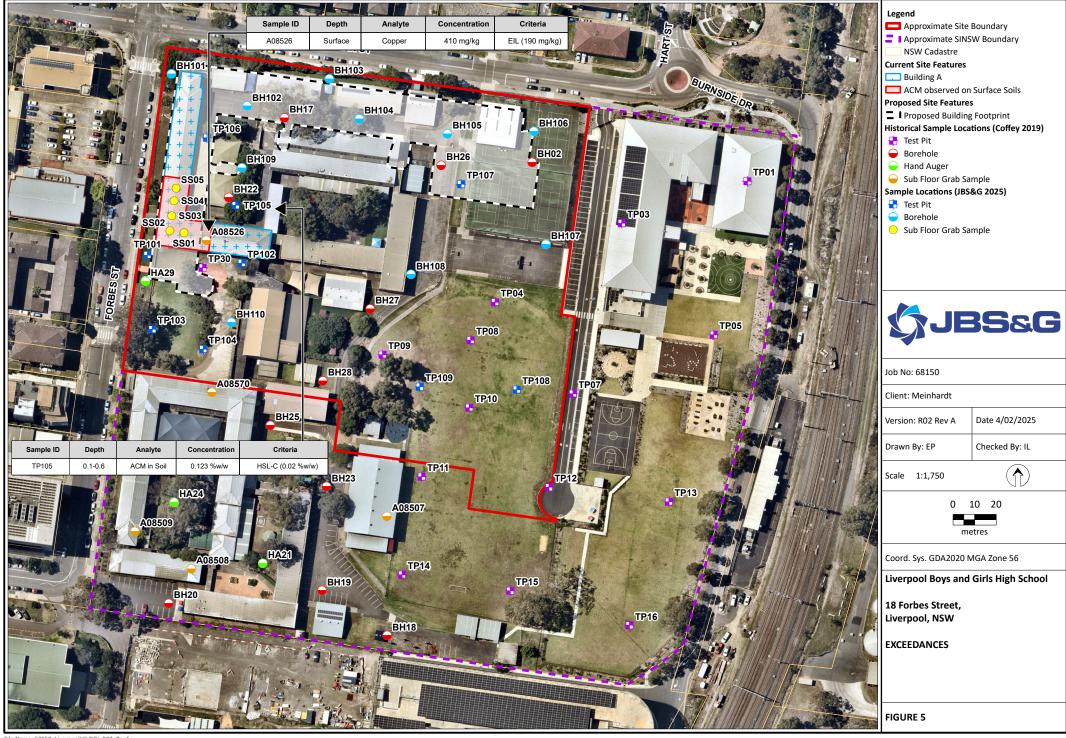
Date 4/02/2025

Checked By: IL





Liverpool Boys and Girls High School





Legen

Approximate Site Boundary

Approximate SINSW Boundary

NSW Cadastre

Current Site Features

Building A

Remedial Extents

Remedial Extent (Copper and Asbestos)

Remedial Extent (Asbestos)

Proposed Site Features

Proposed Building Footprint



Job No: 68150

Client: Meinhardt

Version: R02 Rev A

Date 4/02/2025

Drawn By: EP/HW

Checked By: IL

Scale 1:1,750



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Coord. Sys. GDA2020 MGA Zone 56

Liverpool Boys and Girls High School

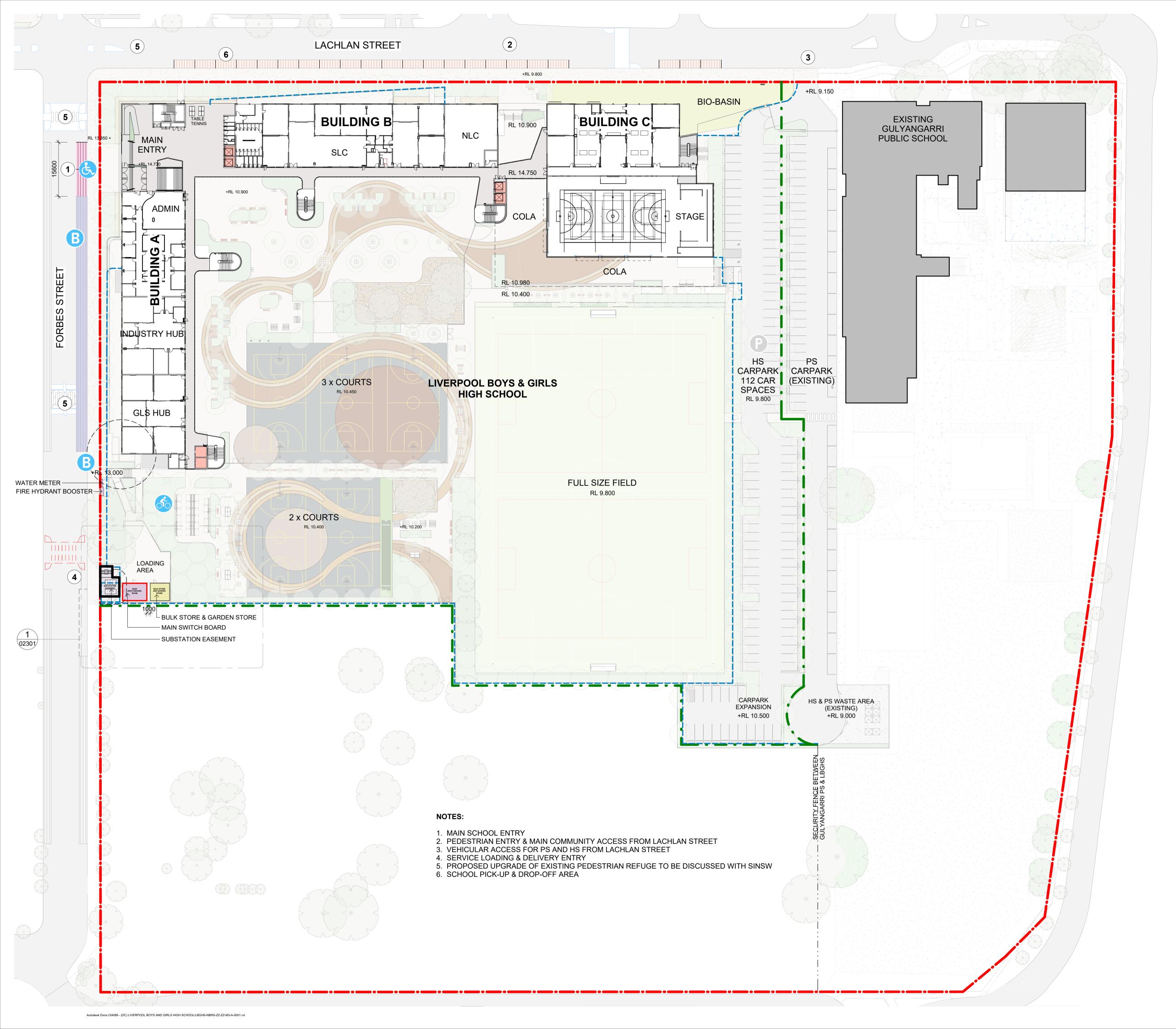
18 Forbes Street, Liverpool, NSW

REMEDIAL EXTENTS

FIGURE 6



Appendix A Concept Plans





LEGEND

BUS STOP





CAR PARKING

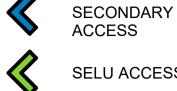
CROSSING

CROSSING

RAIL LINE

BICYCLE PARKING

EXISTING PEDESTRIAN



SELU ACCESS

MAIN ACCESS



PROPOSED PEDESTRIAN STUDENT ACCESS



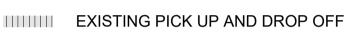
DEMOLISHED PEDESTRIAN CROSSING PROPOSED HIGH SCHOOL SITE

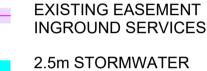


AFTER HOURS COMMUNITY EXISTING BOUNDARY **ACCESS** ---- PROPOSED FENCE



LEARNING COMMONS NLC NATURAL **LEARNING COMMONS**





PICK UP AND DROP OFF

ACCESSIBLE PICK UP AND DROP OFF

POTENTIAL BUS ZONE





EASEMENT



SCHEMATIC

Issu	е		
No.	Date	Description	Chkd
5	04.10.2024	Issue for Coordination	EK
6	10.10.2024	Issue for Coordination	EK
7	18.10.2024	Issue for Coordination	EK
8	24.10.2024	75% Schematic Design	EK
9	21.11.2024	Issue for Coordination	EK

Changes to this Revision

+61 2 9922 2344
Nominated Architects:
Andrew Duffin NSW 5602 Jonathan West NSW 9899 NBRS & Partners Pty Ltd VIC 51197

ABN 16 002 247 565

nbrs.com.au

Revision

Liverpool Boys and Girls High School

Forbes St Liverpool

for SINSW

Drawing Title PROPOSED SITE PLAN

Date 20/11/2024 10:32:56 PM Scale 1:500 @ A1 NBRS Project # 24089 **Drawing Reference**

LBGHS-NBRS-00-ZZ-DR-A-01000

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Appendix B Soil Analytical Data



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FPEQ 2046				-	-	-	-	-	-		-	-	-	<u> </u>	-			-	_	-	-	-	-	-	-		<u> </u>		-	-	-	1-1
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Fig. 19-14			+	15	< 0.4	39	5.3	17	<0.1	<5	5.9	-	<20	<20	<50		_	-	<20	<50	<100	<100	<100	<20	_	_	<0.1	<0.1	< 0.1	<0.2	< 0.3	<0.5
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Fig. 0.4-0.5 0.7 an 2025 1.17685 1.3 0.4 2.5 2.1 1.10 0.3 5.1 9.5 0.20 0.50	TP103_0.0-0.3	07 Jan 2025		-	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	÷	-	-	-	-	-		-	-	-	-
Fig. 0.0-1 O Jan 2025 1176585			+	- 12	-0.4	- 25	- 21	- 110	- 0.3		- 05	-	- 20	-20				-	- 20	-50	-100	-100	-100	- 20		-0.4	-0.4	-0.4	-0.4	-0.2	-0.2	-0.5
FEIDS 0.1-0.6 Of Jan 2025 1176585 1.4 0.4 33 19 25 0.1 0.5 24 0.4 0.5 0.				- 13	<0.4	- 25		- 110	- 0.3		- 95	- -	<2U -	- 20				+ -		- 30	- <t00< td=""><td>- <100</td><td><100</td><td><20</td><td>_</td><td>_</td><td><0.1</td><td></td><td><u.1< td=""><td><u.z< td=""><td><u.3< td=""><td><0.5</td></u.3<></td></u.z<></td></u.1<></td></t00<>	- <100	<100	<20	_	_	<0.1		<u.1< td=""><td><u.z< td=""><td><u.3< td=""><td><0.5</td></u.3<></td></u.z<></td></u.1<>	<u.z< td=""><td><u.3< td=""><td><0.5</td></u.3<></td></u.z<>	<u.3< td=""><td><0.5</td></u.3<>	<0.5
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TP109_1.4-1.5 07 Jan 2025 1176585				12	<0.4	25	12	_	<0.1		42	- -	<20	<20			_	+-		<50	<100	<100	<100		_	_	<0.1		<0.1	<0.2	<0.3	<0.5
TP105_FRAG01	TP109_1.4-1.5	07 Jan 2025	1176585	-	-	-	-		-			-	-	-			_	-			-			+					-	-		-
TP105_FRAG02 09 Jan 2025 1176585				-	-	-			-	-	-	-	-	-	-			-	_	-	-	-	-	<u> </u>	_			-	-	<u> </u>	-	-
TP105_FRAG03 09 Jan 2025 1176585				1 -	-	-	-	-	-	-	-	-	-	-	-	-	-	1 -	-	-	-	-	-	 -	-	 -	 -	 -	-	 -	-	-
								-																<u> </u>			<u> </u>			<u> </u>		-
TP107_FRAG01 109 Jan 2025 1176585 - - - - - - - - -	TP105_FRAG04	09 Jan 2025		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
	TP107_FRAG01	09 Jan 2025	1176585	-		-	-		-	-	-	-		<u> </u>		-		-	l -	-	-	-		<u> </u>		<u> </u>	<u> </u>	<u> </u>	-	<u> </u>	-	



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													P	АН										
			of positives)	ene	ylene	a a	hracene	rene	/rene TEQ (LOR)	/rene TEQ calc (Half)	/rene TEQ calc (Zero)	fluoranthene	нk)fluoranthene	:o(g,h,i)perylene	uoranthene)anthracene	ine		,3-c,d)pyrene	ne	ene		(Sum of total)
			AHs (Sum	cenaphthe	cenaphthy	nthracen	enz(a)anthr	enzo(a)py	enzo(a)p\	enzo(a)py	enzo(a)pyrene	enzo(b+j)fl	enzo(b+j+k)fl	enzo(g,h,	enzo(k)fluor	hrysene	ibenz(a,h)aı	uoranthe	uorene	ıdeno(1,2,3-	aphthale	henanthr	yrene	AHs (Sum
			μg/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	<u>⊑</u> mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	entact HSL-C Recreational / Open Space		50	0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1 1,900	0.1	0.1	0.5
	ntact Intrusive Maintenance Worker																				29,000			
NEPM 2013 Table 1A(1) HILs Rec									3	3	3													300
NEPM 2013 Table 1A(3) Rec C Soi NEPM 2013 Table 1B(6) Site Speci	ific EIL - Urban Residential and Public Op	pen Space Aged Soil																			3 170			
NEPM 2013 Table 1B(6) ESLs for U NEPM 2013 Table 1B(7) Managen	Jrban Res, Fine Soil nent Limits in Res / Parkland, Coarse Soi	il						0.7																
Field ID	Date	Lab Report Number																						
BH101_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH101_0.2-0.3 BH102_0.0-0.1	09 Jan 2025 08 Jan 2025	1176585 1176585	+ -	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5 <0.5	1.2	0.6	<0.5 <0.5	<0.5 <0.5	-	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
BH102_0.0-0.3	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH103_0.0-0.1 BH103_0.1-0.4	08 Jan 2025 08 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH103_0.1-0.4 BH104_0.0-0.1	08 Jan 2025	1176585	+ -	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH104_0.0-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH105_0.0-0.1 BH105_0.2-0.3	08 Jan 2025 08 Jan 2025	1176585 1176585	+ -	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5 <0.5	1.2	0.6	<0.5	<0.5 <0.5	-	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
BH105_0.2-0.4	08 Jan 2025	1176585	+ -			- 0.3				-			-				- 0.3	- 0.3					-	-
BH105_2.9-3.0	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1
BH106_0.0-0.4 QA02	09 Jan 2025 09 Jan 2025	1176585 370401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH106_0.2-0.3	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH106_0.4-0.5	09 Jan 2025	1176585	+ -	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH106_2.9-3.0 BH107 0.0-0.1	09 Jan 2025 09 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH107_0.1-0.5	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH107_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH108_0.0-0.3 BH108_0.2-0.3	09 Jan 2025 09 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH108_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS01 SS02	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03	09 Jan 2025	1176585	+ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 TP101 0.0-0.1	09 Jan 2025 07 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP101_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 0.3	- 0.3		-	-	-	-	-
TP101_0.3-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP102_0.2-0.4 TP102_0.4-0.5	07 Jan 2025 07 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP102_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP103_0.0-0.1	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA01 QC01	09 Jan 2025 09 Jan 2025	370401 1176585	<50	<0.1 <0.5	<0.1 <0.5	<0.1	<0.1	<0.05 <0.5	<0.5 1.2	<0.5 0.6	<0.5 <0.5	<0.5	<0.2	<0.1	<0.5	<0.1 <0.5	<0.1	<0.1	<0.1 <0.5	<0.1	<0.1	<0.1	<0.1 <0.5	<0.5
TP103_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP104_0.0-0.3	07 Jan 2025	1176585	-			-			-	-			-	-	-0.5	-0 =			-0.5		-0 =	-0 =		-0.5
TP104_0.4-0.5 TP105_0.0-0.1	07 Jan 2025 07 Jan 2025	1176585 1176585	+ -	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP105_0.1-0.6	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_0.2-0.3 TP105_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP105_0.4-0.5 TP106_0.1-0.5	07 Jan 2025 07 Jan 2025	1176585 1176585	+ -	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP106_0.2-0.3	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP107_0.0-0.1	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP107_0.0-0.2 TP107_0.2-0.4	07 Jan 2025 07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.1-1.0	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.2-0.3 TP108_1.4-1.5	07 Jan 2025 07 Jan 2025	1176585 1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP108_1.4-1.5 TP109_0.2-0.5	07 Jan 2025 07 Jan 2025	1176585	+-	-	-	- -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP109_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP109_1.4-1.5 SS-01 FRAG01	07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-01_FRAG01 TP105_FRAG01	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG03	09 Jan 2025	1176585 1176585	+ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG04 TP107_FRAG01	09 Jan 2025 09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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														c	Organochlor	ine Pesticid	es											
																			at e					8	e			
							indane)			Dieldrin	•	e (cis)	e (trans)			E+DDD	_ - -	= =	an sulph		dehyde	stone	ō	or Epoxie	robenze	chlor		e
			1,4-DDE	HE C	BHC	PBHC	3-BHC (Li	Aldrin	Dieldrin	Aldrin +	Chlordan	Chlordan	Chlordan	 <u> </u>	9)DT+DDE	Indosulf	Jingopui	Indosulf	indrin	ndrin al	ndrin ke	Heptach	Heptachlor	lexachic	Methoxy	Mirex	Foxaphe
EQL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CRC Care 2011 Table A4 Direct Cont	act HSL-C Recreational / Open Space		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.5
CRC Care 2011 Table A4 Direct Cont NEPM 2013 Table 1A(1) HILs Rec C S										10	70					400				20			10		10	400	20	30
NEPM 2013 Table 1A(3) Rec C Soil H	SL for Vapour Intrusion, Sand									10	70					400				20			10		10	400	20	30
NEPM 2013 Table 1B(6) Site Specific NEPM 2013 Table 1B(6) ESLs for Urb	EIL - Urban Residential and Public Oper an Res. Fine Soil	n Space Aged Soil												180														
	at Limits in Res / Parkland, Coarse Soil																											
Field ID	Date	Lab Report Number																										
BH101_0.0-0.3 BH101_0.2-0.3	09 Jan 2025 09 Jan 2025	1176585 1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
BH102_0.0-0.1	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
BH102_0.0-0.3 BH103 0.0-0.1	08 Jan 2025 08 Jan 2025	1176585 1176585	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<10
BH103_0.1-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH104_0.0-0.1 BH104 0.0-0.4	08 Jan 2025 08 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH104_0.0-0.4 BH105_0.0-0.1	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	<u> </u>	-	-	-	-	-	-	-	-	-			-
BH105_0.2-0.3	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH105_0.2-0.4 BH105_2.9-3.0	08 Jan 2025 08 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	<u> </u>	-	-	-	 -	-	-	-	-	-	-	-	-	-	-	-	-
BH106_0.0-0.4	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA02	09 Jan 2025	370401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02 BH106 0.2-0.3	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH106_0.4-0.5	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH106_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH107_0.0-0.1 BH107_0.1-0.5	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH107_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH108_0.0-0.3	09 Jan 2025	1176585		-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05		-	-	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-	- 0.5
BH108_0.2-0.3 BH108_2.9-3.0	09 Jan 2025 09 Jan 2025	1176585 1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
SS01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 SS03	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP101_0.0-0.1 TP101_0.0-0.3	07 Jan 2025 07 Jan 2025	1176585 1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
TP101_0.3-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP102_0.2-0.4	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP102_0.4-0.5 TP102_1.4-1.5	07 Jan 2025 07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP103_0.0-0.1	07 Jan 2025	1176585	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.1	-	-	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	-	<0.5
QA01 QC01	09 Jan 2025 09 Jan 2025	370401 1176585	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1 <0.05	<0.1	<0.5
TP103_0.0-0.3	07 Jan 2025	1176585	-	- 0.05		-		- 40.05				-	-	- 40.05		- 40.05					- 40.05					- 40.05	-	
TP104_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
TP104_0.4-0.5 TP105_0.0-0.1	07 Jan 2025 07 Jan 2025	1176585 1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.5
TP105_0.1-0.6	07 Jan 2025	1176585			-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
TP105_0.2-0.3	07 Jan 2025	1176585	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
TP105_0.4-0.5 TP106_0.1-0.5	07 Jan 2025 07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP106_0.2-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP107_0.0-0.1	07 Jan 2025	1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
TP107_0.0-0.2 TP107_0.2-0.4	07 Jan 2025 07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.1-1.0	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.2-0.3	07 Jan 2025	1176585	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.1	-	-	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05		<0.5
TP108_1.4-1.5 TP109_0.2-0.5	07 Jan 2025 07 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP109_0.4-0.5	07 Jan 2025	1176585	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.5
TP109_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-		┌╌┚	-	-
SS-01_FRAG01 TP105_FRAG01	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG03 TP105_FRAG04	09 Jan 2025 09 Jan 2025	1176585 1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG04 TP107_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

