



Review of Environmental Factors
The Cooks to Cove GreenWay (In-Corridor Works)

Appendix C: Soils and Contamination Report (GHD, 2020)

June 2021



Inner West Council

The GreenWay Geotechnical and Contamination Services Preliminary Site Soil and Contamination Investigation Report

May 2020

Executive summary

GHD Pty Ltd (GHD) was engaged by Inner West Council (“IWC” or “Council”) to undertake a combined geotechnical and preliminary site contamination investigation (PSI) along approximately 4.5 kilometres (km) of the GreenWay Corridor (the project area / site), from Iron Cove in the north towards Cooks River in the south. The work was undertaken in accordance with the specifications of IWC, Tender 15-19 “GreenWay Geotechnical and Site Soil Contamination Services”. This PSI report details the findings of the contamination investigation.

For the purposes of these combined investigations, the project area was been subdivided into four areas as follows:

- **Area 1:** Bay Run and Richard Murden Reserve.
- **Area 2 (including Area 2D):** Cadigal Reserve and Lewisham West. Area 2D was originally a discretionary item in the tender at the Cadigal Reserve, however it was later included in the full scope of works.
- **Area 3:** Davis Street to New Canterbury Road.
- **Area 4:** Hercules Street.

The objective of this PSI was to assess, to the extent practicable using available information, the potential for contamination to be present at the project area as a result of historical or current use of the project area, which may pose a risk to human health or the environment, and to identify whether further assessment is required.

Further, the investigation was designed to provide an indication of the waste classification for the soil materials for the subject areas, and to consider the potential for acid sulfate soils (ASS) to be present at the project area.

GHD completed a site walkover and desktop assessment including a review of previous investigations and historical data including aerial photography and topographical maps of the site dating from 1917 to present day. Following this review, GHD undertook a targeted soil sampling program in conjunction with the geotechnical investigation to determine the potential for contamination to exist within the project area.

The desktop review confirmed the historical use of the project area as a combination of residential, recreational and commercial/ industrial land uses. Previous contamination investigations at focused portions of Areas 1 and 2 concluded that benzo(a)pyrene (B(a)P), total recoverable hydrocarbons (TRH) C₁₆-C₃₄, copper, lead and zinc were detected in soil samples at concentrations above the selected human health and ecological screening criteria; pH_{FOX} results indicated the potential for ASS for to be present; and, asbestos was detected in several locations as fragments of asbestos containing material (ACM) in bonded cement form.

A conceptual site model (CSM) was developed based on the desktop review, which identified potential source-pathway-receptor (SPR) linkages for human health and environmental receptors.

GHD conducted a field investigation at the project area in stages between 8 and 10 October 2019, then 15 and 29 November 2019. A total of 83 locations were investigated using a variety of methods, including machine and hand augered boreholes, cored boreholes, test pits and large diameter cored and augered boreholes.

Fill material was identified at all locations and generally comprised silty sands, gravelly sands and sandy clays, with anthropogenic materials including trace brick, concrete, asphalt, glass, plastic, metal tile, ACM fibre cement and ballast.

The underlying natural lithology consists of weathered, natural sedimentary rocks indicative of the Ashfield Shale and Hawkesbury Sandstone (including sandstone, siltstone, mudstone and shale). Natural weathered soil profiles include clays, silts and sands, with lesser gravels.

Based on the scope of work completed, and in line with the objectives of the investigation, the following conclusions are drawn:

Area 1

- Exceedances of selected human health guideline criteria were noted at three locations for lead, and twelve locations for B(a)P Toxic Equivalency Quotient (TEQ).
- Asbestos in compressed fibre cement was detected at one location in Area 1 (A1_LD06_0.5). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, six heavy metal exceedances of Ecological Investigation Levels (EILs) were noted for arsenic, lead, nickel and zinc. Exceedances of selected Ecological Screening Level (ESL) guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 1 are a mixture of Hazardous Waste (HW), Restricted Solid Waste (RSW), General Solid Waste (GSW) and Special Waste – Asbestos. The results of Toxicity Characteristic Leaching Procedure (TCLP) analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was intersected at several investigation locations in Area 1 from 0.8 to 4.0 metres below ground level (m bgl), and interaction with shallow groundwater may occur during construction.
- Previous investigations have reported acid sulfate soils to be present in natural soils within 50 metres of Area 1. Natural soils may require management during construction if disturbed.

Area 2

- Exceedances of selected human health guideline criteria were noted at one location for arsenic, one location for lead and 10 locations for B(a)P (TEQ).
- Asbestos in compressed fibre cement was detected at one location in Area 2 (A2D_BH09_0.2). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, sporadic heavy metal exceedances of EILs were noted arsenic, copper, lead, nickel and zinc. Exceedances of selected ESL guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 2 are a mixture of HW, RSW, GSW and Special Waste – Asbestos. The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was intersected at one investigation location in Area 2 (2.9 m bgl), and interaction with groundwater may occur during shallow construction works.
- Previous investigations have reported the potential for acid sulfate soils to be present in shallow soils in the area. Natural soils may require management during construction if disturbed.

Area 3

- Exceedances of selected human health guideline criteria were noted at five locations for B(a)P (TEQ).
- Asbestos in compressed fibre cement was detected at one location in Area 3 (A3_BH07). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, six heavy metal exceedances of EILs were noted arsenic, nickel, and zinc. Exceedances of selected ESL guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 3 are a mixture of HW, RSW, and GSW. The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was reported in one borehole in Area 3, at a depth of 4.2 mbgl. Proposed construction works in Area 3 are shallow and are not likely to intersect groundwater in this area.

Area 4

- Exceedances of selected human health guideline criteria were noted at one location for lead, two locations for arsenic, one location for PAH (sum of total), and 11 locations for B(a)P (TEQ).
- No asbestos was detected in Area 4, however, given the historical land use of the site, and the fact that asbestos was identified at the other three areas, it is considered likely that ACM may be encountered here during construction.
- For urban residential / public open space criteria, heavy metal exceedances of EILs were noted for arsenic, nickel, copper and zinc. There was one ESL exceedance of >C10-C16 Fraction, and exceedances of ESLs for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 4 are a mixture of HW, RSW, and GSW. The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was reported in several boreholes in Area 4, at depths varying from 0.9 to 4.0 m bgl, with a general deepening trend towards the south. Proposed construction works in Area 4 may interact with shallow groundwater in this area.

General conclusions

- Asbestos was identified in three fragment samples of compressed fibre cement with no trace or fibrous asbestos detected in any of the samples. Given the historical land use of the project area, it is considered possible that further ACM could be encountered during construction in all areas, and may pose a health risk to future intrusive maintenance and site workers or construction workers.
- Preliminary waste classification (with TCLP analysis) broadly indicates that waste across the project area will be classified as GSW. However, the preliminary waste classifications presented in this report cannot be relied upon to determine waste disposal requirements during future development works and spoil requiring offsite disposal during construction will require additional waste classification.

- Based on the historical site usage, the conceptual site model (CSM) linkage potential, and the analytical results from the investigation program, the risk of exposure to human health receptors during construction from heavy metal and PAH exceedances of selected site criteria is considered to be low. During redevelopment of the project area, the potential risk to the health of site workers and recreational users may increase and would need to be managed by implementation of a construction environmental management plan.
- There is potential for construction activity to intersect groundwater. Potential for contamination of surface and groundwater may need to be managed by implementation of a CEMP.
- The broader groundwater, surface water and risk to human health and the environment has not been determined beyond the boundaries of this investigation which are limited to the construction footprint.
- Based on the results of previous investigations as summarised in Section 2.6, and the ASS risk assessment provided in Section 2.5.6, ASS are considered to have the potential to be present at Area 1, Area 2, and Area 4. The potential for ASS to impact the proposed development should be considered during site works where natural soils are disturbed.

Recommendations

Based on the completed scope of work, and in consideration of the proposed future recreational land use and ecological significance of the project area, GHD recommends the following:

- Further waste classification of materials is required during construction to determine waste disposal requirements.
- Develop a Construction Environment Management Plan (CEMP), including an Asbestos Management Plan (AMP), Unexpected Finds Protocol, acid sulfate soil management plan (ASS plan) and occupational health and safety (OHS) plan prior to development works. This should include measures that are protective of human health and the environment to mitigate the risk of exposure to asbestos, heavy metals, TRH and PAH.
- Groundwater investigation was not conducted during this investigation, and as such, the groundwater conditions underneath the site are unknown. However, should construction activity intersect groundwater, further groundwater quality investigation would be required to understand the potential impact to groundwater from site soil contamination.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 12 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Background

GHD Pty Ltd (GHD) was engaged by Inner West Council (“IWC” or “Council”) to undertake a combined geotechnical and preliminary site contamination investigation (PSI) along approximately 4.5 kilometres (km) of the GreenWay Corridor (the project area / site), from Iron Cove in the north towards Cooks River in the south. The work was undertaken in accordance with the specifications of IWC, Tender 15-19 “GreenWay Geotechnical and Site Soil Contamination Services”. This PSI report details the findings of the contamination investigation. The project area is illustrated in Figure 0 (Appendix A).

The Cooks River to Iron Cove GreenWay is an urban environmental corridor linking the Parramatta River at Iron Cove with the Cooks River at Earlwood. Following the route of the Inner West Light Rail and Hawthorne Canal, the GreenWay features bike paths and foreshore walks, cultural and historical sites, cafes, bushcare sites and a range of parks, playgrounds and sporting facilities.

The GreenWay navigates the suburbs of Earlwood, Dulwich Hill, Lewisham, Summer Hill, Haberfield and Leichhardt crossing the Inner West Local Government Area into Canterbury-Bankstown. The corridor is intersected by several major arterial roads, including Old Canterbury Road, Parramatta Road and the City West Link. The GreenWay meets the Bankstown railway line at Dulwich Hill and the western railway line at Cadigal Reserve, between Summer Hill and Lewisham Stations. Nine Inner West Light Rail stops are located along the GreenWay.

Land within the GreenWay corridor is owned and managed by a number of government agencies, including Inner West Council, City of Canterbury-Bankstown, Roads and Maritime Services, Sydney Trains and Sydney Water Corporation. Small sections of the proposed GreenWay shared path also pass through privately owned land.

The Inner West community and local councils have been campaigning for over 10 years for funding to complete the remaining 3.2 km of the GreenWay from Parramatta Road, south through Summer Hill and Dulwich Hill to the Cooks River.

The community prepared a GreenWay Master Plan and Coordination Strategy which was adopted by the GreenWay councils (Leichhardt, Marrickville, Ashfield, Canterbury) in 2009. The community’s GreenWay Vision in the Master Plan is for “a recognisable environmental, cultural and non-motorised transport corridor linking the sub-catchments of two of Sydney’s most important waterways”.

Council finalised a Master Plan for the GreenWay in August 2018 which will guide implementation of infrastructure both built and natural over the next 10 to 15 years. The Master Plan can be viewed at the council website here:

<https://www.innerwest.nsw.gov.au/live/environment-and-sustainability/sustainability-programs/greenway>

For the purposes of these combined investigations, the project area has been subdivided into four areas as follows (see Figures 1 to 10, Appendix A):

- **Area 1:** Bay Run and Richard Murden Reserve (Figures 1 to 5, Appendix A).
- **Area 2 (including Area 2D):** Cadigal Reserve and Lewisham West. Area 2D was originally a discretionary item in the tender at the Cadigal Reserve, however it was later included in the full scope of works (Figures 7 to 10, Appendix A).
- **Area 3:** Davis Street to New Canterbury Road (Figures 11 to 12, 0).

- **Area 4:** Hercules Street (Figures 13 to 15, Appendix A).

1.2 Objectives

The objective of this PSI is to:

- Undertake a preliminary site soil and contamination investigation in accordance with Guidelines for Consultants Reporting on Contaminated Sites (OEH 2011) and National Environment Protection (Assessment of Site Contamination) Measure (NEPC 2013).
- Design the field investigations to fulfil the objectives under the Contract and be informed by the desk top study and the GreenWay Concept Design.
- Assess soil samples collected against the Health Investigation Levels (HILs) / Health Screening Levels (HSLs) assigned for Public Open Space land use and Ecological Investigation Levels (EILs) / Ecological Screening Levels (ESLs) for Public Open Space.
- Provide an indication of the waste classification for the soil materials for the subject areas in accordance with the NSW Environment Protection Authority (EPA) Waste Classification Guidelines Part 1: Classifying Waste (2014).
- Assess Acid Sulfate Soil (ASS) and soil salinity in potentially affected areas.
- Assess whether contamination (if present) poses a potentially unacceptable risk to human health and the environment.
- Provide recommendations to manage or mitigate the potential risk posed by contamination (if identified).
- Determine whether further investigation and / or mitigation is required for potential contamination.

1.3 Regulatory guidelines

This PSI has been completed in consideration of the following guidelines:

- National Environment Protection Council (NEPC) National Environment Protection (Assessment of Site Contamination) Amendment Measure (No. 1), 2013.
- NSW Office of Environment and Heritage (OEH) (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
- NSW Environment Protection Authority (EPA) (2014) Waste Classification Guidelines.
- NSW EPA (1995) Sampling Design Guidelines.
- Australian Standard, AS 4482.1 (2005) Guide to the investigations and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.

1.4 Scope of work

The scope of work for the contamination assessment is summarised below:

1.4.1 Desk based review

The desk based review comprised an examination of:

- Information within Lotsearch reports dated 26 September 2019 (Appendix B).
- Current and historical aerial photographs (as part of the Lotsearch reports, Appendix B).
- Environmental site setting within the project area including drainage, geology, hydrogeology and soil (including acid sulfate soils) conditions.

- Available Council information including:
 - IWC Local Environmental Plans (LEP), including:
 - Ashfield LEP 2013
 - Leichhardt LEP 2013
 - Marrickville LEP 2011 (and Amendments to the Marrickville LEP 2011)
 - IWC Development Control Plans (DCP), including:
 - Comprehensive DCP 2016 for Ashbury, Ashfield, Croydon, Croydon Park, Haberfield, Hurlstone Park and Summer Hill
 - Leichhardt DCP 2013
 - Marrickville DCP 2011
 - Proposed amendments to current DCPs
- A search of the NSW EPA Contaminated Land Register.
- A search of the Protection of the Environment Operations (POEO) database.
- A search of groundwater bore records held by the NSW Office of Water.
- A review of reports provided by Council.

1.4.2 Field investigation

A detailed intrusive field investigation along the corridor was completed by GHD in stages between 8 and 10 October 2019, then 15 and 29 November 2019. The detailed field investigation was considered necessary to improve the general understanding of the potential for contamination to exist along the corridor.

The field investigation included 83 machine augered and cored boreholes, hand augered boreholes, and test pits as required to meet the geotechnical specifications of the contract, as outlined in Table 1. Contamination sampling was undertaken from all investigation sites.

Table 1 Investigation Types

Investigation Type	Number of locations
Cored borehole	17
Augered borehole	24
Hand auger	18
Test pit	5
Large diameter augered borehole	17
Large diameter cored borehole	2
Total	83

1.4.3 Laboratory analysis

Soil samples collected by GHD during the investigation were sent to two National Association of Testing Authority (NATA) -accredited laboratories for chemical analysis of the suite of contaminants of potential concern (COPC) (see Section 6.5 for the sample analytical program).

1.4.4 Detailed site investigation report

Preparation of this report was undertaken in consideration of the *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011), and includes outlining the findings of the desk based review, site inspection and soil sampling results. A preliminary evaluation of the relative risk of contamination associated with the project area has been provided, taking into account the nature of the current land use and receptors and the proposed future recreational use of the land.

As per the Specification for GeenWay Geotechnical and Site Soil Contamination Services Tender T15-19, the following have been included in this report:

- Introduction, outlining scope and objectives.
- Site history, site description and biophysical (environmental) setting.
- Fieldwork methods and results including equipment used and other information considered relevant and obtained during the investigation.
- Map showing all soil sampling locations.
- Assessment criteria and laboratory testing results.
- Recommendations appropriate to the identified objectives of the investigation.
- Appendices as required to present all photographs, mapping, include bore logs and core photographs, field testing and laboratory testing, GPS coordinates.

1.5 Limitations

This report has been prepared in accordance with GHD limitations listed here, and provided in Section 12.

A groundwater investigation was not undertaken as part of this assessment. ASS analytical testing and salinity analysis were not undertaken as part of this assessment, as per the sampling provisions of the tender specification document.

The sampling locations were predominantly limited to those sites selected for geotechnical investigation, with some limitations on site selection due to safety issues related to accessing steep embankments, and areas of overgrown vegetation.

2. Site and environmental setting

2.1 Site location

The GreenWay is a 5.8 km urban environmental corridor from Cooks River to Iron Cove, following the route of the Inner West Light Rail and Hawthorne Canal. The project area is divided into four individual areas (Areas 1 to 4) which lie within the Inner West Council area, and are subject to the Ashfield LEP 2013, the Leichhardt LEP 2013 and the Marrickville LEP 2013, as noted in Table 2. The length of the project area within the GreenWay corridor is approximately 4.45 km.

Table 2 Site details summary

Information	Details		
Street Address	The GreenWay Corridor from Cooks River to Iron Cove, via Earlwood, Dulwich Hill, Lewisham, Summer Hill, Haberfield and Leichhardt		
Lot and DP Number ¹	Area 1	Lot 7415 1 3 Richard Murden Reserve	DP 1191381 1161734 1033563
	Area 2	Lot 19 Cadigal Reserve 18	DP 1220375 1223949
	Area 3	Lot 19	DP 1223949
	Area 4	Lot 19 1	DP 1223949 1065311
Client	Inner West Council		
Approximate Site Length	4,450 metres		
Local Government Area	Inner West Council		
Local Land Use Zoning	Area 1	SP2 – Infrastructure Railway RE1 – Public Recreation	
	Area 2	SP2 – Infrastructure Railway RE1 – Public Recreation R1 – General Residential R2 – Low Density Residential IN2 – Light Industrial R3 – Medium Density Residential R4 – High Density Residential B6 – Enterprise Corridor	
	Area 3	SP2 – Infrastructure Railway RE1 – Public Recreation R1 – General Residential	
	Area 4	SP2 – Infrastructure Railway R1 – General Residential R2 – Low Density Residential	

¹ It should be noted that Lot and DP information does not exist for several sections of the project area, including roadways and reserves.

Information	Details
Current Land Use	Public open space, active light rail corridor, bush care zones, roadways, housing
Surrounding Land Use	Surrounding land uses include road and rail infrastructure, general residential, medium and high density residential, public recreation, and light industrial.

2.2 Project area walkover

On 18 June 2019, an appropriately qualified GHD Environmental Geologist and a Geotechnical Engineer undertook a walkover of the GreenWay Corridor from the UTS Rowing Club on Iron Cove, Haberfield in the north to Balfour Street, Dulwich Hill in the south. The walk encompassed the four investigation areas, and provided an understanding of current site uses, public access, and potential constraints to the proposed intrusive investigation. Locations are provided in Figure 2, Appendix A.

Area 1

Area 1 includes the Bay Run at UTS Rowing club, and Richard Murden Reserve. The Bay Run was well utilised by members of the public at the time of inspection, with numerous joggers, walkers and cyclists frequenting the pathway. Richard Murden Reserve consists of a wide reserve between the Hawthorne Canal and Hawthorne Parade, and was also well utilised by the public. It includes large grassed areas, a bushcare site (in the north), and several sporting courts (tennis, netball and basketball). The combined cycleway / pedestrian path exists along the reserve, although at the time of the site visit, it appeared to be undergoing redevelopment in some places. Photographs greenway-3591 to greenway-3638 (see Appendix C) were taken during the site walkover of Area 1.

Areas 2 and 2D

Areas 2 and 2D encompass the Hawthorne Canal and walking path, parallel to the light rail line, from Parramatta Road south to Old Canterbury Road, including Lewisham West light rail station, and then south along Weston Street to the Waratah Mills light rail station. Area 2D includes an off leash dog park and the Cadigal Reserve (also referred to as the Gadigal Reserve), which is a fenced off area managed by IWC. The reserve is a bushcare site which is being re-established by local volunteers. It is marked at the southern end by a visually striking mural painting on the brick wall of the Longport Street overpass. The steep and well vegetated embankments on the eastern side of the canal in Area 2D limit access for intrusive investigation.

South of the Longport Street overpass, Area 2 is easily accessible and lies along the light rail line, with modern high rise apartments framing the rail line.

South of Old Canterbury Road, Area 2 follows Weston Street, which is a residential street with medium density single residences.

See photographs greenway-3639 to greenway-3714 (Appendix C).

Area 3

Area 3 extends from Waratah Mills light rail station southwards to Dulwich Grove light rail station. Much of the area was inaccessible during the site walkover due to the steepness of the embankments either side of the light rail line, and the proximity of residential and commercial properties which abut the rail line.

Access to the project area was possible along Johnson Park, near Arlington light rail station.

See photographs greenway-3715 to greenway-3753 (Appendix C).

Area 4

Area 4 follows the light rail line from Dulwich Grove light rail station, south towards the southern end of Hercules Street, along Terrace Road and onto Ness Avenue in Dulwich Hill. At the time of the project area walkover, access was possible along Hercules Street, however no entry could be gained to the project area along the light rail corridor. The project area follows the light rail line which is mostly bounded by single fronted, medium density housing. The project area crosses the main T3 Sydney trains rail line at the Terrace Road underpass.

See photographs greenway-3754 to greenway-3763.

2.3 Regulatory information

2.3.1 Overview

The following information presented in Table 3 was obtained from the Lotsearch reports (Appendix B) and publically available information including NSW Environmental Protection Agency (EPA) and NSW Planning and Environment websites.

Table 3 Publically available information

Potential Sources	Notes	Information Source
Contaminated Land: Record of Notices, NSW EPA	Area 1 The site does not have any notices on the record under the Contaminated Land Management (CLM) Act 1997 (NSW EPA, 2019). The closest site on the record is 400 m south at the 7-Eleven, 25-35 Parramatta Road, Haberfield.	Environment Protection Authority (EPA) Contaminated Land Record of Notices
	Area 2 The site does not have any notices on the record. There are two sites within 300 m that are listed: <ul style="list-style-type: none"> • Former Kolotex site, 22 George St, Leichhardt (219 m east). • 7-Eleven, 25-35 Parramatta Road, Haberfield (239 m north). 	
	Area 3 There are no sites with notices within a 500 m radius of Area 3.	
	Area 4 There are no sites with notices within a 500 m radius of Area 3.	
List of NSW contaminated sites notified to NSW EPA	Area 1 No contaminated land records were listed for the site. There is one notified site on the Contaminated Land List located 260 m east of the project site: <ul style="list-style-type: none"> • Rail Corp Leichhardt, 261 m north east (regulation not required). 	List of NSW contaminated sites notified to the EPA.
	Area 2 No records were listed for the site. There are three sites listed within a 300 m radius: <ul style="list-style-type: none"> • Former Kolotex Site, 219 m north east (currently regulated). 	

Potential Sources	Notes	Information Source
	<ul style="list-style-type: none"> Denison Road Playground (also known as Denison Road Community Garden), 223 m south (regulation not required). 7-Eleven, 25-35 Parramatta Road, 239 m north (currently regulated). <p>Area 3 There is one record for a site that abuts the eastern edge of Area 3 at Denison Street and Constitution Road.</p> <ul style="list-style-type: none"> Former tyre recapping, on site (regulation not required). This site is currently occupied by the Dennison Apartments. <p>There is one site located within a 300 m radius:</p> <ul style="list-style-type: none"> Denison Road Playground (also known as Denison Road Community Garden), 172 m north east (regulation not required). <p>Area 4 No records were listed for the site. There is one site located within a 300 m radius:</p> <ul style="list-style-type: none"> Former tyre recapping, 139 m north, (regulation not required). This site is currently occupied by the Dennison Apartments. 	
James Hardie asbestos waste sites	According to the NSW EPA (LotSearch, 2019) there are no known James Hardie asbestos waste sites located within a 1000 m radius of the site.	EPA Other Sites with Contamination Issues
Summary of historical business directory records (dry cleaners / motor garages / service stations (within 200 m of site)	<p>Area 1</p> <ul style="list-style-type: none"> Motor garages & engineers: Thorley F.J. (17 m south). Motor garages and service station: Esso Haberfield (38 m south). Dry cleaners, pressers, dyers: Blomgren E.M / Georges Dry Cleaners (164 m east). Dry Cleaners, pressers, dyers: Spot It Dry Cleaners / Spotless Dry Cleaners / Rene french Dry Cleaners/ Yarroll & Dodd (179 m south). <p>Area 2</p> <ul style="list-style-type: none"> Motor garages / engineers / service stations: Autostar Motor Services (on-site); Lewisham Service Station (77 m south-east); George Star 192 m north-east). Dry cleaners, pressers, dyers: Foster Ronald F. Pty Ltd (on-site). Motor garages & engineers: Franks, W (on-site); Cahills Car Sales and Auto Repairs (97 m north-east); Froulop C and Son (104 m 	Universal Business Directories (UBD)

Potential Sources	Notes	Information Source
	<p>north-east); Lewisham Service Station (120 m south-east); Whitburn S (149 m north-east).</p> <ul style="list-style-type: none"> • Motor garages & service stations: BP Lewisham service station (5 m south); BP Battle Bridge service station / Keating and Franklin / Independent service station / Gurren R. (7 m north-east); BP Summer Hill Auto Port (33 m north); Ampol White Cliffs (59 m north); J & F Motor Engineers (71 m north); White Cliffs Service Station (92 m north). <p>Area 3</p> <ul style="list-style-type: none"> • Motor garages / engineers / service stations: Dulwich Hill Motor (on-site); Ampol Service Station / Bel-air Service Station (35 m south); McCarthy Motors / Stevensons Automotive Services (57 m south-east); Dulwich Hill Auto Electrical (132 m south-west); BP Service Station (132 m south-west); Five Ways Mobilgas Service Station / Dulwich Hill Service Station (149 m north-west); Allens Motors (161 m south-east). • Motor garages & engineers: McLaughlin R.N. (on-site); Centennial Garage (on-site); Hoskins T.J. (on-site); Perks W.V. (6 m south); Crawley D.J. (57 m south-east); Esso Service Centre / Atlantic Service Station (78 m south); Reliance Garage (161 m south-east). • Motor service stations: Parkhill Service Station (132 m south-west); Pritchard & Jeffries (161 m south-east); Ampol Dulwich Hill / Total Dulwich Hill Service Station (198 m south-east). <p>Area 4</p> <ul style="list-style-type: none"> • Motor garages / engineers / service stations: Ampol Service Station / Bel-Air Service Station (65 m north); Dulwich Hill Motor (77 m north); Dulwich Hill Auto Electrical / Parkhill Service Station / BP Service Station (147 m north-west); Stevensons Automotive Services / Crawley D.J. (156 m north); Allens Motors / Reliance Garage / Pritchard & Jeffries (159 m north). • Motor garages & engineers: Perks W.V. (on-site); Centennial Garage / Hoskins T.J. (48 m north); McLaughlin R.N.(77 m north); Esso 	

Potential Sources	Notes	Information Source
	<p>Service Centre / Simon P (Esso)(81 m north); Green's Col. Auto Repairs / Underwood H & H / Herbert C.F. (199 south-east).</p> <ul style="list-style-type: none"> • Dry cleaners & pressers: Moussa Pressing & Dry Cleaning (200 m south-east). 	
Current licenced activities under the <i>Protection of the Environment Operations (POEO) Act 1997</i>	<p>Area 1 There is one activity listed within a 500 m buffer of the site:</p> <ul style="list-style-type: none"> • Lendlease Engineering Pty Ltd – WestConnex road construction (on site). <p>Area 2 There is one activity listed within a 500 m buffer of the site:</p> <ul style="list-style-type: none"> • Sydney Trains – railway systems activities (on site). <p>Area 3 There are two activities listed within a 500 m buffer of the site:</p> <ul style="list-style-type: none"> • Sydney Trains – railway systems activities (306 m south). • Australian Rail Track Corporation Ltd - railway systems activities (306 m south). <p>Area 4 There are two activities listed within a 500 m buffer of the site:</p> <ul style="list-style-type: none"> • Australian Rail Track Corporation Ltd - railway systems activities (on site). • Sydney Trains – railway systems activities (on site). 	POEO Licence Data Source: NSW EPA
Delicensed activities regulated by the EPA	There are no delicensed activities associated with the project areas or located within a 500 m buffer of the project areas.	Delicensed Activities Data Source: EPA
Former activities licenced under the POEO Act 1997	<p>Area 1 There are three formerly licenced activities within a 500 m radius of the site:</p> <ul style="list-style-type: none"> • Lührmann Environment Management Pty Ltd / Robert Orchard / Sydney Weed and Pest Management Pty Ltd – Application of herbicides (all on site). <p>Area 2 There are five formerly licenced activities within a 500 m radius of the site:</p> <ul style="list-style-type: none"> • Lührmann Environment Management Pty Ltd / Robert Orchard / Sydney Weed and Pest Management Pty Ltd – Application of herbicides (on site). • Allied Mills Pty Ltd – General agricultural processing (on site). • Graphic World Group Holdings Pty Ltd – Hazardous, industrial or Group A waste generation or storage (on site). 	Former Licenced Activities Data Source: EPA

Potential Sources	Notes	Information Source
	<p>Area 3 There is one formerly licenced activity within a 500 m radius of the site:</p> <ul style="list-style-type: none"> Allied Mills Pty Ltd – General agricultural processing (435 m north). 	
	<p>Area 4 There are three formerly licenced activities within a 500 m radius of the site:</p> <ul style="list-style-type: none"> Luhrmann Environment Management Pty Ltd / Robert Orchard / Sydney Weed and Pest Management Pty Ltd – Application of herbicides (275 m south). 	
Underground petroleum storage system (UPSS) sensitive zone	<p>UPSS sensitive zones are defined by the NSW EPA as:</p> <ul style="list-style-type: none"> Regions immediately surrounding sensitive receptors. Regions on or near vulnerable groundwater. Regions of recognised environmental significance. <p>Area 1 is entirely located within a UPSS sensitive zone as defined by the NSW EPA. Area 4, from Terrace Road to Ness Avenue, is located within a UPSS sensitive zone. These zones have been developed to apply a consistent level of protection for sensitive environmental receptors. The risk of potential contamination to these receptors must be considered for these zones.</p>	NSW EPA

2.3.2 Heritage

A search of the Ashfield LEP 2013, the Leichhardt LEP 2013, and the Marrickville LEP 2011 indicates the following heritage items on site (see Lotsearch reports, Appendix B):

- Area 1: Haberfield Conservations Area (nominated of State significance); former house.
- Area 2: Haig Avenue Conservation Area; Lewisham Sewerage Aqueduct (Sydney Water heritage asset number 4570955); public reserve; Long Cove Creek railway viaducts (formerly adjacent girder bridges); Pressure Tunnel Shaft (Sydney Water heritage asset number 4570942); Lewisham Sewage Aqueduct; former flour mill complex; Hoskins Park and Environs Heritage Conservation Area; Lewisham Estate Heritage Conservation Area; Battle Bridge; Lewisham Aqueduct; Lewisham Railway substation; stone terracing and steps.
- Area 3: Waratah Flour Mills; Hoskins Park and Environs Heritage Conservation Area.
- Area 4: Gladstone Hall.

2.4 Project area history

2.4.1 Area 1

A selection of aerial photographs and maps were examined in order to ascertain past activities and land uses at the project area. Historical topographic maps examined were for the years 1917, 1936, 1975 and 2015. Aerial images were examined for the following years: 1943, 1951, 1955, 1961, 1965, 1970, 1982, 1991, 2000, 2009 and 2019. The aerial photographs are included in Appendix B, with the exception of the 2019 image which is included as Figure 1, Appendix A.

A summary of review of historical aerial photography and maps is provided in Table 4.

Table 4 Review of historical aerial photographs and maps (Area 1)

Year	Observations
1917 (map)	Area 1 is surrounded by urban development, but itself contains no buildings or roads. The Hawthorne Canal and freight rail line both have been already built, and pass through the area. The land adjacent to the north-west portion of the area appears to be in the process of being developed with roads half-formed into a grid structure. Marion Street runs along the southern base of Area 1.
1936 (map)	The area remains unchanged since 1917. The land to the north-west of the area is now developed. Additional buildings have appeared on the land adjacent to the north-east portion of the area.
1943	This photo shows more detail on Area 1 and surrounding areas. The area is largely comprised of the Hawthorne Canal, and surrounding undeveloped land. The freight railway line runs along the eastern border of the area. There is vegetation along the western bank of the canal. The surrounding areas are urbanised and comprised of a mixture of industrial and residential buildings.
1951	The area remains largely unchanged since 1943.
1955	The area remains largely unchanged since 1951.
1961	The area remains largely unchanged since 1955.
1965	The area remains largely unchanged since 1961, with the exception of a new bridge built across Hawthorne Canal at the northern end of the area (Lilyfield Road).
1970 1975 (map)	The area remains largely unchanged since 1965.
1982	The area remains largely unchanged since 1970/75, with the exception of four tennis courts which have been built on the western bank of the Hawthorne Canal.
1991	The area remains largely unchanged since 1982.
2000	The area has become more vegetated, and a bike path runs along the western bank of the Hawthorne Canal. Five asphalt basketball courts have also been built.
2009	The area remains largely unchanged since 2000.

Year	Observations
2015 (map) 2019	The area remains largely unchanged since 2009, with the exception of the addition of a pedestrian bridge across the Hawthorne Canal at the northern end of the area. The former freight railway at this stage has been converted in the Dulwich Hill Light Rail line still running along the eastern border of the area.

2.4.2 Area 2

A selection of aerial photographs and maps were examined in order to ascertain past activities and land uses at Area 2. Historical topographic maps examined were for the years 1917, 1936, 1975 and 2015. Aerial images were examined for the following years: 1943, 1955, 1961, 1965, 1970, 1982, 1991, 2000, 2009 and 2019. The aerial photographs are included in Appendix B, with the exception of the 2019 image which is included as Figure 1, Appendix A.

A summary of review of historical aerial photography and maps is provided in Table 5

[Table 5 Review of historical aerial photographs and maps \(Area 2\)](#)

Year	Observations
1917 (map)	Area 2 is surrounded by urban development. The Hawthorne Canal and freight rail line both have been already built, and pass through the area. The Main Suburban Railway Line also already runs over the area from east to west on a rail bridge.
1936 (map)	The area remains unchanged since 1917. Parramatta Road can be seen more clearly along the northern border of Area 2.
1943	This photo shows more detail on the area and surrounding areas. Area 2 is largely comprised of the freight railway line and surrounding easement. The area can now also be seen to include some residential buildings along the western half.
1955	The area remains largely unchanged since 1943.
1961	The area remains largely unchanged since 1955. Some buildings have been constructed in the centre of the area just south of the rail bridge.
1965	The area remains largely unchanged since 1961. The buildings constructed in 1961 have been removed.
1970 1975 (map)	The area remains largely unchanged since 1965.
1982	The area remains largely unchanged since 1970/75.
1991	The area remains largely unchanged since 1982, with the exception of more vegetation.
2000	The area has become substantially more vegetated.
2009	The area remains largely unchanged since 2000.
2015 (map) 2019	The area remains largely unchanged since 2009. The former freight railway at this stage has been converted in the Dulwich Hill Light Rail line.

2.4.3 Area 3

A selection of aerial photographs and maps were examined in order to ascertain past activities and land uses at the site. Historical topographic maps examined were for the years 1917, 1936, 1975 and 2015. Aerial images were examined for the following years: 1943, 1955, 1961, 1965, 1970, 1982, 1991, 2000, 2009 and 2019. The aerial photographs are included in Appendix B, with the exception of the 2019 image which is included as Figure 1, Appendix A.

A summary of review of historical aerial photography and maps is provided in Table 6.

Table 6 Review of historical aerial photographs and maps (Area 3)

Year	Observations
1917 (map)	The area is surrounded by urban development. The freight rail line passes through the site. Three road bridges cross over the area.
1936 (map)	The area remains unchanged since 1917.
1943	This photo shows more detail on Area 3 and surrounding areas. Area 3 is largely comprised of the freight railway line and surrounding easement. The area is surrounded by residential and industrial buildings, and open parkland / ovals.
1955	The area remains largely unchanged since 1943. Some industrial buildings have been constructed in the previously open land along the south-west border of the area.
1961	The area remains largely unchanged since 1955.
1965	The area remains largely unchanged since 1961.
1970	The area remains largely unchanged since 1965.
1975 (map)	
1982	The area remains largely unchanged since 1970/75.
1991	The area remains largely unchanged since 1982. The industrial buildings along the western border of the area have been demolished.
2000	Residential buildings have been constructed in place of the former industrial buildings along the western border of the area.
2009	The industrial site constructed in 1955 along the south-west border of the area has been demolished.
2015 (map)	The area remains largely unchanged since 2009. The former freight railway at this stage has been converted in the Dulwich Hill Light Rail line.
2019	

2.4.4 Area 4

A selection of aerial photographs and maps were examined in order to ascertain past activities and land uses at the site. Historical topographic maps examined were for the years 1917, 1936, 1975 and 2015. Aerial images were examined for the following years: 1943, 1955, 1961, 1965, 1970, 1982, 1991, 2000, 2009 and 2019. The aerial photographs are included in Appendix B, with the exception of the 2019 image which is included as Figure 1, Appendix A.

A summary of review of historical aerial photography and maps is provided in Table 7.

Table 7 Review of historical aerial photographs and maps (Area 4)

Year	Observations
1917 (map)	Area 4 is surrounded by urban development. The freight rail line passes through the area. The Bankstown Railway Line runs through the area east to west. The Cooks River runs to the south of the area.
1936 (map)	The area remains unchanged since 1917.
1943	This photo shows more detail on Area 4 and surrounding areas. The area is largely comprised of the freight railway line and surrounding easement, with some residential buildings at the southern end. The area is surrounded by residential and industrial buildings, with undeveloped land to the south.
1955	The area remains largely unchanged since 1943.
1961	The area remains largely unchanged since 1955.
1965	The area remains largely unchanged since 1961.
1970 1975 (map)	The area remains largely unchanged since 1965. There is evidence of earthworks in open land to the south of the area.
1982	The area remains largely unchanged since 1970/75. Some buildings and sports courts have been constructed in the open land to the south of the area in what will become known as Jack Shanahan Reserve.
1991	The area remains largely unchanged since 1982. The residential buildings to the north-east of the area have been demolished.
2000	The area remains largely unchanged since 1991. Residential buildings have been constructed in place of the former industrial buildings to the north-west of the area.
2009	The area remains largely unchanged since 2000.
2015 (map) 2019	The area remains largely unchanged since 2009. The former freight railway at this stage has been converted in the Dulwich Hill Light Rail line. The area and the Jack Shanahan Reserve to the south are substantially more vegetated.

2.5 Environmental setting

2.5.1 Topography and drainage

The topography and drainage of the site is outlined in Table 8.

Table 8 Topography and drainage

Area	Description
1	The topography of Area 1 is generally flat, with an elevation of around 3.0 metres Australian Height Datum (m AHD) across the site. To the east and west of the area, the surrounding areas slope moderately (10°) down towards the site and the Hawthorne Canal from an elevation of approximately 10 m AHD at 100 m distance. Surface runoff is expected to flow from east and west towards the canal, following topography and then northwards along the canal into Iron Cove.

2	The topography of Area 2 is varied, with elevations ranging from 22 meters AHD at the southern end to 4 meters AHD in the centre of the area near the railway line. To the east and west of Area 2, the surrounding areas slope moderately (10°) down towards the site from an elevation of approximately 20-30 m AHD at 300 m distance.
3	The topography of Area 3 is fairly level, with elevations ranging from 22 to 26 meters AHD across the area. To the east and west of the area, the surrounding areas slope very gently down towards the area from an elevation of approximately 28 m AHD at 150 m distance.
4	The topography of the Area 4 dips gently to the south, with elevations ranging from 26 m AHD at the northern end of the area to 14 m AHD at the southern end. To the east and west of the area, the surrounding areas slope gently down towards the area and the Cooks River to the south of the area at a slope angle of approximately 5°.

2.5.2 Soil landscapes

According to the Soil Landscapes of Sydney 1:100,000 map sheet and (NSW OEH), the soil the landscape for the project area is classified as shown in Table 9.

Table 9 Soil Landscapes

Area	Soil Landscape	Landscape	Soils	Limitations
1	Disturbed Terrain	Level plain to hummocky terrain, extensively disturbed by human activity, including complete disturbance, removal or burial of soil. Local relief <10 m, slopes <30%. Landfill includes soil, rock, building and waste materials. Original vegetation completely cleared, replaced with turf or grassland.	Turfed fill areas commonly capped with up to 40 cm of sandy loam or up to 60 cm of compacted clay over fill or waste materials.	Dependent on nature of fill material. Mass movement hazard, unconsolidated low wet strength materials, impermeable soil, poor drainage, localised very low fertility and toxic materials (unspecified).
2	Birrong (ALBg) - Alluvial	Level to gently undulating alluvial floodplain draining Wianamatta Group shales. Local relief to 5 m, slopes <3%. Broad valley flats. Extensively cleared tall open-forest and woodland.	Deep (>250 cm) Yellow Podzolic Soils (Dy2.42, Dy3.12) and Yellow Solodic Soils (Dy3.42) on older alluvial terraces; deep (>250 cm) Solodic Soils (Dy3.42) and Yellow Solonetz (Dy3.43) on current floodplain.	Localised flooding, high soil erosion hazard, saline subsoil, seasonal waterlogging, very low soil fertility.
2,3,4	Blacktown (REbt) - Residual	Gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Local relief to 30 m, slopes are usually <5%. Broad rounded crests and ridges with gently inclined slopes.	Shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11,	Moderately reactive highly plastic subsoil, low soil fertility, poor soil drainage.

Area	Soil Landscape	Landscape	Soils	Limitations
		Cleared eucalypt woodland and tall open-forest (wet sclerophyll forests).	Dy3.11) on lower slopes and in areas of poor drainage.	
4	Gynea (ERgy) - Erosional	Undulating to rolling rises and low hills on Hawkesbury Sandstone. Local relief 20-80m, slopes 10-25%. Rock outcrop <25%. Broad convex crests, moderately inclined sideslopes with wide benches, localised rock outcrop on low broken scarps. Extensively cleared open-forest (drysclerophyll forest) and eucalypt woodland.	Shallow to moderately deep (30-100 cm) Yellow Earths (Gn2.24) and Earthy Sands (Uc5.11, Uc5.23) on crests and inside of benches; shallow (<20 cm) Siliceous Sands (Uc1.21) on leading edges of benches; localised Gleyed Podzolic Soils (Dg4.21) and Yellow Podzolic Soils (Dy4.11, Dy5.11, Dy5.41) on shale lenses; shallow to moderately deep (<100 cm) Siliceous Sands (Uc1.21) and Leached Sands (Uc2.21) along drainage lines.	Localised steep slopes, high soil erosion hazard, rock outcrop, shallow highly permeable soil, very low soil fertility.