																				Organo	phosphoru	s Pesticides																	
			szinophos methyl	3olstar (Sulprofos)	sromophos-ethyl	chlorfenvinphos	chlorpyrifos	chlorpyrifos-methyl	Coumaphos	Jemeton-O	Demeton-S	Diazinon	Dichlorvos	Jimethoate	Disulfoton	N	thion	thoprop	enitrothion	ensulfothion	enthion	Malathion	Merphos	Vethidathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	horate	irimiphos-methyl	yrazophos	Ronnel	erbufos	etrachlorvinphos	rokuthion	richloronate	enamiphos	Parathion
FO!			mg/kg		mg/kg		mg/kg					mg/kg			mg/kg			mg/kg		g mg/kg													mg/kg		mg/kg				mg/kg
	Direct Contact HSL-C Recreational / Op		0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	2	0.2	2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1
CRC Care 2011 Table A4 D NEPM 2013 Table 1A(1) H	Direct Contact Intrusive Maintenance V	Vorker					250									_						+															\vdash	\longrightarrow	-
NEPM 2013 Table 1A(3) R	ec C Soil HSL for Vapour Intrusion, Sar																																						
NEPM 2013 Table 1B(6) E	ite Specific EIL - Urban Residential and SLs for Urban Res, Fine Soil																																						
NEPM 2013 Table 1B(7) N	Management Limits in Res / Parkland, C	Coarse Soil																																					
Field ID BH101_0.0-0.3	Date 09 Jan 2025	Lab Report Number 1176585	1 -	T -	1 -	T -	Ι.	T -	Ι.	Ι.	Ι.	Ι.	Ι.	Ι.	Ι.	T -	Ι.	Т.	T -	T -	Τ.	T -	Ι.	T -	l .		_			_	l -	_	l -	l .	I -	T -			
BH101_0.2-0.3	09 Jan 2025	1176585	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2
BH102_0.0-0.1 BH102_0.0-0.3	08 Jan 2025 08 Jan 2025	1176585 1176585		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH103_0.0-0.1	08 Jan 2025	1176585	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5
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TP104_0.4-0.5	07 Jan 2025	1176585	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2
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TP108_0.2-0.3	07 Jan 2025	1176585	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2		<0.2	-	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2
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TP109_0.4-0.5	07 Jan 2025	1176585	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2
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TP100_1.4-1.5 07 Jan 2025 1176585 0.020 7.0 90 0.14 0.006 4.3 0.030 83 76 4.4 <0.05 0.09 <0.05 7.1 4.0 1.5 0.010 0.020 0.09 3.4 0.005 0.011 0.13 TP109_0.2-0.5 07 Jan 2025 1176585 - </td <td></td> <td></td> <td></td> <td> -</td> <td> - </td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td> --</td> <td>-</td> <td> -</td> <td>-</td>				 -	-	-	-	-	-	-	-	 - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	 -	-
TP109_0.4-0.5 07 Jan 2025 1176585				0.020	7.0	90	0.14	0.006	4.3	0.030	83	76	<2	4.4	<0.005	0.009	<0.005	7.1	4.0	1.5	0.010	0.020	0.010	0.080	0.090	3.4	0.005	0.011	0.13	0.12
	TP109_0.2-0.5	07 Jan 2025	1176585	_				-		-		_			-		-				-	-	-		_		_	-	-	-
		07 Jan 2025 07 Jan 2025	1176585 1176585	0.020	5.0	63	0.10	0.008	4.3	0.030	- 53	40	<2	5.0	<0.005	0.014	<0.005	- 11	5.1	1.5	<0.005	0.030	<0.005	0.10	0.11	5.5	0.009	0.018	0.080	0.06
SS-01_FRAG01 09 Jan 2025 1176585	SS-01_FRAG01	09 Jan 2025	1176585	-	-	-	-										_													-
TP105_FRAG01				-	-	-	-						-	-	-									-						-
TP105_FRAG02				 -	-	-	-	-	-	-	-	\vdash	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_	_	-
TP105_FRAG04 09 Jan 2025 1176585	TP105_FRAG04	09 Jan 2025	1176585			-	-	-		-	-		-	-	-	-	-		-		-	-	-	-						-
TP107_FRAG01 09 Jan 2025 1176585	TP107_FRAG01	09 Jan 2025	1176585	-		-	-	-	-	-	-		-	-	-	-	-		-		-	-	-	-	L -	-	-			-



Manual Property of the prope							I																	Moisture				
Part					Ionic Balar	nce		SPOCAS		Partic	le Size						Asbestos - Eurofins				Asbesto	os - Envirol	ab	Content	ļ		Other	
Second Content				J	nductivity (1:5 aqueous tract)	(aqueous extract)	3 Extractable Sulfur rrection Factor	lfidic - Acid Reacted Calcium	lfidic - Titratable Sulfidic idity	mm Fraction	mm Fraction	proximate Sample Mass	bestos Sample Dimensions	bestos from ACM in Soil		ganic Fibres - Comment	spirable Fibres - Comment	nthetic Fibres - Comment	bestos Reported Result	. <u>.</u>	tal Asbestos	bestos (ACM >7mm)	bestos in soil (<2mm AF/FA) w/w)	pisture Content	oisture Content (dried @ 3°C)	پر	alysed Material	traneous Material
Second Content				<u> </u>	8 8	<u> </u>	보 8	<u> </u>	<u>8</u> 8	22	7	δ	S .	<u>8</u>	SS SS	, ē	ž.	\$	8	SS.	P	- Asl	₹ <u>%</u>	Σ	Σ̈́ξ	2	- F	<u> </u>
Control Cont	FOI											g	comment	% (w/w)	% (w/w)	Comment	Comment	Comment	Comment	g/kg	g/kg	% (w/v	v) % (w/w	_				
Column C	CRC Care 2011 Table A4 Dire	ect Contact HSL-C Recreational / Ope	n Space	0.5	10	0.1	_	0.003	0.02	0.003	0.003													0.1	_	0.1	0.1	0.1
Column C	CRC Care 2011 Table A4 Dire	ect Contact Intrusive Maintenance W	orker																									
Part																												
Part																												
Part			Public Open Space Aged Soil																									
Control Cont	NEPM 2013 Table 1B(7) Man	nagement Limits in Res / Parkland, Co	parse Soil																									
Control Cont																												
State Stat			· · · · · · · · · · · · · · · · · · ·		_	_	_	_				05.6		0.0000	0.0000	Organia fibro datastad	No trace achestes detected	No.	No ashastas datastad		_	_	_	_				
Second				2.7	13	7.5	-	-	-	-	-	- 030	-	-	-	- Organic ribre detected	NO trace aspestos detected	- NII	NO aspestos detected	-	+ -	+ -	+ -	+ -	11	0.1	-	
Second S	BH102_0.0-0.1				-	-	-	-	- 1	-	- 1	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
March Marc	BH102_0.0-0.3				_		-	-		-	- 1	844	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-	1 -		-	-	-		
14. 14. 14. 14. 14. 14. 14. 14. 14. 14.	BH103_0.0-0.1			 -	+ -	+ -	-	+ -		-	-	-	-	- 0.0000	- 0.0000	-	No transport of the state	-	No orboro	<u> </u>	+-	+ -	-	+ -	4.4	-	-	
Second Control				+ -	+ -	-	 	+ -	·	-	-		-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	<u> </u>	+ -	+ -	+ -	+ -	- 14	-	-	
Control Cont	BH104_0.0-0.1 BH104_0.0-0.4			+ :	1 -	+ :	+ -	+ -	 	-	-		-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	 	+ -	+ -	+ -	+ -	- 14	-	- +	
Second S	BH105_0.0-0.1			-	-	-	1 -	-	- 1	-	- 1	-	-	-	-	-	-	-	-	-	-	-	T -	-	13	-	-	
Mary	BH105_0.2-0.3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	
Page				-	-	-	<u> </u>			-	-	634	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	+ -	+ -	 -	-	-	-		
See				+ -	+ -	-	2.0	0.005	<0.02	93	<0.005	961	-	0.0000	- 0.000	Organic fibro dotoctod	No trace achestes detected	- Nil	No achortos datastad	<u> </u>	+ -	+ -	+ -	+ -	14	-	100	<0.1
Sept. 1955. 1956.				+ :	+ -	+ -	+ -	+ -		-			-		0.0000	- Organic ribre detected	NO trace aspestos detected	- NII	NO aspestos detected	0	<0.1	<0.01	< 0.001	+ -	-	-		
Second Control Contr	QC02			-	1 -	-	<u> </u>	-	1 - 1	-	- 1	853	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-	-	_	-	-	-	- 1	
Second Process Proce	BH106_0.2-0.3			-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	=	-	-	-	-	-	27	-	-	
Second Property Second	BH106_0.4-0.5				-	-	<u> </u>	-	-	-	-	-	-	-	-		-		-	-	-	-	-	-		-	-	
Section Property				16	140	5.7	2.0	0.005	<0.02	90	<0.005	-	-	-	-	-	-	-	-	<u> </u>	+ -	+ -	+ -	+ -	_	0.1	100	<0.1
Second 1988				+ -	+ -	+ -	-	-	-	-	-	949	-	0.0000	0.0000	Organic fibre detected	No trace ashestos detected	Nil	No asbestos detected	-	+ -	+ :	+ :	+ -	9.7	-		
1986 19	BH107_2.9-3.0			-	-	-	2.0	< 0.005	<0.02	49	<0.005	-	-		-	-	-	-	-	-	-	+ -	+ -	-	14	-	100	<0.1
Math	BH108_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	792	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-	-	-	-	-	-	-	
93.	BH108_0.2-0.3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	-	
93 PS 95 PS				+ -	+ -	-	2.0	<0.005	10.00	140	3.9	-	-	- 0000	- 0000	-	- No house selected	- N/I	No selected detected	<u> </u>	+ -	+ -	+ -	-	2.4	-	97	
Section Sect				+ -	+ -	+ -	+ -	-	-	-	-		-							-	+ -	+ :	+ :	+ -	-	-		
95	SS03			-	-	-	-	-	- 1	-	- 1		-			_				-	-	-	-	-	-	-	-	
Page	SS04			-	-	-	-	-	-	-	-		-							-	-	-	-	-	-	-	-	
Fig. 6.145 1798 250 17955 17				٠.	-	-	-	-	-	-	-	741	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	<u> </u>	-	-	<u> </u>	-	-	-	-	
Fig. 1975 1976				+ -	+ -	-	+ -	-	-	-	-	912	-	0.0000	- 0.000	Organic fibro dotoctod	No trace achestes detected	- Nil	No achortos datastad	<u> </u>	+ -	+ -	+ -	+ -	12	-	-	
17900 1790				+ -	 -	-	 -	 -	- 1	-	- 1		-							-	+ -	+ -	+ -	+ -	-	-	- 1	
Proc. 14-15 17-16 17-1	TP102_0.2-0.4		1176585	-	-	-	-	-	- 1	-	- 1	713	-		0.0000		No trace asbestos detected	Nil	No asbestos detected	-	-	-	-	-	-	-	-	
1793 1976	TP102_0.4-0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
0941 0949 0949 0949 0949 0949 0949 0949				_			+ -		_	-	-	-	-	-			-		-	<u> </u>	+ -		+ -	+ -	_	10.12		
Column C				- 13		- 0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	0	<0.1	<0.01	<0.001		- 10	- 1.7		
Final Delta Delt	QC01			-	-	-	-	-	- 1	-	- 1	738	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-	-0.0.		-	17	-	-	
179.5 179.	TP103_0.0-0.3			-	-	-	-	-		-			-							-	-	-	-	-	-	-	-	
1715 1715	TP104_0.0-0.3			 -	+ -	+ -	-	+ -	-	-	-	821		0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	<u> </u>	+-	+-	-	+ -	-	-	-	
1795 1795				+ -	+ -	+ -	+ -	+ -	+ - +	-	 	1 004		0.0000	0.0000	Organic fibro dotoctod	No trace asherter detected	Niil	No achester detected		+-	+-	+ -	+	9.6			
Final Fina	TP105_0.1-0.6			+ -	1 -	+ -	+ -	 	1	-	-		-								+ -	+ -	+ -	+ -		-	- 1	- -
1715 1715	TP105_0.2-0.3	07 Jan 2025	1176585		1 -		<u> </u>	1 -		-				-	-	-	-	<u> </u>	-		<u> </u>				17			- -
Find 1968	TP105_0.4-0.5				1 -	1 -	1 -	1 -	\vdash \Box	-	\vdash		-		-	-	-	-	-	-	-		1	1 -	13	- 1		
Fig. 10				+ -	+ -	+ -	-	 -		-	•		-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	+ -	+ -	+ -	+ -		-	-	
Find				+ -	1 -	+ -	+ -	+ -	+ : +	-	 	-		-	-	-	-	-	-	-	+ -	+ -	+ -	+ -		-		
Final Fina	TP107_0.0-0.1			+ -	1 -	+ -	+ -	+ -	1	-		664	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected		+ -	+ -	+ -	+ -		-	- 1	- -
Final Fina	TP107_0.2-0.4	07 Jan 2025	1176585			-		-		-		745	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-				-	-	-	- -
F108_14-15 07 Jan 2025 176585	TP108_0.1-1.0				1 -	-	1 -	-	1	-	- T	806	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected	-	-	-	-	-	-	-	- 1	
TP109_0.2-0.5 07 Jan 2025 1176585 1176585 1176585 1.7 07 Jan 2025 1176585 1.7 07 Jan 2025 1176585 1.7 08 Jan 2025 1176585 1.7				+ -	+ -	+ -	- 20	-0.005	<0.02	- 40	<0.005	-		-	-	-	-	-	-	-	+ -	+ -	+ -	+ -		-	100	
Figure 175 1				+ -	+ -	+ -	2.0	<0.005	<u.uz< td=""><td>49</td><td><0.005</td><td>853</td><td>-</td><td>0.0000</td><td>0.0000</td><td>Organic fibre detected</td><td>No trace asbestos detected</td><td>Nil</td><td>No asbestos detected</td><td></td><td>+ -</td><td>+ -</td><td>+ -</td><td>+ -</td><td>- 1/</td><td>- 1</td><td>100</td><td>~U.1</td></u.uz<>	49	<0.005	853	-	0.0000	0.0000	Organic fibre detected	No trace asbestos detected	Nil	No asbestos detected		+ -	+ -	+ -	+ -	- 1/	- 1	100	~U.1
TP109_14-1.5 07 Jan 2025 1176585 1.7 65	TP109_0.4-0.5			 -	1 -	1 -	1 -	1 -	1 - 1	-	-	-	-		-		-			<u> </u>	1 -	+ -	-	+ -	17	- 1	- 1	
TP105_FRAG01 09 Jan 2025 1176585	TP109_1.4-1.5		1176585		1 -		2.0	< 0.005	<0.02	59	<0.005		-	-	-	-	-	-	-		<u> </u>					-	100	<0.1
TP105_FRAGO2	SS-01_FRAG01				1 -	-	-	-	↓ - T	-	├ T						-	-	·	-	-	-	-	-	-	- 1	- 1	
TP105_FRAG03 09 Jan 2025 1176585 -				+ -	+ -	+ -	+ -	1 -	+ - +	-	 					-	-	-	-	<u> </u>	+ -	+ -	+ -	+ -	-	-	-	- + -
TP105_FRAG04 09 Jan 2025 1176585 26 38x32x6 0.000 0.0000				+ -	+ -	+ -	+ -	+ -	+ - +	-	 					-	-	-		 	+ -	+ -	+ -	+-			- +	- + -
TP107_FRAG01 09 Jan 2025 1176585 12 39x35x4 0.0000 0.0000 sotile, amosite and crocidolite asbestos dete	TP105_FRAG04				1 -		<u> </u>	<u> </u>		-	<u> </u>												1 -		L			
	TP107_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	12	39x35x4	0.0000	0.0000	-	-	-	ysotile, amosite and crocidolite asbestos dete	-	-	-	-	-	-	-	-	

			Field AQ Results					ory Result	Combin	ed Result		NEPC HSI	L-C	
AQ ID	Depth Interval	Stratum	AQ Weight	ACM Weight	Asbestos Weight 1	w/w%	ACM	AF/FA	ACM	AF/FA	Visible asbestos in surface	Bonded ACM	AF/FA	Result
			grams	grams	grams		w/w%	w/w%	% w/w	w/w%	soil?	w/w%	w/w%	
		Boys and Gi	rl Redevelopm	ent Site										
TP101	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP101	0.3-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP102	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP103	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP104	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP105	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP105	0.1-0.6	Subsurface	20000	164	24.6	0.123	0.0	0.000	0.123	0.000	No	0.02	0.001	HSL Exceedance
TP106	0.1-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP107	0.0-0.2	Surface	20000	12	1.8	0.009	0.0	0.000	0.009	0.000	Yes	0.02	0.001	HSL Exceedance
TP107	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP108	0.1-1.0	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP109	0.2-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH101	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH102	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH103	0.1-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH104	0.0-0.4	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH105	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH106	0.0-0.4	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH107	0.1-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
BH108	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
						Liverpool Bo	ys High Sch	ool - Block A C	rawl Space					
SS01	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS02	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS03	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS04	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS05	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance

Table D - Acid Sulfate Soil Sample Results
Project Name: 68150 Liverpool HS DGI + RAP, 18 Forbes Street , Meinhardt



Soil Sample ID	рНксі	рН _{ох}	TAA (mol H+/tonne)	TPA (mol H ⁺ /tonne)	TSA (mol H+/tonne)	S _{POS} %	a-ANC _E (mol H ⁺ /tonne)	SPOCAS-Net Acidity (mol H+/tonne)	Liming Rate
ASSMAC Assessm (1 - 1000 tonne disturbe		ies		62	62	>0.1			
BH105_2.9-3.0	5.0	5.4	21	<2	<2	0.010	N/A	27	2
BH106_2.9-3.0	4.3	5.1	56	42	<2	0.008	N/A	68	5
BH107_2.9-3.0	4.1	4.9	69	56	<2	0.010	N/A	82	6
BH108_2.9-3.0	5.9	6.3	8	<2	<2	<0.005	N/A	<10	1
TP108_1.4-1.5	4.3	4.4	83	76	<2	0.006	N/A	90	7
TP109 1.4-1.5	4.3	5.0	53	40	<2	0.008	N/A	63	5