According to the Atlas of Australian Soils (CSIRO), the soil mapping unit and classification for the site for Areas 1 to 4 is as noted in Table 10.

Table 10 Australian soil classification order

Area	Map unit code	Soil Order	Map Unit Description
1,2,3,4	Pb12	Kurosol	Gently rolling to rounded hilly country with some steep slopes and broad valleys: chief soils are hard acidic red soils with hard neutral and acidic yellow mottled soils on lower slopes and in valleys.
1,2	Tb35	Sodosol	Dissected plateau remnants - flat to undulating ridge tops with moderate to steep side slopes: chief soils are hard acidic yellow and yellow mottled soils and hard acidic red soils; many shallow profiles occur and profile thickness varies considerably over short distances. Flat ferruginous shale or sandstone fragments are common on and/or in and/or below the soils of this unit.

2.5.3 Geology

Area 1

The Sydney 1:100,000 geological map sheet reveals the geology of Area 1 is predominantly comprised of Quaternary man made fill (including dredged estuarine sand and mud, demolition rubble, industrial and household waste) overlying silty to peaty quartz sand, silt and clay with

ferruginous & humic cementation in places and common shell layers. This geology continues to the south of the area following the Hawthorne Canal.

Within a 500 metre radius of the area, the surrounding geology consists predominantly of Triassic medium to coarse grained quartz sandstone, very minor shale and laminate lenses. Beyond this, to the east and west of the site, the surrounding geology consists of Triassic Wianamatta Group Ashfield Shale - black to dark grey shale and laminate.

There are two dykes approximately 800 metres to the north of Area 1 within and adjacent to Iron Cove.

According to selected driller's logs available for Area 1 (BH – BH3), this predicted geology is supported by the observation of fill layers comprised of silty sand, gravelly sand or silty clay to a depth of 0.5 to 4.7 metres below ground level (m bgl), followed by alluvial silty sand layers and then sandstone bedrock. (EIS, 2018 – see Section 2.6).

Area 2

The Sydney 1:100,000 geological map sheet reveals the geology of the northern half of Area 2 is comprised predominantly of Quaternary man made fill (dredged estuarine sand and mud, demolition rubble, industrial and household waste) overlying silty to peaty quartz sand, silt and clay with ferruginous & humic cementation in places and common shell layers.

The geology of the southern half of the area comprises Triassic Wianamatta Group Ashfield Shale - black to dark grey shale and laminate.

Within a 1000 metre radius of the area, the surrounding geology also predominantly consists of Triassic Wianamatta Group Ashfield Shale.

There are seven dykes to the south and east of the area, with the closest dyke intersecting the southernmost end of Area 2.

According to selected driller's logs available for Area 2 (BH101 – BH107), this predicted geology is supported with the observation of fill layers comprised of silty sand or clayey sand to a depth of 0.5 – 2.0 metres below ground level (mbgl) (Cardno, 2018 – see Section 2.6).

Area 3

The Sydney 1:100,000 geological map sheet reveals the geology of Area 3 comprises Triassic Wianamatta Group Ashfield Shale - black to dark grey shale and laminate.

Within a 500 metre radius of the site, the surrounding geology also comprises of Triassic Wianamatta Group Ashfield Shale.

There are eight Dykes in the vicinity of Area 3, two of which pass through the area. A fold within the Fairfield Basin is also present around 300 metres west of the area.

According to selected driller's logs available for Area 3 (BH14 – BH21, Coffey, 2011 – see Section 2.6) the geology encountered consisted of fill layers (railway ballast, gravelly sand) followed by natural silty sand or clayey sand layers (highly weathered sandstone) encountered at 0.2 – 0.4 mbgl.

Area 4

The Sydney 1:100,000 geological map sheet reveals the geology of the northern half of Area 4 comprises Triassic Wianamatta Group Ashfield Shale - black to dark grey shale and laminate. The geology of the southern half of the area comprises Triassic medium to coarse grained quartz sandstone, with very minor shale and laminate lenses.

The surrounding geology within a 1000 metre radius of the area to the north, east, west, and within a 200 metre radius to the south, is also made up of these geological units. Further south of the site near the Cooks River, the geology consists of Quaternary silty to peaty quartz sand, silt, and clay, with ferruginous and humic cementation in places, and common shell layers.

There are eight dykes to the north and west of Area 4; the closest dyke lies approximately 300 metres north. A fold within the Fairfield Basin is also present approximately 800 metres to the northwest of Area 4.

According to selected driller's logs available in proximity to Area 4 (BH22 – BH24), the geology encountered consisted of fill layers (railway ballast, silty gravel) followed by Sandstone encountered at 0.3 – 0.9 mbgl. (Coffey, 2011 – see Section 2.6).

2.5.4 Hydrogeology

A review of the NSW Department of Primary Industries – Office of Water database shows no groundwater bores present within Areas 1 to 4. There are 16 bores within 500 metres of Area 1, as shown in Table 11. None of the other areas have bores within 500 meters.

Table 11 Registered groundwater bores within 500 metres of Area 1

Bore Number	Owner	Intended purpose	Depth drilled (mbgl)	SWL (mbgl)	Proximity to site (m)	Direction
GW114 003	Private	Monitoring bore	Not available (N/A)	N/A	228	South East
GW114 005	Private	Monitoring bore	N/A	N/A	232	South East
GW114 004	Private	Monitoring bore	N/A	N/A	273	South East
GW111 653	Other Govt	Monitoring bore	N/A	N/A	276	North East
GW111 663	Other Govt	Monitoring bore	N/A	N/A	307	North East
GW113 096	Private	Monitoring bore	N/A	N/A	365	South West
GW113 099	Private	Monitoring bore	N/A	N/A	365	South West
GW113 097	Private	Monitoring Bore	6.15	N/A	370	South West
GW113 095	Private	Monitoring Bore	8.00	N/A	379	South West

Bore Number	Owner	Intended purpose	Depth drilled (mbgl)	SWL (mbgl)	Proximity to site (m)	Direction
GW110 175	Other Govt	Monitoring Bore	6.20	1.90	380	North
GW110 174	Other Govt	Monitoring Bore	2.50	1.90	384	North
GW113 098	Private	Monitoring Bore	4.00	N/A	386	South West
GW113 094	Private	Monitoring Bore	5.60	N/A	387	South West
GW113 093	Private	Monitoring Bore	6.00	N/A	395	South West
GW113 092	Private	Monitoring Bore	6.00	N/A	396	South West
GW111 654	Other Govt	Monitoring Bore	5.00	N/A	456	North East

Based on the information shown in Table 11 , well depths in the vicinity of the Area 1 vary between 2.50 and 8.00 mbgl and the standing water level, available for two wells, was 1.90 mbgl.

Direction of groundwater flow is unconfirmed for Areas 1 to 4, but has been inferred based on topography and nearby surface water bodies. Iron Cove on the Parramatta River lies to the north of Area 1, and the Hawthorne Canal runs through Area 1 from south to north towards Iron Cove. General groundwater flow is inferred to be towards these two surface water bodies. The Hawthorne Canal also runs through Area 2, and general groundwater flow direction is inferred to be towards Iron Cove. For Areas 3 and 4, general groundwater flow direction is inferred to be in a southerly direction towards the Cooks River.

According to the Hydrogeology Map of Australia, the aquifers within Areas 1 to 4 are expected to be porous, extensive highly productive aquifers.

Areas 1 to 4 are not located within the Botany Groundwater Management Zones.

2.5.5 Hydrology

At the northern end of the project area the major surface water body is Iron Cove, which is part of the Parramatta River. Flowing northwards into Iron Cove is the Hawthorne Canal which flows through Areas 1 and 2.

At the southern end of the project area (Area 4), the closest major surface water body is the Cooks River which is located approximately 250 metres south of Area 4, and which flows south-east into Botany Bay.

The ground surface at Area 1 is mainly comprised of a large unsealed, grassed parkland area (Richard Murden Reserve), with asphalted cycleway / walkway paths and hard stand surfaced playing courts. The ground surface is generally level through this area, with surface runoff expected to infiltrate the ground surface, or flow towards the Hawthorne Canal.

The ground surface at Area 2 (between Parramatta Road and Longport Street) is comprised of unsealed, steep embankments either side of the Hawthorne Canal, adjacent to the sealed GreenWay path. Surface runoff here is expected to infiltrate the ground surface, or be channelled into the Hawthorne Canal. South of Longport Street, Area 2 is comprised of the light rail line and associated infrastructure. Surface water runoff is expected to infiltrate the unsealed ground surface (ballast, grass).

In Area 3, excess surface groundwater is expected to follow the topography and flow generally flow down the steep embankments, towards the light rail line, where it expected to infiltrate the unsealed surface (ballast, grass). The overall topography slopes very gently to the south towards Area 4, where surface water is expected to follow similar flow pathways as for Area 3.

Excess surface water from surrounding roads and adjacent properties at all areas is expected to enter the local stormwater drainage system.

2.5.6 Acid sulfate soils

A summary of the acid sulfate soils (ASS) risk for Areas 1 to 4 based on classifications provided by the relevant LEPs and Atlas of Australian Sulfate Soils is shown in Table 12. According to the LEP ASS classifications, ASS are likely to present in Areas 1 and 4, with a low likelihood of being present in Areas 2 and 3. ASS results are further discussed in the summary of previous investigations (see Section 2.6), where it is clear that ASS have the potential to be present in Area 2.

Table 12 Acid sulfate soils risk

Area	LEP ASS classification	Atlas of Australian Acid Sulfate Soils classification
1	Class 2 soils are mapped immediately adjacent to the eastern site boundary (Leichhardt LEP 2013). The Ashfield LEP (2013) does not provide ASS mapping.	Class A soils (High probability of ASS occurrence) within the site boundary.
2	No LEP ASS Risk (refer to Section 2.6.6 for likely ASS presence at Area 2).	Class C soils (Extremely low probability of ASS occurrence) within the site boundary.
3	No LEP ASS Risk.	Class C soils (Extremely low probability of ASS occurrence) within the site boundary.
4	Class 5 soils within the site boundary and Class 1 and Class 3 soils within 300 m of the site (Marrickville LEP 2011).	Class A soils (High probability of ASS occurrence) within 100 m of the site boundary.

Clause (6.1) of the Leichhardt LEP (2013) and Marrickville LEP (2011) refer to development that is permissible for each class of land with respect to ASS. Subclause (1) of the Leichhardt LEP states that “the objective of this clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage”.

Further information may be obtained by referring to the Leichhardt LEP (2013) and Marrickville LEP (2011). The Ashfield LEP (2013) does not refer to ASS.

2.5.7 Dryland salinity

There is no hazard or risk assessment data for the project area (Areas 1 to 4) in the Dryland Salinity – National Assessment database, and the project area lies outside the data coverage of the Dryland Salinity Potential of Western Sydney Data Source.

2.5.8 Bushfire prone land

Bush fire prone land is an area of land that can support a bush fire or is likely to be subject to bush fire attack, as designated on a bush fire prone land map. Vegetation Category 1 is considered to be the highest risk for bush fire, with the greatest combustibility and likelihood of forming fully developed fires. It is represented as red on a bush fire prone map, with a 100 m radius (represented as yellow).

There are no Bush Fire Prone Land Categories in the vicinity of the project area (Areas 1 to 4).

2.5.9 Ecological constraints

Table 13 shows a summary of the ecological constraints in regards to native vegetation, groundwater dependant ecosystems, and Ramsar wetlands for Areas 1 to 4.

Table 13 Ecological Constraints

Area	Native Vegetation	National Atlas of Groundwater Dependent Ecosystems	Ramsar Wetlands
1	Small patches of Saline Wetlands are present 400 meters to the north of the area along the banks of the Parramatta River. Portions of this constitute Coastal Saltmarsh and Subtropical and Temperate Coastal Saltmarsh (Possible) which is are listed as a Threatened Ecological Communities under NSW and Federal EPBC legislation.	There are no Groundwater Dependant Ecosystems or Inflow Dependant Ecosystems in the vicinity of the area.	There are no Ramsar Wetlands in the vicinity of the area.
2	There is no native vegetation the vicinity of the area that constitutes a Threatened Ecological Community under either NSW or Federal EPBC legislation.	There are no Groundwater Dependant Ecosystems or Inflow Dependant Ecosystems in the vicinity of the area.	There are no Ramsar Wetlands in the vicinity of the area.
3	There is no native vegetation the vicinity of the area that constitutes a Threatened Ecological Community under either NSW or Federal EPBC legislation.	There are no Groundwater Dependant Ecosystems or Inflow Dependant	There are no Ramsar Wetlands in the vicinity of the area.

Area	Native Vegetation	National Atlas of Groundwater Dependent Ecosystems	Ramsar Wetlands
		Ecosystems in the vicinity of the area.	
4	Small patches of Saline Wetlands and Forested Wetlands are present 300-400 meters to the south of the area along the banks of the Cooks River. The Forested Wetlands Portions is classified as Swamp Oak Floodplain Forest which is listed as a Threatened Ecological Community under NSW legislation.	There are no Groundwater Dependant Ecosystems or Inflow Dependant Ecosystems in the vicinity of the area.	There are no Ramsar Wetlands in the vicinity of the area.

The NSW Bionet Atlas shows species that have NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10 kilometre of the site. Full results from the NSW Bionet Atlas can be viewed in Appendix B.

2.6 Previous contamination investigations

2.6.1 Roads and Traffic Authority of NSW, April 2011. Greenway Shared Path – Haberfield. Geotechnical Investigation of Subsurface Conditions Factual Report

The report presents the results of a geotechnical investigation of foundation conditions within the site of the proposed Greenway shared path at Haberfield, from Marion Street in the south via Richard Murden Reserve to Dobroyd Parade in the north, and is covered by Area 1 of this GHD investigation.

The program involved investigation of 20 sites and included test pitting, dynamic cone penetration (DCP) tests, cone penetration tests (CPT μ) and dissipation tests.

During the investigation, a fragment of fibrous asbestos was identified within the fill material at location TP1, and was classified as a likely hazardous material due to the potential for it to contain asbestos. A contamination study was recommended prior to the final determination of the path's alignment.

2.6.2 Coffey Environments Australia Pty Ltd, 20 December 2011. Phase 2 Contamination Assessment, Sydney Light Rail Extension (SLRE) – Inner West. Transport for NSW ID: DOT 2011/003

Coffey was engaged by Transport NSW to conduct a Phase 2 contamination assessment of the planned Sydney Light Rail Extension – Inner West (SLRE-IW) corridor from the existing Lilyfield light rail stop to the proposed Dulwich Hill Interchange stop. The Coffey (2011) investigation covers Areas 1 to 4 of this GHD investigation.

The objective of the investigation was to provide a soil and groundwater assessment for contaminants of potential concern (COPC), provide advice of management of contaminated material during construction works, and to provide an indicative waste management classification for offsite disposal of surplus spoil.

The program included drilling 49 soil bores and eight hand augers from 0.3 to 8.0 metres below ground level (m bgl), and completion of four monitoring wells. Conclusions included:

- Isolated occurrences of benzo(a)pyrene (B(a)P) and total polycyclic aromatic hydrocarbons (PAH) were found to exceed adopted health based investigation levels.
- Asbestos fibres in soils were detected at the proposed Lewisham West stop, and suspected asbestos cement sheeting fragments were observed east of the proposed Leichhardt North stop.
- Surface soils were found to exceed ecological investigation levels for heavy metals in pedestrian access locations.
- Acid sulfate soil (ASS) was confirmed to be present in the vicinity of the proposed Hawthorne and Marion light rail stops in natural soils at depths greater than 2 mbgl, however, Coffey consider it likely that there is ASS present within the subsurface which was not identified as part of their assessment.
- Fill materials at the site were classified as General Solid Waste (GSW) with Toxicity Characteristic Leaching Procedure (TCLP), except for some Hazardous Waste (HW) at Rozelle Rail Yards and the Waratah Mills stop, and some Restricted Solid Waste (RSW) at the Arlington stop.

2.6.3 Consara Pty Ltd, 5 February 2016(a). Asbestos Containing Materials Clearance Works. Four Bushcare Sites along the Inner West Light Rail Extension Corridor, Sydney NSW

Consara was commissioned by Transport for NSW (TfNSW) to undertake works required to remove visible fragments of possible asbestos containing material (ACM) from following four sites along the Inner West Light Rail Extension corridor between Lilyfield and Marrickville, NSW:

- Hercules Street North (2,292 m²) (the northern portion of Area 4 in this report).
- Fred Street (1,509 m²) (on the north-eastern margin of Area 2 in this report).
- Little Street (476 m²) (70 metres east of Area 2 of this report).
- Loftus Street (1,436 m²) (60 metres east of the southern end of Area 1 in this report).

The four sites are parcels of land proposed for use by community volunteer groups as Bushcare revegetation and regeneration sites.

An appropriately licensed asbestos removal operator was engaged to undertake a detailed walkover of each site to visually identify ACM, and if present, remove the ACM for off-site disposal. Fragments of potential ACM were identified at each of the sites, and use of the sites as Bushcare sites is considered possible subject to implementation of an asbestos management plan.

2.6.4 Consara Pty Ltd, 5 February 2016(b). Asbestos Management Plan. Four Bushcare Sites along the Inner West Light Rail Extension Corridor, Sydney NSW

Consara was commissioned by Transport for NSW (TfNSW) to prepare an asbestos management plan (AMP) for use at the previously cleared sites along the Inner West Light Rail Extension corridor between Lilyfield and Marrickville, NSW (Consara 2016(a)).

Consara notes that previous investigation of these sites has identified the presence of ACM and associated asbestos fibres, and an AMP was considered necessary to protect future users of the sites.

2.6.5 Environmental Investigation Services, 24 April 2018. Report to Inner West Council on Preliminary Soil Contamination Screening and Waste Classification Assessment for Proposed Community Development at Richard Murden Reserve, Haberfield, NSW

EIS was engaged by Inner West Council to undertake a preliminary soil contamination screening and waste classification assessment for proposed development at Richard Murden Reserve (Area 1 in this report). The proposed development is understood to have included three new netball courts, new toilet facilities, basketball hoop, shelters, pathways, lighting and landscaped areas.

The investigation included soil sampling and analysis from three geotechnical boreholes. No asbestos was detected and the majority of results were returned below the site assessment criteria with the exception of:

- Nickel which exceeded the ecological investigation level criterion for one sample (BH3 0.06-0.1 m).
- Total recoverable hydrocarbons (TRH) > C₁₆-C₃₄ which exceeded the selected ecological screening criterion level for BH1 (0.0-0.2 m).
- (B(a)P) Toxic Equivalency Quotient (TEQ) exceeded the selected health investigation level criterion for recreation, open spaces in BH1 (0.0-0.2) and BH3 (0.4-0.5).

Preliminary waste classification (without TCLP), indicated classifications including GSW, HW and RSW, however, EIS conclude that the volumes of HW and RSW may be reduced through further TCLP analysis.

EIS notes that the client intend to classify all excavated material as ASS, and recommend assessment of the soils to confirm whether ASS is actually present, and to obtain a liming rate if it is present.

2.6.6 Cardno Pty. Ltd, 4 May 2018. Preliminary Site Investigation.
Greenway Central Shared Path

Inner West Council engaged Cardno to prepare a preliminary site investigation (PSI) for the Greenway Central Shared Path cycle path upgrade between Parramatta Road and Old Canterbury Road, Lewisham, NSW. This includes the northern half of Area 2 in this report.

The investigation was designed to determine whether COPC are present, or have the potential to be present at levels that would constrain the proposed development of the site to public open space, and to provide recommendations for additional assessment, management or remediation if required.

Eleven soils bores were drilled across the site, with 11 primary samples submitted for analysis. Based on the results of this assessment:

- B(a)P, TRH C₁₆-C₃₄, copper, lead and zinc were detected in soil samples at concentrations above the selected human health and ecological screening criteria.
- pH_{Fox} indicates the potential for ASS for to be present.
- Asbestos was detected in one soil sample.

Cardno recommended:

- Validation soil sampling should be undertaken after excavation of the soils during the site upgrades to confirm removal of COPC, in addition to testing to determine waste classification.

- Additional suspension peroxide oxidation combined acidity and sulphur (SPOCAS) testing to confirm the presence of ASS, and for an ASS management plan to be implemented during excavation.

2.6.7 Cardno Pty Ltd, 5 October 2018. Detailed Site Investigation, Grosvenor Crescent, Summer Hill

Cardno was engaged by Inner West Council to prepare a PSI for the Greenway alignment beneath the Longport Street overpass, adjacent to the Cadigal Reserve, Grosvenor Crescent, Summer Hill (Area 2 in this report). Seven soil boreholes were drilled at the site, with twelve samples submitted for analysis.

Concentrations of COPCs in soil were generally less than the human health screening criteria, with the exception of B(a)P and lead which exceeded the adopted health investigation levels for recreational land use. Some exceedances of ecological screening criteria were reported for TRH C₁₆-C₃₄, copper, lead and zinc. No asbestos was detected in the soils, however, a fragment taken from surface was confirmed to contain chrysotile and amosite asbestos. Acid sulfate soils (ASS) were deemed to have the potential to be present.

Cardno deemed potential future risks to human and ecological health to be low given that development plans include excavation and offsite disposal. Cardno also notes that re-development and capping of the Greenway path will minimise the potential exposure pathways to identified COPCs.

2.6.8 Cardno Pty Ltd, 8 October 2018. Remediation Action Plan, Grosvenor Crescent, Summer Hill

Cardno was engaged by Inner West Council to prepare a remediation action plan (RAP) for the remediation of the former Railcorp yard located beneath the Longport Street overpass, adjacent to the Cadigal Reserve, Grosvenor Crescent, Summer Hill (Area 2 in this report).

The selected remediation approach is to be performed jointly by an environmental consultant and a licensed contractor and will involve general steps:

- Site establishment.
- Shallow excavation works to level the site, as required.
- Establishment of capping through construction of the sealed shared path and importation and placement of capping materials for landscape areas.
- Visual inspection and validation.
- Preparation of a Site Environmental Management Plan (SEMP).

3. Preliminary site conceptual model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a preliminary CSM is an essential part of all site assessments and provides the framework for identifying contamination sources and how potential receptors may be exposed to contamination.

The following CSM has been developed for the potential on-site sources of contamination based on the information collected as part of this assessment. Further, the CSM considers the objectives of the investigation to review the project area suitability for continued recreational land use, and to support the redevelopment works.

3.1 Potential contamination sources

Infrastructure and activities related to use of the project area as a rail line, canal and public recreation space are associated with the potential for soil and groundwater contamination. Possible sources of contamination include the following:

- The spillage of fuels and lubricants.
- The use of herbicides / pesticides to manage weeds along the rail / GreenWay corridor.
- Metal dust resulting from wheel abrasion of the rail tracks.
- Airborne particle emissions from rail corridor and neighbourhood traffic.
- Lead and asbestos particles released from deteriorating paint and hazardous building materials.
- Uncontrolled fill from on- and off-site sources.

Based on the project area history, including previous and current uses, contaminants of potential concern associated with the sources of contamination listed above include:

- Heavy metals including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
- Asbestos containing materials (ACM)
- Hydrocarbons including total recoverable hydrocarbons (TRH), benzene, toluene, ethylene, xylene and naphthalene (BTEX) and polycyclic aromatic hydrocarbons (PAH)
- Organophosphate pesticides/ organochlorine pesticides (OPP/OCP)

3.2 Potential exposure pathways

Potential human health pathways are detailed below:

- Direct contact (ingestion and/or dermal).
- Dust inhalation.
- Volatilisation of vapours and accumulation in soil (inhalation).

Potential ecological pathways include:

- Leaching from subsurface soils / vertical migration to groundwater.
- Lateral migration via impacted surface water.
- Lateral migration via impacted groundwater.

3.3 Potential receptors

When evaluating potential adverse health / environmental effects from exposure to a contaminated site, all potentially exposed populations should be considered. For the project area, the key populations or receptors of interest are considered to include:

- Future recreational users of the site.
- Current and future intrusive maintenance (utility) or construction workers (excavations).
- Groundwater underlying the site.
- Ecological systems such as Iron Cove, Cooks River, natural and exotic vegetation at parklands, bushcare sites and along the GreenWay corridor.

3.4 Potential source-pathway-receptor (SPR) linkages

Based on the current information, a tabulated CSM has been developed as presented in the CSM shows the source-pathway-receptors (SPR) linkages identified for the project area and a discussion on where they are likely to be complete or incomplete.

Potential SPR linkages are noted in Table 14.

Table 14 Conceptual site model with potential SPR linkages

Source	CoPC	Potential Pathways	Potential Receptors	SPR Linkage complete?
Fuel and lubricant spills or leaks	TRH, BTEX, PAH, heavy metals	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure: Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove; surface runoff into Hawthorne Canal; direct contact with exposed soil</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental: Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological: Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human: Complete SPR linkage for human receptors is possible particularly during site works and maintenance. Complete SPR linkage is unlikely for recreational site users due to the planned hard-standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>
Uncontrolled fill materials on- and off- site	TRH, BTEX, PAH, PCBs, heavy metals, asbestos	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure: Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove; surface runoff into Hawthorne Canal; direct contact with exposed soil</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental: Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological: Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human: Complete SPR linkage for human receptors is possible particularly during site works and maintenance. Complete SPR linkage is unlikely for recreational site users due to the planned hard-standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>

Source	CoPC	Potential Pathways	Potential Receptors	SPR Linkage complete?
Chemicals related to historical use of, herbicides, pesticides and fertilisers	OCP/OPP	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure:</p> <ul style="list-style-type: none"> • Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove; surface runoff into Hawthorne Canal; direct contact with exposed soil 	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental:</p> <p>Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological:</p> <p>Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human:</p> <p>Complete SPR linkage for human receptors is possible particularly during site works and maintenance.</p> <p>Complete SPR linkage is unlikely for recreational site users due to the planned hard standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>
Metal dust from wheel / track abrasion	Heavy metals	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure:</p> <p>Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove; surface runoff into Hawthorne Canal; direct contact with exposed soil.</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental:</p> <p>Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological:</p> <p>Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human:</p> <p>Complete SPR linkage for human receptors is possible particularly during site works and maintenance.</p> <p>Complete SPR linkage is unlikely for recreational site users due to the planned hard standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>

Source	CoPC	Potential Pathways	Potential Receptors	SPR Linkage complete?
Deteriorating paint and HBM	Heavy metals (lead), asbestos	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure: Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove (for heavy metals); surface runoff into Hawthorne Canal; direct contact with exposed soil..</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental: Ecological receptors (for heavy metals) - groundwater, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological: Complete SPR linkage for heavy metals is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human: Complete SPR linkage for human receptors is possible particularly during site works and maintenance. Complete SPR linkage is unlikely for recreational site users due to the planned hard standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>
Particulates emitted from rail corridor and local traffic sources	TRH, BTEX, PAH, heavy metals	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure: Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove (for heavy metals); surface runoff into Hawthorne Canal; direct contact with exposed soil..</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental: Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological: Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human: Complete SPR linkage for human receptors is possible particularly during site works and maintenance. Complete SPR linkage is unlikely for recreational site users due to the planned hard standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>

Source	CoPC	Potential Pathways	Potential Receptors	SPR Linkage complete?
Transformers adjacent to rail corridor	PCBs, TRH	<p>Human exposure:</p> <ul style="list-style-type: none"> • Direct contact with contaminated soils • Ingestion of soils and dust • Inhalation of vapours associated with contaminants in soil / groundwater <p>Environmental exposure: Vertical migration through the unsaturated zone into groundwater and subsequent transport to Cooks River or Iron Cove (for heavy metals); surface runoff into Hawthorne Canal direct contact with exposed soil.</p>	<p>Human:</p> <ul style="list-style-type: none"> • Onsite future recreational users of the site • Construction workers during excavation • Future intrusive maintenance workers <p>Environmental: Ecological receptors - groundwater, Hawthorne Canal, Cooks River / Iron Cove, adjacent bushcare sites, onsite vegetation / animal communities.</p>	<p>Ecological: Complete SPR linkage is possible for ecological receptors through migration of COPC in groundwater or direct contact with uncovered soils.</p> <p>Human: Complete SPR linkage for human receptors is possible particularly during site works and maintenance. Complete SPR linkage is unlikely for recreational site users due to the planned hard standing surface of the pathway, however, some linkage may be possible for adjacent parkland/ grassed areas.</p>

In summary, SPR linkages are considered to be possible for ecological receptors with respect to COPC migration through the ground to the groundwater and potentially into Cooks River or Iron Cove. Human SPR linkages are considered to be possible during site works or intrusive maintenance works, and for recreational site users adjacent to the path itself. However, SPR linkages are considered unlikely for recreational users of the pathway itself due to the hardstanding surface of the path.

4. Data quality objectives

4.1 Overview

The purpose of establishing Data Quality Objectives (DQO) is to ensure the assessment is undertaken in a way that enables the collection and reporting of reliable data on which to base the assessment.

DQOs have been established for this assessment to assist the design and implementation of data collection activities, to ensure the type, quantity and quality of data obtained are appropriate and address the project objectives. The DQO process described in Schedule B2 of the National Environmental Protection Council (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure (No.1)* (NEPM), was adopted for this project, and involves seven steps:

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

A description of each DQO step developed for this project is provided in Table 15.

Table 15 Data quality objectives

Step	Data quality objectives
Step 1 State the Problem	<p>The problem is that contamination has been identified at select locations within the project area and potential source-pathway-receptor linkages of contaminants have been identified, but neither have been fully assessed for the extent of the project area, and as such the contamination status of the site is unknown.</p> <p>The objectives of the investigation are to assess whether the potential contamination sources have actually caused site contamination and if these impacts may pose a risk to receptors or affect the proposed future use of the site.</p>
Step 2 Identify the Decision	<p>The decisions for the assessment are the issues that need to be addressed arising from Step 1 and form the basis for risk characterisation:</p> <ul style="list-style-type: none"> • Is contamination present at the site and will the presence of any contamination affect the future use of the site or pose a risk to the identified receptors? • Is there a need for further assessment, remediation and/or management of contamination (if identified)? • What are the preliminary waste classifications for each area? • Are ASS present at the project area?
Step 3	<p>The inputs to the decision represent the information and data that will be collected as part of the assessment include:</p>

Step	Data quality objectives
Inputs to the Decision	<ul style="list-style-type: none"> • Review of historical land uses and potential sources of contamination identified at the site and on surrounding properties. • Review current land uses and practices for potential sources of contaminations at the site and on surrounding properties. • Review published environmental information for the site, including geological and hydrogeological maps. • Review of previous documentation, where available. • Drilling and soil sampling from 83 selected investigation locations across four sub-areas of the project area. • Collection and laboratory analysis of soil samples. • Comparison of the analytical data to applicable investigation levels to evaluate the potential for contamination to adversely impact upon human health and/or environmental receptors.
Step 4 Boundaries of the Study	<p>The temporal boundaries of the investigation are:</p> <ul style="list-style-type: none"> • Site walkover – 18 June 2019 • Intrusive investigation – 8 to 10 October 2019, and 15 to 29 November 2019 <p>The lateral boundaries of the study area are the boundaries of the site, as depicted in Figure 2, Appendix A.</p> <p>The vertical boundary of the study area is from surface to the depth of investigation (14.65 m bgl at A1_BH07).</p> <p>Groundwater and soil vapour investigations were not conducted.</p>
Step 5 Decision Rules	<p>The decision rules adopted in this investigation are as follows:</p> <ul style="list-style-type: none"> • The concentrations of contaminants of potential concern are to be assessed against adopted site investigation levels, which are sourced from the NSW EPA, NEPM endorsed guidelines with reference to site-specific exposure scenarios. • If concentrations of contaminants of potential concern are below the adopted investigation levels, then contamination at the site will be considered unlikely to pose an unacceptable risk to identified receptors. In such case, no further investigation, remediation or management is required. • Conversely, when concentration(s) of contaminants of potential concern exceed the adopted site investigation levels, further assessment may be required to evaluate the need for additional investigation and / or remediation / management activities.
Step 6 Tolerable Limits on Decision Errors	<p>Two types of decision errors are possible:</p> <ul style="list-style-type: none"> • Sampling errors which occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the site, i.e. the samples collected are not representative of the site conditions such that contamination is either missed or overstated. • Measurement errors which occur during sample collection, handling preparation, analysis and data reduction.

Step	Data quality objectives
	<p>To minimise the potential for decision errors, a number of data quality indicators (DQIs) were evaluated, namely representativeness, completeness, comparability, precision, sensitivity and accuracy. The DQIs were based on those listed in Appendix C of the NEPM.</p>
<p>Step 7 Optimisation of the Data Collection Process</p>	<p>For the assessment, the data collected will be optimised by:</p> <ul style="list-style-type: none"> • Engagement of specialist GHD personnel with previous experience in the assessment and remediation of contaminated sites to cover all aspects of the assessment. • Laboratory analysis of selected soil samples for identified contaminants of potential concern. Samples were selected on the basis of: <ul style="list-style-type: none"> – The potential for contamination presence in fill materials, including the potential presence of asbestos containing materials (ACM). – Visual and olfactory indications of potential contamination presence observed during the sampling program, as well as Photo Ionisation Detector (PID) screening results. • Assessment of data quality with reference to the specified DQIs, to evaluate the reliability and useability of the obtained data. • Assessment of laboratory analytical results against adopted criteria.

5. Basis for assessment

5.1 Relevant guidelines

The framework for the contamination assessment made herein, was developed in consideration of guidelines “made or approved”, by the NSW EPA under Section 105 of the *Contaminated Land Management Act, 1997*. These guidelines include, but are not limited to the following:

- NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*.
- NSW EPA (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.
- NEPM (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure (No. 1)*, National Environment Protection Council (NEPC).
- NSW EPA (2015) *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*.
- NSW EPA (2016) *Contaminated land management, Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017*.

Site investigation levels have been adopted from assessment criteria presented in NEPM (2013) as discussed below. GHD understands that the intended ongoing land use is for public recreation, therefore recreational land use scenarios have been considered appropriate for the screening criteria, and are discussed in the following sections. Additionally, consideration is given to the health of site workers during development works and intrusive maintenance works.

5.2 Human health criteria

5.2.1 National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM) (2013) Table 1A (1) Health Investigation Levels (HIL) C Recreational

For non-petroleum hydrocarbons, the NEPM 2013 Health Investigation Levels (HIL) have been adopted. The HILs take into account direct contact pathways, including incidental ingestion and dermal contact. For the purposes of selecting health based investigation levels for recreational soil, and to consider the health of site workers during rehabilitation works, HIL-C is considered to be appropriate.

5.2.2 NEPM (2013) Health Screening Levels (HSL) C Recreational Soil for Vapour Intrusion, Sand

The NEPM (2013) presents Health Screening Levels (HSLs) for fuel derived petroleum hydrocarbons, which are generic criteria based on a series of reasonably conservative assumptions in order to be protective of human health for a variety of land use types. For the purposes of selecting health based investigation levels for recreational soil (HSL-C) is considered to be appropriate for proposed future land use (i.e. public open space).

5.2.3 Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE), Health Screening Levels (HSLs) for Direct Contact, Setting C (Recreational/Open Space)) and vapour intrusive works

HSLs have been developed for soil vapour, groundwater and soil for petroleum hydrocarbons. HSLs were developed to address an identified need for consistent human health risk assessment for petroleum hydrocarbons in Australian conditions. HSL C refers to sites

classified as recreational/ open space. These guidelines are selected for site workers during rehabilitation activities and intrusive maintenance works.

5.3 Ecological criteria

The project area falls within a highly disturbed environment, including public parks, an active rail corridor, and with extensive fill cover and limited native vegetation. As such, consideration has been given below to land use criteria for urban residential / public open space which is considered to be representative of the current and future proposed land use.

GHD note that areas such as Cadigal Reserve and designated bushcare sites throughout the project area are more sensitive receptors, and therefore some consideration for discussion purposes has also been given to the more protective criteria for Areas of Ecological Significance. In addition, it is noted that these highly stringent criteria are normally applied where the planning provisions or land use designation is for the primary intention of conserving and protecting the natural environment. As such, we note that these areas are not “natural environments”, and are more appropriately classified into the public open space land use designation.

5.3.1 NEPM (2013) EILs Urban residential – public open space

EILs consider the physiochemical properties of soil and contaminants and the capacity of the soil to accommodate increases in contaminant levels above natural background while maintaining ecosystem protection. EILs apply principally to contaminants in the top two metres of soil at the finished surface/ ground level which corresponds to the root zone and habitation of many species.

The EILs for urban residential – public open space are considered here given that the proposed site usage is recreational, urban residential – public open space.

EILs have been refined for copper and zinc using available pH data, and are referred to as site specific EILs (see Section 8.2.2).

5.3.2 NEPM (2013) ESLs Urban residential – public open space

This ecological screening level was selected for TRH, BTEX and some PAHs, to reflect the recreational land use, with a conservative guideline of coarse soil from 0 to 2 metres.

5.3.3 NEPM (2013) Ecological Investigation Levels (EILs) Areas of Ecological Significance

This criteria has been selected for comparison purposes only, in areas that are identified as being more sensitive receptors (e.g. Cadigal Reserve and bushcare sites).

EILs have been refined for copper and zinc using available pH data, and are referred to as site specific EILs (See Section 8.2.2).

5.3.4 NEPM (2013) Ecological Screening Levels (ESLs) Areas of Ecological Significance

This criteria has been selected for comparison purposes only, in areas that are identified as being more sensitive receptors (e.g. Cadigal Reserve and bushcare sites).

This ecological screening level was selected for TRH, BTEX and some PAHs, to reflect areas of ecological significance, with a conservative guideline of coarse soil from 0 to 2 metres.

5.4 Waste classification

The chemical concentrations from the soil samples were compared to the criteria outlined in Table 1 of the NSW EPA (2014) *Waste Classification Guidelines: Part 1 Classifying Waste*. The guidelines provide criteria for assessing the appropriate waste classification and subsequent disposal location for solid wastes. The classification process for non-liquid wastes focuses on the potential for the waste to release chemical contaminants into the environment through contact with liquids (leachates).

The method used to chemically assess waste is the specific contaminant concentration (SCC) test. Where the SCC value exceeds the specified contaminant threshold (CT) value, further assessment using TCLP may be used to determine the total concentration of each contaminant in the waste sample and its leachability. The guidelines set different maximum levels for the CT of each contaminant and its leachability, in order for waste to be classified as either general solid waste or restricted solid waste. If the level exceeds the restricted solid waste criteria, the material is classified as hazardous waste.

In addition, should the waste be found (or reasonably suspected) to contain asbestos then the material should be classified as special waste mixed with general solid, restricted solid or hazardous waste (as applicable) and managed accordingly.

6. Methodology

6.1 General

The following section provides details of the sampling and analysis program developed to address the objectives and the scope of works for the project.

A team of suitably qualified GHD scientists conducted the field program at the project area in stages between 8 to 10 October 2019, then 15 to 29 November 2019.

6.2 Workplace health and safety

GHD developed a site specific health safety and environment (HSE) plan for the investigation as part of the overall commitment to provide a healthy and safe working environment for staff and contractors. All work employed the use of personal protection equipment (PPE) in accordance with GHD HSE requirements.

The HSE plan included a job safety and environment analysis detailing the step by step procedures of all aspects of the works and associated hazards and control measures to be implemented. The HSE plan was read by and signed by all GHD personnel, and subcontractors and feedback and discussion provided prior to the works commencing. A site specific pre-start safety assessment was conducted before commencing works.

GHD completed a site inspection prior to on-site intrusive works to finalise the proposed intrusive investigation locations, which included the following:

- Accessibility and appropriateness of each location was checked by GHD's site representative.
- Services clearance was undertaken by a professional underground services locator to further reduce the risk of intersecting subsurface services during the intrusive works, and Dial Before You Dig plans, and plans provided by the Client and other relevant parties were also referenced.

6.3 Field program

The following sections provide details of the soil sampling locations. Investigation locations were planned to provide more detailed information on the potential for contamination to exist along the length of the investigation area. Locations of test pits and boreholes are shown in Figures 1 to 16, Appendix A. Site photographs are provided in Appendix C.

6.3.1 Test Pits

Two methods of excavation were used for test pit excavation, namely:

1. Three tonne excavator, supplied by Stratacore, equipped with a 300 mm, toothed bucket.
2. Hand dug methods. Hand digging was used due to access restrictions and shallow sampling was acceptable.

Upon completion of each test pit, the excavation and excavated spoil was photographed with a description board. The excavated spoil was replaced in the same sequence as it was exhumed, and appropriately compacted.

6.3.2 Boreholes

Drilling rigs from Stratacore Drilling Pty Ltd (Stratacore) and Terratest Pty Ltd (Terratest) were mobilised to the site to undertake the drilling program. The boreholes were drilled using Stratacore's Comacchio Geo205, SD05 ute mounted rig and hand carry rig with Terratest providing the XP60 ute mounted rig and the X-country tight access rig.

Soils were drilled using solid flight auger or washbore rotary drilling methods, as appropriate for the conditions above or below the groundwater table. For cored boreholes, upon reaching the bedrock, steel casing was installed to advance the borehole. Rock core was placed in purpose built steel boxes with one metre of core per row. The site representative carried out logging and photographing of the core on site.

6.3.3 Hand augered boreholes

Hand augered boreholes were completed in areas such as specified council Bushcare sites where minimal impact investigation activities were necessary, where tight access prevented the use of drilling rigs or for contamination purposes only.

Upon completion of each hand auger, the excavation and excavated spoil was photographed with a description board. The excavated spoil was replaced in the same sequence as it was exhumed, and appropriately compacted.

6.4 Sampling method

During drilling and test pitting, disturbed soil samples were collected whenever the geology changed, any visual or olfactory contamination was noted and/or at the intervals below:

- 1 sample between 0.0 – 0.2 mbgl.
- 1 sample between 0.4 – 0.5 mbgl.
- 1 sample between 0.9 – 1.0 mbgl, and 1 every meter to the target depth.

All samples were collected in accordance with GHD's Standard Field Operating Procedures to ensure that representative samples were collected, information was accurately recorded and quality control maintained throughout the investigation.

Soils penetrated during the investigation were described in general accordance with the Unified Soil Classification system, with features such as seepage, discolouration, staining, odours and other indications of contamination being noted (refer to Appendix F – Bore Logs).