Table 1: Analytical Summary Tables Liverpool Boys and Girls High School



oof	fey 🤊			Ashastas				Heere B	4-4-1				I Income											OCD											
COI	iev -			Asbestos				Heavy N	vietai		T		Inorgani	C										ОСР			Т	\Box							
	- J			Asbetos	Arsenic	Cadmium	Chromium (III+VI)	Hexavalent Chromium Copper		Lead	Nickel	Zinc	Moisture Content (dried @ 103°C)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic		4,4-DDE a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC chlordane	д-внс	aaa	DDT DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
EQL				g/kg	mg/kg 2	mg/kg 0.4		mg/kg mg/l	_	ng/kg mg/kg 5 0.1		_	1				g/kg mg/kg .05 0.05			mg/kg mg/l	kg mg/kg m . 0.05 0												mg/kg 0.05		
	Low Desnity) Direct Cont	act			2	0.4	3	3 3		5 0.1	3	3	1	0.1	. 0.1	. 0.	.03 0.03	0.03	0.03	0.03 0.1	0.05	.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.03	0.03
HSL-D Commercial/	Industrial Intrusive Mair	ntenance Worker																																	
NEPM 2013 Table 1					100	20	100^	100 600	0 :	300 40	400	0 7400							6	50			240							10		6		10	300
	A(3) Res A/B Soil HSL for				100		250	220	1	1100	25/	0 400											180												
	ban residential and publ .B(6) ESLs for Urban Res,		II		100		250	220) 1	1100	350	0 400		-								-	180												
	.B(7) Management Limit		arse Soil																																
	. ,	, ,																																	
Field_ID		ime Matrix_TYPE	Lab_Report_Number		1 .	1 .							1 .																						
A08507	02-Oct-19	SOIL	681511	NAD	12	_	_	- 13	-	23 <0.1	_		12	-	-	_		-	-		-	-		-	-	-	-	-	-	-	-	-	-		
A08508 A08509	02-Oct-19 02-Oct-19	SOIL	681511 681511	NAD NAD	9.1	<0.4	30 23	- 110 - 52	-	95 0.2 88 <0.1	_		9.7	+ :	-	_		-	-			-		-	-	-	-	-	-	-	-	-	-	-	-
A08526	02-Oct-19	SOIL	681511	NAD	14	<0.4	26	- 28	-	23 0.4			6.5	٠.	-	_		-	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-
A08570	02-Oct-19	SOIL	681511	NAD	22	0.6	34	- 410) :	140 0.7	12	2 270	7.3	-	-			-	-		-	-		- 1	-	-	-	-	-	-	-	-	-	- 1	
BH17_0.1-0.2	03-Oct-19	SOIL	681511	NAD	13	<0.4	44	- 39	-	120 0.2	_	_	14	<0.1	_	_	.05 <0.05					_			<0.05	_		_	_	<0.05	<0.05		<0.05	<0.05	<0.05
BH18_0.1-0.2	03-Oct-19	SOIL	681511	NAD	8.1	<0.4	76	- 23	-	38 0.1	_	_	9.7	<0.1	1 <0.:	1 <0	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	0.05 <0.05		<0.05	_	_		_	<0.05	_				<0.05
BH18_0.4-0.5 BH19_0.1-0.2	03-Oct-19 03-Oct-19	SOIL	681511 681511	-	6.3 7.3	<0.4	28 42	- 14	-	23 <0.1 17 <0.1	_	_	24	<0.1	1 20	1 <0	.05 <0.05		- 5 <0.05	<0.05 <0.	1 <0.05 <0	- 0.05 <	 0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	- <0.05	<0.05
BH19_0.5-0.6	03-Oct-19	SOIL	681511	-	4.3	<0.4	20	- 7.9	-	28 <0.1	_	_	19	- 10.2	- 1	_		- 10.03				-		-	-	-	-	-	-	-	-	-	-	-	-
BH20_0.1-0.2	03-Oct-19	SOIL	681511	-	7.8	<0.4	45	- 38	-	67 <0.1	_	_	19	<0.1	1 <0.:	1 <0	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH21_0.2-0.3	04-Oct-19	SOIL	681511	NAD	12	<0.4	22	- 21		59 0.1	6.2	2 62	18	<0.1	1 <0.:	1 <0	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH22_0.0-0.1	03-Oct-19	SOIL	681511	NAD	24	<0.4	39	- 10	-	30 <0.1	_	_	12	<0.1	_	_	.05 <0.05	<0.05	<0.05	<0.05 <0.			0.05 <0.05		<0.05	_	_	_		<0.05	_				
BH22_0.4-0.5	03-Oct-19	SOIL	681511 681511	-	8.3	<0.4	56 22	- 14	-	22 <0.1 18 <0.1	_		26		_	_		- 5 <0.05	- 5 <0.05	<0.05 <0.	- 1 <0.05 <0		 0.05 <0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		O OE	- -0.0E	- O OE	- 0.05
BH23_0.3-0.4 BH24_0.1-0.2	03-Oct-19 04-Oct-19	SOIL	681511	NAD	10	<0.4	18	- 12	-	86 0.4			16 26	<0.1 <0.1		_	.05 <0.05					_	0.05 < 0.05		<0.05	<0.05		_	_	<0.05	<0.05	<0.05 <0.05			<0.05
BH24_0.4-0.5	04-Oct-19	SOIL	681511	-	-	-	-		\rightarrow		 -	_	24	<0.1		_	.05 <0.05					_	0.05 < 0.05		<0.05			_	_	<0.05	<0.05	<0.05			<0.05
BH25_0.1-0.2	03-Oct-19	SOIL	681511	-	2.4	<0.4	120	- 33		<5 <0.1	120	0 66	9.1	<0.1	1 <0.:	1 <0	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH25_0.4-0.5	03-Oct-19	SOIL	681511	-	7.4	<0.4		- 7.6	-	15 <0.1	_	_	12	-	-	_		-	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-
BH26_0.1-0.2	03-Oct-19	SOIL	681511	NAD	2.5	<0.4	150	<1 33	-	10 <0.1	_	_	17	<0.1	_	_	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	_		<0.05	_	_	_		<0.05	_	<0.05	<0.05	<0.05	
BH26_0.7-0.8 BH27_0.2-0.3	03-Oct-19 03-Oct-19	SOIL	681511 681511	- NAD	7.4	<0.4	19 25	- 12	-	18 <0.1 39 0.2	_	_	20 16	<0.1	1 <0.:	_	.05 <0.05	- 5 <0.05	- 5 <0.05	<0.05 <0.	1 <0.05 <0	0.05 <	 0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH27 0.6-0.7	03-Oct-19	SOIL	681511	-	-	-	-		\rightarrow		-	_	27	<0.1		_	.05 <0.05					_	0.05 < 0.05			_		_	_		_			_	
BH28_0.2-0.3	03-Oct-19	SOIL	681511	-	5.7	<0.4	22	- 15		54 <0.1	12	2 280	24	<0.1		_				<0.05 <0.		_				_		_			_			_	<0.05
TP07_0.0-0.1	03-Oct-19	SOIL	681511	NAD	230	<0.4		- 12	\rightarrow	7 0.1		_	17			-				<0.05 <0.															
TP07_0.4-0.5	03-Oct-19	SOIL	681511	-	-		-		_			_	18	<0.1	_	_	.05 <0.05	<0.05		<0.05 <0.		_	_	_			_	+	_		_				
TP08_0.0-0.1 TP09 0.0-0.1	03-Oct-19 03-Oct-19	SOIL	683170 683170	-	55 16	<0.4	_	- 7.7	-	12 <0.1 20 <0.1	_	5 12	11 15	+:	-	_		-	-			_		_	-	-	-	+	-	-	-	-	-	-	-
TP09_0.4-0.5	03-Oct-19	SOIL	683170	-	6.3	<0.4	_	- 6.8	-	14 <0.1	_		15	+ -	_	_		_	-			_			-	-		_	_	-	-	-	-	-	-
TP10_0.0-0.1	03-Oct-19	SOIL	681511	-	20	<0.4	10	- 14		24 <0.1	_	1 45	26	<0.1	1 <0.:	1 <0	.05 <0.05	<0.05	<0.05	<0.05 <0.	1 <0.05 <0	0.05 <	0.05 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP10_0.9-1.0	03-Oct-19	SOIL	681511	-	5.8	<0.4	_	- 9.8	\rightarrow	18 <0.1	_	9	17	-	-	_		-	-					_	-	-	-	_	-	-	-	-	-	-	-
TP11_0.0-0.1	04-Oct-19	SOIL	681511	NAD	5.2	_	7.2		\rightarrow	23 <0.1	_	_	8.7	_	_	_	_	_		<0.05 <0.		_									_				
TP12_0.0-0.1 TP12_0.4-0.5	04-Oct-19 04-Oct-19	SOIL	681511 681511	-	56 5.1	<0.4	<5 23		-	11 <0.1 16 <0.1	_	9 15 8 13	16 20	<0.1	1 <0.:	_	.05 <0.05	<0.05	<0.05	<0.05 <0.			- <0.05		<0.05	<0.05	_		_	<0.05	<0.05	<0.05			<0.05
TP13 0.0-0.1	04-Oct-19	SOIL	681511	NAD	3.7	_	5.8		-	17 <0.1	_	7 19	17	<0.1		_				<0.05 <0.								_							
TP13_0.4-0.5	04-Oct-19	SOIL	681511	-	4.1	<0.4	_	- 10	\rightarrow	19 <0.1	_	1 11	16	-	-	_		-	-			_			-	-	-	+	-	-	-	-	-		-
TP14_0.0-0.1	04-Oct-19	SOIL	681511	-	<2	<0.4	_	- <5		11 <0.1	_	5 11	7			_				<0.05 <0.				_											
TP15_0.0-0.1	04-Oct-19	SOIL	681511	NAD	3	<0.4	_		\rightarrow	16 <0.1	_	20	7.3	_		_	_	_		<0.05 <0.		_	_				_	+	_		_				
TP15_0.4-0.5	04-Oct-19	SOIL	681511	-	6.4	_	21	- <5	-	27 <0.1	_	8	8.4	-	-	+		-	-			_		_	-	-	+	_	_		-	-	-		-
TP16_0.0-0.1 TP29 0.0-0.1	04-Oct-19 04-Oct-19	SOIL SOIL	681511 681511	- NAD	5.9 8.6	_	13 20	- 11 - 72	-	26 <0.1 150 <0.1	_	38 38	13 12	-01	1 20	1 -0				<0.05 <0.			 0.05 <0.05	_	- <0.05	- <0.05		_	_	- <0.05	<0.05	<0.05		- <0.05	- <0.05
TP29_0.0-0.1	04-Oct-19	SOIL	681511	- NAD	15	_	28		-	25 <0.1	_	_	8.6	- 1		_		-	-						-	_			_		-	-		-	
TP30_0.0-0.1	04-Oct-19	SOIL	681511	NAD		<0.4	_		\rightarrow	18 <0.1	_	_	17		_	1 <0	.05 <0.05	<0.05		<0.05 <0.			_	_		_		_	_		_				
_		· · · · · · · · · · · · · · · · · · ·		-		•	•			· ·																	$\overline{}$	$\overline{}$						$\overline{}$	

Table 1: Analytical Summary Tables Liverpool Boys and Girls High School



cof	ffey 🤊			\top															ОРР													=	\mp	
	-		mg/Y						Chlorpyrifos-methyl gy/8m gy/8m (Conmaphos																									57-93 mg/kg mg/kg
EQL	ow Dosnity) Direct Contac		1	0.2	0.2	0.2	0.2	0.2	0.2 2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2 0.2	2 0.2	0.2	0.2	0.2	0.2 0.2	0.2	2	0.2	2 0.	2 0.2	0.2	0.2	0.2	0.2	0.2	0.2	20 50
	ow Desnity) Direct Contac Industrial Intrusive Mainte																																	3300 62000
NEPM 2013 Table 1/			20					160																										
NEPM 2013 Table 1/	A(3) Res A/B Soil HSL for V	/apour Intrusion, Sand 0-1m																																
	oan residential and public																																	
	B(6) ESLs for Urban Res, Co			-																														1000
INEPINI 2013 Table 11	b(7) Management Limits ii	n Res / Parkland, Coarse Soil																																1000
Field_ID	Sampled_Date_Tim	ne Matrix_TYPE Lab_Repor	t_Number																															
A08507	02-Oct-19	SOIL 681511	-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-		-	-	-	- -	-	-	-	-	-	-	-	<20 <50
A08508	02-Oct-19	SOIL 681511	-	<u> </u>	-	-	-	-		<u> </u>	-	-	-	-		-		_	_	-	-		-	-	-	- -	-	-	-		-	-		<20 <50
A08509 A08526	02-Oct-19 02-Oct-19	SOIL 681511 SOIL 681511	-	-	-	-	-	-		-	-	-	-	-		-		-	-	-	-		-	-	-	- -	-	-	-	-	-	-	-+	<20 <50 <20 <50
A08570	02-Oct-19	SOIL 681511	-	+:	-	-	-	-		+ -	+ -	-	-	-	-	-		+ -	+ -	-	-		-	-	-		-	+ -	-		-			<20 <50
BH17_0.1-0.2	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2		<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0.	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
BH18_0.1-0.2	03-Oct-19	SOIL 681511	<1			<0.2	<0.2	<0.2	<0.2 <2			<0.2	$\overline{}$			_	<0.2 <0.		_	<0.2	<0.2	<0.2 <0.	_			2 <0	_		<0.2		_	_	_	<20 <50
BH18_0.4-0.5	03-Oct-19	SOIL 681511	-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-		-	-	-	- -	-	-	-	- 1	-	-	-	<20 <50
BH19_0.1-0.2	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0.	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
BH19_0.5-0.6	03-Oct-19	SOIL 681511	-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-		-	-	-		-	-	-		-	-	-	<20 <50
BH20_0.1-0.2 BH21_0.2-0.3	03-Oct-19 04-Oct-19	SOIL 681511 SOIL 681511	<1			<0.2	<0.2	<0.2	<0.2 <2 <0.2 <2	_	<0.2	<0.2	_	_		_	<0.2 <0.3	_		<0.2	<0.2	<0.2 <0.				2 <0	_		<0.2	_	<0.2		_	<20 <50 <20 <50
BH22_0.0-0.1	03-Oct-19	SOIL 681511	<1			<0.2	<0.2	<0.2	<0.2 <2			<0.2	$\overline{}$			_	<0.2 <0.3	_	_	<0.2	<0.2	<0.2 <0.	_			2 <0	_		<0.2		_	_	_	<20 <50
BH22_0.4-0.5	03-Oct-19	SOIL 681511		-	-	-	-	-		-	-	-	-	-	-	-		- 101.	- 1012	-	-			-	-			-	-	-	-	-	-	<20 <50
BH23_0.3-0.4	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0.	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
BH24_0.1-0.2	04-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
BH24_0.4-0.5	04-Oct-19	SOIL 681511	<1	_		<0.2	<0.2	<0.2	<0.2 <2	_		<0.2	$\overline{}$			_	<0.2 <0.			<0.2	<0.2	<0.2 <0.				2 <0	_		<0.2		_		<0.2	
BH25_0.1-0.2	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.		2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2		<0.2	2 <0		_	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
BH25_0.4-0.5 BH26_0.1-0.2	03-Oct-19 03-Oct-19	SOIL 681511 SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.3	_	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50 <20 <50
BH26_0.7-0.8	03-Oct-19	SOIL 681511	-	- 40.2	- 10.2		-	-		- 10.2		-	-	-	-	-		2 (0.2	- 10.2	-	-		- 10.2	-	-		- 10.2		-	- 1	-	-	_	<20 <50
BH27_0.2-0.3	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	:0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0.	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	_	<20 <50
BH27_0.6-0.7	03-Oct-19	SOIL 681511	<1					<0.2	<0.2 <2		<0.2	<0.2	<0.2				<0.2 <0.		2 <0.2			<0.2 <0.				2 <0							<0.2	
BH28_0.2-0.3	03-Oct-19	SOIL 681511	<1																															<20 <50
TP07_0.0-0.1	03-Oct-19	SOIL 681511	<1		_		+	<0.2								_		_				<0.2 <0.			<0.2									<20 <50
TP07_0.4-0.5 TP08_0.0-0.1	03-Oct-19 03-Oct-19	SOIL 681511 SOIL 683170	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2		<0.2	<0.2	- <0.2	- <0.2		-		_		<0.2	- <0.2	<0.2 <0.			<0.2				<0.2	- <0.2	- <0.2	<0.2	_	 <20 <50
TP09 0.0-0.1	03-Oct-19	SOIL 683170		+ :	+-	-	-	-			+-	-	-	-		-		_		+	-		_				_		-	-	-	-	_	<20 <50
TP09_0.4-0.5	03-Oct-19	SOIL 683170	-	1 -	-	-	-	- 1			1 -	-	-	-		-		_		-	-		_			- -			-	-	-	_		<20 <50
TP10_0.0-0.1	03-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	0.2	<0.2 <0.	2 <0.2	2 <0.2	<0.2	<0.2	<0.2 <0.	2 <0.2	<2	<0.2	2 <0	.2 <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20 <50
TP10_0.9-1.0	03-Oct-19	SOIL 681511	-	-	-	-	-	-		_	-	-	-	-		-				-	-			-					-	-	-	-		<20 <50
TP11_0.0-0.1	04-Oct-19	SOIL 681511	<1				<0.2						$\overline{}$		<0.2 <	_		_	2 <0.2		_	<0.2 <0.	_			_	.2 <0.2		_		_	<0.2		<20 <50
TP12_0.0-0.1	04-Oct-19	SOIL 681511	<1	<0.2		<0.2	_					_	_			_						<0.2 <0.			<0.2	_	_		_		_			<20 <50
TP12_0.4-0.5 TP13 0.0-0.1	04-Oct-19 04-Oct-19	SOIL 681511 SOIL 681511	<1		<0.2	<0.2	<0.2	<0.2	 <0.2 <2	_	<0.2	<0.2	<0.2	- <0.2		- 0.2	<0.2 <0.2	_	_	_	<0.2	<0.2 <0.	_		<0.2	 2 <0		_	<0.2	<0.2	- <0.2	- <0.2	_	<20 <50 <20 <50
TP13_0.0-0.1	04-Oct-19	SOIL 681511	-	- 10.2	- 10.2						- 10.2		-	-		-				- \0.2	-			-			_	_	-		-	-		<20 <50
TP14_0.0-0.1	04-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2		_		<0.2				_		_	_			<0.2 <0.	_	_	<0.2	_		_		<0.2			_	<20 <50
TP15_0.0-0.1	04-Oct-19	SOIL 681511	<1	<0.2	<0.2	<0.2	<0.2	<0.2								_	<0.2 <0.	_				<0.2 <0.	_		<0.2		.2 <0.2				<0.2			<20 <50
TP15_0.4-0.5	04-Oct-19	SOIL 681511	-	-	-	-	-	-			-	-	-	-		-		_		-	-		-			- -	_		-	-	-	-	_	<20 <50
TP16_0.0-0.1	04-Oct-19	SOIL 681511	-	-	-	-	-	-		_	-	-	-	-		-		_	_	-	-		_	-			_	_	-	-	-	-	_	<20 <50
TP29_0.0-0.1	04-Oct-19	SOIL 681511	<1	_	<0.2		<0.2					+	_	_		_		_		_		<0.2 <0.			<0.2	_	_		_		_			<20 <50
TP29_0.4-0.5 TP30_0.0-0.1	04-Oct-19 04-Oct-19	SOIL 681511 SOIL 681511	<1	- <0.2	-02	- <0.2	<0.2	<0.2	<0.2 <2	_	<0.2	- <0.2				- 10.2	<0.2 <0.2	_	_	_	- <0.2	<0.2 <0.2	_	_		 2 <0		_		<0.2	- <0.2		_	<20 <50 <20 <50
11.30_0.0.0.1	04-000-13		1	\U.Z	- \0.2	1 ~0.2	1 ~0.2	\U.Z	-0.2 42	\0.2	1 ~0.2	\0.2	~U.Z	-0.2	-0.2	·U.2	-0.2 -0	_ \0.4	- \0.2	\0.2	\U.Z	-0.2 -0.	_ \0.2	\ \Z	\U.Z '	_ \	\0.2	\ \0.2	\U.Z	~U.Z	\U.Z	-0.2	-0.2	-20 \30

Table 1: Analytical Summary Tables Liverpool Boys and Girls High School



September 1			_	_				_	_	_						АН	F														ganic	Or						ev	coff
Part						cresol)								(Zer						€	(Half)								thalene)									. ,	0011
Property Property	4-Dimethylphenol 6-Dichlorophenol -Chlorophenol -Methylphenol	4-Dichlorophenol	4,6-Trichlorophenol	4,5-Trichlorophenol	4-Dinitrophenol	i è l	AHs (Sum of total)	rene	henanthrene	aphthalene	ıdeno(1,2,3-c,d)pyrene	uorene	uoranthene	rene TEQ	ibenz(a,h)anthracene	hrysene	5	enzo(b+j)fluoranthene	enzo(g,h,i)perylene	rene TE	pyrene TEQ	enzo(a) pyrene	enz(a)anthracene	nthracene	cenaphthylene	cenaphthene		aphthalene	(F2 minus	10-C40 (Sum of total)	5-C10	34-C40		16-C34					
Column C	<u>ゎ゙ゖ゚ゖ゚ゟ゚ゖ゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚</u>	mg/kg mg	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	g mg/kg				-		mg/k	Mg/kg	mg/kg	z mg/kg	ن mg/kg	ng/kg	ng/kg r	ng/kg	kg m	ن mg/kg					
	0.5 0.5 0.5 0.2																																	_					QL
Part																											4400	1400				300	0 6	4500			Contact	Desnity) Direct (SL-A Residential (Low
Part																											82000	29000				20000	00 12	85000		e Worker			
Part							300			2				3						3	3						45	2	110							r Intrusion Sand 0.1m			
Part																											43	3	110										
Product Prod																						0.7					180		120			5600	0 5	1300		· · · · · · · · · · · · · · · · · · ·	· · · · ·		
March																															700	0000	0 10	2500		/ Parkland, Coarse Soil	Limits in Res	Management Li	EPM 2013 Table 1B(7
March Marc																																				Market Type		6 1 5 ·	- Lilian
	<0.5 <0.5 <0.5 <0.5	<0.5 <0	-1 T		-5 T	<0.4	<∩ ⊑	∠ 0 ⊑	-0 F	<0 F	<0 5 1	<n =="" td="" <=""><td><n =="" td="" <=""><td><0 =</td><td><0 s</td><td>∠∩ ⊑</td><td>∠∩ ⊑</td><td><0 €</td><td>∠∩ F</td><td>1 2</td><td>n e</td><td>5 -OF</td><td>∠∩ □</td><td>-n =</td><td>-n =</td><td>Z0 5</td><td><20</td><td><∩ ⊑</td><td><50 J</td><td>100</td><td><20</td><td><100</td><td>n</td><td><100</td><td>ort_Number</td><td></td><td></td><td>-</td><td>_</td></n></td></n>	<n =="" td="" <=""><td><0 =</td><td><0 s</td><td>∠∩ ⊑</td><td>∠∩ ⊑</td><td><0 €</td><td>∠∩ F</td><td>1 2</td><td>n e</td><td>5 -OF</td><td>∠∩ □</td><td>-n =</td><td>-n =</td><td>Z0 5</td><td><20</td><td><∩ ⊑</td><td><50 J</td><td>100</td><td><20</td><td><100</td><td>n</td><td><100</td><td>ort_Number</td><td></td><td></td><td>-</td><td>_</td></n>	<0 =	<0 s	∠ ∩ ⊑	∠ ∩ ⊑	<0 €	∠ ∩ F	1 2	n e	5 -OF	∠ ∩ □	-n =	-n =	Z0 5	<20	<∩ ⊑	<50 J	100	<20	<100	n	<100	ort_Number			-	_
March Marc	<0.5 <0.5 <0.5 <0.5 <0.		-		_	-		_	_	_	_	_		_		_		+		_	_					_			_	_			_	_					
	<0.5 <0.5 <0.5 <0.				_	-		_	_	_	_	_		_		_		+					_			_	_		_	_		_		_					
HI HI HI HI HI HI HI HI	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5		<0.5		_	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2			_		<0.5	<0.5	<20	<0.5	<50	<100	<20	<100	0 <	<100		681511	9	02-Oct-19	
HHIRINGA 10 10 10 10 10 10 10 1	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	-	<0.5	_	<0.5	_	<0.5	_	<0.5	_	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	5 <0.5	<0.5			_	<20		_	_			_	_				02-Oct-19	
HH HH HH HH HH HH HH H	<0.5 <0.5 <0.5 <0.		-		_	-		_	_	_	_	_		_		_		+					_			_	_		_	_		_	_	_					
HH	<0.5 <0.5 <0.5 <0.					-		_	_	_	_	_		_		_		+								_	_		_	_		_		_					
Helly 0.5 0.6 Fig. 1.5 0.5 Fig. 1.5 0.5 0.5 0.5 0.5 Fig. 1.5 0.5 0.5 0.5 0.5 Fig. 1.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Fig. 1.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0	<0.5 <0.5 <0.5 <0. <0.5 <0.5 <0.5 <0.				_	-			_	_	_	_	_	_		_		+			_		_			_	_		_	_		_		_					
Part Data	<0.5 <0.5 <0.5 <0.5 <0.				_	-			_	_	_	_	_	_				_			_		_			_			_	_			_	_					
Figure Sing Sing	<0.5 <0.5 <0.5 <0.		-		_	-		_	_	_	_	_	_	_				_			_		_			_			_	_		_	_	_					
Heat Column Heat Heat	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	5 <0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<50	<100	<20	<100	0 <	<100		681511	9	04-Oct-19	H21_0.2-0.3
RH23_0.3-0.4 03-Oct-19 SOIL 681511 C100 C100 C20 C100	<0.5 <0.5 <0.5 <0.		<1	<1	<5	-		_	_	_	_	_		_		_		_								_	_		_	_		_	_	_					
Philar Different Differe	<0.5 <0.5 <0.5 <0.				_	-		_	_	_	_	_	_	_				_			_		_			_			_	_		_	_	_					
BHZ_0.04.05 O4-Oct-19 SOIL 681511 C10 C10	<0.5 <0.5 <0.5 <0.		-		_	-			_	_	_	_	_	_				_			_		_			_			_	_		_	_	_					
BH25_0.4-0.5 G3-0ct-19 SOIL G81511 C100 C400 C40 C	<0.5 <0.5 <0.5 <0.	- 40.5	~1	~1		- <0.4	<0.5	<0.5	<0.5	<0.5	<0.5	- <0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	- <0.5	<0.5	<0.5	_	<0.5	- <20	<0.5	- <50	- 100	- 20	-100	_						
BHZ_0.4-0.5 O3-Oct-19 SOIL 681511 C100 C100 C20 C100 C20 C100 C20	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	5 <0.5	<0.5	<0.5		<0.5	<20	<0.5	<50	530	<20	310	_						
RH26_0.7-0.8 03-0ct-19 SOIL 681511 C10 C10 C20 C10 C20 C10 C20 C20	<0.5 <0.5 <0.5 <0.				_	-			_	_	_	_	_	_				_		_	_		_			_	_		_	_		_		_					
BH2T_0.2-0.3 03-Oct-19 SOIL 681511 < 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	5 <0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<50	130	<20	130	0 1	<100		681511	9	03-Oct-19	H26_0.1-0.2
BH2_06-0.7 03-0ct-19 SOIL 681511	<0.5 <0.5 <0.5 <0.		-		_	-		_	_	_	_	_	_	_				_			_		_			_			_	_		_		_					
BHZ_0.2-0.3 03-Oct-19 SOIL 681511	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	_		_	_	_		_	<0.5	<20	<0.5	<50	<100	<20	:100	0 <	<100					
FPOT_0.0-0.1 G3-Oct-19 SOIL G81511 G81511 G10 G10 G20 G10 G50 G.5	<0.5 <0.5 <0.5 <0.	<0.5	-	- <1	- <5	<0.4	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5								<0.5	<20	<0.5	- <50	100	<20	- +	0 -	<100					
FP07_04-0.5 03-Oct-19 SOIL 681511 -<	<0.5 <0.5 <0.5 <0.5 <0.				_	-		_					-		_		_						_				-		_	-			_	_					
TP09_0.0-0.1 03-Oct-19 SOIL 683170 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 </td <td></td> <td></td> <td> </td> <td>†</td> <td> 1</td> <td> </td> <td>-</td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td> </td> <td></td> <td></td> <td></td> <td><u> </u></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td>_</td> <td>- 1</td> <td></td> <td>- </td> <td></td> <td>L -</td> <td></td> <td></td> <td></td> <td></td> <td></td>				†	1		-	_	_								<u> </u>		_	_					_	_			_	- 1		-		L -					
FP9_04-0.5 03-Oct-19 SOIL 683170 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <td><0.5 <0.5 <0.5 <0.</td> <td></td> <td>$\overline{}$</td> <td><1</td> <td><5</td> <td><0.4</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><0.5</td> <td>_</td> <td></td> <td></td> <td></td> <td>_</td> <td><0.5</td> <td>1.2</td> <td>_</td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td>	<0.5 <0.5 <0.5 <0.		$\overline{}$	<1	<5	<0.4	_						<0.5	_				_	<0.5	1.2	_		_			_			_	_			_	_					
FP10_0.0-0.1 03-Oct-19 SOIL 681511 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 </td <td><0.5 <0.5 <0.5 <0.</td> <td></td> <td>-</td> <td></td> <td>_</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td>\rightarrow</td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	<0.5 <0.5 <0.5 <0.		-		_	-							_	_				_		_			_			_			_	\rightarrow		_	_						
FP10_0.9-1.0 03-Oct-19 SOIL 681511 <100 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 <20 <100 </td <td><0.5 <0.5 <0.5 <0.</td> <td></td> <td></td> <td></td> <td>_</td> <td>-</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td>	<0.5 <0.5 <0.5 <0.				_	-	_							_				_		_			_			_	_		_	_			_	_					
TP11_0.0-0.1 04-Oct-19 SOIL 681511 <100 <100 <20 <100 <50 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.	<0.5 <0.5 <0.5 <0. <0.5 <0.5 <0.5 <0.		-		_	-	_						-			_					_		_			_	_		_	_			_	_					
	<0.5 <0.5 <0.5 <0.5 <0.				_	-	_	_						_		_		_					_		_	_	_		_	_			_	_					
	<0.5 <0.5 <0.5 <0.		$\overline{}$		_	-	_						_	_							_		_			_			_	_			_	_					
TP12_0.4-0.5 04-Oct-19 SOIL 681511 <100 <100 <20 <100 <50 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	_	_	_	_	_	_	_	_				_	<0.5	1.2	0.6	5 <0.5	<0.5	<0.5	<0.5	<0.5			_	_		:100	_	_				04-Oct-19	
	<0.5 <0.5 <0.5 <0.		\rightarrow		_	-	_							_		_		_					_			_	_		_	_			_	_					
TP13_0.4-0.5	<0.5 <0.5 <0.5 <0.		-		_	-	_							_		_		_			_		_			_			_	_			_	_					
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	<0.5 <0.5 <0.5 <0. <0.5 <0.5 <0.5 <0.		-		_	-	_	_	_	_	_	_	_	_				_			_		_			_			_	_		_	_						
TP16_0.0-0.1	<0.5 <0.5 <0.5 <0.5 <0.				_	-	_							_		_	_	_					_		_	_			_	_			_	_					
	<0.5 <0.5 <0.5 <0.		-		_	-												_			_		_						_	_		_	_	_					
TP29_0.4-0.5 04-Oct-19 SOIL 681511 <100 <100 <100 <20 <100 <50 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.	<0.5 <0.5 <0.5 <0.			<1	<5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	5 <0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<50	<100	<20	100	0 <	<100		681511	9	04-Oct-19	
TP30_0.0-0.1 04-Oct-19 SOIL 681511 < 100 <100 <100 <100 <100 <100 <100	<0.5 <0.5 <0.5 <0.	<0.5 <0	<1	<1	<5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<50	<100	<20 ·	:100	0 <	<100		681511 681511	9	04-Oct-19	P30_0.0-0.1