A visual assessment was made of all samples for the potential presence of contamination and/or asbestos.

A small portion of soil was separated from each sample and placed in to zip lock bags for field vapour/headspace screening using a PID. PID readings of collected soil samples and visual and olfactory evidence of potential contamination were recorded on the borehole logs. Copies of the borehole logs including observations and PID readings are included in Appendix F.

At completion of sampling, soil bores and test pits were backfilled with soil generated during sampling and the surface re-instated.

6.4.1 Sample handling, storage and transportation

Samples for chemical analysis were immediately placed into laboratory supplied, appropriate sampling containers. Samples for asbestos screening analysis were placed into zip lock bags. Collected samples were then stored in ice-chilled cool boxes prior to and during transit to the nominated analytical laboratories.

6.5 Sample analytical program

Selected samples were submitted to the nominated NATA accredited laboratory Eurofins | mgt, Sydney) for analysis for contaminants of potential concern as specified by the client.

A summary of the soil analytical schedule is presented in Table 16.

Table 16 Summary of sample analytical program

Analyte	Primary samples analysed	Duplicate samples analysed	Total samples	Duplicate ratio	Trip Blanks	Trip Spikes
TRH / BTEX / PAH / 8 heavy metals	85	22	107	1 : 5	6 (TRH & BTEX)	6 (TRH & BTEX)
OCP / PCB / OPP	85	22	107	1 : 5		
Asbestos (presence / absence)	20	-	20	-		

Metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc

7. Quality assurance and quality control

7.1 Fieldwork

Fieldwork was conducted in general accordance with GHD's Standard Field Operating Procedures which are aimed at ensuring that all environmental samples are collected by a set of uniform and systematic methods, as required by GHD's Quality Assurance system.

Key requirements of these procedures are as follows:

- Appropriately trained and experienced staff who documented site activities using photographs and notes on standard field forms such as daily site records and sampling logs.
- Decontamination procedures - including the use of new disposable gloves for the collection of each sample, decontamination of the sampling equipment between each sampling location (using phosphate free detergent) and the use of dedicated laboratory provided sampling containers.
- Logging procedures - all samples are described using a recognised system.
- Calibration procedures - all field monitoring equipment is appropriately calibrated.
- Sample identification procedures - collected samples were immediately transferred to sample containers of appropriate composition and preservation for the required laboratory analysis. All sample containers were clearly labelled with a sample number, sample location, sample depth (for soil samples) and sample date. The sample containers were then transferred to an ice filled cooler for sample preservation during shipment to the testing laboratory.
- Chain of custody information requirements - a chain-of-custody form was completed and forwarded to the testing laboratory.

7.2 Field quality control

Field quality control procedures used during the project comprised the collection and analysis of the following:

- **Intra-laboratory (blind) duplicates:** Comprise a single sample that is divided into two separate sampling containers. Both samples are sent to the project laboratory. Blind duplicates provide an indication of the analytical precision of the laboratory, but are inherently influenced by other factors such as sampling techniques and sample media heterogeneity. Blind duplicates were collected and analysed during the investigation at a frequency of 15%.
- **Inter-laboratory (split) duplicates:** Comprise a single sample that is divided into two separate sampling containers. One of these samples is sent to the primary analytical laboratory, whilst the remaining sample is submitted to an independent secondary laboratory for the identical suite of analysis. Split samples are prepared and analysed in order to check the accuracy of data generated by the primary laboratory. Split duplicates were collected and analysed during the investigation at a frequency of 5%.
- **Rinsate:** A sample of analyte free water poured over decontaminated field sampling equipment prior to the collection of soil samples. The rinsate sample is used to assess the adequacy of the decontamination process. Eighteen rinsate samples were collected as part of this investigation.

- **Trip blank:** A sample prepared by the primary laboratory, free of volatile contaminants. The trip blank accompanies the primary samples during transits from the site to the laboratory. The trip blank is analysed for BTEXN and TRH C₆-C₁₀ compounds, and results are used to assess the potential of cross-contamination of volatile contaminants during transportation of samples. Trip blanks should have no detectable concentrations of COPC. Six trip blanks were analysed with the sample batch sent to the laboratory.
- **Trip spike:** A sample prepared by the laboratory containing pure deionised water spiked with known concentrations of the analytes of interest (including BTEXN and TRH C₆-C₁₀ compounds) to determine precision in the laboratory, and results are used to assess the potential of loss of volatile contaminants during transportation of samples. Adopted recovery limits are 70-130%. Two trip spikes were analysed with the sample batch sent to the laboratory.

7.3 Laboratory quality control

The primary laboratory used was Eurofins | mgt and the secondary laboratory was Australian Laboratory Services (ALS). These laboratories have adopted their internal procedures and NATA accredited methods in accordance with their quality assurance system.

Laboratory quality control procedures used during the project included:

- **Laboratory duplicate samples:** The analytical laboratory collects duplicate sub samples from one sample submitted for analytical testing at a rate equivalent to one in twenty samples per analytical batch, or one sample per batch if less than twenty samples are analysed in a batch. A laboratory duplicate provides data on the analytical precision and reproducibility of the test result.
- **Spiked Samples:** An authentic field sample is 'spiked' by adding an aliquot of known concentration of the target analyte(s) prior to sample extraction and analysis. A spike documents the effect of the sample matrix on the extraction and analytical techniques. Spiked samples are analysed for each batch where samples are analysed for organic chemicals of concern.
- **Certified Reference Standards:** A reference standard of known (certified) concentration is analysed along with a batch of samples. The Certified Reference Standard (CRS) or Laboratory Control Spike provides an indication of the analytical accuracy and the precision of the test method and is used for inorganic analyses.
- **Surrogate Standard / Spikes:** These are organic compounds which are similar to the analyte of interest in terms of chemical composition, extractability, and chromatographic conditions (retention time), but which are not normally found in environmental samples. These surrogate compounds are 'spiked' into blanks, standards and samples submitted for organic analyses by gas-chromatographic techniques prior to sample extraction. Surrogate Standard/Spikes provide a means of checking that no gross errors have occurred during any stage of the test method leading to significant analyte loss.
- **Method Blank:** Usually an organic or aqueous solution that is as free as possible of analytes of interest to which is added all the reagents, in the same volume, as used in the preparation and subsequent analysis of the samples. The reagent blank is carried through the complete sample preparation procedure and contains the same reagent concentrations in the final solution as in the sample solution used for analysis. The reagent blank is used to correct for possible contamination resulting from the preparation or processing of the sample.

The primary testing laboratory conducted an assessment of the laboratory QC program internally; however, the results were also independently reviewed and assessed by GHD.

Laboratory duplicate samples should return RPDs within the NEPM acceptance criteria of $\pm 30\%$. Percent recovery is used to assess spiked samples and surrogate standards. Percent recovery; although dependent on the type of analyte tested, concentrations of analytes and sample matrix; should normally range from about 70-130%. Method (laboratory) blanks should return analyte concentrations as 'not detected'.

7.4 QA/QC results

7.4.1 Field QA/QA results

As part of the field investigation, 22 duplicate samples were submitted for analysis, including 17 intra-laboratory duplicate samples and 5 inter-laboratory duplicate samples. In addition, eighteen soil rinsate samples were taken, and six trip blanks and two trip spikes were submitted for analysis.

Duplicate samples

Relative percentage differences (RPDs) were calculated with the following criteria adopted for acceptability based on data quality objectives outlined in Section 4.

- RPDs have only been considered where at least one concentration of the duplicate pair is greater than ten times the estimated quantitation limit (EQL).
- GHD has adopted a nominal acceptance criterion of 30% RPD for field duplicates and splits for inorganics and a nominal acceptance criterion of 50% RPD for field duplicates and splits for organics.
- However, it is noted that these criteria will not always be achieved, particularly in heterogeneous soil or fill materials, or at low analyte concentrations. In such cases, this does not necessarily indicate a problem with the data.

RPD results for duplicate samples indicate seventeen samples returned RPDs outside the specified limits for metals, BTEXN, TRH and PAH (see Appendix E – Soil Duplicate RPD table). This is not unexpected, and is attributed to the highly heterogeneous nature of the fill material encountered across the site.

Rinsate samples

Eighteen soil rinsate samples were taken from equipment used for soil sampling. Four samples returned concentrations marginally above the relevant laboratory limit of reporting (LOR) for zinc. All other samples returned concentrations below LOR for all COPC, indicating the potential for cross contamination between soil samples to affect the interpretation of soil data is very low, and acceptable. On reviewing the soil samples taken from the investigation sites on the same days as the rinsates with elevated zinc levels, it is noted that all samples returned zinc levels below the selected ecological and human health criteria, except three samples. If these samples, two only just exceeded the selected criteria, and were similar to surrounding results. The third sample returned very high zinc results, however this result was repeated in a duplicate sample. The rinsate results are therefore considered to be acceptable.

Trip blank

Six trip blanks were sent to the laboratory during the investigation and tested for BTEXN and TRH (C₆ – C₁₀). Concentrations were not reported above the relevant laboratory limit of reporting (LOR), indicating the potential for volatile cross contamination to be low and acceptable.

Trip spike

Two trip spike samples were sent to the laboratory during the investigation and tested for BTEXN and TRH (C₆ – C₁₀). All recoveries were within the nominated acceptance criteria.

7.4.2 Laboratory QA/QC assessment

Holding Times

All analytes were extracted within the reported holding times of the laboratories.

Laboratory programme

The NATA certified laboratories utilised for this assessment (Eurofins | mgt and ALS) undertook their own quality assurance and quality control procedures for sample analysis. GHD has reviewed the internal laboratory control data provided within the laboratory reports (refer to Appendix D).

All quality assurance sample analysis undertaken by the laboratories passed their own quality assurance and control procedures.

Table 17 provides an overview of the laboratory QA/QC quality controls.

Table 17 Laboratory QA/QC assessment

QA/QC Assessment	Comment
Appropriate methodologies used for sample analyses	<p>All laboratory transcripts were NATA stamped and signed by a NATA signatory. The primary laboratory used in this investigation was:</p> <ul style="list-style-type: none">• Eurofins MGT (Sydney) <p>The secondary laboratory used for sampling was:</p> <ul style="list-style-type: none">• ALS Global <p>Statistical data presented in the laboratory QA/QC reports were considered adequate in demonstrating the precision and accuracy of the methods used to analyse field samples.</p>
Appropriate limit of reporting (LORs)	<p>The laboratory LOR was lower than the adopted assessment criteria in all cases therefore the LOR's were considered appropriate.</p>
Laboratory QA/QC plan	<p>Copies of signed chain of custody forms are presented in Appendix D of the report. All soil samples were received and analysed within the specified laboratory holding times.</p> <p>The analytical methods used are documented on the laboratory reports presented in Appendix D.</p> <p>Laboratory quality control samples included laboratory control samples, internal duplicates, matrix spike and method blanks. The types of QA/QC samples analysed by the laboratory were considered appropriate to assess the precision and accuracy of the laboratory methods used.</p> <p>There were two occasions for which the matrix spike recovery was outside of the recommended acceptance criteria indicating a sample matrix interference. Comparison with the laboratory control sample (LCS) result for each of these analytes indicated a pass, which suggests the fail result for the laboratory spike recovery was not due to the soil sample.</p> <p>Several duplicate analytes returned RPD outside of the 30% acceptance limits. Further analysis indicates that sample heterogeneity as the cause.</p>

QA/QC Assessment	Comment
	<p>The statistical data presented in the laboratory QA/QC reports is generally considered adequate in demonstrating the precision and accuracy of the methods used to analyse field samples.</p> <p>Copies of the laboratory QA/QC reports are provided in Appendix D.</p>

8. Investigation results

8.1 Field observations

A total of 83 locations were investigated using a variety of methods, as outlined in Table 1, including machine and hand augered boreholes, cored boreholes, test pits and large diameter cored and augered boreholes.

Table 18 to Table 21 provide a summary of location, depth of fill and intersected lithology. The investigation locations are shown in Figures 1 to 16, Appendix A. Co-ordinates of locations were recorded using hand-held geographic positioning systems (GPS) and are accurate to approximately 10 m.

As anticipated, based on the site history and previous investigations, the majority of areas are covered by a layer of fill material of variable thickness. Fill materials generally comprised silty sands, gravelly sands and sandy clays. Observed anthropogenic materials consist of construction materials including concrete, ballast, asphalt, bricks, mortar, tiles, glass, plastic and metal.

Fill thicknesses ranged as follows:

- Area 1: 0.25 to 2.5 metres, with average thicknesses around 1.5 metres
- Area 2: absent to 9.0 metres, with average thicknesses around 0.5-1.0 metres
- Area 3: 0.5 to 7.30 metres, with average thicknesses around 1.0 metres
- Area 4: 0.75 to 4.8 metres, with average thicknesses around 1.0 metres

Underlying the fill material are weathered, natural sedimentary rocks indicative of the Ashfield Shale and Hawkesbury Sandstone (including sandstone, siltstone, mudstone and shale). Natural weathered soil profiles include clays, silts and sands, with lesser gravels.

Borelogs are provided as Appendix F.

8.1.1 Groundwater

Groundwater was intersected in several boreholes in Area 1, with intersected depths varying from 0.8 mbgl to 4.0 mbgl, and typically around 1.5 mbgl. Groundwater in Area 1 is likely to be influenced by its proximity to the Iron Cove and Hawthorne Canal water bodies. Levels are likely to vary with tides, seasonal fluctuations and major rainfall events.

Groundwater was observed in borehole A2D-BH09 in Area 2, at a depth of 2.9 mbgl. This level generally correlates with the base of the Hawthorne Canal.

Groundwater was observed in Area 3, in borehole A3-BH06, at the interface of the fill and residual soil, at a depth of 4.2 mbgl. Area 3 is not located close to any surface water bodies and deeper groundwater levels are anticipated.

Groundwater was observed in a number of boreholes in Area 4, likely due to the presence of the nearby drainage channel. Groundwater was recorded at approximately 0.9 to 4.0 m bgl trending deeper towards the southern low point of the area. Groundwater levels are likely to vary due to seasonal fluctuations and following major rainfall events.

Intersected depths for all areas are noted in Table 18 to Table 21.

8.1.2 Asbestos containing material

One sample of suspected ACM was visually identified during drilling A2D_BH09, and was submitted for asbestos identification (A2D_BH09_0.2(ACM)). The results are further discussed in Section 8.2.1.

Table 18 Area 1 investigation summary

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A1-BH01	Augered Borehole	328719.6	6250682.5	2.5	2.0	0-2 m: fill 2-2.5 m clayey sand with gravel GW at 1.60 m bgl
A1-BH02	Augered Borehole	328763.0	6250647.9	3.3	2.10	0-2.1 m: fill 2.1-3.0 m: clayey sand with gravel GW at 2.10 m
A1-BH03	Augered Borehole	328835.4	6250540.9	0.25	0.25	0-0.25 m: hole abandoned, not sampled
A1-BH04	Augered Borehole	328840.7	6250534.2	0.45	0.45	0-0.45 m: hole abandoned, not sampled
A1-BH05	Augered Borehole	328847.1	6250523.0	5.0	2.20	0-2.20 m: fill 2.20-5.0 m: clayey sand, with gravel GW at 4.0 m
A1-BH06	Cored Borehole	328855.3	6250530.3	12	2.0	0-2.0 m: fill 2.0-12.0 m clays, sands, gravel, sandstone GW at 1.0 m
A1-BH07	Cored borehole	328867.0	6250528.5	14.65	2.50	0-14.65 m: clayey sand, sandstone GW at 1.70 m
A1-HA01	Hand Auger	328782.4	6250614.6	0.9	0.90	0-1.5 m: fill
A1-LD01	Large Diameter Augered Borehole	328833.0	6250325.3	2.0	1.50	0-1.50 m: fill 1.5-2.0 m: sandy clay, trace shells GW at 1.50 m
A1-LD02	Large Diameter Augered Borehole	328829.3	6250260.8	2.0	1.0	0-1.0 m: fill 1.0-2.0 m: clay, trace sand and shells GW at 0.80 m
A1-LD03	Large Diameter Augered Borehole	328757.8	6250090.0	2.0	2.0	0-2.0 m: silty sand, clayey sand, sandstone gravels

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A1-LD04	Large Diameter Augered Borehole	328698.0	6249983.5	2.0	1.50	0-1.50 m: fill 1.50-2.0 m: clay, trace sand and shells GW at 1.80 m
A1-LD05	Large Diameter Augered Borehole	328632.5	6249919.4	2.0	1.50	0-1.50 m: fill 1.50-2.0 m: clay, trace sand and shells
A1-LD06	Large Diameter Augered Borehole	328613.7	6249806.4	2.0	1.10	0-1.10 m: fill 1.10-2.0 m: clay, trace sand and shells GW at 1.10 m
A1-LD07	Large Diameter Augered Borehole	328582.2	6249715.1	2.0	2.0	0-1.80 m: fill 1.80-2.0 m: silty gravelly sand, gravels
A1-LD08	Large Diameter Augered Borehole	328549.7	6249650.7	2.0	2.0	0-2.0 m: fill
A1-LD09	Large Diameter Augered Borehole	328498.3	6249539.3	2.0	2.0	0-2.0 m: fill
A1-LD10	Large Diameter Augered Borehole	328404.6	6249367.8	2.0	1.50	0-1.50 m: fill 1.50- 2.0 m: clay, medium grained sand
A1-LD11	Large Diameter Augered Borehole	328400.1	6249225.9	2.0	1.70	0-1.70 m: fill 1.70-2.0 m: clayey sand GW at 1.70 m

Table 19 Area 2 investigation summary

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A2-BH02	Cored Borehole	328380.2	6248168.6	8.60	1.10	0-1.10 m: fill 1.10-8.60 m: clayey sand, sandstone
A2-BH03	Augered Borehole	328173.7	6247796.9	1.50	0.70	0-0.70 m: fill

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
						0.70-1.50 m: clay with sand, sandstone
A2-BH04	Augered Borehole	328174.7	6247742.2	1.05	0.80	0-0.80 m: fill 0.80-1.05 m: fine to coarse sandstone
A2D-BH04	Cored Borehole	328451.0	6248456.5	7.09	1.50	0-1.50 m: fill 1.50-7.09 m: sandy clay, sandstone
A2D-BH05	Cored Borehole	328443.6	6248434.6	6.97	1.30	0-1.30 m: fill 1.30-6.97 m: gravelly sand, sandstone
A2D-BH06	Cored Borehole	328427.0	6248282.4	7.24	2.50	0-2.50 m: fill 2.50-2.65 m: sand
A2D-BH07	Cored Borehole	328415.1	6248285.3	6.0	2.50	0-2.50 m: fill 2.50-6.0 m: sandy clay, sandstone
A2D-BH08	Cored Borehole	328425.9	6248261.6	7.0	2.20	0-2.20 m: fill 2.20-7.0 m: clay, sandstone
A2D-BH09	Cored Borehole	328412.4	6248228.8	6.88	1.60	0-1.60 m: fill (suspected ACM sample collected at 0.2m) 1.60-6.88 m: sandy clay, gravel, sandstone GW at 2.9 m
A2D-LD01	Large Diameter into Cored Borehole	328454.1	6248404.9	7.46	3.90	0-3.90 m: fill 3.90-7.46 m: gravelly clay, sandstone
A2D-LD02	Large Diameter Augered Borehole	328447.0	6248370.6	2.0	2.0	0-1.50 m: fill 1.50-2.0 m: gravelly sand
A2D-LD03	Large Diameter Augered Borehole	328433.1	6248307.7	2.0	-	0-0.10 m: fill 0.1-2.0 m: high plasticity clay
A2D-LD04	Large Diameter Augered Borehole	328389.1	6248199.2	13.0	9.00	0-9.0 m: fill 9.0-11.0 m: clay, gravels, sandstone
A2-HA01	Hand Auger	328401.0	6248153.5	0.50	0.50	0-0.50 m: fill

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A2-HA02	Hand Auger	328383.4	6248128.9	0.80	0.80	0-0.80 m: fill
A2-HA03	Hand Auger	328360.2	6248095.3	0.15	0.15	0-0.15 m: fill
A2-HAC01	Hand Auger	328358.1	6248141.7	0.60	0.60	0-0.60 m: fill
A2-HAC02	Hand Auger	328339.1	6248114.4	2.0	0.85	0-0.85 m: fill 0.85-2.0 m: clay, sandy clay
A2-HAC03	Hand Auger	328317.8	6248033.3	1.0	0.90	0-0.90 m: topsoil 0.90-1.0 m: clayey sand
A2-TP01	Testpit	328385.0	6248182.9	0.70	0.70	0-0.70 m: fill

Table 20 Area 3 investigation summary

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A3-BH01	Augered Borehole	327838.3	6247276.8	2.0	0.70	0-0.70 m: fill 0.70-2.0 m: high plasticity clay
A3-BH02	Augered Borehole	327833.6	6247234.3	2.0	1.0	0-1.0 m: fill 1.0-2.0 m: high plasticity clay, sandy clay
A3-BH03	Augered Borehole	327830.2	6247201.7	2.0	0.70	0-0.70 m: fill 0.70-2.0 m: high plasticity clay
A3-BH04	Cored Borehole	327820.6	6247149.6	10.0	1.70	0-1.70 m: fill 1.70-3.0 m: sandy clay, clay, sandstone
A3-BH05	Cored Borehole	327831.7	6247124.1	8.65	2.10	0-2.10 m: topsoil 2.10-8.65 m: clay, sandstone
A3-BH06	Cored Borehole	327842.7	6247095.6	11.79	5.0	0-5.0 m: fill 5.0-11.79; clay, sandstone GW at 4.2 m
A3-BH07	Cored Borehole	327848.9	6247080.0	6.74	1.85	0-1.85 m: fill

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
						1.85-6.74 m: sandy clay, breccia, siltstone, sandstone
A3-BH08	Cored Borehole	327846.3	6247047.9	10.0	1.90	0-1.90 m: fill 1.90-6.0 m: gravelly clay, sandstone
A3-BH09	Cored Borehole	327867.7	6246929.2	8.4	0.60	0-0.60 m: fill 0.60-8.40 m: clay, shale, siltstone / sandstone
A3-BH10	Cored Borehole	327889.6	6246878.0	13.32	3.90	0-3.90 m: fill 3.90-13.32 m: clay, shale, sandstone
A3-BH11	Cored Borehole	327927.2	6246811.0	10.28	1.70	0-1.70 m: fill 1.70-4.55 m: clay, sandstone
A3-HA01	Hand Auger	327963.9	6247462.1	1.20	1.20	0-1.20 m: fill
A3-HA02	Hand Auger	327940.9	6247442.1	2.0	2.0	0-2.0 m: fill
A3-HA03	Hand Auger	327919.9	6247418.2	1.0	1.0	0-1.0 m: fill
A3-HA04	Hand Auger	327898.5	6247386.9	2.0	2.0	0-2.0 m: fill
A3-HA05	Hand Auger	327868.6	6247329.8	2.0	0.60	0-0.60 m: fill 0.60-2.0 m: clay
A3-HA06	Hand Auger	327857.0	6247021.0	1.15	0.60	0-0.60 m: fill 0.60-1.0 m: silty sand, shale
A3-HA07	Hand Auger	327864.1	6246965.5	1.15	0.95	0-0.95 m: fill 0.95-1.10 m: silty sand, shale
A3-LD/BH01	Large Diameter into Cored Borehole	327981.4	6247478.6	12.41	7.30	0-7.30 m: fill 7.30-10.65 m: clay, sandstone
A3-LD01	Large Diameter Augered Borehole	327849.1	6247311.2	2.0	0.70	0-0.70 m: fill
A3-LD02	Large Diameter Augered Borehole	327838.4	6247108.9	5.56	2.50	0-2.50 m: fill 2.50-4.70 m: clay, sandstone

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A3-TP01	Testpit	328001.3	6247494.2	0.50	0.50	0-0.50 m: silty sand topsoil
A3-TP02	Testpit	327976.2	6247471.3	0.80	0.80	0-0.80 m: silty sand topsoil

Table 21 Area 4 investigation summary

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
A4-BH01	Augered Borehole	327961.9	6246716.6	2.73	1.30	0-1.30 m: fill 1.30-2.73 m: clay, sandstone
A4-BH02	Augered Borehole	328019.0	6246569.8	1.85	0.90	0-0.90 m: fill 0.90-1.70 m: sandy clay, sandstone GW at 0.9 m
A4-BH03	Augered Borehole	328011.0	6246525.2	4.0	3.0	0-3.0 m: fill 0.3-3.8 m: sandy clay, sandstone GW at 3.0 m
A4-BH04	Augered Borehole	328020.3	6246484.6	5.40	4.80	0-4.80 m: fill 4.80-5.10 m: clayey sand, sandstone GW at 4.0 m
A4-BH05	Augered Borehole	328006.6	6246455.2	3.0	3.0	0-3.0 m: fill
A4-BH06	Augered Borehole	327984.3	6246424.2	1.0	1.0	0-1.0 m: fill
A4-BH07	Augered Borehole	327937.6	6246389.2	5.30	1.0	0-1.0 m: fill 1.0-5.50 m: sandy clay, sandstone
A4-BH08	Augered Borehole	327806.1	6246218.9	0.80	0.45	0-0.45 m: fill 0.45-0.80 m: clayey sand, sandstone
A4-BH09	Augered Borehole	327984.4	6246710.3	2.60	0.60	0-0.60 m: fill 0.60-2.60 m: sandy clay, sandstone
A4-BH10	Augered Borehole	327995.1	6246698.4	2.67	2.10	0-2.10 m: fill

Location ID	Investigation method	Coordinates (MGA 56)		Investigation depth (mbgl)	Depth of fill (mbgl)	Lithology summary and groundwater (GW) intersection
		Easting (m E)	Northing (m S)			
						2.10-2.67 m: sandstone GW at 1.80 m
A4-BH11	Augered Borehole	328016.2	6246647.1	1.22	0.45	0-0.45 m: fill 0.45-1.22 m: clayey sand, sandstone
A4-BH12	Augered Borehole	328025.7	6246608.0	1.14	1.0	0-1.0 m: fill 1.0-1.14 m: sandstone
A4-HAC01	Augered Borehole	328005.3	6246672.7	3.10	1.35	0-1.35 m: fill 1.35-3.10 m: sandy clay, sandstone GW at 2.0 m
A4-HAC02	Augered Borehole	328024.3	6246620.5	1.60	1.30	0-1.30 m: fill 1.30-1.60 m: clayey sand, sandstone
A4-HAC03	Hand Auger	328048.8	6246572.5	1.50	0.60	0-0.60 m: fill 0.60-1.50 m: high plasticity clay
A4-HAC04	Hand Auger	328046.4	6246546.9	1.50	0.50	0-0.50 m: fill 0.50-1.50 m: low plasticity clay
A4-HAC05	Hand Auger	327911.8	6246375.4	1.0	1.0	0-1.0 m: fill
A4-HAC06	Hand Auger	327878.6	6246363.1	1.0	1.0	0-1.0 m: fill
A4-LD01	Large Diameter Augered Borehole	327864.1	6246315.6	3.30	2.0	0-2.0 m: fill 2.0-3.3 m: clayey sand, sandstone GW at 3.0 m
A4-TP01	Testpit	327849.8	6246287.3	3.0	1.70	0-1.70 m: fill 1.70-3.0 m: clay, sandy clay
A4-TP02	Testpit	327850.5	6246290.0	1.0	1.40	0-1.40 m: fill

8.2 Soil analytical results

8.2.1 Human health results

Human health results considered both recreational site users and future maintenance and intrusive workers.

Analytical results are presented in Tables 1 to 4, Appendix E, and a summary of human health guideline criterion exceedances for Areas 1 to 4 is provided in Table 22 to Table 25 below. Exceedances of human health criteria are also noted on Figures 1 to 16, Appendix A.

In summary:

- For Area 1, exceedances of selected human health guideline criteria were noted at three locations for lead, and twelve locations for B(a)P TEQ. One collected sample confirmed to contain asbestos as compressed fibre cement.
- For Area 2, exceedances of selected human health guideline criteria were noted at one location for arsenic, one location for lead and 10 locations for B(a)P TEQ. One collected sample confirmed to contain asbestos as compressed fibre cement.
- For Area 3, exceedances of selected human health guideline criteria were noted at five locations for B(a)P TEQ. One collected sample confirmed to contain asbestos as compressed fibre cement.
- For Area 4, exceedances of selected human health guideline criteria were noted at one location for lead, two locations for arsenic, one location for PAH (sum of total), and 11 locations for B(a)P TEQ.

Table 22 Area 1 Human health guideline criterion exceedances

Criterion Guideline	Analyte (and added contaminant limit (mg/kg))	Sample exceedances (and value (mg/kg))
NEPM 2013 HIL C - recreational	Lead (600)	A1_BH02_2.0 (2,600) A1_LD08_2.0 (QA3) (1,100) A1_LD11_0.2 (960)
NEPM 2013 HIL C - recreational	Ba(P) TEQ (3)	A1_BH01_0.5 (7.9); A1_BH02_2.0 (3.4) A1_BH06_0.5 (QA5) (3.4); A1_HA01_0.5 (10) A1_LD02_0.5 (3.7); A1_LD04_2.0 (25) A1_LD05_0.5 (14); A1_LD07_2.0 (9.8) A1_LD08_2.0 (8.4); A1_LD09_1.0 (8.6) A1_LD11_0.5 (6.4); A1_LD11_0.2 (24)

Table 23 Area 2 Human health guideline criterion exceedances

Guideline Criterion	Analyte (and added contaminant limit (mg/kg))	Sample exceedances (and value (mg/kg))
NEPM 2013 HIL C - recreational	Arsenic (300)	A2_HAC02_0.2 (380)
NEPM 2013 HIL C - recreational	Lead (600)	A2_BH09_0.5 (1,200)

Guideline Criterion	Analyte (and added contaminant limit (mg/kg))	Sample exceedances (and value (mg/kg))
NEPM 2013 HIL C - recreational	Ba(P) TEQ (3)	A2_BH03_0.5 (12); A2_BH04_0.5 (11) A2_HAC02_1.0 (9.4); A2D_BH04_0.5 (18) A2D_BH05_0.2 (18); A2D_BH07_0.5 (DUP1) (4.2) A2D_BH07_2.0 (4.4); A2D_LD01_0.5 (7.9) A2D_LD02_0.2 (Dup_251019) (3.1); A2D_LD04_0.5 (4.0)

Table 24 Area 3 Human health guideline criterion exceedances

Guideline Criterion	Analyte (and added contaminant limit (mg/kg))	Sample exceedances (and value (mg/kg))
NEPM 2013 HIL C - recreational	Ba(P) TEQ (3)	A3_BH03_0.5 (5); A3_HA02_1.0 (QA10) (3.7) A3_HA04_0.5 (13) ; A3_LD01_1.0 (6.8) A3_LD02_0.5 (34)

Table 25 Area 4 Human health guideline criterion exceedances

Guideline Criterion	Analyte (and added contaminant limit (mg/kg))	Sample exceedances (and value (mg/kg))
NEPM 2013 HIL C - recreational	Arsenic (300)	A4_TP01_0.2 (320)
NEPM 2013 HIL C - recreational	Lead (600)	A4_BH11_0.2 (650); A4_TP01_0.2 (890)
NEPM 2013 HIL C - recreational	PAHs (Sum of total) (300)	A4_HAC06_0.5 (689)
NEPM 2013 HIL C - recreational	Ba(P) TEQ (3)	A4_BH02_0.5 (5.8); A4_BH03_1.0 (21) A4_BH07_0.5 (7.6); A4_BH08_0.2 (26) A4_BH09_0.2 (Dup1_221019) (4.3) A4_BH10_1.0 (7.1); A4_BH11_0.2 (7.8) A4_BH12_0.2 (38); A4_HAC02_0.5 (14) A4_HAC05_0.5 (16); A4_HAC06_0.5 (100)

Asbestos

Twenty soil samples and one compressed fibre cement fragment sample were submitted to the laboratory for asbestos identification.

Of the twenty soil samples submitted, two soil samples returned a positive identification. The compressed fibre cement material fragment was also positively identified as containing asbestos. Table 26 presents the results.

Table 26 Asbestos identification

Sample identification	Comment
A1_LD06_0.5	Chrysotile asbestos detected in compressed fibre cement fragment
A2D_BH09_0.2(ACM)	Chrysotile and amosite asbestos detected in compressed fibre cement fragment
A3_BH07_0.2	Chrysotile asbestos detected in fibre cement fragment

8.2.2 Ecological results

The desktop review of the project area indicates that is a disturbed environment including residential areas, public parks, the Hawthorne Canal, and the light rail corridor. There is limited native vegetation and extensive fill material. Therefore, urban residential / public open space criteria have been applied.

Site specific EILs were calculated for copper and zinc using pH values determined for each sample (as reported in full in GHD 2020, *The GreenWay Geotechnical and Contamination Services, Geotechnical Report*). The average pH values were used to calculate site specific added contaminant limits (ACL) for zinc and copper EILs for public open space land uses. The calculated ACL values are provided in Table 27 for urban residential / public open space land use, and are used is the ecological analytical tables in Appendix E.

Referring to Table 1B(1) (NEPM 2013) for zinc and Table 1B(2) (NEPM 2013) for copper, using the average soil pH values for each area, and a low cation exchange capacity (CEC = 5), the site specific ACLs for these analytes increases significantly.

Measurements of CEC and clay content were not collected during this investigation, and therefore site specific EILs for all other analytes were calculated using estimated Background Concentrations (as per NEPM Schedule B5b, 2013) and the most conservative Added Contaminant Limit (ACL) (as per NEPM Schedule B1 2013). The lowest and therefore most conservative screening levels have been applied for these analytes for the purposes of this assessment.

Analytical results are presented in Appendix E, and summarised below.

Table 27 Added contaminant limits (urban residential / public open space)

Area	pH	CEC	ACL (mg/kg) (for public open space)
Area 1	8.3	5	Zinc = 230
			Copper = 800
Area 2	7.0	5	Zinc = 230
			Copper = 280
Area 3	6.3	5	Zinc = 230
			Copper = 190
Area 4	7.0	5	Zinc = 230
			Copper = 280

Applying these ACL values results in additional significant reduction in exceedances of site specific EILs for both zinc and copper (see ecological results tables, Appendix E).

A summary of exceedances of EIL and ESL criteria for urban-residential public open space is noted on Figures 1 to 16, Appendix A.

Area 1 summary

Urban residential / public open space criteria exceedance

Heavy metal exceedances of EILs were noted at one location for arsenic and lead, no locations for copper, three locations for nickel and one location for zinc. There were seven exceedances of ESLs for F3 (>C16-C34 Fraction), and exceedances of ESL criteria for B(a)P were noted for the majority of samples analysed.

Area 2 summary

Urban residential / public open space criteria exceedance

Heavy metal exceedances of EILs were noted at four locations for arsenic, three locations for copper, one for lead, two for nickel and five for zinc. There were seven exceedances of ESLs for F3 (>C16-C34 Fraction), and exceedances of ESL criteria for B(a)P were noted for twelve samples.

Area 3 summary

Urban residential / public open space criteria exceedance

Heavy metal exceedances of EILs were noted for one sample for arsenic and nickel, no samples for copper and four samples for zinc. There were four exceedances of ESLs for F3 (>C16-C34 Fraction), and exceedances of ESL criteria for B(a)P were noted for 13 samples.

Area 4 summary

Urban residential / public open space criteria exceedance

Heavy metal exceedances of EILs were noted for three samples for arsenic and nickel, two samples for copper and four samples for zinc. There was one ESL exceedance of >C10-C16 Fraction, and nine exceedances of ESLs for F3 (>C16-C34 Fraction), and exceedances of ESL criteria for B(a)P were noted for 13 samples.

8.3 Preliminary waste classification

Classification of soil samples analysed for all areas was undertaken in accordance with the NSW EPA *Waste Classification Guidelines: Part 1 Classifying Waste*. A review of analytical results for samples collected from all areas indicates a range of preliminary waste classifications as presented in Appendix E, and summarised below. In general, waste classification levels above General Solid Waste were triggered for metals including arsenic, lead, nickel and zinc, and also for TRH (B(a)P), and PAH (sum of total). Toxicity characteristic leaching procedure (TCLP) analysis was undertaken on select samples to determine the likely leachability of nominated analytes (arsenic, lead, zinc and B(a)P)². The results of TCLP analysis enabled reclassification of these samples into lower waste classification levels. This is considered broadly indicative of the expected reduction in waste classification levels for spoil across all areas following TCLP analysis.

² It should be noted that TCLP analysis was conducted outside of holding times for B(a)P and results provided here are indicative only. However, it is expected that TCLP analysis of samples with B(a)P exceedances undertaken within holding times would result in reduced waste classification levels.

Area 1

Eleven samples returned results that classified them as Hazardous Waste (HW), seven samples are classified as Restricted Solid Waste (RSW), and only one sample was classified as General Solid Waste (GSW) (A1_HA01_0.2). Following TCLP for nickel, lead and B(a)P for three samples (A1_BH02_0.2; A1_BH02_2.0; A1_LD11_0.2), the waste classifications all fell within the GSW classification.

One sample, A1_LD06_0.5, was found to contain asbestos, and is therefore classified as Special Waste – Asbestos.

Area 2

Eight samples returned results that classified them as HW, nine samples are classified as RSW and three samples are classified as GSW. Following TCLP for arsenic, lead and B(a)P for two samples (A2D_BH08_0.2; A2D_BH09_0.5), the waste classifications all fell within the GSW classification.

One sample, A2D_BH09_0.2 (ACM), was found to contain asbestos, and is therefore classified as Special Waste – Asbestos.

Area 3

Five samples returned results that classified them as HW, eight samples are classified as RSW and seven samples are classified as GSW. Following TCLP for arsenic, lead and B(a)P for two samples (A3_HA01_1.0; A3_HA06_0.5), the waste classifications all fell within the GSW classification.

One sample, A3_BH07_0.2, was found to contain asbestos, and is therefore classified as Special Waste – Asbestos.

Area 4

Twelve samples returned results that classified them as HW, four samples are classified as RSW and two samples are classified as GSW.

Following TCLP for arsenic, lead and B(a)P for two samples (A4_BH11_0.2; A4_PT01)0.2), the waste classifications all fell within the GSW classification.

9. Discussion of results

This discussion is designed to provide context to the proposed construction with respect to the potential contamination risk at all areas. It is understood that the following structures have been proposed across the alignment.

- On-grade paths typically 3.5 m wide reinforced, 125 mm thick concrete over a Dense Graded Base, typically constructed 100 to 200 mm above the existing ground level to minimise excavation.
- High-level elevated paths typically 3.5 m wide steel superstructures, with fibre reinforced polymer (FRP) deck and steel balustrades, either supported on piles or directly bolted into rock. Typically 0.5 m to 4 m high.
- Retaining walls typically block work walls on strip footings or contiguous pile if required by site constraints. Typically 0.5 m to 2.5 m high.
- Tunnels typically jacked 3.5 x 2.4 m box culverts.
- Light poles are 5 m high and 90 mm diameter with a WE-EF VFL530 LED luminaire, mounted in-ground for on-grade and low level elevated paths, and off the structure for high-level elevated paths.

The concept design prepared by IWC has specified where each of the design elements are required across all four areas of the alignment. These elements are discussed per area in further detail in the tables below, with reference to the potential contamination risks relevant for each section. Analytical results tables are presented in Appendix E.

Table 28 Area 1 Contamination risk discussion

Design Element	Potential risk element	Discussion
<p>On-grade shared path foundation generally in the area along the Bay Run and through Richard Murden Reserve; 1575 m long on-grade path through Richard Murden Reserve and 190 m on-grade shared path along Bay Run.</p>	<ul style="list-style-type: none"> • ASS • Human Health – heavy metals (Pb), B(a)P TEQ, asbestos • Ecological – EILs: heavy metals (Ni, As, Zn, Pb,), ESLs: B(a)P, TRH (>C16-C34) • Preliminary waste classification with selected TCLP analysis – GSW, and Special Waste - Asbestos 	<ul style="list-style-type: none"> • The on-grade path for Area 1 is to be built entirely on reclamation fill material of varying depth, with minimal excavation. • ASS is known to be present in natural soils within 50 metres of Area 1 from previous investigations. Natural soils may require management during construction if disturbed. • Groundwater levels in this area are shallow (from 0.8 mbgl) and tidally influenced. Construction activities have the potential to interact with groundwater. • Lead above human health criteria guidelines was noted in only two locations (A1_BH02 at the northern end of Area 1, and A1_LD01 at the southern end of Richard Murden Reserve). Both occurrences were at depths of 1.9-2.0 mbgl. Elevated lead was not reported in these boreholes at shallower depths, and is therefore not considered to be a risk for shallow construction works. • B(a)P TEQ above the human health guideline criterion was reported at the majority of sites within Area 1, at all depths. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Asbestos was detected in one sample at A1_LD06. It is considered likely that further asbestos may be encountered during construction and an asbestos management plan (AMP) will be required as part of a construction environment management plan (CEMP). • Scattered heavy metal (As, Ni, Pb) exceedances of EIL criteria were noted at four locations along the Bay Run near the UTS Rowing Club. All exceedances were in shallow fill material and were less than three times the criteria limits. A1_LD04, located in central Richard Murden Reserve, had one result for zinc which was above the guideline criteria, however, this is likely related to the background concentration of zinc in the natural strata, and is not considered to be a risk for construction. • Exceedances of the public open space ESL criterion for B(a)P were reported for the majority of sites in Area 1, at levels up to 12 times the guideline value. TRH (C16-34) was reported for the majority of sites within Richard Murden Reserve.