				SV	ос											Т	PH				Vol	atile		
					lenol	/I phenol		lo:					iated)	ogenated)				(
				2-Nitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl	4-Nitrophenol	4-chloro-3-methylphenol	Dinoseb	Pentachlorophenol	Phenol	Tetrachlorophenols	Phenols (Total Halogenated)	Phenols (Total Non Halogenated)	C10-C14	C15-C28	C29-C36	+C10-C36 (Sum of total)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total
FOL				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
EQL HSL-A Residential (Lov	w Desnity) Direct Contact			1	5	20	5	1	20	1	0.5	10	1	20	20	50	50	50	0.1 100	0.1 450	0.1 14000	0.2	0.1	0.3 12000
	dustrial Intrusive Maintena	nce Worker																	1100		120000			130000
NEPM 2013 Table 1A(• •									100	3000													
	(3) Res A/B Soil HSL for Vaporn in residential and public opern		m																0.5	55	160			40
	(6) ESLs for Urban Res, Coars																		50	70	85			105
	(7) Management Limits in Re		oil																					
Eigld ID	Samulad Data Time	Matrix TVDE	Lah Danart Number																					
Field_ID A08507	Sampled_Date_Time 02-Oct-19	Matrix_TYPE SOIL	Lab_Report_Number 681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08508	02-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08509	02-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	57	64	121	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08526	02-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08570 BH17 0.1-0.2	02-Oct-19 03-Oct-19	SOIL SOIL	681511 681511	<1 <1	<5 <5	<20 <20	<5 <5	<1	<20 <20	<1	<0.5 <0.5	<10 <10	<1	<20 <20	<20 <20	58 <50	67 <50	125 <50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH18 0.1-0.2	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1 <1	<20	<1 <1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH18_0.4-0.5	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH19_0.1-0.2	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	72	72	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH19_0.5-0.6	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH20_0.1-0.2	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH21_0.2-0.3 BH22 0.0-0.1	04-Oct-19 03-Oct-19	SOIL SOIL	681511 681511	<1 <1	<5 <5	<20 <20	<5 <5	<1 <1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH22_0.0-0.1 BH22_0.4-0.5	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH23_0.3-0.4	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH24_0.1-0.2	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH24_0.4-0.5	04-Oct-19	SOIL	681511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25_0.1-0.2	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	77	250	327	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH25_0.4-0.5 BH26 0.1-0.2	03-Oct-19 03-Oct-19	SOIL SOIL	681511 681511	<1 <1	<5 <5	<20 <20	<5 <5	<1 <1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1	<20 <20	<20 <20	<50 <50	<50 100	<50 100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH26 0.7-0.8	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH27_0.2-0.3	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH27_0.6-0.7	03-Oct-19	SOIL	681511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28_0.2-0.3	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.0-0.1 TP07_0.4-0.5	03-Oct-19 03-Oct-19	SOIL SOIL	681511 681511	<1	<5 -	<20	<5 -	<1	<20	<1	<0.5	<10	<1 -	<20	<20	<50	<50 -	<50 -	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.4-0.3	03-Oct-19	SOIL	683170	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.0-0.1	03-Oct-19	SOIL	683170	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.4-0.5	03-Oct-19	SOIL	683170	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.0-0.1	03-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.9-1.0 TP11 0.0-0.1	03-Oct-19 04-Oct-19	SOIL SOIL	681511 681511	<1 <1	<5 <5	<20 <20	<5 <5	<1 <1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP12 0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP12_0.4-0.5	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP13_0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP13_0.4-0.5	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP14_0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5 <5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP15_0.0-0.1 TP15_0.4-0.5	04-Oct-19 04-Oct-19	SOIL SOIL	681511 681511	<1 <1	<5 <5	<20 <20	<5 <5	<1 <1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1 <1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.1	<0.1 <0.1	<0.1	<0.2	<0.1	<0.3
TP16 0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP29_0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP29_0.4-0.5	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP30_0.0-0.1	04-Oct-19	SOIL	681511	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3

Liverpool Boys and Girls High School



		Asbestos				Heavy	Metal			In	organic													ОСР													_										
											@ 103°C)	s EPAVic	pesticides EPAVic																																		
		estos	anic	mium	omium (III+VI)	per		ćını).	le l		sture Content (dried (anochlorine pesticides	organochlorine	,4-DDE	꾸	ir	in + Dieldrin	우	rdane	Ŷ			.+DDE+DDD	drin	rin aldehyde	rin ketone	osulfan I	osulfan II	osulfan sulphate	rin	BHC (Lindane)	eptachlor	rachior epoxide	hoxychlor	aphene	uthion	ophos methyl	tar (Sulprofos)	orfenvinphos	orpyrifos	orpyrifos-methyl	maphos	neton-O	neton-S	einon	ılorvos	lethoate ulfoton
		Asb	Arse	Cad	Chr.	Cop	Lead	Σ	2	Zinc	Σ	Org	Other	4	-a-B-	Aldr	Adr	- A	울	- B	, 8	100	<u> </u>	Diel	Endrin	2	Ē	Ē	End	ᇤ	ρ	Í :		Z E	Š	ğ	Azir	Bols	<u>ş</u>	ਤੁ	<u>ĕ</u>	3	Den	Den	Diaz	Dic	Dist
FOL		mg/kg					mg/kg n																																								0.2 0.2
NSW 2014 General Solid Waste CT1 (N	lo Leaching)		100			,		4		,	1	0.1	0.1	0.03	0.03	0.03	0.03	0.0	0.2	0.0	3 0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	.03 (7.05 0.	03 0.0	0.0		0.2	0.2	0.2	0.2	4	0.2	2	0.2	0.2	0.2	0.2	0.2 0.2
NSW 2014 Restricted Solid Waste CT2	(No Leaching)		400	80			400	16	160																															16							
Field_ID Sampled_Date_Time	Lab_Report_Number																																														
A08507 02-Oct-19	681511	NAD		<0.4				<0.1		54	12	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	Ι-	-	-	-	-	-	-	-	-	-	
A08508 02-Oct-19 A08509 02-Oct-19	681511 681511	NAD NAD	9.1	<0.4		110 52	_	0.2 <0.1		240 800	9.7 3.2	-	-	-	-	-	-	-	-	-	+-	-	+ -	-	-	-	-	-	-	-	-	-		-	-	+ -	+-	-	-	-	-	-	-		-		
A08526 02-Oct-19	681511	NAD	14	<0.4		28		_		34	6.5	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	<u> </u>	-	-	-	-	-	-	- 1	- 1		
A08570 02-Oct-19	681511	NAD	22	0.6	34	410				270	7.3	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	- -	-	-	-	 -	-	-	-	-	-	-		-	-	
BH17_0.1-0.2 03-Oct-19 BH18_0.1-0.2 03-Oct-19	681511 681511	NAD NAD	13 8.1	<0.4		39 23	_	0.2		130 58	9.7		<0.1			<0.05					.05 <0.0				<0.05					<0.05 <0 <0.05 <0											_		<0.2	_	<0.2 <	_	<0.2 <0.2 <0.2 <0.2
BH18_0.4-0.5 03-Oct-19	681511	-		<0.4		14		<0.1		18	24	-	-	-	-	-	-	-	-	- 40.0		-	-	-	-	-	-	-	-	-	-	-		-	-	-	- 10.2	- 10.2	-	-	-	-	-	-	-	-	
BH19_0.1-0.2 03-Oct-19	681511	-		<0.4		31		<0.1		30	20	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.0	05 <0.	1 <0.0	.05 <0.0	5 <0.05	5 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05 <	<0.05	<0.05 <0	0.05 <	0.05 <0	.05 <0.	05 <0.0)5 <1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
BH19_0.5-0.6 03-Oct-19	681511			<0.4		7.9		<0.1		9.8	19	-	-	-	-	-	-	-	-	-	_	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	1	-	-	
BH20_0.1-0.2 03-Oct-19 BH21_0.2-0.3 04-Oct-19	681511 681511	- NAD		<0.4	45 22	38 21				93 62	19 18	<0.1	14.1			<0.05					.05 <0.0				<0.05					<0.05 <0													<0.2				<0.2 <0.2 <0.2 <0.2
BH22_0.0-0.1 03-Oct-19	681511	NAD		<0.4		10	_	<0.1		19	12										.05 <0.0																<0.2								<0.2 <	-	<0.2 <0.2
BH22_0.4-0.5 03-Oct-19	681511	-		<0.4		14		<0.1		10	26	-	-	-	-	-	-	-		-		-		-	$\overline{}$	-						-			-	-	1	-		-	-	-	-		-		
BH23_0.3-0.4 03-Oct-19	681511	- 140		<0.4		12				8.5	16										.05 <0.0																				_	_				_	<0.2 <0.2
BH24_0.1-0.2 04-Oct-19 BH24_0.4-0.5 04-Oct-19	681511 681511	NAD -	- 10	<0.4	18	16	86	0.4		32	26 24										.05 <0.0																<0.2 <0.2			-		_		_	<0.2 <	_	<0.2 <0.2
BH25_0.1-0.2 03-Oct-19	681511	-	2.4	<0.4	120	33	<5		_	66	9.1		<0.1								.05 <0.0																										<0.2 <0.2
BH25_0.4-0.5 03-Oct-19	681511	-		<0.4		7.6		<0.1			12	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	<u> </u>	-	-	-	-	-	-	-	-	-	
BH26_0.1-0.2 03-Oct-19	681511	NAD	2.5	<0.4		33		<0.1		55	17	<0.1		<0.05		<0.05	<0.05				.05 <0.0				$\overline{}$		\rightarrow	-	-		-	-	\rightarrow			<0.2	<0.2	_	_	_	<0.2	_	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
BH26_0.7-0.8 03-Oct-19 BH27 0.2-0.3 03-Oct-19	681511 681511	- NAD	7.4	<0.4				<0.1 0.2		5.4	20 16	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05		_	1 <0.0	.05 <0.0	- 5 <0.05		<0.05	$\overline{}$	- 0.05					_	-		_	5 <1	<0.2	<0.2	<0.2		<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
BH27_0.6-0.7 03-Oct-19	681511	-	-	-	-	-	-	-		-	27										.05 <0.0																$\overline{}$	_		_	_	_	_			_	<0.2 <0.2
BH28_0.2-0.3 03-Oct-19	681511	-	5.7	<0.4				<0.1			24										.05 <0.0																<0.2		<0.2								<0.2 <0.2
TP01_0.0-0.1 03-Oct-19	681511	NAD	4		7	8.3		<0.1		10	24										.05 <0.0																<0.2				<0.2	_	_			_	<0.2 <0.2
TP07_0.0-0.1 03-Oct-19 TP07_0.4-0.5 03-Oct-19	681511 681511	NAD -	230	<0.4	<5 -	12	-	0.1	6.3 8	-	17 18		<0.1	_	_	_	_	$\overline{}$	$\overline{}$	$\overline{}$.05 <0.0	$\overline{}$		_		-	_	_	-		-	_	_	_		_	_	_	_	_	<0.2	_	<0.2			_	<0.2 <0.2 <0.2 <0.2
TP08_0.0-0.1 03-Oct-19	683170	-	55	<0.4	6.8	7.7	12	<0.1			11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	- 10.2	- 10.2	-	-	-	-	-	-	-	-	-	
TP09_0.0-0.1 03-Oct-19	683170	-	16	-	22			<0.1		12	15	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	<u> </u>	-	-	-	-	-	-	-	-	-	
TP09_0.4-0.5 03-Oct-19	683170			<0.4		6.8		<0.1		<5	15	-	-	-	-	-	-	-	_	-	-	-	-	-	-	-	-	-	-	-	_	-		_	-	-	-	-		-	-	-	-	1	-	-	
TP10_0.0-0.1 03-Oct-19 TP10_0.9-1.0 03-Oct-19	681511 681511			<0.4			24 18			45 9	26 17	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	- <u.l< td=""><td>J5 <0. -</td><td>1 <0.0</td><td>.05 <0.0</td><td>5 <0.03</td><td>- <0.05</td><td><0.05</td><td><0.05</td><td>-</td><td>- <0.05</td><td><0.05 <</td><td>- 0.05</td><td>- <0.05</td><td>J.05 <</td><td>- 0.05</td><td>.05 <0.</td><td>05 <0.0</td><td>05 <1</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><2</td><td><0.2</td><td><0.2</td><td><0.2 <</td><td><0.2</td><td><0.2 <0.2</td></u.l<>	J5 <0. -	1 <0.0	.05 <0.0	5 <0.03	- <0.05	<0.05	<0.05	-	- <0.05	<0.05 <	- 0.05	- <0.05	J.05 <	- 0.05	.05 <0.	05 <0.0	05 <1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
TP11_0.0-0.1 04-Oct-19	681511	NAD	5.2	<0.4				_		44	8.7	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	5 <0.0	05 <0.	_	.05 <0.0	5 <0.05	5 <0.05	<0.05	<0.05	<0.05	_	<0.05 <	<0.05	<0.05 <0	0.05 <		.05 <0.	05 <0.0)5 <1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
TP12_0.0-0.1 04-Oct-19	681511	-		<0.4					6.9	15	16	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.0	05 <0.	1 <0.0	.05 <0.0			<0.05	<0.05					<0.05 <0		0.05 <0				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
TP12_0.4-0.5 04-Oct-19	681511	-		<0.4			_	_	6.8	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	<u> </u>	+	<u> </u>	-	-	-	-	-	1	-	-	
TP13_0.0-0.1 04-Oct-19 TP13_0.4-0.5 04-Oct-19	681511 681511	NAD -	3.7 4.1	<0.4				<0.1		19 11	17 16	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	> <0.0	J5 <0.	1 <0.0	.05 <0.0	5 <0.05	5 <0.05	<0.05	<0.05	<0.05	<0.05 <	<0.05 <	<0.05 <	<0.05 <0	J.U5 <	v.u5 <0	.05 <0.	U5 <0.0)5 <1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2 <	<0.2	<0.2 <0.2
TP14_0.0-0.1 04-Oct-19	681511			<0.4						11	7	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	5 <0.0	05 <0.	1 <0.0	.05 <0.0	5 <0.05	5 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05 <0	0.05 <	0.05 <0	.05 <0.	05 <0.0)5 <1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2 <0.2
TP15_0.0-0.1 04-Oct-19	681511	NAD	3	<0.4	6.5	7.2	16	<0.1		20	7.3										.05 <0.0																$\overline{}$	$\overline{}$	<0.2	-	_	_		<0.2		_	<0.2 <0.2
TP15_0.4-0.5 04-Oct-19	681511	-		<0.4						8	8.4	-	-	-	-	-	-	-	-	-	_	-	-	-	-	-	-	-	-	-	-	-	- -	-	-	-	+-	-	-	-	-	-	-	 -	-		- -
TP16_0.0-0.1 04-Oct-19 TP29_0.0-0.1 04-Oct-19	681511 681511	- NAD	5.9 8.6	<0.4		11 72				38 87	13 12	-01	<0.1		-0.05	-0.05				1 <0.0	.05 <0.0	5 <0.05	- 5 <0.05		- 0.05	- 0.05	- 0.05	- 0.05	- 0.05	- 0.05	-	-		05 200	5 <1	<0.2	<0.2		<0.2		<0.2	<2	<0.2	<0.2	<0.2 <	-	 <0.2 <0.2
TP29_0.0-0.1 04-Oct-19	681511	- IVAD		<0.4				<0.1		22	8.6		- <0.1	-	-	-	_	_		_	-			_	$\overline{}$	$\overline{}$		-		-	-	-	.05 <0.	-		- 40.2		_		-	- <0.2	-	- <0.2		-	- "	
TP30_0.0-0.1 04-Oct-19	681511	NAD									17	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.0	05 <0.	1 <0.0	05 <0.0	5 <0.05	5 <0.05	<0.05	<0.05	<0.05	<0.05	<0.05 <	<0.05	<0.05 <0	0.05 <	0.05 <0	.05 <0.	05 <0.0)5 <1	<0.2	<0.2			_	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2 <0.2