Design Element	Potential risk element	Discussion
		<ul style="list-style-type: none"> • Preliminary waste classifications for Area 1 included one sample of Special Waste (asbestos), Hazardous Waste (HW), Restricted Solid Waste (RSW), General Solid Waste (GSW). The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
<p>Light pole foundations at nominal 15 m spacings – 1575 m long on-grade path through Richard Murden Reserve and 190 m on-grade shared path along Bay Run.</p>	<ul style="list-style-type: none"> • ASS • Human Health – heavy metals (Pb), B(a)P TEQ, asbestos • Ecological – EILS: heavy metals (Ni, As, Zn, Pb,), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • The light pole foundations are shallow and expected to be completed entirely on reclamation fill material of varying depth. • Comments are as per the discussion section above.
<p>Foundations and footings for 30 m long elevated ramp structure at junction of Bay Run and Greenway.</p>	<ul style="list-style-type: none"> • ASS • Human Health – B(a)P TEQ • Ecological – EILs: heavy metals (Ni), B(a)P • Preliminary waste classification (no TCLP) – RSW 	<ul style="list-style-type: none"> • ASS is known to be present in natural soils within 50 metres of Area 1 from previous investigations. Natural soils may require management during construction if disturbed. • One sample reported an exceedance of the human health criterion for B(a)P TEQ. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • One exceedance of the EIL criterion was reported for Ni, and one ESL exceedance was reported for B(a)P for this area. The nickel exceedance is unlikely to pose a risk to ecological receptors during construction. B(a)P exceedances are common throughout Area 1. • Preliminary waste classification for the two borehole locations in this section are indicative of RSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

Design Element	Potential risk element	Discussion
Foundations and footings for 30 m long retaining wall(s) to support earthen ramp on Bay Run on approach to Lilyfield Road bridge.	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological – EILS: heavy metals (Ni), ESLs: B(a)P • Preliminary waste classification (no TCLP) – RSW 	<ul style="list-style-type: none"> • Construction here is proposed on the existing City West Link concrete footings, without excavation. • However, should excavation be undertaken, comments are as per the design element above.

Table 29 Area 2 Contamination risk discussion

Design element	Potential risk element	Discussion
Cantilevered structure from Parramatta Road underpass to the Gadigal Reserve Dog Park for approximately 60 m.	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological –EILS: heavy metals (Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – RSW, HW 	<ul style="list-style-type: none"> • Previous investigations have reported acid sulfate soil (ASS) to have the potential to be present in shallow soils in the area. Natural soils may require management during construction if disturbed. • Exceedances of the human health criterion for B(a)P TEQ were reported for this area. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • One heavy metal exceedance (Zn) of the EIL criterion was reported, and is not considered to pose a risk during construction works. Exceedances of the ESL criteria for B(a)P and TRH (>C16-34) were noted at all sites. • Preliminary waste classifications of RSW and HW based were reported in this section. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
On-grade shared paths foundations and footings generally in the area on an eastern alignment through Gadigal Reserve for 160 m	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological – EILs: heavy metals (Zn), ESLs: B(a)P, TRH (>C16-34) 	<ul style="list-style-type: none"> • Construction works are expected to be shallow (or on grade). • Comments are as per the discussion section above.

Design element	Potential risk element	Discussion
long path plus path lighting poles at nominal 15 m spacings.	<ul style="list-style-type: none"> • Preliminary waste classification (no TCLP) – RSW, HW 	
Light pole foundations and footings generally in the area on an eastern alignment through Gadigal Reserve for 160 m at nominal 15 m spacings.	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological – EILs: heavy metals (Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – RSW, HW 	<ul style="list-style-type: none"> • Construction works are expected to be shallow. • Comments are as per the discussion section above.
Foundations and footings for a minor 4 m wide, 9 m long single span bridge over the Hawthorne Canal at the southern end of Gadigal Reserve.	<ul style="list-style-type: none"> • ASS • Human Health – B(a)P TEQ • Ecological – EILs: heavy metals (Cu, Zn), ESLs: B(a)P • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Previous investigations have reported acid sulfate soil (ASS) to have the potential to be present in shallow soils in the area. Natural soils may require management during construction if disturbed. • Exceedances of the human health criterion for B(a)P TEQ were reported for this area. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Heavy metal exceedances of ecological criteria for Cu and Zn were noted only for A2D_BH08. Exceedances of the ESL criterion for B(a)P was noted at all sites. • The majority of samples reported for this section were slightly above the GSW classification levels and are classified as RSW, with one sample classified as HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
Foundations and footings for a 75 m long elevated shared path structure on an eastern	<ul style="list-style-type: none"> • ASS • Human Health – heavy metals (Pb), asbestos 	<ul style="list-style-type: none"> • Previous investigations have reported acid sulfate soil (ASS) to have the potential to be present in shallow soils in the area. Natural soils may require management during construction if disturbed.

Design element	Potential risk element	Discussion
alignment at the southern end of Gadigal Reserve.	<ul style="list-style-type: none"> • Ecological – EILs: heavy metals (As, Cu, Pb, Ni, Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis – GSW, and Special Waste - Asbestos 	<ul style="list-style-type: none"> • Exceedance of the human health criterion for lead was noted for A2D_BH09 at 0.2 m bgl and was repeated at 0.5 m bgl. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Asbestos was confirmed to be present in a sample of compressed fibre cement at A2D_BH09. It is considered likely that further asbestos may be encountered during construction and an asbestos management plan (AMP) will be required as part of a construction environment management plan (CEMP). • Heavy metal exceedances of EIL criteria were reported in this section. Exceedances of ESL criteria for B(a)P and TRH (>C16-34) were also reported. • Preliminary waste classification for this area is Special Waste – asbestos, due to the presence of ACM. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
30 m long jacked culvert below Longport Street on an eastern alignment.	<ul style="list-style-type: none"> • Human Health –B(a)P TEQ • Ecological – EILs: heavy metals (Ni), ESLs: B(a)P • Preliminary waste classification (no TCLP) - RSW 	<ul style="list-style-type: none"> • Exceedances of the human health criterion for B(a)P TEQ was reported for this section. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria were noted for Ni and B(a)P, but are considered unlikely to impact ecological receptors given that they were taken from the Longport Street overpass bridge and are not proximal to identified receptors. • Preliminary waste classification for borehole A2D_LD04 indicates RSW for shallow material (0.5m bgl) and GSW for material at 2.0 m bgl. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
Wetland with 375 m ² footprint just south of	<ul style="list-style-type: none"> • ASS • Ecological – EILs: heavy metals (As, Zn) 	<ul style="list-style-type: none"> • Previous investigations have reported acid sulfate soil (ASS) to have the potential to be present in shallow soils in the area. Natural soils may require management during construction if disturbed.

Design element	Potential risk element	Discussion
Longport Street on eastern side of light rail tracks.	<ul style="list-style-type: none"> • Preliminary waste classification (no TCLP) – RSW, HW 	<ul style="list-style-type: none"> • Minor exceedances of EIL guideline criteria were noted for As and Zn at two locations. There is a potential risk of exposure to ecological receptors during construction which may be managed as part of a dust control in the CEMP.
Stairs to Longport Street and tiered seating south of Longport Street on western side of light rail tracks.	<ul style="list-style-type: none"> • ASS • Human Health – heavy metals (As), B(a)P TEQ • Ecological – EILs: heavy metals (As, Cu, Ni, Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – RSW, HW 	<ul style="list-style-type: none"> • Previous investigations have reported acid sulfate soil (ASS) to have the potential to be present in shallow soils in the area. Natural soils may require management during construction if disturbed. • Exceedances of the human health criteria for As and B(a)P TEQ were reported for this section. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Heavy metal exceedances of EIL criteria and exceedances of ESL criteria for B(a)P and TRH (>C16-34) were reported for this section. There is a potential risk of exposure to ecological receptors during construction which may be managed as part of a dust control in the CEMP. • Preliminary waste classifications for this section include RSW and HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
Central median tree pits approximately 75 m long in Weston Street (to inform excavation only).	<ul style="list-style-type: none"> • Human Health –B(a)P TEQ • Ecological – ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – HW 	<ul style="list-style-type: none"> • Exceedances of the human health criteria for B(a)P TEQ were reported for this section. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ESL criteria for B(a)P and TRH (>C16-34) were reported for this section. This should be considered during construction works, with respect to the planting of trees in these pits. • Preliminary waste classification for this section is HW based on B(a)P exceedances. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

Table 30 Area 3 Contamination risk discussion

Design element	Potential risk element	Discussion
30 m long jacked culvert below Davis Street.	<ul style="list-style-type: none"> • Ecological – ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – GSW 	<ul style="list-style-type: none"> • Exceedances of ESL criteria for B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works. • Preliminary waste classification for this section was GSW. Additional waste classifications will be required for material excavated during construction which requires off-site disposal.
Foundations and footings for 200 m long low level elevated paths (<0.5 m high) and light pole foundations at nominal 15 m spacings from Davis Street to Johnson Park.	<ul style="list-style-type: none"> • Human Health – B(a)P TEQ • Ecological – EILs: heavy metals (As, Ni, Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Exceedances of the human health criteria for B(a)P TEQ were reported for this section. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of EIL criteria for heavy metals, and ESL criteria for B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works. • Preliminary waste classifications for this section included GSW, RSW and HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
On-grade shared paths foundations and footings generally in the area in Johnson Park for 175 m shared paths.	<ul style="list-style-type: none"> • Human Health – B(a)P TEQ • Ecological – ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Construction works are expected to be shallow (or on grade). • Exceedances of the human health criteria for B(a)P TEQ were reported for this section. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of EIL criteria for heavy metals, and ESL criteria for B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works. • Preliminary waste classifications for this section included GSW and HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

Design element	Potential risk element	Discussion
Light pole foundations and footings generally in the area in Johnson Park for 175 m at nominal 15 m spacings.	<ul style="list-style-type: none"> • Human Health –B(a)P TEQ • Ecological – ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Construction works are expected to be shallow. • Comments are as per the discussion section above.
Retaining wall foundations and footings north of Constitution Road on the approach to the proposed jacked culvert below Constitution Road – two 40 m long retaining walls to the north.	<ul style="list-style-type: none"> • Human Health –B(a)P TEQ • Ecological – EILs: heavy metals (Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – RSW, HW 	<ul style="list-style-type: none"> • Exceedances of the human health criteria were reported for B(a)P TEQ. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria for zinc, B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works. • Preliminary waste classifications for this section included RSW and HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
30 m long jacked culvert below Constitution Road.	<ul style="list-style-type: none"> • Human Health – asbestos • Ecological – EILs: heavy metals (Zn) ,ESLs: B(a)P • Preliminary waste classification (no TCLP) – Special Waste – asbestos, GSW 	<ul style="list-style-type: none"> • Asbestos was detected in one sample (A3_BH07_0.2) in this section. It is considered likely that further asbestos may be encountered during construction and an asbestos management plan (AMP) will be required as part of a construction environment management plan (CEMP). • Exceedances of ecological criteria for zinc and B(a)P were reported for this section. Groundwater in Area 3 is deep (> 4.0 mbgl) and is unlikely to be impacted by these exceedances during construction works. • Waste classification for this section includes Special Waste – asbestos, and GSW. Further classification will be required to confirm this during construction.
150 m long high level elevated shared path from Constitution Road to south of New Canterbury Road.	<ul style="list-style-type: none"> • Ecological – EILs: heavy metals (Zn), ESLs: B(a)P, TRH (>C16-34) 	<ul style="list-style-type: none"> • Exceedances of ecological criteria for zinc, B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works.

Design element	Potential risk element	Discussion
	<ul style="list-style-type: none"> • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Preliminary waste classifications for this section included GSW, with RSW and limited HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

Table 31 Area 4 Contamination risk discussion

Design element	Potential risk element	Discussion
Batter slopes or retaining wall foundations and footings for proposed 90 m long earthen ramps at northern end of the area to connect to Hercules Street.	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological – heavy metals (Zn), B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Based on the Atlas of Australian Acid Sulfate Soils classification, there is potential for ASS to be present within 100 m of the site. Natural soils may require management if disturbed during construction. • Exceedances of the human health criteria were reported for B(a)P TEQ. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria for zinc, B(a)P and TRH (>C16-34) were reported for this section. Ecological receptors are unlikely to be impacted by these exceedances during construction works • Preliminary waste classifications for this section included RSW, and HW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
On-grade shared paths foundations and footings generally in the area for 225 m.	<ul style="list-style-type: none"> • ASS • Human Health – Pb, B(a)P TEQ, • Ecological – heavy metals (As, Cu, Ni, Zn), B(a)P, TRH (>C16-34) 	<ul style="list-style-type: none"> • Construction works are expected to be shallow. • ASS are likely to be present within 100 m of the site, however, ASS is unlikely to impact construction works at shallow levels. Groundwater at A4_BH02 is anomalously shallow (0.9 m bgl), and construction works exceeding this depth in the vicinity of this location may need to consider potential ASS. • Only one heavy metal (Pb) exceedance of human health criteria was reported. Exceedances of the human health criteria were reported for B(a)P TEQ. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works.

Design element	Potential risk element	Discussion
	<ul style="list-style-type: none"> • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Exceedances of EIL criteria for heavy metals, and ESI criteria for B(a)P and TRH (>C16-34) were reported for this section. • Preliminary waste classifications indicate GSW, RWS and HW for this section. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
Light pole foundations and footings generally in the area for 225 m.	<ul style="list-style-type: none"> • ASS • Human Health – Pb, B(a)P TEQ • Ecological – EILs: heavy metals (As, Cu, Ni, Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Construction works are expected to be shallow. • Comments are as per the discussion section above.
Batter slopes or retaining wall foundations and footings for proposed 95 m long earthen ramps at southern end of the area to connect to Hercules Street.	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ, PAHs (sum of total) • Ecological – EILs: heavy metals (As, Cu, Ni, Zn), ESLs: B(a)P, TRH (>C16-34) • Preliminary waste classification (no TCLP) – HW 	<ul style="list-style-type: none"> • Based on the Atlas of Australian Acid Sulfate Soils classification, there is potential for ASS to be present within 100 m of the site. Natural soils may require management if disturbed during construction. • Exceedances of the human health criteria were reported for B(a)P TEQ and PAHs (sum of total). Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria for heavy metals, B(a)P and TRH (>C16-34) were reported for this section.. • Preliminary waste classifications indicate HW for this section. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

Design element	Potential risk element	Discussion
<p>Retaining wall foundations and footings for 30 m long retaining wall on Terrace Road below Bankstown rail line.</p>	<ul style="list-style-type: none"> • ASS • Human Health – heavy metals (As, Pb) • Ecological – EILs: heavy metals (As, Cu, Zn) • Preliminary waste classification with selected TCLP analysis - GSW 	<ul style="list-style-type: none"> • Based on the Atlas of Australian Acid Sulfate Soils classification, there is potential for ASS to be present within 100 m of the site. Natural soils may require management if disturbed during construction. • Exceedances of the human health criteria were reported for heavy metals (As, Pb). Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria in this section were for heavy metals only. • Preliminary waste classifications indicate RSW and HW for this section based on As and Pb levels. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
<p>Central median tree pits approximately 25 m long in Ness Ave (to inform excavation only).</p>	<ul style="list-style-type: none"> • ASS • Human Health –B(a)P TEQ • Ecological –ESLs: TRH (>C10-C16, >C16-34), B(a)P • Preliminary waste classification (no TCLP) – HW 	<ul style="list-style-type: none"> • Based on the Atlas of Australian Acid Sulfate Soils classification, there is potential for ASS to be present within 100 m of the site. Natural soils may require management if disturbed during construction. • Exceedances of the human health criteria were reported for B(a)P TEQ. Appropriate exposure control measures should be implemented as part of a health and safety plan during construction works. • Exceedances of ecological criteria in this section were for TRH and B(a)P. • Preliminary waste classifications indicate RSW and HW for this section based on B(a)P levels. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

9.1 Environmentally sensitive areas

There are some areas across the GreenWay that are considered to be environmentally sensitive, including Gadigal Reserve and several bushcare sites along the project corridor.

Whilst these sites have been assessed against urban residential / public open space criteria for the purposes of this investigation, a more stringent assessment for comparison purposes is also included against criteria for areas of ecological significance, as provided in the results tables (Appendix A).

For Gadigal Reserve, the analytes exceeded were similar for both sets of criteria, with some additional exceedances of heavy metals reported for the ecologically significant criteria. It should be noted that although the reserve is demarcated as an environmentally sensitive site (see Appendix C, site photograph GreenWay_3657), it is located in a highly disturbed area along the Hawthorne Canal, between Parramatta Road and Railway Terrace. The light rail line runs along the top of eastern embankment of the site and the Sydney Inner West and Leppington rail line crosses overhead. Ecologically significant assessment criteria are therefore included for comparison only. During construction, there is a potential risk of exposure to ecological receptors. This risk may be managed as part of a dust control plan in the CEMP which may include covering exposed soils, or capping measures.

The Dulwich Hill GreenWay bushcare site is located at the northern end of Area 3, and the Johnson Park GreenWay bushcare site is located in the central section of Area 3.

The results for Johnson Park indicate no exceedances of public open space or ecologically significant criteria, suggesting that it is unlikely to be impacted during construction.

For the Dulwich Hill GreenWay bushcare site, the analytes exceeded were similar for both sets of criteria, with some additional analytes exceeding guidelines for heavy metals and B(a)P for the ecologically significant criteria.

Groundwater is deep in Area 3 (4.3m bgl in A3_BH06) and is unlikely to be intersected during construction works. The risk of exposure to the bushcare site (e.g. sediment run off) may be managed during construction as part of a sediment control plan in the CEMP.

It is anticipated that other bushcare and environmentally sensitive sites proximal to the proposed construction may similarly be protected during construction with the use of management measures, such as sediment control plans, in the CEMP.

10. Revised conceptual site model

10.1 Assessment of exposure risks for on-site receptors

The risks to human health and ecological on-site receptors is considered here and summarised by area in Table 32. A conceptual site model (CSM) diagram showing source-pathway-receptor (SPR) linkages is provided as Figure 17, Appendix A.

On-site human health exposure risks may be managed through exposure control measures developed as part of a health and safety plan in the CEMP.

On-site ecological exposure risks during construction include the possibility of impacted soil leaching to groundwater, or transport of sediment from construction spoil through runoff into surface water receptors such as Hawthorne Canal. This may be managed through development of a sediment and dust control plan as part of the CEMP.

The risk to groundwater has not been assessed as part of this investigation. However, should construction activity intersect groundwater, further investigation would be required to understand the potential impact to groundwater quality from site soil contamination.

Table 32 Revised conceptual site model

Area	COPC	Receptor	Pathway	Linkage
1	Asbestos; B(a)P TEQ	Human <ul style="list-style-type: none"> • Construction workers during excavation • Future intrusive maintenance workers 	Direct contact; inhalation; ingestion	Possible during construction and maintenance works. Will require exposure control measures in a health and safety plan as part of the CEMP.
	As; Ni; Pb; Zn; B(a)P; TRH (>C16-34)	Ecological <ul style="list-style-type: none"> • Vegetation • Groundwater • Hawthorne Canal • Iron Cove 	Vertical and lateral migration through soil profile to groundwater; intersected groundwater; dust / sediment run off	Possible if groundwater is intersected during construction there is potential for impact from elevated CoPC in fill soils.
2	Asbestos; As; Pb; B(a)P TEQ	Human <ul style="list-style-type: none"> • Construction workers during excavation • Future intrusive maintenance workers 	Direct contact; inhalation; ingestion	Possible during construction and maintenance works. Will require exposure control measures in a health and safety plan as part of the CEMP.
	As; Cu; Ni; Pb; Zn; B(a)P; TRH (>C16-34)	Ecological <ul style="list-style-type: none"> • Vegetation • Groundwater • Hawthorne Canal • Gadigal Reserve 	Vertical and lateral migration through soil profile to groundwater; dust / sediment run off	Possible if groundwater is intersected during construction there is potential for impact from elevated CoPC in fill soils.
3	Asbestos; total 8 PAHs B(a)P TEQ	Human <ul style="list-style-type: none"> • Construction workers during excavation • Future intrusive maintenance workers 	Direct contact; inhalation; ingestion	Possible during construction and maintenance works. Will require exposure control measures in a health and safety plan as part of the CEMP.

Area	COPC	Receptor	Pathway	Linkage
	As; Ni; Zn; B(a)P; TRH (>C16-34)	Ecological • Vegetation • Groundwater	No pathway is expected for groundwater	Unlikely – proposed construction is unlikely to intersect groundwater or affect on-site vegetation.
4	As; Pb; total 8 PAHs B(a)P TEQ; PAHs (sum of total)	Human • Construction workers during excavation • Future intrusive maintenance workers	Direct contact; inhalation; ingestion	Possible during construction and maintenance works. Will require exposure control measures in a health and safety plan as part of the CEMP.
	Zn; B(a)P; TRH (>C16-34 and C10-16);	Ecological • Vegetation • Groundwater	Vertical and lateral migration through soil profile to groundwater; intersected groundwater;	Possible if groundwater is intersected during construction there is potential for impact from elevated CoPC in fill soils.

10.2 Assessment of exposure risks for off-site receptors

The investigation focused on the proposed project alignment and there is limited groundwater data available to evaluate risks to off-site ecological receptors (Iron Cove, Cooks River) from selected heavy metals, TRH and B(a)P for each area. Coffey (2011) undertook a limited groundwater investigation on the eastern side of the Hawthorne Canal in Area 1 in the vicinity of the Hawthorne and Marion Street light rail stations (outside the GreenWay project area). This investigation indicated zinc present above the selected groundwater investigation levels, and PAH below the selected groundwater investigation levels, however no project specific groundwater investigation has been undertaken in the proposed GreenWay construction corridor.

10.3 Remaining data gaps

Remaining data gaps include:

- ASS – given the potential presence of ASS in Areas 1 and 2, the potential for ASS to impact the proposed development should be considered during site works particularly where natural soils are disturbed.
- Elevated levels of (Ba)P and lead require further investigation to understand the bio-availability and potential impact on human health and the environment during development works. The requirement for this should take into consideration future plans for additional redevelopment works, including capping, grass cover and leachability to groundwater.
- Risks to off-site ecological receptors are uncertain, and require further management during construction, including the development of AMP and sediment / dust control plans as part of the CEMP.
- Groundwater investigation was not conducted during this investigation, and as such, the groundwater conditions underneath the site are unknown. However, should construction activity intersect groundwater, further investigation would be required to understand the potential impact to groundwater quality from site soil contamination.