Liverpool Boys and Girls High School





					01	PP														П				Organic	•											PAH							
											Т		Т			Т		Т	Τ		\top			Organic					Т		Т		Т	Т		FAII					$\overline{}$	\top	\top
		Ethoprop	Ethion	Fenitrothion	Fensulfothion	Fenthion	EPN	Merphos	Malathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	62-93	C10-C16	C34-C40	C6-C10	C10-C40 (Sum of total)	C10-C16 (F2 minus Naphthalene)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene Benzo(alovrene TEO calc (Half)	5	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene Benzo(a)bvrene TEQ calc (Zero)		Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene Phenanthrene	Pyrene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg n	ng/kg m	ng/kg mg	/kg mg/k	g mg/k	g mg/kg	mg/kg r	ng/kg m	g/kg mg/l	g mg/l	kg mg/k	g mg/kg	g mg/kg	mg/kg	mg/kg m	ng/kg mg	/kg mg/k	g mg/kg	mg/kg	mg/kg r	mg/kg mg	/kg mg/k	g mg/kg	mg/kg	mg/kg r	ng/kg mg/	kg mg/k	g mg/kg	mg/kg	mg/kg m	ng/kg mg	g/kg mg/	kg mg/kg	g mg/kg	mg/kg mg	¿/kg mg/k	g mg/kg
EQL		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2 0.	2 0.2	2	0.2	2	0.2	0.2 0.2	0.2	0.2	0.2	0.2	0.2	20	50 10	0 100	20	100	50	0.5 2	0 0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5 0	0.5	5 0.5	0.5	0.5 0.	.5 0.5	0.5
NSW 2014 General Solid Waste																					2600											0.8											
113VV 2014 Nestricted 30ffd VVd	aste eta (No Leaching)																				2000											J.L											
	e_Time Lab_Report_Number																		_																	,							
A08507 02-Oct-19 A08508 02-Oct-19	681511	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		<50 <1																			<0.5 <0		
A08508 02-Oct-19 A08509 02-Oct-19	681511 681511		-	-	-	-	-	-			-	1 :	-	-		-	+ :	1	1	 		<50 <1 <50 <1						20 <0.5 20 <0.5		<0.5 <0.5		<0.5 0.6	5 1.2 5 1.2			<0.5 <		_	.5 <0.5 .5 <0.5			_	5 <0.5 5 <0.5
A08526 02-Oct-19	681511	1 -	-	-	-	-	-	-	-	1	+ -	+	-	-		+ -	+ -	+ -	+ -	 			00 <100					20 <0.5				<0.5 0.6				<0.5			.5 <0.5				5 <0.5
A08570 02-Oct-19	681511	- 1	-	-	-	-	-	-		-	-	- 1	-	-		-	-	-	-	- 1			0 <100					20 <0.5				<0.5 0.6				<0.5						_	5 <0.5
BH17_0.1-0.2 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2	<0.2	<2	<0.2 <	:0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2			00 <100					20 <0.5				<0.5 0.6				<0.5 <		0.5 <0.				0.5 <0.5	5 <0.5
BH18_0.1-0.2 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <0	.2 <0.2	! <2	<0.2	<2	<0.2 <	:0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2	<20 <	<50 <1	00 <100	<20	<100	<50	<0.5 <2	20 <0.5	<0.5	<0.5	<0.5	<0.5 0.6	5 1.2	<0.5	<0.5	<0.5 <	<0.5 <0	:0.5 <0.	.5 <0.5	<0.5	<0.5 <0	0.5 <0.5	5 <0.5
BH18_0.4-0.5 03-Oct-19	681511	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-		-			00 <100				<0.5 <2			<0.5		<0.5 0.6				<0.5 <			.5 <0.5				5 <0.5
BH19_0.1-0.2 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2 <	<0.2 <0	_	_	_	_	_	0.2 <0.2	_	2 <0.2	_	_				00 150		150			20 <0.5				<0.5 0.6				<0.5 <			.5 <0.5				5 <0.5
BH19_0.5-0.6 03-Oct-19 BH20_0.1-0.2 03-Oct-19	681511 681511									_	-		_			_							00 <100 00 <100		<100 <100			20 <0.5 20 <0.5				<0.5 0.6 <0.5 0.6			-	<0.5		_	.5 <0.5			_	5 <0.5
BH21_0.2-0.3 04-Oct-19	681511			<0.2 <0.2					<0.2 <0 <0.2 <0	.2 <0.2				<0.2 <	0.2 <0.2	2 <0.2							00 <100					20 <0.5		<0.5			5 1.2			<0.5 <			.5 <0.5 .5 0.5				5 <0.5 5 <0.5
BH22 0.0-0.1 03-Oct-19	681511			<0.2	-	<0.2	_		<0.2 <0						0.2 <0.2								00 <100					20 <0.5				<0.5 0.6				<0.5						_	5 <0.5
BH22_0.4-0.5 03-Oct-19	681511	-	-	-	-	-	-	-		_			_	_		\rightarrow						<50 <1						20 <0.5				<0.5 0.6				<0.5 <							5 <0.5
BH23_0.3-0.4 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2			<0.2 <		2 <0.2	2 <0.2					<50 <1						20 <0.5					5 1.2			<0.5 <			.5 <0.5				5 <0.5
BH24_0.1-0.2 04-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <0	.2 <0.2	! <2	<0.2	<2	<0.2 <	:0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2	<20 •	<50 <1	00 <100	<20	<100	<50	<0.5 <2	20 <0.5	<0.5	<0.5	<0.5	<0.5 0.6	5 1.2	<0.5	<0.5	<0.5 <	<0.5 <0	:0.5 <0.	.5 <0.5	<0.5	<0.5 <0	0.5 <0.5	5 <0.5
BH24_0.4-0.5 04-Oct-19	681511			<0.2	-					.2 <0.2				<0.2 <				<0.2						-	-	-	- -	_	-	-	-		-		-	-			-				
BH25_0.1-0.2 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2		<2	<0.2 <		2 <0.2	2 <0.2		<0.2		<20 •		20 310			<50		20 <0.5				<0.5 0.6				<0.5 <							5 <0.5
BH25_0.4-0.5 03-Oct-19	681511	-	-	-	-	-	-	-		-	-	-	-	-		_	-	-		-		<50 <1						20 <0.5				<0.5 0.6							.5 <0.5			_	5 <0.5
BH26_0.1-0.2 03-Oct-19 BH26_0.7-0.8 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2	<0.2	<2	- <0.2	0.2 <0.2	2 <0.2	2 <0.2	<0.2				<50 <1 <50 <1						20 <0.5 20 <0.5				<0.5 0.6 <0.5 0.6		<0.5		<0.5 <			.5 <0.5				5 <0.5 5 <0.5
BH27_0.2-0.3 03-Oct-19	681511 681511	<0.2	- <0.2	<0.2	<0.2	_	<0.2	<0.2 <		.2 <0.2	! <2			<0.2 <		2 <0.2	2 <0.2					<50 <1						20 <0.5				<0.5 0.6				<0.5 <			.5 <0.5				5 <0.5
BH27_0.6-0.7 03-Oct-19	681511	<0.2		<0.2	-				<0.2 <0			\rightarrow			0.2 <0.2							- 1		-	-	-			- 40.5	-	-		- 1.2			-	-		-	- 40.5	- 1		- 10.5
BH28_0.2-0.3 03-Oct-19	681511	<0.2		<0.2	-	_			<0.2 <0						0.2 <0.2							<50 <1	00 <100	<20	<100		<0.5 <2	20 <0.5	<0.5	<0.5	<0.5	<0.5 0.6	5 1.2	<0.5	<0.5	<0.5 <	<0.5 <0	0.5 <0.	.5 <0.5	<0.5	<0.5 <0	0.5 <0.5	5 <0.5
TP01_0.0-0.1 03-Oct-19	681511			<0.2		<0.2			<0.2 <0						:0.2 <0.2								00 <100					20 <0.5				<0.5 0.6									<0.5 <0	0.5 <0.5	5 <0.5
TP07_0.0-0.1 03-Oct-19	681511			<0.2	-					.2 <0.2				<0.2 <		2 <0.2						<50 <1			<100	-		20 <0.5	<0.5	<0.5	<0.5	<0.5 0.0	5 1.2	<0.5	<0.5	<0.5 <	<0.5 <0	0.5 <0.			<0.5 <0).5 <0.5	5 <0.5
TP07_0.4-0.5 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2	<0.2	<2	<0.2 <	0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2			-	-	-	-			1 -	-	-		-			-	-	- -			- -	- -	
TP08_0.0-0.1 03-Oct-19	683170	-	-	-	<u> </u>	-	-	-	- -	-	+ -	+-	-	-	- -	+ -	+-	+ -	+ -	-	<20 •		00 <100					20 <0.5				<0.5 0.6				<0.5			.5 <0.5				5 <0.5
TP09_0.0-0.1 03-Oct-19 TP09 0.4-0.5 03-Oct-19	683170 683170	-		-	\vdash	-	-	-		-	-	-	-	-		+ -	-	-				<50 <1 <50 <1	00 <100 00 <100					20 <0.5 20 <0.5			<0.5	<0.5 0.6	5 1.2			<0.5 <		0.5 <0.					5 <0.5 5 <0.5
TP10_0.0-0.1 03-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	-	<0.2		<0.2 <0	.2 <0.2		\rightarrow			:0.2 <0.2	_	_			_		<50 <1						20 <0.5					5 1.2			<0.5 <			.5 <0.5			_	5 <0.5
TP10_0.9-1.0 03-Oct-19	681511	-	-	-	-	-	-			- 10.2		-	-	-		- 10.2	- 10.2	- 10.2	- 10.2	-			00 <100					20 <0.5				<0.5 0.6				<0.5			.5 <0.5			0.5 <0.5	
TP11_0.0-0.1 04-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2	<0.2	<2	<0.2	0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2			00 <100					20 <0.5				<0.5 0.6				<0.5							5 <0.5
TP12_0.0-0.1 04-Oct-19	681511	<0.2			<0.2					.2 <0.2					0.2 <0.2						<20 <	<50 <1	00 <100	<20	<100		<0.5 <2	20 <0.5				<0.5 0.6				<0.5 <			.5 <0.5				5 <0.5
TP12_0.4-0.5 04-Oct-19	681511	-	-	-	-	-	-	-	-		-	-	-	-		-	-	-	-	-				<20				20 <0.5				<0.5 0.6				<0.5 <			.5 <0.5				5 <0.5
TP13_0.0-0.1 04-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2	-	-	<0.2 <		2 <0.2	2 <0.2	_	_			<50 <1						20 <0.5				<0.5 0.6				<0.5 <						_	5 <0.5
TP13_0.4-0.5 04-Oct-19	681511						-	-		2 -0.5						_						<50 <1					<0.5 <2					<0.5 0.6											5 <0.5
TP14_0.0-0.1 04-Oct-19	681511	<0.2		<0.2	<0.2	_				.2 <0.2		_		<0.2 <		2 <0.2							00 <100		<100 <100			20 <0.5 20 <0.5				<0.5 0.6				<0.5			.5 <0.5 .5 <0.5				5 <0.5
TP15_0.0-0.1 04-Oct-19 TP15_0.4-0.5 04-Oct-19	681511 681511	<0.2	<u.z< td=""><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td>- 0.2</td><td></td><td>.2 <0.2</td><td>! <2</td><td><0.2</td><td></td><td><0.2 <</td><td>:0.2 <0.2</td><td>2 <0.2</td><td>2 <0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td></td><td></td><td>00 <100 00 <100</td><td></td><td></td><td></td><td></td><td>20 <0.5 20 <0.5</td><td></td><td></td><td></td><td><0.5 0.6 <0.5 0.6</td><td></td><td></td><td></td><td><0.5 <</td><td></td><td></td><td>.5 <0.5</td><td></td><td></td><td></td><td>5 <0.5 5 <0.5</td></u.z<>	<0.2	<0.2	<0.2	<0.2	- 0.2		.2 <0.2	! <2	<0.2		<0.2 <	:0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2	<0.2			00 <100 00 <100					20 <0.5 20 <0.5				<0.5 0.6 <0.5 0.6				<0.5 <			.5 <0.5				5 <0.5 5 <0.5
TP16 0.0-0.1 04-Oct-19	681511	1 -		-	<u> </u>	-	-	-	_ -	+ -	+ -	-	-	-		+ -	+ -	+ -	+ -	-			00 <100					20 <0.5				<0.5 0.6				<0.5			.5 <0.5				5 <0.5
TP29 0.0-0.1 04-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <	<0.2 <0	.2 <0.2	! <2		<2	<0.2 <		2 <0.2	2 <0.2	<0.2					00 <100					20 <0.5				<0.5 0.6				<0.5			.5 <0.5				5 <0.5
TP29_0.4-0.5 04-Oct-19	681511					-				-	-												00 <100				<0.5 <2					<0.5 0.6			-	<0.5						0.5 <0.5	
TP30_0.0-0.1 04-Oct-19	681511	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2 <0	.2 <0.2	. <2	<0.2	<2	<0.2 <	0.2 <0.2	2 <0.2	2 <0.2	<0.2	<0.2																						<0.5 <0		



													SV	ос											TF	PH					Volatile			\neg
																																\Box	\Box	
			PAHs (Sum of total)	3/4-Methylphenol (m/p-cresol)	2,4-Dinitrophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	4-chloro-3-methylphenol	Dinoseb	Pentachlorophenol	Phenol	Tetrachlorophenols	Phenols (Total Halogenated)	Phenols (Total Non Halogenated)	C10-C14	C15-C28	C29-C36	+C10-C36 (Sum of total)	3/4-Methylphenol (m/p-cresol)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total
501			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
EQL NSW 2014 Gen	eral Solid Waste CT1 (N	o Leaching)	200	0.4	5	8000	40	0.5	0.5	0.5	0.5	0.2 4000	1	5	20	5	1	20	1	0.5	10	1	20	20	50	50	50 10000	0.2	0.1	0.1 600	0.1 288	0.2	0.1	0.3 1000
NSW 2014 Ger	tricted Solid Waste CT2	(No Leaching)	800			32000	160					16000															40000		40	2400	1152			4000
Field_ID A08507	Sampled_Date_Time 02-Oct-19	Lab_Report_Number 681511	<0.5	<0.4	_E	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08507 A08508	02-Oct-19 02-Oct-19	681511	<0.5	<0.4	<5 <5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1 <1	<5 <5	<20	<5 <5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50 <50	<50 <50	<50 <50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08509	02-Oct-19	681511	<0.5	<0.5	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	57	64	121	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08526	02-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
A08570	02-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	58	67	125	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH17_0.1-0.2	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH18_0.1-0.2		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH18_0.4-0.5	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH19_0.1-0.2		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	72	72	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH19_0.5-0.6 BH20_0.1-0.2		681511 681511	<0.5 <0.5	<0.4	<5 <5	<1 <1	<1	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.2 <0.2	<1 <1	<5 <5	<20 <20	<5 <5	<1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.2 <0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH21_0.2-0.3		681511	0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH22 0.0-0.1		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH22 0.4-0.5		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH23_0.3-0.4	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH24_0.1-0.2	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH24_0.4-0.5		681511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
BH25_0.1-0.2		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	77	250	327	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH25_0.4-0.5		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH26_0.1-0.2 BH26_0.7-0.8		681511 681511	<0.5 <0.5	<0.4	<5 <5	<1 <1	<1 <1	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.2 <0.2	<1 <1	<5 <5	<20 <20	<5 <5	<1	<20 <20	<1 <1	<0.5 <0.5	<10	<1 <1	<20 <20	<20 <20	<50 <50	100 <50	100 <50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH27_0.2-0.3		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
	03-Oct-19	681511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	- 10.1	-		
BH28 0.2-0.3		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP01_0.0-0.1	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.0-0.1	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.4-0.5		681511	-	ĿÌ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-]	-	-	-	-	-]]
	03-Oct-19	683170	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.0-0.1	03-Oct-19	683170	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.4-0.5 TP10 0.0-0.1	03-Oct-19	683170 681511	<0.5 <0.5	<0.4	<5 <5	<1 <1	<1 <1	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.2 <0.2	<1 <1	<5 <5	<20 <20	<5 <5	<1	<20 <20	<1 <1	<0.5 <0.5	<10	<1 <1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.0-0.1	03-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP11 0.0-0.1	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP12 0.0-0.1		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1		<0.2	<0.1	<0.3
TP12_0.4-0.5	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP13_0.0-0.1	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP13_0.4-0.5	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP14_0.0-0.1		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP15_0.0-0.1	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP15_0.4-0.5	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP16_0.0-0.1 TP29 0.0-0.1	04-Oct-19 04-Oct-19	681511 681511	<0.5 <0.5	<0.4	<5 <5	<1 <1	<1 <1	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.2 <0.2	<1 <1	<5 <5	<20 <20	<5 <5	<1 <1	<20 <20	<1 <1	<0.5 <0.5	<10 <10	<1 <1	<20 <20	<20 <20	<50 <50	<50 <50	<50 <50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
	04-Oct-19	681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5 <5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP30 0.0-0.1		681511	<0.5	<0.4	<5	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<5	<20	<5	<1	<20	<1	<0.5	<10	<1	<20	<20	<50	<50	<50	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
75_5.5 5.2		1	,					,	1							-																		

Liverpool Boys and Girls High School



Appendix C Logs



PROJECT NUMBER 68150

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

CLIENT Meinhardt

ADDRESS 18 Forbes Street DRILLING DATE 09 Jan 2025 **DRILLING COMPANY** Legion Drilling

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56

DIAMETER 50 mm

EASTING 308719.7491

NORTHING 6245175.3955

TOTAL DEPTH 3.00 m bgl LOGGED BY E Piccinin

	l .							
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		- - - - 0.2		Fill - Silty SAND, grey-yellow, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with no inclusions	DP	BH101_0.00-0.10 BH101_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (BH101_0.0-0.3).
		- 0.4		CL-ML-SM Natural - Sandy Silty CLAY, brown-orange, heterogeneous, dry-damp, non-plastic, stiff, with no inclusions	DP	BH101_0.40-0.50		No odours, staining, or asbestos observed.
		- - 0.6 -						
		- 0.8 -				BH101_0.90-1.00		
		-1 -		CL-ML-SM Natural - Sandy Silty CLAY, grey-white,	DR		-	No odours, staining, or
		1.2 1.4		heterogeneous, dry, non-plastic, very stiff, with no inclusions				asbestos observed.
		- - - - 1.6				BH101_1.40-1.50]	
		1 . 8						
		_ _ 2		Becomes light red at 2.0 m bgs		BH101_1.90-2.00		
		- 2.2 						
		2.4 				BH101_2.40-2.50	-	
		- 2.6 - - - 2.8						
		3		Touriseties Death at 0.00		BH101_2.90-3.00		
		- - - 3.2		Termination Depth at:3,00 m.				
		_ _ 3.4 _						



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

LL RIG GeoProbe NORTHING 6245160,5604

CLIENT Meinhardt

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56

ADDRESS 18 Forbes Street **DRILLING DATE** 08 Jan 2025

TOTAL DEPTH 3.00 m bgl LOGGED BY E Piccinin

EASTING 308754,7094

 $\label{eq:comments} \textbf{COMMENTS} \ \ \textbf{Asphalt was present at the site with an observed thickness of 0.05m.}$

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

DIAMETER 50 mm

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT				Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand, sub-angular, loose, with inclusions of weathered shale gravels, roots, and	DR	BH102_0.00-0.10		No odours or staining observed. No asbestos observed in
		0.2		rootlets		BH102_0.20-0.30		10L AQ (BH102_0.0-0.3).
		- - 0.4 -		CL-ML Natural - Silty CLAY, brown, heterogeneous, dry-damp, non-low plasticity, stiff, with inclusions of weathered shale gravels, roots, and rootlets	DP	BH102_0.40-0.50		No odours, staining, or asbestos observed.
		0.6		Becomes orange-red at 0.7 m bgs				
		- 0.8 - - -				BH102_0.90-1.00		
		1 1.2						
		- - - 1.4		CL MI Natural City Cl AV annual land		DU400 4 40 4 50		No adams de inius
		_ 1.6		CL-ML Natural - Silty CLAY, grey-yellow, heterogeneous, dry, low plasticity, stiff, with inclusions of weathered shale gravels	DR	BH102_1.40-1.50	=	No odours, staining, or asbestos observed.
		1.8						
		_ 2				BH102_1.90-2.00		
		_ _ 2.2 _		Becomes grey-white at 2.3 m bgs				
		_ _ 2.4 _		CL-ML-SM Natural - Sandy Silty CLAY, grey-yellow,	DR	BH102_2,40-2,50	-	No odours, staining, or
		2.6		heterogeneous, dry, non-plastic, stiff, with inclusions of weathered shale gravels	DIX.			asbestos observed.
		- 2.8 -				BH102_2.90-3.00	_	
		3	<i>X//////</i>	Termination Depth at:3,00 m.				
		- 3.2 - - - -						
		3.4		for environmental not geotechnical purposes.				Page 1 of 1



PROJECT NUMBER 68150

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

CLIENT Meinhardt **ADDRESS** 18 Forbes Street

DRILLING DATE 08 Jan 2025

DRILLING COMPANY Legion Drilling

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56

DIAMETER 50 mm

EASTING 308792.7748 **NORTHING** 6245173,2105

TOTAL DEPTH 3.00 m bgl LOGGED BY E Piccinin

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT				Fill - Sandy GRAVEL, black-grey, heterogeneous, noist, poorly graded, medium gravel, sub-angular,	М	BH103_0.00-0.10		No odours or staining observed.
		- 0 . 2	\bowtie	loose, with no inclusions	/ DP			No asbestos observed in 10L AQ
		-	\bowtie	Fill - Sandy Silty CLAY, brown-orange, heterogeneous, dry-damp, non-plastic, stiff, with		BH103_0.20-0.30		(BH103_0.0-0.1).
		- 0 . 4		inclusions of weathered shale gravels				No odours or staining observed.
		_		CL-ML Natural - Silty CLAY, brown, heterogeneous, dry-damp, non-low plasticity, stiff, with inclusions of	DP	BH103_0.40-0.50		No asbestos observed in 10L AQ
		- 0.6		rootlets				(BH103_0.1-0.4). No odours, staining, or
								asbestos observed.
		- - 0 . 8						
						BH103_0.90-1.00	-	
		<u> </u>				_		
		_						
		−1 .2						
		_						
		— 1.4 -				BH103_1.40-1.50		
		_ _ 1.6		CH-MH Natural - Silty CLAY, grey-red-yellow, heterogeneous, damp, low-medium plasticity,	DP			No odours, staining, or asbestos observed.
		- 1.0		firm-stiff, with inclusions of weathered shale gravels				aspesios observed.
		_ 1.8						
		- -						
		- 2				BH103_1.90-2.00		
		_						
		- 2.2						
		_						
		2.4				BH103_2.40-2.50	-	
		_				2.1103_2.40 2.00		
		 2.6						
		2.8 						
		_				BH103_2.90-3.00		
		-3	<i></i>	Termination Depth at:3,00 m.				
		2 2						
		- 3.2 -						
		3.4						
								Page 1 of 1



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

EASTING 308806.5749 **NORTHING** 6245154.6953

CLIENT Meinhardt

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56

ADDRESS 18 Forbes Street **DRILLING DATE** 08 Jan 2025

DIAMETER 50 mm

TOTAL DEPTH 3.30 m bgl

LOGGED BY E Piccinin

 $\label{eq:comments} \textbf{COMMENTS} \ \ \textbf{Asphalt was present at the site with an observed thickness of 0.05m.}$

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	OIA	Additional Observations
PT				Fill - Sandy Silty CLAY, brown-orange, heterogeneous, dry-damp, non-plastic, stiff, with no	DP	BH104_0.00-0.10		No odours or staining observed.
		- - 0 . 2	\bowtie	inclusions				No asbestos observed in 10L AQ
						BH104_0.20-0.30		(BH104_0.0-0.4).
		- 0.4 -		CL-ML Natural - Silty CLAY, brown-orange, heterogeneous, dry-damp, low plasticity, firm, with	DP	BH104_0.40-0.50		No odours, staining, or asbestos observed.
		0.6		inclusions of weathered shale gravels				
		0.8						
		_ _ 1		Becomes grey-yellow at 1.0 m bgs		BH104_0.90-1.00		
				becomes grey-yellow at 1.0 m bgs				
		- 1 . 2						
		- - 1.4				BH104_1.40-1.50	-	
		_ 1.6 _						
		1.8						
		_ 2				BH104_1.90-2.00		
		2.2						
		- 2.4 -				BH104_2.40-2.50		
		2.6						
		2 . 8		Becomes grey-red-yellow with weathered shale				
		3		gravels at 2.9 m bgs		BH104_2.90-3.00		
		- - - 3.2						
				Termination Depth at:3.30 m.	+			
		3.4		,				



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

EASTING 308847.4003 **NORTHING** 6245147.6803

CLIENT Meinhardt

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56

ADDRESS 18 Forbes Street DRILLING DATE 08 Jan 2025 **DIAMETER** 50 mm

TOTAL DEPTH 3.10 m bgl LOGGED BY E Piccinin

 $\label{eq:comments} \textbf{COMMENTS} \ \ \textbf{Asphalt was present at the site with an observed thickness of 0.05m.}$

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT				Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH105_0.00-0.10		No odours or staining observed. No asbestos observed in
		- 0.2 - - -		Fill - Silty Gravelly CLAY, grey, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash	DP	BH105_0.20-0.30		10L AQ (BH105_0.0-0.2). No odours or staining
		- 0.4 - -		CH-MH Natural - Silty CLAY, brown-orange, heterogeneous, damp, low-medium plasticity , firm-stiff, with inclusions of organic matter	DP	BH105_0.40-0.50		observed. No asbestos observed in 10L AQ (BH105_0.2-0.4).
		- 0.6 -		CH-MH Natural - Silty CLAY, grey-red-yellow,	DP			No odours, staining, or asbestos observed. No odours, staining, or
		- 0.8 -		heterogeneous, damp, low-medium plasticity, firm, with inclusions of weathered shale gravels		BH105_0.90-1.00		asbestos observed.
		_ 1 _ _				_	1	
		1 . 2						
		1.4 				BH105_1.40-1.50		
		_ 1.6 _						
		_ 1 . 8				BH105_1.90-2.00		
		_ 2 _				<u> </u>		
		2.2						
		- 2.4 -				BH105_2.40-2.50	-	
		2.6						
		- 2.8 -				BH105_2.90-3.00		
		_ _ 3 _		Termination Depth at:3.10 m.		511103_2.50-3.00		
		- 3.2 		Termination Deptir at.5.10 III.				
		3.4						



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

NORTHING 6245148.8303

CLIENT Meinhardt

ADDRESS 18 Forbes Street

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56 **DIAMETER** 50 mm

DRILLING DATE 09 Jan 2025

TOTAL DEPTH 3.00 m bgl LOGGED BY E Piccinin

EASTING 308887,4207

COMMENTS Concrete was present at the site with an observed thickness of 0.14m.

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Concrete.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	OI4	Additional Observations
PT		- 0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp-wet, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH106_0.00-0.10 BH106_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (BH106_0.0-0.4).
		0.4		CH-MH Natural - Silty CLAY, brown-yellow, heterogeneous, moist-wet, medium-high plasticity, firm, with inclusions of rootlets	M	BH106_0.40-0.50		No odours, staining, or asbestos observed.
		- 0.8 1				BH106_0.90-1.00		
		- 1.2		CH-MH Natural - Silty CLAY, grey-red, heterogeneous, moist, medium-high plasticity, firm, with inclusions of weathered shale gravels	M			No odours, staining, or asbestos observed.
		- 1.4 - - 1.6		mar modeliono or weathered endie gravele		BH106_1.40-1.50		
		1.8 2				BH106_1.90-2.00		
		- 2.2						
		2.4 				BH106_2.40-2.50		
		- 2.8 3		Termination Depth at:3,00 m.		BH106_2.90-3.00		
		- - 3.2		Termination Deptir at.5,00 III.				
		3.4		for environmental not geotechnical purposes.				Page 1 of 1



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

EASTING 308893,0288

CLIENT Meinhardt

NORTHING 6245096.5484

ADDRESS 18 Forbes Street

DRILLING METHOD Push Tube/Solid Flight Auge COORD SYS GDA2020_MGA_zone_56 **DIAMETER** 50 mm

TOTAL DEPTH 3.10 m bgl LOGGED BY E Piccinin

DRILLING DATE 09 Jan 2025

 $\label{eq:comments} \textbf{COMMENTS} \ \ \textbf{Asphalt was present at the site with an observed thickness of 0.05m.}$

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT				Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular,	DP	BH107_0.00-0.10		No odours or staining observed.
				loose, with no inclusions	DP			No asbestos observed in
		- 0 . 2	\bowtie	Fill - Silty Gravelly CLAY, dark brown-grey, heterogeneous, damp-moist, medium-high plasticity,		BH107_0.20-0.30		10L AQ (BH107_0.0-0.1).
		_	$\otimes\!$	firm, with inclusions of weathered shale gravels and				No odours or staining
		- 0.4 -	\bowtie	rootlets		BH107_0.40-0.50	1	observed. No asbestos observed in
				CH-MH Natural - Silty CLAY, grey-yellow,	М		1	10L AQ (BH107_0.1-0.5).
		- 0 . 6		heterogeneous, moist, medium-high plasticity, firm, with inclusions of rootlets				No odours, staining, or
				With molecules of results				asbestos observed.
		0.8						
						BH107_0.90-1.00	-	
		_1				B11107_0.00 1.00	4	
		1.2						
		_ 1.4						
				CH-MH Natural - Silty CLAY, grey-red, heterogeneous, moist, medium-high plasticity, firm,	M	BH107_1.40-1.50		No odours, staining, or asbestos observed.
		_ 1.6		with inclusions of weathered shale gravels and rootlets				
		1.0		Tooliera				
		4.0						
		1.8 						
		_				BH107_1.90-2.00		
		- 2 -						
		- 2 . 2						
		2.4				BH107_2.40-2.50	-	
							4	
		2.6						
		2.8						
		_					_	
		_ _ 3				BH107_2.90-3.00	_	
		- 3.2 		Termination Depth at:3.10 m.				
		- 3.4						



PROJECT NUMBER 68150

DRILLING COMPANY Legion Drilling

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

LL RIG GeoProbe NORTHING 6245082,574

EASTING 308830,5656

CLIENT Meinhardt

DRILLING METHOD Push Tube/Solid Flight Auge **COORD SYS** GDA2020_MGA_zone_56

ADDRESS 18 Forbes Street **DRILLING DATE** 09 Jan 2025

DIAMETER 50 mm

TOTAL DEPTH 3.00 m bgl
LOGGED BY E Piccinin

 $\label{eq:comments} \textbf{COMMENTS} \ \ \textbf{Asphalt was present at the site with an observed thickness of 0.05m.}$

Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		- - - 0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH108_0.00-0.10 BH108_0.20-0.30	-	No odours or staining observed. No asbestos observed in 10L AQ (BH108_0.0-0.3).
		0.4		CH-MH Natural - Silty CLAY, brown-grey, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of organic matter	DP	BH108_0.40-0.50		No odours, staining, or asbestos observed.
		0.6 0.8		CH-MH Natural - Silty CLAY, grey-red, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		_ _ 1				BH108_0.90-1.00	-	
		_ 1 . 2						
		1.4 1.6				BH108_1.40-1.50	-	
		1.8		CH-MH Natural - Silty CLAY, grey-red-yellow, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of weathered shale gravels	DP			No odours, staining, or asbestos observed.
		2 2				BH108_1,90-2,00		
		2.2						
		- 2.4 - - - 2.6				BH108_2.40-2.50		
		- 2.8 -		SP Natural - SAND, white-yellow, homogenous, damp, poorly graded, medium sand, sub-angular, loose, with no inclusions	DP			No odours, staining, or asbestos observed.
		3		Termination Depth at:3,00 m.		BH108_2.90-3.00		
		- 3.2 						
		3.4		for environmental not geotechnical purposes.				Page 1 of 1



PROJECT NUMBER 68150

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

CLIENT Meinhardt

ADDRESS 18 Forbes Street **DRILLING DATE** 09 Jan 2025 **DRILLING COMPANY** Legion Drilling

DRILLING METHOD Solid Flight Auger

DIAMETER 50 mm

EASTING 308752,2934

NORTHING 6245131,9647

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.60 m bgl LOGGED BY E Piccinin

		1	1					
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	DID	Additional Observations
SFA				Fill - Silty Gravelly SAND, grey, heterogeneous,	DP			No odours, staining, or
		- - 0.2		damp, poorly graded, medium sand, sub-angular, loose, with inclusions of roots and rootlets Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, brick, concrete, roots, and rootlets	DP			asbestos observed. No odours, staining, or asbestos observed.
		- 0.4 -	\bigotimes	concrete, roots, and rooters				
		0.6 0.8		CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		_ _ _ _ 1		Becomes grey-red at 1.0 m bgs				
		- 1.2 						
		- - 1.4 - -						
		- 1.6	/////	Termination Depth at:1.60 m.				
		- - 1.8 - -						
		2 2.2						
		- 2.4 2.4						
		2.6 2.8						
		- - - 3.2 -						
		- 3.4 						



PROJECT NUMBER 68150

PROJECT NAME 68150 Liverpool HS DGI + RAP DRILL RIG GeoProbe

CLIENT Meinhardt **ADDRESS** 18 Forbes Street

DRILLING DATE 09 Jan 2025

DRILLING COMPANY Legion Drilling

DRILLING METHOD Solid Flight Auger

DIAMETER 50 mm

EASTING 308747.418 **NORTHING** 6245060.4131

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.40 m bgl LOGGED BY E Piccinin

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
SFA			\bigotimes	Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, leaf litter, roots and rootlets	DP			No odours, staining, or asbestos observed.
		- 0.2 - -		Fill - Silty CLAY, brown-grey-red, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, weathered shale gravels, roots and rootlets	DP			No odours, staining, or asbestos observed.
		- 0.4 -		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		- 0.6 -						
		0.8						
		_ _ 1 _						
		- 1.2 						
		1.4		Termination Depth at:1.40 m.				
		_						
		1.6 						
		_ _ 1.8						
		2						
		2.2						
		2.4						
		2.6						
		- - - 2.8						
		_ _ _ 3						
		- - - 3.2						
		- - - - 3.4						
		<u> </u>						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt
ADDRESS 18 Forbes Street

ADDRESS 18 Forbes Street
DRILLING DATE 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308708.5971 **NORTHING** 6245091.6463

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.00 m bgl LOGGED BY E Piccinin

	1							<u> </u>
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets	DP	TP101_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP101_0.0-0.3).
		0.2		Fill - Clayey SILT, light brown, heterogeneous,	DP	TP101_0.20-0.30		No odours or staining
		0.4		dry-damp, non-plastic, soft-firm, with no inclusions		TP101_0.40-0.50		observed. No asbestos observed in 10L AQ (TP101_0.3-0.5).
		- 0.5 - 0.6		CL Natural - CLAY, brown-red, homogenous, dry-damp, low plasticity, firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		0.7						
		0.8						
		1		Termination Depth at:1.00 m.		TP101_0.90-1.00		
		_ 1.1 						
		1.2 1.3						
		1.4						
		- 1.5 - 1.6						
		1.7						
		 1.8						
		1.9 						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt

ADDRESS 18 Forbes Street

ADDRESS 18 Forbes Street
DRILLING DATE 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308752.2498 **NORTHING** 6245088.0588

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.40 m bgl LOGGED BY E Piccinin

								1
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		- - - 0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, leaf litter, roots and rootlets	DP	TP102_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.0-0.2).
		- 0.2 - - - 0.3		Fill - Silty CLAY, brown-grey-red, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, weathered shale gravels, roots and rootlets	DP	TP102_0.20-0.30	-	No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.2-0.4).
		- 0.4 - 0.5 - 0.6		Fill - Clayey SILT, light brown, heterogeneous, dry-damp, non-plastic, soft-firm, with no inclusions	DP	TP102_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.4-0.7).
		- 0.7 - 0.8		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		- 0.9 - 1				TP102_0.90-1.00	-	
		- 1.1 - 1.2 - 1.3						
		- - - - - - - - - - - - - - - - - - -		Termination Depth at:1.40 m.				
		1.6						
		1.7 1.8 						
		_ 1.9						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt

ADDRESS 18 Forbes Street

ADDRESS 18 Forbes Street **DRILLING DATE** 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator
METHOD Test Pit

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308710.8526 **NORTHING** 6245057.3584

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 0.80 m bgl LOGGED BY E Piccinin

Test Pit									
Pit O.1 O.2 Disserved. TP103_0.20-0.30 TP103_0.20-0.30 CL.Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets O.5 O.6 O.7 Termination Depth at 0.80 m. O.9 1 1.1 1.2 1.3 1.4 1.5 1.6	Drilling Method	Water (m bgl)	Depth (m bgl)		Lithological Description	Moisture	Samples	PID	Additional Observations
0.1	Test				Fill - Silty CLAY, brown, heterogeneous, damp, low		TP103_0.00-0.10		No odours or staining
0.2	FIL		0.1	\bowtie	plasticity, soft, with inclusions of foots and footiets			_	No asbestos observed in
CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets				\bowtie					10LAQ (TP103_0.0-0.3).
O.3			0.2	\bowtie			TP103 0 20-0 30		
C. Matural - C. A. provin-red, nomogenous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets TP103_0.40-0.50				\bowtie					
0.4 TP103_0.40-0.50 TP103_0.40-0.50 0.8 Termination Depth at:0,80 m, 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6 1.6			0.3		CL Natural - CLAY, brown-red, homogenous, damp,	DP			No odours, staining, or
0.5 0.6 -0.7 0.8 Termination Depth at 0.80 m. -1 1.1 1.2 -1.3 -1.4 -1.5 -1.6			0.4		low plasticity, firm-stiff, with inclusions of roots and rootlets				asbestos observed.
0.6 -0.7 -0.8 Termination Depth at 0.80 m0.9 -1 -1.1 -1.2 -1.3 -1.4 -1.5 -1.6							TP103_0.40-0.50		
0.8 Termination Depth at:0.80 m. 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6			0.5						
0.8 Termination Depth at:0.80 m. 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6			_						
0.8 Termination Depth at:0.80 m. 1 1 1.1 1.2 1.3 1.4 1.5 1.6			0.6						
0.8 Termination Depth at:0.80 m. 1 1 1.1 1.2 1.3 1.4 1.5 1.6			0.7						
1									
- 0.9 - 1.1 - 1.2 - 1.3 - 1.4 - 1.5 - 1.6			0.8		Termination Depth at:0,80 m.				
-1.1 -1.2 -1.3 -1.4 -1.5 -1.6			0.0		·				
-1.1 -1.2 -1.3 -1.4 -1.5 -1.6			0.9						
1.2 -1.3 -1.4 -1.5 -1.6			1						
1.2 -1.3 -1.4 -1.5 -1.6									
-1.3 -1.4 -1.5 -1.6			1.1						
-1.3 -1.4 -1.5 -1.6			1 2						
-1.4 -1.5 -1.6			1.2						
-1.5 -1.6 -1.6			1.3						
-1.5 -1.6 -1.6									
			1 <u>.</u> 4						
			- - 1.5						
			1.6						
			<u> </u>						
			- 1.7 -						
			1.8						
			_						
			1.9						
			_						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt

ADDRESS 18 Forbes Street

ADDRESS 18 Forbes Street **DRILLING DATE** 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308734.4048 **NORTHING** 6245048.2319

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.20 m bgl LOGGED BY E Piccinin

						r	ı	_
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		- 0.1 - 0.2 - 0.3		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets	DP	TP104_0.00-0.10 TP104_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (TP104_0.0-0.3).
		0.4		Fill - Silty CLAY, brown-orange, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, glass, roots and rootlets	DP	TP104_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (TP104_0.3-0.7).
		- 0.7 - 0.8 - 0.9 - 1.1		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP	TP104_0.90-1.00		No odours, staining, or asbestos observed.
		- 1.3 - 1.4 - 1.5 - 1.6 - 1.7		Termination Depth at:1.20 m.				



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt

ADDRESS 18 Forbes Street **DRILLING DATE** 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator
METHOD Test Pit

TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308749.4022 **NORTHING** 6245114.7457

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.60 m bgl LOGGED BY E Piccinin

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1 0.2 0.3 0.4		Fill - Silty Gravelly SAND, grey, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with inclusions of roots and rootlets Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, brick, concrete, roots, rootlets and asbestos fragments	DP	TP105_0.00-0.10 TP105_0.20-0.30 TP105_0.40-0.50	-	No odours or staining observed. No asbestos observed in 10L AQ (TP105_0.0-0.1). No odours or staining observed. Four asbestos fragments (TP105-FRAG01 to TP105-FRAG04) observed in 10L AQ (TP105_0.1-0.6).
		- 0.6 - 0.7 - 0.8 - 0.9		CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of rootlets	DP	TP105_0.90-1.00	-	No odours, staining, or asbestos observed.
		1.1 1.2 1.3		Becomes grey-red at 1.0 m bgs		TP105_1.40-1.50	_	
		1.5		Termination Depth at:1.60 m.				
		1.7 1.8 1.9						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt
ADDRESS 18 Forbes Street
DRILLING DATE 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator
METHOD Test Pit
TP LENGTH (m) m

TP WIDTH (m) m

EASTING 308736,1683
NORTHING 6245146,0708
COORD SYS GDA2020_MGA_zone_56
TOTAL DEPTH 1.00 m bgl

LOGGED BY E Piccinin

		1					_	1
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit	>	- 0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7		Fill - Silty Gravelly SAND, grey, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with inclusions of ash, ceramic, roots, and rootlets Fill - Silty CLAY, brown-orange, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of weathered shale gravels CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of weathered shale gravels	DP DP	TP106_0.00-0.10 TP106_0.20-0.30 TP106_0.40-0.50	_	No odours or staining observed. No asbestos observed in 10L AQ (TP106_0.0-0.1). No odours or staining observed. No asbestos observed in 10L AQ (TP106_0.1-0.5). No odours, staining, or asbestos observed.
		- 1.1 - 1.2 - 1.3 - 1.4 - 1.5 - 1.6 - 1.7		Termination Depth at:1.00 m.		TP106_0.90-1.00		



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt

ADDRESS 18 Forbes Street **DRILLING DATE** 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excavator
METHOD Test Pit

TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308853.741 **NORTHING** 6245124.5912

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.50 m bgl LOGGED BY E Piccinin

								•
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		- - - 0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of ash, glass, metal, roots, rootlets, tile and an asbestos fragment	DP	TP107_0.00-0.10		No odours or staining observed. One asbestos fragment (TP107-FRAG01) observed in 10L AQ
		0.2		Fill - Silty CLAY, brown-grey, heterogeneous, dry-damp, low plasticity, stiff, with inclusions of ash, glass, metal, roots, rootlets, and tile	DP	TP107_0.20-0.30	_	(TP107_0.0-0.2). No odours or staining observed. No asbestos observed in 10L AQ
		- 0.4 - 0.5		Fill - Sandy SILT, light brown, heterogeneous, damp, non-low plasticity, soft, with no inclusions	DP	TP107_0.40-0.50		(TP107_0.2-0.4). No odours or staining observed. No asbestos observed in
		0.6		CL Natural - CLAY, red, homogenous, damp, low-medium plasticity, firm-stiff, with no inclusions	DP			10L AQ (TP107_0.4-0.6). No odours, staining, or asbestos observed.
		0.7						
		0.9 1				TP107_0.90-1.00	_	
		- 1.1 - 1.2						
		- 1.3 - 1.3						
		1.4		Termination Depth at:1.50 m.		TP107_1.40-1.50		
		1.6 1.7						
		1.7 1.8						
		1.9 						



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt
ADDRESS 18 Forbes Street

DRILLING DATE 07 Jan 2025

DRILLING COMPANY Ken Coles **PLANT TYPE** Excavator

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308879.5362 **NORTHING** 6245029.4315

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.50 m bgl LOGGED BY E Piccinin

						г		
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit	Water	- 0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8	Graphi	Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of roots and rootlets Fill - Silty CLAY, brown-grey, heterogeneous, damp, low plasticity, stiff, with inclusions of ash, glass, weathered shale gravels, and rootlets	DP DP Woistu	TP108_0.00-0.10 TP108_0.20-0.30 TP108_0.40-0.50	Gld	No odours or staining observed. No asbestos observed in 10L AQ (TP108_0.0-0.1). No odours or staining observed. No asbestos observed in 10L AQ (TP108_0.1-1.0).
		- 1.1 - 1.2 - 1.3 - 1.4 - 1.6 - 1.7		CL Natural - CLAY, brown-orange, homogenous, damp, low-medium plasticity, firm-stiff, with no inclusions Termination Depth at:1.50 m.	DP	TP108_1.40-1.50		No odours, staining, or asbestos observed.



PROJECT NAME 68150 Liverpool HS DGI + RAP PLANT TYPE Excavator

CLIENT Meinhardt
ADDRESS 18 Forbes Street

ADDRESS 18 Forbes Street
DRILLING DATE 07 Jan 2025

DRILLING COMPANY Ken Coles
PLANT TYPE Excevator

METHOD Test Pit
TP LENGTH (m) m
TP WIDTH (m) m

EASTING 308834.6306 **NORTHING** 6245030.7242

COORD SYS GDA2020_MGA_zone_56

TOTAL DEPTH 1.50 m bgl LOGGED BY E Piccinin

						<u> </u>		
Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	DIO	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of roots and rootlets	DP	TP109_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.0-0.2).
		0.2 0.3		Fill - Silty CLAY, brown-grey, heterogeneous, dry-damp, low plasticity, stiff, with inclusions of ash, glass, roots, rootlets, and tile	DP	TP109_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.2-0.5).
		0.4				TP109_0.40-0.50		
		- 0.6		Fill - Sandy SILT, grey-white, heterogeneous, damp, non-low plasticity, soft, with no inclusions	DP			No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.5-0.8).
		- 0.7 - 0.8				TP109_0.70-0.80		(11 103_0.5-0.0).
		0.8		CL Natural - CLAY, red, homogenous, damp, low-medium plasticity , firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		1 1 1						
		- 1.1 - 1.2						
		1.3 1.						
		1.4 		Termination Depth at:1.50 m.		TP109_1.40-1.50		
		1.6						
		1.7 1.8						
		1.9						
		_						



project:

Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH17**

logged by:

sheet: 1 of 1
project no. 754-SYDEN231101

AL

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

r	locati			soys	ana	GIFI	s n ig	n Sc	hool, Lachlan Street Liverpool	NSW	check	ed by:	DM
			lot Specified						ace elevation: Not Specified	_		izontal:	
ŀ			type:, Truck mounte	ed			l <i>i</i>		ng fluid:	hole dia	ameter	: 50 mm	
ŀ	drilli	ng in	formation	c S	ı		mate	rial sub		T		`	
	method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteris colour, secondary and minor components	stic,	moisture condition	consistency/ relative density	structure and additional observations
	1		E: BH17_0.0-0.1	3.1			$ \rangle$		TOPSOIL: SAND : fine grained, brown, trace sn sub-angular gravels.	mall	D	L	no ACM / stains / odours observed Topsoil
9:50			E: BH17_0.1-0.2	1.2		_			FILL: Gravelly SAND : fine to medium grained medium sub-angular gravels.	d, brown,	D	L	Fill -
28/10/2019 US			E: BH17_0.3-0.4	0.3		_		CH	CLAY: high plasticity, red, grey mottled.		D	MD	Natural -
CDF_0_9_07_LIBRARY.GLB rev.AU_Log_COF BOREHOLE: ENVIRONMENTAL_LIVERPOOLBOYS AND GIRLS HIGH SCHOOL.GPJ < <drawingfile>> 28/10/2019 08:50</drawingfile>	PT	Not Encountered				0.5 — - - -							- - -
VIRONMENIAL LIVERPOOL BOY	•		E: BH17_1.0-1.1	0.2		1.0 —							-
KEHOLE: EN						_			Borehole BH17 terminated at 1.30 m Target depth				-
og COP BO						1.5 —							_
B rev:AU						-							
LIBKARY.G						_							-
CDF_0_9_07_						_							
	metho AD AS HA MR W PT SS * e.g.	auge auge hand wash hand push solid bit sl		suppo M mi C ca: N nill	ud sing - 10-0	ct-12 wa on date :	ter shown	E S U V H N N	disturbed sample environmental sample S split spoon sample undisturbed sample ### undisturbed sample ###mm diameter VS water sample B hammer bouncing I standard penetration test (SPT) W W W SPT - sample recovered W	based on A boisture cond dry I moist / wet /p plastic lii	scription S 1726 dition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense
	B T V	blan TC b V bit	it			r inflow r outflow			lc SPT with solid cone ID photoionization detector	4			D dense VD very dense



project:

Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH18**

1 of 1 sheet: 754-SYDEN231101

AL

project no.

logged by:

Department of Education School Infrastructure NSW (SINSW) client: date started: 03 Oct 2019

date completed: 03 Oct 2019 principal:

Liverpool Boys and Girls High School, Lachlan Street Liverpool NSW checked by: DM location:

_	catio			Juys	anu	Giri	s i iig		hool, Lachlan Street Liverpo				DM
- 1			Not Specified type: , Truck mounte	ad.					ace elevation: Not Specified ng fluid:	=	from hor iameter		
<u> </u>	_		formation	tu .			mate	rial sub		noie u	iametei	. 50 111111	I
۳		ا اا ج		ار <u>ک</u>				Jul	material description			_ <u>≥</u>	structure and
method &	support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	SOIL NAME: plasticity or particle charac colour, secondary and minor compor		moisture condition	consistency / relative density	additional observations
SS-									ASPHALT.		D	L	no ACM / stains / odours observed
	•		E: BH18_0.1-0.2	1.1		-			FILL: Gravelly SAND: fine to medium grain small sub-angular gravels.	ined, brown,	D		Fill -
19 09:51			E: BH18_0.4-0.5	1		0.5		CI	CLAY : medium plasticity, red, yellow and grandtled.	rey			Natural -
e>> 2&10/20						-							-
J < <drawingr< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td></drawingr<>						-							-
SCHOOL GF		p	E: BH18_1.0-1.1	0.8		1.0 —							-
ND GIRLS HIGH		Not Encountered				-							-
DOL BUYS AN		۷				1.5							-
COP_O_9_0/_LIBRARY.GLB REVAU LOG COF BOREFFOLE: ENVIRONMENTAL LIVERFOOL BOYS AND GIRLS FIIGH SCHOOL.GFJ < <ur> A PT</ur>						- - -							-
OKEHOLE: ENVIRO				0.7		2.0 —							-
ev:AU Log COP B						- -							-
AKY.GLD.				0.1		2.5			Davabala DI 140 tarreis et el et 0.00 es				_
ים מי בים מים בים מים מים מים מים מים מים מים מים מים מ						- -			Borehole BH18 terminated at 2.60 m Target depth				-
L						_							-
M A: H M W P	S A IR / T S	auge hand mud wasi hand push	er drilling* er screwing* d auger rotary hbore d auger n tube	suppo M mi C ca: N nill	ud sing			E E E S U	disturbed sample environmental sample ss split spoon sample li## undisturbed sample ##mm diameter water sample	soil grou soil de based on A moisture con D dry M moist	AS 1726	n	consistency/relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb frishle
* e. B T V	.g.		k bit pit	water	level wate	oct-12 wa on date s r inflow r outflow	shown	N N	I* SPT - sample recovered IC SPT with solid cone PID photoionization detector	W wet Wp plastic I Wl liquid lir	imit nit		VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Borehole

Hole ID. **BH19**

project no.

1 of 1 sheet: 754-SYDEN231101

Department of Education School Infrastructure NSW (SINSW) client: date started: 03 Oct 2019

date completed: 03 Oct 2019 principal:

project: Site and Building Contamination Assessment logged by: AL Liverpool Boys and Girls High School, Lachlan Street Liverpool NSW checked by: location: DM

		lot Specified type: , Truck mounte	ed					ace elevation: Not Specified ng fluid:	_		izontal: : 50 mm	
		formation				mate	rial sub		noic di	arrictor	. 50 11111	
			ion (yr					material description			, ži	structure and
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	SOIL NAME: plasticity or particle characteristics colour, secondary and minor compo	cteristic, nents	moisture condition	consistency / relative density	additional observations
								ASPHALT.		D	L	no ACM / stains / odours observed
•		E: BH19_0.1-0.2	1.5		-			FILL: Gravelly SAND: fine to medium gra	ained, brown,	D		Fill
			0.2		-		CH-MH	medium sub-angular gravels. Silty CLAY: high plasticity, black, high pla	asticity silt.	М	L/S	Natural
		E: BH19_0.3-0.4			-				·			
		E: BH19_0.5-0.6			0.5 —							
		Е. ВН 19_0.5-0.0			_							
					_							
			0.2		-		СН	CLAY: high plasticity, red to grey, yellow m	nottled.	М	MD	
					-							
		E: BH19_1.0-1.1	0.2		1.0 —							
	p _a				-							
	Not Encountered				-							
	t Enco				-							
	8				-							
					1.5							
					1.0							
					-							
					-							
					-							
		E: BH19_2.0-2.1	0.2		2.0 —							
			1		-							
					-							
					_							
					_							
					2.5-							
					2.5							
								Borehole BH19 terminated at 2.60 m				
					-			Target depth				
					-							
					-							
netho	nd	Г	suppo	rt				amples & field tests				
.D	auge	er drilling*	M m				A	LT air lift test		scriptio	n	very soft
IS IA	hand	er screwing* I auger	N nil					disturbed sample	based on A	AS 1726	:2017	S soft F firm
IR /	wasl	rotary nbore					s	S split spoon sample ## undisturbed sample ##mm diameter	moisture con	dition		St stiff VSt very stiff
T S	push	l auger i tube					٧	/S water sample	D dry M moist			H hard Fb friable
_	bit sl	stem flight auger hown by suffix	water	10-0	Oct-12 wa	ter	N	standard penetration test (SPT)	W wet Wp plastic l	imit		VL very loose
.g.	AD/I	k bit	=		on date : er inflow	PIOMU	N N	c SPT with solid cone	Wl liquid lir	nit		MD medium dense
	TC b			⋖ wate	er outflow		P	ID photoionization detector refusal				VD dense very dense



project:

Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH20**

AL

754-SYDEN231101

sheet: 1 of 1

project no.

logged by:

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

locat			buys	ariu	GIII	s mg		hool, Lachlan Street Liverpoo				DM One
		lot Specified type: , Truck mounte	vd.					ace elevation: Not Specified ng fluid:	•	from hor iameter		90°
		formation	au .			mate	rial sub		noie u	arricter	. 50 111111	
QIIII.		iorniacion	ار کر م				nai oab	material description			. ≱	structure and
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	SOIL NAME: plasticity or particle characte colour, secondary and minor compone	eristic, ents	moisture condition	consistency / relative density	additional observations
-SS-								ASPHALT.		D	L	no ACM / stains / odours observed
*		E: BH20_0.1-0.2	1.1		-			FILL: Gravelly SAND: fine to medium grains brown.	ed, grey to	D		Fill
					-		CI	Silty CLAY: medium plasticity, black.		М	L/S	Natural
	Encountered	E: BH20_0.5-0.6	0.6		0.5 —		CH	CLAY: high plasticity, red, grey mottled.		M	MD	
PT	Not				-							
		E: BH20_1.0-1.1	0.5		1.0 —							
v					_			Borehole BH20 terminated at 1.30 m				
					_			Target depth				
					1.5 —							
					-							
					_							
					-							
meth AD		er drilling*	suppo M mi		l		Α	amples & field tests LT air lift test	soil grou			consistency / relative density
AS HA MR W PT SS	auge hand mud wash hand push solid	er screwing* I auger rotary hbore I auger I tube I stem flight auger	C ca:	sing I			B C E S U V	bulk disturbed sample disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter // S water sample B hammer bouncing	moisture con D dry M moist W wet	dition		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose
* e.g. B T V	bit sl AD/I blan TC b V bit	k bit vit	<u></u>	level wate	ort-12 war on date s r inflow r outflow	shown	N N F	standard penetration test (SPT) * SPT - sample recovered c SPT with solid cone ID photoionization detector	Wp plastic I Wl liquid lir	imit nit		VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Borehole

Hole ID. **BH21**

sheet: 1 of 1

project no.

754-SYDEN231101

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

project: Site and Building Contamination Assessment logged by: AL

locat	ion:	Liverpool E	Boys	and	Girl	s Hig	ıh Sc	hool, Lachlan Street Liverp	ool NSW	check	ed by:	DM
position	on: N	lot Specified					surf	ace elevation: Not Specified	angle	from hor	izontal:	90°
		type:, Truck mounte	ed					ng fluid:	hole d	liameter	: 50 mm	1
drilli	ing in	formation	- 5	1	1	mate	rial sub					
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characolour, secondary and minor compo		moisture condition	consistency / relative density	structure and additional observations
		E: BH21_0.0-0.2	3.7		-			FILL: Gravelly SAND : fine to medium gr fine grained grey gravels.	ained, grey,	D	L	no ACM / stains / odours observed Fill
		E: BH21_0.2-0.3	0.9		-			FILL: CLAYEY SAND: fine to medium gradium plasticity red, grey clay, with some size sub-angular gravels.		D	L	
	Not Encountered	E: BH21_0.5-0.6	0.5		0.5		CI	CLAY: medium plasticity, red, yellow mott	led.	D	MD	Natural
- HA-	Not En				-							
		E: BH21_1.0-1.1	0.6		1.0 —							
*					-	<i>(////)</i>		Borehole BH21 terminated at 1.20 m Target depth				
					-							
					1.5 —							
					-							
					_							
meth AD AS HA MR W PT SS	auge hand mud wash hand push solid	er drilling* er screwing* d auger rotary hbore d auger t tube l stem flight auger nown by suffix	suppo M m C ca N nil	ud sing I	Oct-12 wa		E E E S U	disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter ws water sample HB hammer bouncing standard penetration test (SPT)		n dition	n	consistency/relative density VS Very soft S S S S Oft F F firm St VSt Very stiff H hard Fb friable VL very loose L loose
B T V	blan TC b V bit	k bit vit			r inflow r outflow		l N	lc SPT with solid cone	··· iiquiu III			MD medium dense D dense VD very dense



principal:

Environmental Log - Borehole

Hole ID. **BH22**

sheet: 1 of 1

project no. **754-SYDEN231101**

03 Oct 2019

client: Department of Education School Infrastructure NSW (SINSW)

date started: 03 Oct 2019

project: Site and Building Contamination Assessment

logged by: AL

date completed:

position:	Not Specified						ace elevation: Not Specified	angle fro			90°
	nt type:, Truck mounte	ed					ng fluid:	hole diar	neter :	: 50 mm	
drilling	information				mate	rial sub	stance				
method & support water		photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristic colour, secondary and minor components	c,	moisture	consistency / relative density	structure and additional observations
Not Encountered	E: BH22_0.0-0.1	0.3		0.5 —		CL	FILL: SAND: fine to medium grained, brown, with some sub-angular medium sized black gravels. CLAY: low plasticity, red, yellow mottled.		D	MD	no ACM/ stains / odours observed Fill Natural
AS au HA ha MR mu W wa PT ha SS pu so * bit e.g. AE	uger drilling* uger screwing* and auger rud rotary ashbore and auger ush tube lid stem flight auger t shown by suffix D/T ank bit	support M mu C cas N nill	ud sing _ 10-Oc level c	1.5 —		E E S U	bulk disturbed sample disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter //S water sample B hammer bouncing standard penetration test (SPT) * SPT- sample recovered barner mois M W W P W W W W W W W W W W W W W W W W	soil group soil desc ased on AS sture condi dry moist wet plastic lim iliquid limit	tion	n	consistency/relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense



project:

Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH23**

sheet: 1 of 1

AL

project no.

logged by:

754-SYDEN231101

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

		lot Specified ype: , Truck mounte	ed					ace elevation: Not Specified ng fluid:	•	liameter	izontal: : 50 mm	
		formation				mate	rial sub					
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle chara colour, secondary and minor compo	acteristic, onents	moisture condition	consistency / relative density	structure and additional observations
								ASPHALT.		D	L	no ACM / stains / odours observed
-	•	E: BH23_0.1-0.2	0.8		-			FILL: Gravelly SAND: fine to medium gr medium sized sub-angular grey gravels.	ained, grey,	D		Fill
		E: BH23_0.3-0.4	0.5		-		CI	CLAY : medium plasticity, red, trace mediu sub-angular gravels.	ım sized	D	MD	Reworked natural
		E: BH23_0.4-0.5	0.5		0.5			FILL: Sandy GRAVEL: fine grained, brown medium grained brown sand, with traces or plasticity clay.		D	MD	Fill
	Not Encountered	E: BH23_0.6-0.7	0.1		-		CL	CLAY: low plasticity, red, yellow and grey	mottled.	D	MD	Natural
		E: BH23_1.2-1.3	0.2		1.0 —							
					_			Borehole BH23 terminated at 1.30 m Target depth				
					1.5 —							
					-							
netho		er drilling*	suppo M mi	ud			P	amples & field tests LT air lift test		up symbo		consistency / relative density
AS HA MR V T SS	auge hand mud wash hand push solid	er screwing* I auger rotary nbore I auger tube stem flight auger nown by suffix	C can N nill	J10-C	0ct-12 wa on date:	ter shown	L V	disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter ws water sample HB hammer bouncing standard penetration test (SPT)	moisture cor D dry M moist W wet Wp plastic	AS 1726 Idition		S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
л.g. В Г	blanl TC b V bit	k bit it		- 1	r inflow r outflow		N	lc SPT with solid cone ID photoionization detector	WI liquid li			MD medium dense D dense VD very dense



project:

Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH24**

AL

754-SYDEN231101

sheet: 1 of 1

project no.

logged by:

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

nt type: , Truck mount information samples & field tests E: BH24_0.0-0.1 E: BH24_0.1-0.2				ace elevation: Not Specified ing fluid:	•	from hor iameter	izontal:	90°
information samples & field tests E: BH24_0.0-0.1 E: BH24_0.1-0.2	ng information samples & field tests			ng nulu.	noie di	iai i leter i	muun	
samples & field tests E: BH24_0.0-0.1 E: BH24_0.1-0.2	samples & field tests	E (2)	i matendi SUD	etanco			. 00 111111	
E: BH24_0.1-0.2 E: BH24_0.4-0.5	field tests							المراجع والمراجع
E: BH24_0.1-0.2	>	photoionization detector (ppmv) RL (m) depth (m)	graphic log soil group symbol	material description SOIL NAME: plasticity or particle characolour, secondary and minor compressions.	acteristic, onents	moisture condition	consistency / relative density	structure and additional observations
E: BH24 0.4-0.5	E: BH24_0.0-0.1	1.7		FILL: Gravelly SAND: fine to medium gr fine grained white gravels, traces of plastic	rained, grey, C.	D	L	no ACM / stains / odours observed Fill
E: BH24_0.4-0.5	E: BH24_0.1-0.2	1.1		FILL: SAND: fine grained, brown, trace gl medium plasticity grey clay.	lass and			
	E: BH24_0.4-0.5	0.1 - 0.5	G	CLAY: medium plasticity, grey to yellow, r	ed mottled.	D	MD	Natural
E: BH24_1.0-1.1	E: BH24_1.0-1.1	- 0.1 1.0-		Borehole BH24 terminated at 1.10 m Target depth				
		- 1.5 — - -						
ger screwing*	auger drilling* auger screwing* hand auger mud rotary washbore hand auger push tube solid stem flight auger bit shown by suffix AD/T	level on date s	A B B C C E S S U V V H ter N Shown N	ALT air lift test bulk disturbed sample disturbed sample environmental sample ss split spoon sample liff undisturbed sample #mm diameter water sample hammer bouncing standard penetration test (SPT) Formula bulk bulk bulk bulk bulk bulk bulk bulk	moisture con D dry M moist W wet Wp plastic I	escription AS 1726: adition	ı	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense
ge	auge hand was hand push solid bit s AD/	er screwing* d auger rrotary hbore d auger t tube I stem flight auger hown by suffix K k bit	er drilling* er screwing* d auger Irotary hbore d auger t tube I stem flight auger hown by suffix k bit bit M mud C casing N nill water I 10-Oct-12 wa level on date in level	er drilling* er screwing* d auger rortary hbore d auger t tube d stem flight auger hown by suffix k bit bit M mud C casing N nill Example Water 10-Oct-12 water	er drilling* er screwing* d auger rotary hbore d stem flight auger hown by suffix k bit bit M mud C casing N nill C casing N nill D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample E undisturbed sample HB hammer bouncing N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone plD photoionization detector	er drilling* er screwing* d auger rortary hbore d stem flight auger hown by suffix K bit bit M mud C casing N nill ALT air lift test B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter WS water sample HB hammer bouncing N standard penetration test (SPT) N* SPT - sample recovered WI liquid lir Will iquid lir ALT air lift test Soli de based on A moisture con D dry M moist W wet Wy plastic I WI liquid lir	er drilling* er screwing* dauger rotary hobore dauger is tem flight auger hown by suffix k bit bit with the factor of the factor of the first of the factor	re drilling* er screwing* da uger rotary hore di auger not ube is tem flight auger hown by suffix T k bit k bit



Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH25**

logged by:

sheet: 1 of 1
project no. 754-SYDEN231101

AL

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

		lot Specified ype: , Truck mounte	ed					ace elevation: Not Specified ng fluid:	=	from hor liameter		
		formation	-u			mate	rial sub		TIOIC C	ilametei	. 50 11111	'
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characolour, secondary and minor comp	acteristic, onents	moisture condition	consistency / relative density	structure and additional observations
. 07	_		0.0		0	0,	0, 0,	ASPHALT.		D	L	no ACM / stains / odours observed
		E: BH25_0.1-0.2	0.1				CL	FILL: Gravelly SAND: fine to medium gr brown, medium sub-angular grey gravels. CLAY: low plasticity, red to grey.		D D	MD	FIII Natural
	Not Encountered	E: BH25_1.0-1.1	0.2		1.0 —							
	Not		0.3		1.5 — - -							
		E: BH25_2.0-2.1	0.2		2.0 —							
					2.5			Borehole BH25 terminated at 2.60 m				
	-4	,			-			Target depth				
g			on date : r inflow	ter shown	ESUV	disturbed sample environmental sample sopiit spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT)		ndition	n	consistency / relative density VS Servery soft Servery soft Fervery St stiff VSt very stiff Here hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		



Environmental Log - Borehole

Hole ID. **BH26**

sheet: 1 of 1
project no. 754-SYDEN231101

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

project: Site and Building Contamination Assessment logged by: AL location: Liverpool Boys and Girls High School, Lachlan Street Liverpool NSW checked by: DM

locati			Boys	and	Girl	s Hig		hool, Lachlan Street Liverpool I				DM
		Not Specified						ace elevation: Not Specified			rizontal:	90°
		type:, Truck mounte	ed					ng fluid:	hole dia	ameter	: 50 mm	
arilli	ng in	formation	⊊ 🕏			mate	rial sub				>	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristic colour, secondary and minor components		moisture condition	consistency / relative density	structure and additional observations
A								ASPHALT.		D	L	no ACM / stains / odours observed
*		E: BH26_0.1-0.2 E: BH26_0.2-0.3	14.6		_			FILL: Gravelly SAND: medium grained, brown, medium sized sub-angular gravels, some asphal pieces.		D		FIII
			0.2		_		CI	CLAY: medium plasticity, red to grey to yellow.		М	S/MD	Natural
	Encountered		0.3		0.5							
	Not	E: BH26_0.7-0.8	0.2		-			becoming low plasticity at 0.7m bgs				
			0.3		1.0 —							
					_	(////)		Borehole BH26 terminated at 1.30 m Target depth				
					1.5 —							
					_							
					_							
methor AD AS HA WR PT SS	auge hand mud was hand push solid		suppo M mi C ca: N nill	ud sing	oct-12 wa	ter	E E E S	disturbed sample environmental sample services split spoon sample surface water sample water sample ##mm diameter water sample ##mm diameter by water sample Mean diameter surface states that (SDT)	soil group soil des pased on Ai sisture cond dry moist wet	scriptio S 1726	n	consistency/relative density VS Very soft S S Soft F firm St St Stiff VSt Very stiff H hard Fb friable VL very loose
e.g. З Г /	bit shown by suffix g. AD/T blank bit TO bit	level wate	on date s r inflow r outflow	shown	1	PD photoionization detector		mit nit		L loose MD medium dense D dense VD very dense		



Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH27**

logged by:

sheet: 1 of 1
project no. 754-SYDEN231101

AL

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

position:	: N	ot Specified	,-					ace elevation: Not Specified	angle fron			90°
		ype:, Truck mounte	ed			1		ng fluid:	hole diam	eter :	50 mm	
drilling	gin	formation	-5		l	mate	rial sub				_	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristic colour, secondary and minor components	moisture	condition	consistency / relative density	structure and additional observations
	Not Encountered	E: BH27_0.0-0.1 E: BH27_0.2-0.3 E: BH27_0.4-0.5	0.9		0.5—	6	SC CL	FILL: Gravelly SAND: fine to medium grained, b small sub-angular gravels. FILL: CLAYEY SAND: fine to medium grained, regulow. FILL: ASH: fine grained, blue, some small sub-angravels. FILL: CLAYEY SAND: fine to medium grained, b medium plasticity red, yellow clay. CLAY: low plasticity, red, grey and yellow mottled	orown, I	D D D D	L MD MD	no ACM / stains / odours observed Fill Natural
AS a HA h MR m W W PT h SS p s b e.g. A B b	auge nand mud wash nand oush solid	k bit	suppo M mi C ca N nill	ud sing - lo-O	1.5 —		ESUV	bulk disturbed sample disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter //S water sample B hammer bouncing standard penetration test (SPT) * SPT - sample recovered ba	soil group si soil descr ased on AS 1 sture conditi- dry moist wet plastic limit liquid limit	iption 1726:2 on		consistency/relative density VS Very soft S S Soft F F firm St St Stiff VSt Very stiff H hard Fb friable VL very loose L loose MD medium dense D dense



Environmental Log - Borehole

Site and Building Contamination Assessment

Hole ID. **BH28**

logged by:

sheet: 1 of 1
project no. 754-SYDEN231101

AL

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

_	locati	on:	Liverpooi	30ys	ano	GIN	s Hig	n Sc	hool, Lachlan Street Liverpool NSW	cneci	ked by:	DM
			lot Specified						•	e from ho	rizontal:	90°
ļ			type:, Truck mounte	ed						diameter	: 50 mm	1
ļ	drilli	ng in	formation				mate	rial sub	stance			1
	method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristic, colour, secondary and minor components	moisture condition	consistency / relative density	structure and additional observations
l	A A		E: BH28_0.0-0.1		ш.	_		0 0	FILL: Gravelly SAND : fine to medium grained, brown, small sub-angular gravels.	D	L	no ACM / stains / odours observed Fill
10/2019 09:51			E: BH28_0.2-0.3	_		-			FILL: CLAYEY SAND : fine to medium grained, brown, medium plasticity red, yellow clay.	D	MD	-
< <drawingfile>> 28/</drawingfile>		ntered	E: BH28_0.5-0.6			0.5		CI	CLAY : medium plasticity, red, grey and yellow mottled.	D		Natural –
ND GIRLS HIGH SCHOOL.GPJ <		Not Encountered				- - -						-
CDF_0_9_07_LIBRARY.GLB rev.aU Log COF BOREHOLE: ENVIRONMENTAL LIVERPOOL BOYS AND GIRLS HIGH SCHOOL GPJ < <drawingfile>> 28/10/2019 09:51</drawingfile>						1.0						- - -
30REHOLE: ENVI							(/////		Borehole BH28 terminated at 1.30 m Target depth			-
AU Log COFE						1.5 —						-
RARY.GLB rev./						-						-
CDF_0_9_07_LIE						-						-
	method AD AS HA MR W PT SS * e.g. B	auge hand mud wash hand push solid	k bit	suppo M mi C ca N nill	ud sing 	Oct-12 wa on date : r inflow r outflow	shown	ESUV	bulk disturbed sample disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter WS water sample H## undisturbed sample ##mm diameter water sample H## water sample IBH hammer bouncing IBH standard penetration test (SPT)	c limit	n	consistency/ relative density VS Very soft S S Soft F F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense dense VD



Environmental Log - Test pit

Hole ID. **TP07**

sheet: 1 of 1
project no. 754-SYDEN231101

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

project: Site and Building Contamination Assessment logged by: AC location: Liverpool Boys and Girls High School, Lachlan Street Liverpool NSW checked by: DM

locat	ion:	Liverpool E	Boys	and	Girl	s Hig	h Sc	hool, Lachlan Street Liverpo	ool NSW	check	ed by:	DM
		lot Specified						ace elevation: Not Specified	•	entation:		
		type: 3.3t Excavator						avation method:	excav	ation din	nensions	s: 1.0 m long 0.3 m wide
arilli	ng in	formation	Ę >			mate	rial sub			1	>-	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle charac colour, secondary and minor compo		moisture condition	consistency / relative density	structure and additional observations
		E: TP07_0.0-0.1				$\left \begin{array}{c} \\ \\ \end{array} \right $		TOPSOIL: SAND: fine to medium grained.		М		no ACM / stains / odours observed Topsoil
			0.8		-			FILL: CLAY: with some ash.		М		Fill
	Not Encountered	E: TP07_0.4-0.5	0.9		0.5		CI	CLAY: orange, brown, white.		М		Natural
		E: TP07_0.9-1.0	0.7		-							
					- 1.0 - -			Test pit TP07 terminated at 1.00 m Target depth				
					-							
methoday AD AS HA MR W PT SS * e.g. B T V	auge hand mud wash hand push solid	k bit it	suppo M mu C ca N nill	ud sing I	oct-12 wa on date : r inflow r outflow		ESUV	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered Ic SPT with solid cone photoionization detector		ndition	n	consistency/ relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP08** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

locat	ion:	Liverpool E	Boys	and	Girl	s Hig	h Sc	hool, Lachlan Street Liverpo	ool NSW	check	ed by:	DM
		lot Specified						ace elevation: Not Specified		entation:		
		type: 3.3t Excavator						vation method:	excava	ation din	nensions	s: 1.0 m long 0.3 m wide
drilli	ng in	formation				mate	rial sub	stance				
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle charact colour, secondary and minor components	eteristic, nents	moisture condition	consistency / relative density	structure and additional observations
•	untered	E: TP08_0.0-0.1	1.1		-			FILL: CLAYEY SAND: fine to medium grain low plasticity clay.		D		no ACM / stains / odours observed Fill
ш 	Not Encountered	E: TP08_0.6-0.7			0.5 —		CL	CLAY: brown, orange mottled, with some in fragments.	onstone	D	St	Natural
					1.0-			Test pit TP08 terminated at 0.70 m Target depth				
methodal AD AS HA MR W PT SS * e.g. B T V	auge hand mud wash hand push solid	k bit vit	suppo M mi C ca N nil	ud sing I	ct-12 wa on date : r inflow r outflow	ter shown	A B C E S U V H N N N	disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered C SPT with solid cone ID photoionization detector	soil grousoil de based on / moisture com D dry M moist W wet Wp plastic Wil liquid lin	AS 1726	n	consistency/relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP09** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

		lot Specified						ace elevation: Not Specified		entation:		v: 1.0 m long 0.3 m wido
		type: 3.3t Excavator formation				mata	exca rial sub	avation method:	excav	ัลแบท ติเท	ierisions	s: 1.0 m long 0.3 m wide
uriii	ling in	iorniation	c 5			mate	riai sub				>-	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle chara colour, secondary and minor compo	acteristic, onents	moisture condition	consistency / relative density	structure and additional observations
		E: TP09_0.0-0.1	0.8		-		CL	CLAY: brown, orange.		D		no ACM / stains / odours observed Reworked clay
П П	Not Encountered	E: TP09_0.4-0.5	0.9		0.5		CL	CLAY: orange.		D		Natural
		E: TP09_0.9-1.0	0.9		-							
'					- 1.0 			Test pit TP09 terminated at 1.00 m Target depth				
meth AD AS HA MR W PT SS * e.g. B T	auge hand mud wash hand push solid	k bit vit	water water To-Oct-12 water level on date sh water inflow water outflow	snown	ESUV	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample ##mm diameter water sample standard penetration test (SPT) SPT - sample recovered LS SPT with solid cone photoionization detector		n dition	n	consistency / relative density VS S very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP10** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 03 Oct 2019

principal: date completed: 03 Oct 2019

nociti	ion:	lot Specified				<i>3 1 11</i> 9		hool, Lachlan Street Liverpoonage elevation: Not Specified	entation:	eu by.	DM
		type: 3.3t Excavator						avation method:		nensions	:: 1.0 m long 0.3 m wide
		formation				mate	rial sub				<u> </u>
			fion mv)					material description		sity	structure and
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	SOIL NAME : plasticity or particle characte colour, secondary and minor compone	moisture condition	consistency/ relative density	additional observations
		E: TP10_0.0-0.1				$\left \begin{array}{c} \\ \\ \end{array} \right $		TOPSOIL: SAND.	М		no ACM / stains / odours observed Topsoil
			0.8		-		CI	CLAY: brown, grey, orange.	M		Reworked clay
	Not Encountered	E: TP10_0.4-0.5	0.9		0.5 —		CI	CLAY: orange, brown mottled.	D		Natural
		E: TP10_0.9-1.0	0.8		-1.0			Test pit TP10 terminated at 1.00 m			
					- -			Target depth			
meth AD AS HA MR W PT SS ÷ e.g.	S auger screwing* C cas A hand auger N nill R mud rotary washbore hand auger push tube solid stem flight auger bit shown by suffix C cas N nill water		ud sing I	oct-12 war on date s r inflow r outflow	ter shown	ESUV	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered Ic SPT with solid cone IID photoionization detector	ndition	n	consistency / relative density VS VS S Soft F F Sim St St St VSt Very stiff H H H H H H H H C VL Very loose L L L L L L L L L L L L L L L L L L L	



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP11** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

ositio	on: N	lot Specified					surf	ace elevation: Not Specified	pit ori	entation:		
quip	ment	type: 3.3t Excavator					exca	avation method:	excav	ation din	nensions	s: 1.0 m long 0.3 m wide
drilli	ing in	formation			_	mate	rial sub	stance				T
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle char colour, secondary and minor comp	racteristic, ponents	moisture condition	consistency / relative density	structure and additional observations
		E: TP11_0.0-0.1	0.5		_			TOPSOIL: Sandy GRAVEL: blue, some clay.	e low plasticity	D		no ACM / stains / odours observed Topsoil
	Not Encountered	E: TP11_0.4-0.5	0.5					FILL: CLAY: medium plasticity, red, brown	wn.	M		Reworked clay
		E: TP11_0.9-1.0	0.5		-		CI	CLAY: white, grey mottled.		D		Natural
					-			Test pit TP11 terminated at 1.00 m Target depth				
meth AD AS HA MR N PT SS 	auge hand mud was hand push solid	k bit vit	suppo M mu C cas N nill	ud sing I	Oct-12 wa on date : er inflow er outflow	shown	E S U V H N N N	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered SPT with solid cone photoionization detector		ndition	n	Consistency / relative density VS Servery soft Servery soft Servery stiff Fervery stiff Here hard Fervery stiff Here hard Formal friable VL VERY loose Lervery loose Lervery loose Dense MD Dense MD Dense VD VD Very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP12** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

_	on:		Joys	arra	OII I	<i>3 1 11</i> 9		hool, Lachlan Street Liverpool I			DM
		lot Specified						ace elevation: Not Specified	pit orientation		o: 10 m long 0.3 m wide
		type: 3.3t Excavator				mata		vation method:	excavation di	mensions	s: 1.0 m long 0.3 m wide
ariili	ng in	formation	⊊ 5			mate	rial sub			>-	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristic colour, secondary and minor components	moisture condition	consistency / relative density	structure and additional observations
•		E: TP12_0.0-0.1	0.7		_			TOPSOIL: SAND: brown, with some ash.	M		no ACM / stains / odours observed Topsoil
					_		CI	CLAY: orange, brown.	М		Reworked clay
E .	Not Encountered	E: TP12_0.4-0.5	0.7		0.5 —		CI	CLAY: medium plasticity, brown.			Natural
		E: TP12_0.9-1.0	0.8		- - - 1.0						
3					-			Test pit TP12 terminated at 1.00 m Target depth			
methodal AS HA MR W PT SS * e.g. B T V	auge hand mud wash hand push solid	k bit it	suppo M mu C cas N nill	ud sing 	ct-12 wa on date s r inflow r outflow	ter shown	ESUV	disturbed sample environmental sample S split spoon sample ## undisturbed sample ##mm diameter VS water sample B hammer bouncing standard penetration test (SPT) * SPT - sample recovered C SPT with solid cone ID photoionization detector		on	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP13** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

		lot Specified		· <u></u>				ace elevation: Not Specified	•	entation:		
		type: 3.3t Excavator				4		avation method:	excav	ation din	nensions	: 1.0 m long 0.3 m wide
arılli	ng in	formation	c S			mate	rial sub				>	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle character colour, secondary and minor compo	cteristic, nents	moisture condition	consistency / relative density	structure and additional observations
		E: TP13_0.0-0.1	0.7		-			ASH-SLAG: black, grey.				no ACM / stains / odours observed
ı	Not Encountered	E: TP13_0.4-0.5	0.6		- 0.5 —	4.4	CI	CLAY: medium plasticity, brown, orange.				Natural
		E: TP13_0.9-1.0	0.8		- - -							
					- 1.0 - -			Test pit TP13 terminated at 1.00 m Target depth				
meth AD AS HA MR W PT SS * e.g. B T	auge hand mud wash hand push solid	k bit it	water 10-Oct-12 water	snown	ESUV	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered Ic SPT with solid cone lID photoionization detector		ndition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP14** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

		lot Specified ype: 3.3t Excavator						ace elevation: Not Specified avation method:	•	entation:		s: 1.0 m long 0.3 m wide
		formation				mate	rial sub		Excav	allon um	1011510115	s. 1.0 III long 0.3 III wide
ariiii	g	iomation	ال ال				iidi Sub	material description			≱	structure and
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	SOIL NAME: plasticity or particle chara colour, secondary and minor compo	acteristic, onents	moisture condition	consistency / relative density	additional observations
		E: TP14_0.0-0.1	0.8		-			TOPSOIL: SILTY SAND : fine to medium brown.	grained,	М		no ACM / stains / odours observed Topsoil
					-			FILL: Sandy CLAY: medium plasticity, re	ed, orange.	M		Reworked clay
	Not Encountered	E: TP14_0.4-0.5	0.7		0.5 —		CI	CLAY: medium plasticity, white, orange, b	orown.	М		Natural
		E: TP14_0.9-1.0	0.6		-							
					-			Test pit TP14 terminated at 1.00 m Target depth				
methodas AD AS HA MR W PT SSS	auge hand mud wash hand push solid	er drilling* er screwing* lauger rotary bore lauger tube stem flight auger nown by suffix	N nill	ud sing I	- -		E E E S U	disturbed sample environmental sample SS split spoon sample split spoon sample lift undisturbed sample ##mm diameter WS water sample hammer bouncing	soil d based on moisture co D dry M moist W wet	ndition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose
e.g. B T V	AD/T blanl TC b V bit	bit	<u>*</u>	wate	ct-12 wa on date r inflow r outflow	snown	1	I* SPT - sample recovered IC SPT with solid cone PID photoionization detector	Wp plastic Wl liquid li	W wet Wp plastic limit		L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP15** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: **04 Oct 2019**

locati	ion:	Liverpool L	Boys	and	Girl	s Hig	gh Sc	hool, Lachlan Street Liverpo	ool NSW	check	ed by:	DM
		lot Specified						ace elevation: Not Specified	•	entation:		
		ype: 3.3t Excavator						avation method:	excav	ation din	nensions	s: 1.0 m long 0.3 m wide
arıllı	ng in	formation	c 5			mate	rial sub				>-	
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characolour, secondary and minor compo		moisture condition	consistency / relative density	structure and additional observations
		E: TP15_0.0-0.1	0.7		-			TOPSOIL: Sandy GRAVEL: brown.		M		no ACM / stains / odours observed Topsoil
	Not Encountered	E: TP15_0.4-0.5	0.8		0.5 —		CL	CLAY: low plasticity, white, grey, brown.		M		Natural
		E: TP15_0.9-1.0	0.8		-							
•					-1.0 - -			Test pit TP15 terminated at 1.00 m Target depth				
methor AD AS HA MR W PT SS * e.g. B T	auge hand mud wash hand push solid	k bit it	suppo M mi C ca N nill	ud sing I	Oct-12 wa on date : r inflow r outflow	shown	E S U V H N N N N	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered Ic SPT with solid cone lID photoionization detector		ndition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



principal:

Environmental Log - Test pit

Hole ID. **TP16** sheet: 1 of 1

date completed:

project no. **754-SYDEN231101**

04 Oct 2019

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

project: Site and Building Contamination Assessment logged by: AC

	ion: on: N	ot Specified	Joys	ariu	Giri	s mg		nool, Lachlan Street Liverpool I		entation:		DM
		ype: 3.3t Excavator						avation method:	•			s: 1.0 m long 0.3 m wide
drilling information							material substance					
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristicolour, secondary and minor components	C,	moisture condition	consistency / relative density	structure and additional observations
		E: TP16_0.0-0.1	0.7		-			TOPSOIL: Gravelly SAND: fine to medium grai blue.	ned,	M		no ACM / stains / odours observed Topsoil
	Not Encountered	E: TP16_0.4-0.5	0.6				Cl	CLAY: medium plasticity, brown.		M		Natural
		E: TP16_0.9-1.0	0.6		- - -			Took sit TD16 torminated at 1.00 m				
					-			Test pit TP16 terminated at 1.00 m Target depth				
nethor D S IA IR / T S	auge hand mud wash hand push solid	c bit it	suppo M m C ca N nil	ud sing I	oct-12 wa on date : r inflow r outflow	shown	ESUV	disturbed sample environmental sample split spoon sample undisturbed sample #mm diameter water sample harmer bouncing standard penetration test (SPT) SPT - sample recovered SPT with solid cone lID photoionization detector	isture con dry moist wet plastic l	AS 1726	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP29** sheet: 1 of 1

logged by:

754-SYDEN231101 project no.

AC

Department of Education School Infrastructure NSW (SINSW) client: date started: 04 Oct 2019

04 Oct 2019 date completed: principal:

		lot Specified						ace elevation: Not Specified	·	ientation:		
		ype: 3.3t Excavator						avation method:	exca	ation din	nensions	s: 1.0 m long 0.3 m wide
игии	ng in	formation	⊊ 5			mate	rial sub				>-	
support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characolour, secondary and minor compressions.	acteristic, onents	moisture	consistency/ relative density	structure and additional observations
		E: TP29_0.0-0.1				$ \rangle$		TOPSOIL: SAND: blue.				no ACM / stains / odours observed Topsoil
			0.8		-			FILL: CLAY: medium plasticity, brown.		M		Reworked clay
	Not Encountered	E: TP29_0.4-0.5	0.9		0.5 —		СІ	CLAY: medium plasticity, orange, brown.		М		Natural
		E: TP29_0.9-1.0	0.9		- 1.0			Test pit TP29 terminated at 1.00 m Target depth				
					-							
methodas AS HA MR W TT SS	auge hand mud wash hand push solid	k bit it	suppo M mi C ca N nill	ud sing I	Oct-12 wa I on date er inflow er outflow	shown	# E S U V P P N N N N N N N N N N N N N N N N N	disturbed sample environmental sample split spoon sample undisturbed sample ##mm diameter water sample hammer bouncing standard penetration test (SPT) SPT - sample recovered SPT with solid cone photoionization detector	•	ndition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Environmental Log - Test pit

Site and Building Contamination Assessment

Hole ID. **TP30** sheet: 1 of 1

logged by:

project no. **754-SYDEN231101**

AC

client: Department of Education School Infrastructure NSW (SINSW) date started: 04 Oct 2019

principal: date completed: 04 Oct 2019

locatio	n:	Liverpooi i	30ys	ana	Giri	s Hig	ın Sc	hool, Lachlan Street Liverp	ooi NSW	check	ed by:	DM
		ot Specified						ace elevation: Not Specified	•	entation:		
	_	ype: 3.3t Excavator				1		avation method:	excav	ation din	nensions	:: 1.0 m long 0.3 m wide
drilling	g inf	formation	- 5	I		mate	rial sub	stance				
method & support	water	samples & field tests	photoionization detector (ppmv)	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle chara colour, secondary and minor comp		moisture condition	consistency / relative density	structure and additional observations
		E: TP30_0.0-0.1	0.8		_			TOPSOIL: SAND.		D		no ACM / stains / odours observed Topsoil
	Not Encountered	E: TP30_0.3-0.4	0.9		-		CI	CLAY: orange, brown mottled.		M		Natural
:	Not Enco	E: TP30_0.8-0.9	0.8		0.5							
,					1.0 —			Test pit TP30 terminated at 0.90 m Target depth				
AS a HA h MR n W W PT h SS p s t b e.g. A B b	auger hand mud wash hand bush solid	bit	suppo M mi C ca: N nill	ud sing I		ter shown	ESUV	disturbed sample environmental sample S split spoon sample undisturbed sample ##mm diameter ws water sample HB hammer bouncing standard penetration test (SPT)		ndition	n	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Appendix D Mitigation Measures

Table D.1: Mitigation Measures

Project Stage Design (D), Construction (C), Operation (O)	Mitigation Measures	Relevant Section of Report
С	The unexpected finds protocol should be adhered to during redevelopment works where any unexpected contaminants are encountered.	Section 8.2.
D	An asbestos management plan should be developed to outline the required controls and protocols for the appropriate management of all asbestos impacted materials during the construction phase.	Section 9.2.2
0	An LTEMP should be prepared following the completion of remedial works to detail the ongoing management of contained asbestos impacted materials at the site.	Section 6.2.4 and Section 7.6



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1.1.1.1 Document Distribution

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		Name	Name	Signature	Date
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