11. Conclusions and recommendations

11.1 Conclusions

Based on the scope of work completed, with reference to the objectives outlined in Section 1.2, the following conclusions are made (subject to the limitations outlined in Section 12):

Area 1

- Area 1 is covered by a layer of fill material of variable thickness, averaging approximately 1.5 metres thick. Fill materials generally comprised silty sands, gravelly sands and sandy clays. Observed anthropogenic materials consisted of trace brick and asphalt.
- Exceedances of selected human health guideline criteria were noted at three locations for lead, and twelve locations for total B(a)P TEQ.
- Asbestos in compressed fibre cement was detected at one location in Area 1 (A1_LD06_0.5). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, six heavy metal exceedances of EILs were noted for arsenic, lead, nickel and zinc. Exceedances of selected ESL guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 1 are a mixture of Hazardous Waste (HW), Restricted Solid Waste (RSW), General Solid Waste (GSW) and Special Waste – Asbestos. The results of Toxicity Characteristic Leaching Procedure (TCLP) analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was intersected at several investigation locations in Area 1 from 0.8 to 4.0 metres below ground level (m bgl), and interaction with shallow groundwater may occur during construction.
- Previous investigations have reported acid sulfate soils to be present in natural soils within 50 metres of Area 1. Natural soils may require management during construction if disturbed.

Area 2

- Area 2 is covered by a layer of fill material of variable thickness, averaging approximately 0.5-1.0 metres in thickness. Fill materials generally comprised silty sands, gravelly sands and sandy clays. Observed anthropogenic materials consisted of trace glass, plastic, concrete, brick, tile and ACM fibre cement.
- Exceedances of selected human health guideline criteria were noted at one location for arsenic, one location for lead and 10 locations for B(a)P (TEQ).
- Asbestos in compressed fibre cement was detected at one location in Area 2 (A2D_BH09_0.2). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, sporadic heavy metal exceedances of EILs were noted arsenic, copper, lead, nickel and zinc. Exceedances of selected ESL guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 2 are a mixture of HW, RSW, GSW and Special Waste – Asbestos. The results of TCLP analysis enabled reclassification of selected samples as

GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

- Groundwater was intersected at one investigation location in Area 2 (2.9 m bgl), and interaction with groundwater may occur during shallow construction works.
- Previous investigations have reported the potential for acid sulfate soils to be present in shallow soils in the area. Natural soils may require management during construction if disturbed.

Area 3

- Area 3 is covered by a layer of fill material of variable thickness, averaging approximately 1.0 metres thick. Fill materials generally comprised silty sands, gravelly sands and sandy clays. Observed anthropogenic materials consisted of trace brick, tile, concrete and ballast.
- Exceedances of selected human health guideline criteria were noted at five locations for B(a)P (TEQ).
- Asbestos in compressed fibre cement was detected at one location in Area 3 (A3_BH07). Given the historical land use of the site, it is considered likely that further ACM would be encountered during construction.
- For urban residential / public open space criteria, six heavy metal exceedances of EILs were noted arsenic, nickel, and zinc. Exceedances of selected ESL guideline levels for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 3 are a mixture of HW, RSW, and GSW. The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.
- Groundwater was reported in one borehole in Area 3, at a depth of 4.2 mbgl. Proposed construction works in Area 3 are shallow and are not likely to intersect groundwater in this area.

Area 4

- Area 4 is covered by a layer of fill material of variable thickness, averaging approximately 1.0 metres thick. Fill materials generally comprised silty sands, gravelly sands and sandy clays. Observed anthropogenic materials consisted of trace glass, metal, concrete, ballast and brick.
- Exceedances of selected human health guideline criteria were noted at one location for lead, two locations for arsenic, one location for PAH (sum of total), and 11 locations for B(a)P (TEQ).
- No asbestos was detected in Area 4, however, given the historical land use of the site, and the fact that asbestos was identified at the other three areas, it is considered likely that ACM may be encountered here during construction.
- For urban residential / public open space criteria, heavy metal exceedances of EILs were noted for arsenic, nickel, copper and zinc. There was one ESL exceedance of >C10-C16 Fraction, and exceedances of ESLs for F3 (>C16-C34 Fraction), and B(a)P were reported.
- Waste classification results for Area 4 are a mixture of HW, RSW, and GSW. The results of TCLP analysis enabled reclassification of selected samples as GSW. Based on the results of selected TCLP analysis, the soil may be reclassified as GSW, however, further classification will be required to confirm this during construction.

- Groundwater was reported in several boreholes in Area 4, at depths varying from 0.9 to 4.0 m bgl, with a general deepening trend towards the south. Proposed construction works in Area 4 may interact with shallow groundwater in this area.

General conclusions

- Asbestos was identified in three fragment samples of compressed fibre cement with no trace or fibrous asbestos detected in any of the samples. Given the historical land use of the project area, it is considered possible that further ACM could be encountered during construction in all areas, and may pose a health risk to future intrusive maintenance and site workers or construction workers.
- Preliminary waste classification (with TCLP analysis) broadly indicates that waste across the project area will be classified as GSW. However, the preliminary waste classifications presented in this report cannot be relied upon to determine waste disposal requirements during future development works and spoil requiring offsite disposal during construction will require additional waste classification.
- Based on the historical site usage, the conceptual site model (CSM) linkage potential, and the analytical results from the investigation program, the risk of exposure to human health receptors during construction from heavy metal and PAH exceedances of selected site criteria is considered to be low. During redevelopment of the project area, the potential risk to the health of site workers and recreational users may increase and would need to be managed by implementation of a construction environmental management plan.
- There is potential for construction activity to intersect groundwater. Potential for contamination of surface and groundwater may need to be managed by implementation of a CEMP.
- The broader groundwater, surface water and risk to human health and the environment has not been determined beyond the boundaries of this investigation which are limited to the construction footprint.
- Based on the results of previous investigations as summarised in Section 2.6, and the ASS risk assessment provided in Section 2.5.6, ASS are considered to have the potential to be present at Area 1, Area 2, and Area 4. The potential for ASS to impact the proposed development should be considered during site works where natural soils are disturbed.

11.2 Recommendations

Based on the completed scope of work, and in consideration of the proposed future recreational land use and ecological significance of the project area, GHD recommends the following

- Further waste classification of materials is required during construction to determine waste disposal requirements.
- Develop a Construction Environment Management Plan (CEMP), including an Asbestos Management Plan (AMP), Unexpected Finds Protocol, acid sulfate soil management plan (ASS plan) and occupational health and safety (OHS) plan prior to development works. This should include measures that are protective of human health and the environment to mitigate the risk of exposure to asbestos, heavy metals, TRH and PAH.
- Groundwater investigation was not conducted during this investigation, and as such, the groundwater conditions underneath the site are unknown. However, should construction activity intersect groundwater, further groundwater quality investigation would be required to understand the potential impact to groundwater from site soil contamination.

12. Limitations

This report: has been prepared by GHD for Inner West Council and may only be relied on by Inner West Council for the purpose as set out and in accordance with the agreement between GHD and the Inner West Council.

GHD otherwise disclaims responsibility to any person other than Inner West Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described throughout this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Inner West Council and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

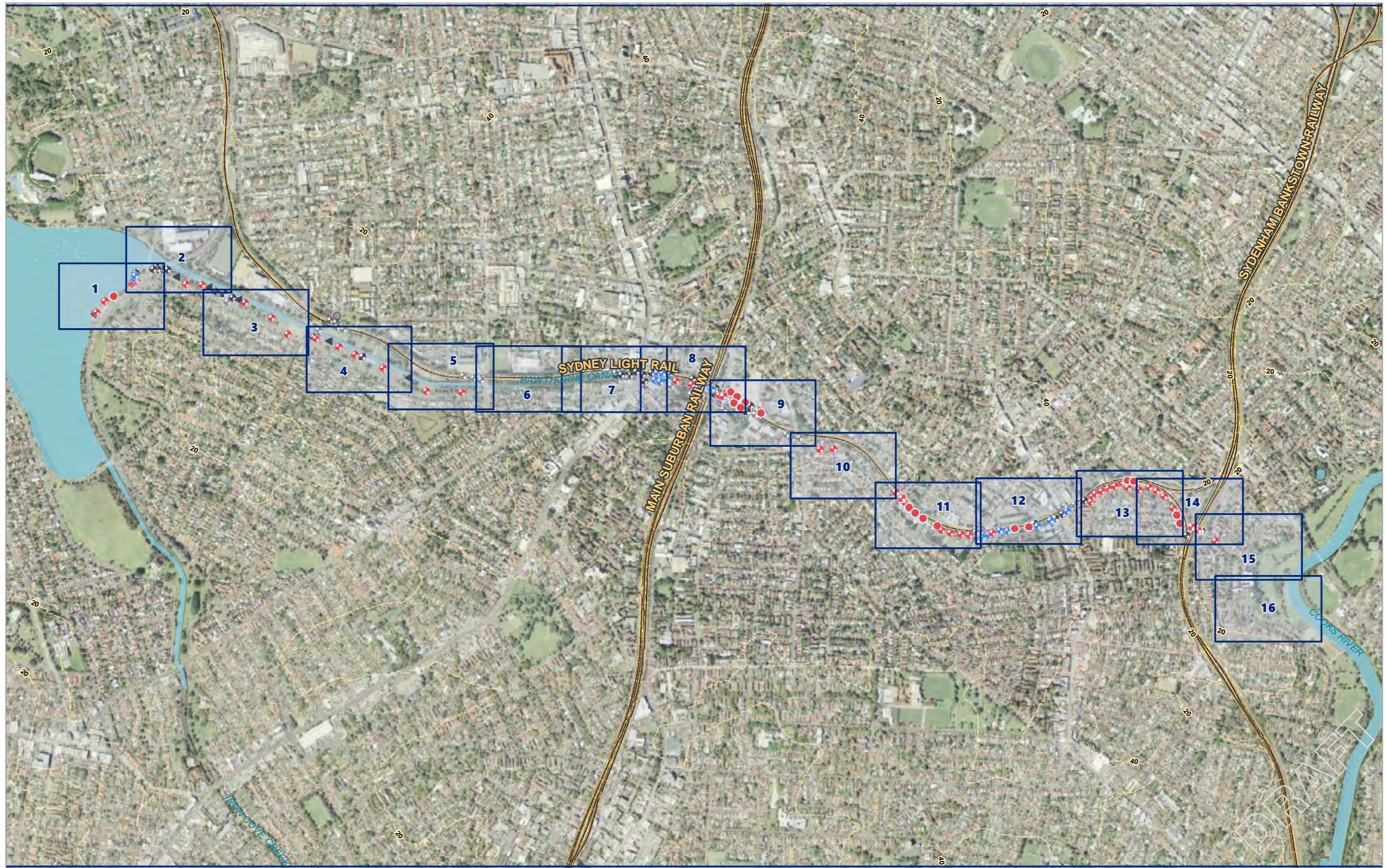
The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

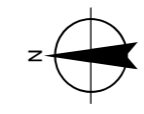
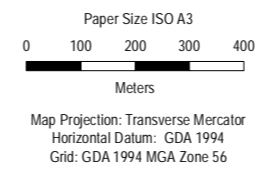
Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this Report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

Appendices

Appendix A – Figures



The GreenWay Investigation Locations		Historic Contamination Investigation Locations		Historic Geotechnical Investigation Locations		Other Features	
	Augered Borehole		Borehole		Borehole		Contours
	Cored Borehole		Hand Auger		CPT		Railways
	Hand Auger		Testpit		Testpit		Watercourses
	Testpit		Index				Index



The GreenWay Project

Geotechnical and Contamination Investigations - Overall Site View

Project No. 21-12515105
Revision No. A
Date 28 Jan 2020

FIGURE 0

Program

1. Pavement entrance UTS in one material as a 'shared space' for pedestrians and cyclists
2. Remove one parking space to widen pinch point and introduce loading zone.
3. 2.7 + 2.1m path. Keep seawall and widen to west in this section.
4. Change GPT cover to more bike friendly option
5. Remove three trees on NE side of path and step between seawall and path level
6. Retain seating steps
7. Ramp length increased to keep grade to 5%. Increase ramp width to 4.8m
8. Match existing levels
9. Ramp up from GreenWay to Bay Run
10. 3.5m wide shared path
11. Remove grove of four Casuarinas adjacent path to improve sightlines
12. Raised path past existing fig trees (to avoid roots damaging path)

Exceedances:

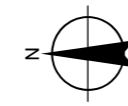
- Depth (Field / Interlab Duplicates)
- Exceeds Human Health Criteria
- Exceeds Ecological Criteria

Legend

- | | | | |
|------------------|------------|----------|--------------|
| Augered Borehole | Borehole | Borehole | Contours |
| Cored Borehole | Hand Auger | CPT | Railways |
| Hand Auger | | Testpit | Watercourses |
| Testpit | | | Index |

Paper Size ISO A3
 0 7.5 15 22.5 30
 Meters

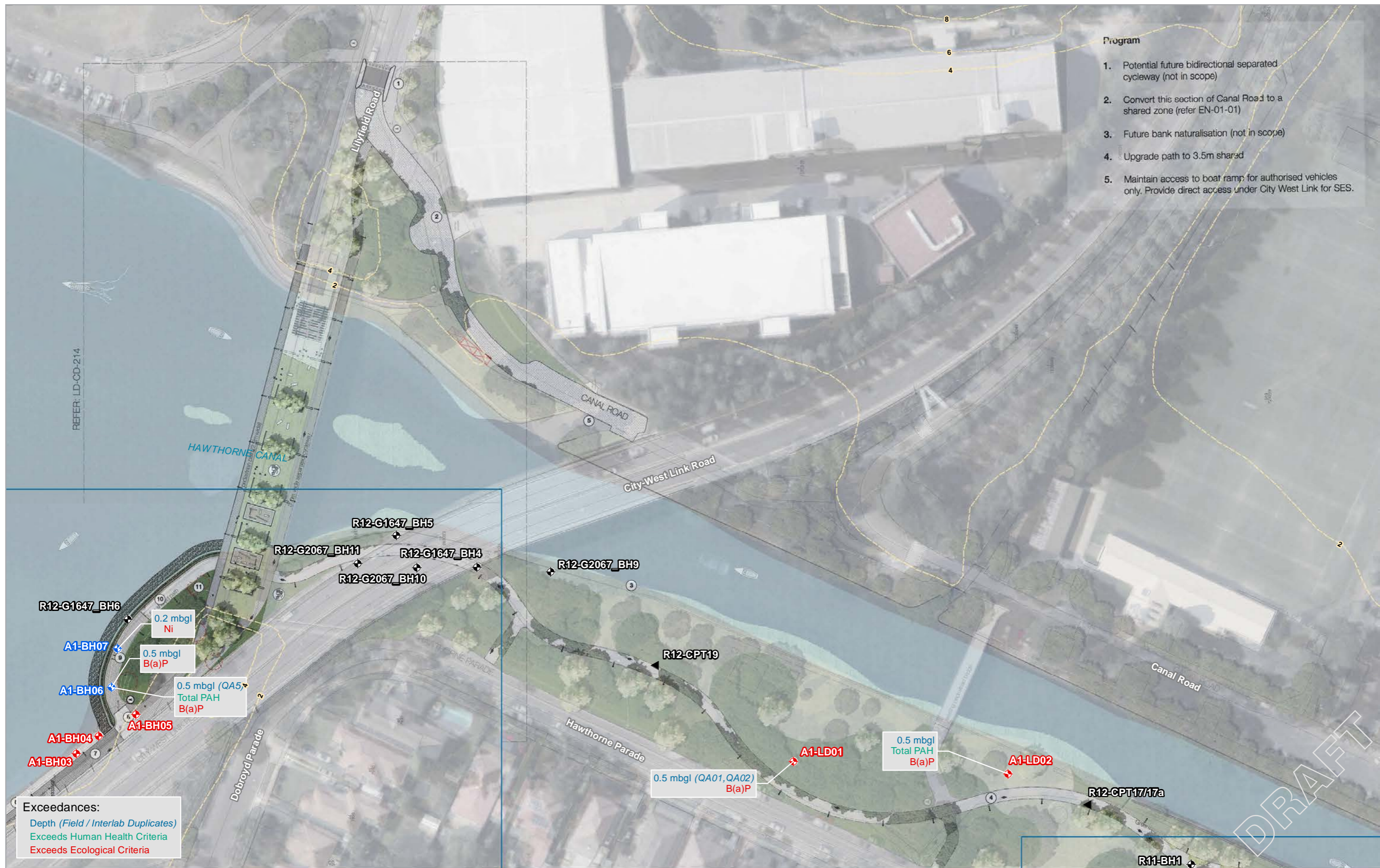
Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_101

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 1

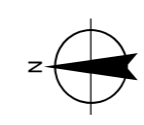


- Program**
1. Potential future bidirectional separated cycleway (not in scope)
 2. Convert this section of Canal Road to a shared zone (refer EN-01-01)
 3. Future bank naturalisation (not in scope)
 4. Upgrade path to 3.5m shared
 5. Maintain access to boat ramp for authorised vehicles only. Provide direct access under City West Link for SES.

Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria

Legend	
	Augered Borehole
	Cored Borehole
	Hand Auger
	Testpit
	Borehole
	Hand Auger
	CPT
	Testpit
	Contours
	Railways
	Watercourses
	Index

Paper Size ISO A3
 0 7.5 15 22.5 30
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_102

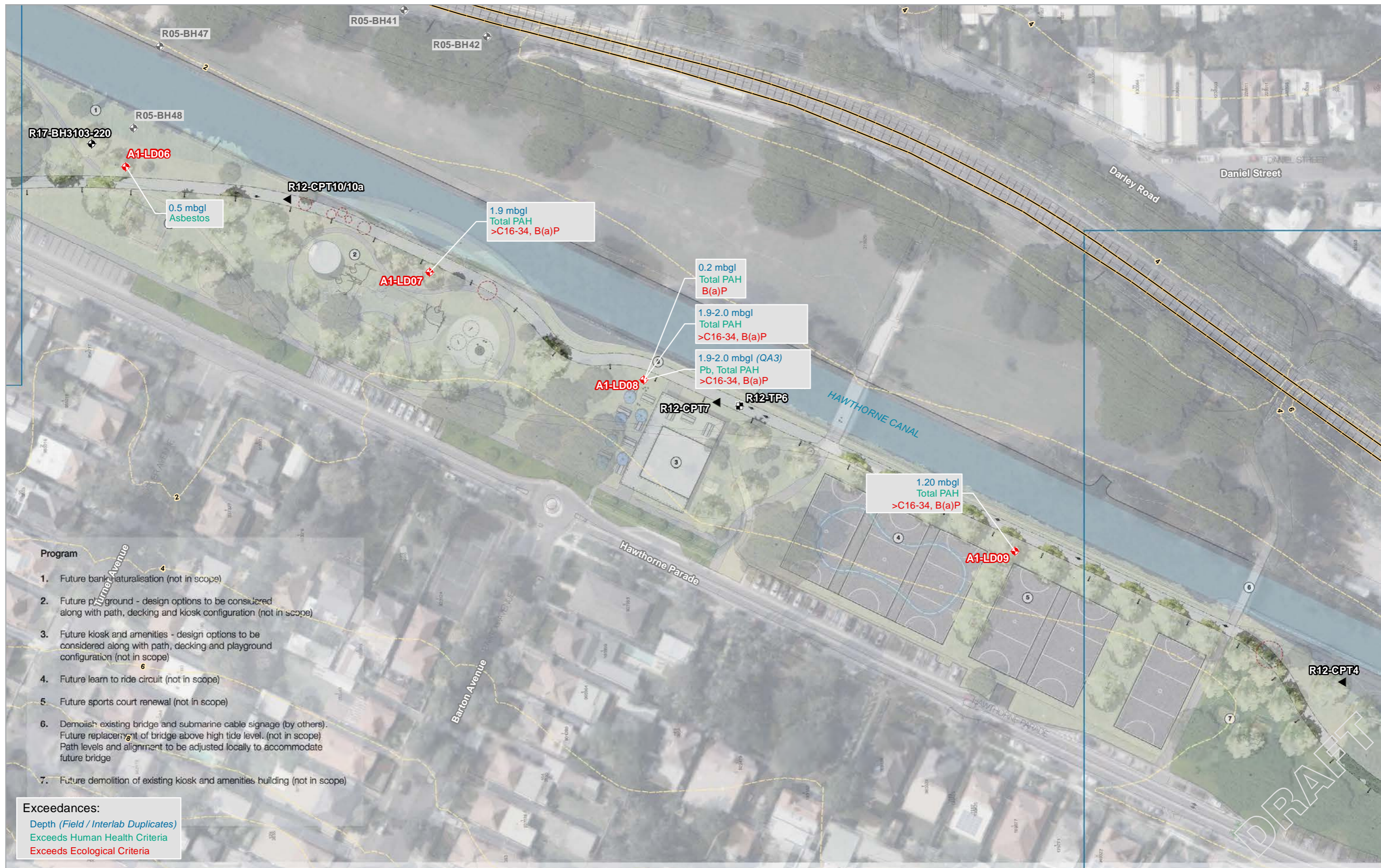
Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 2

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 Print date: 03 Feb 2020 - 16:12

Data source: General Topo - NSW LPI DTDB 2015. Aerial Imagery - Sixmaps 2018. Created by: kvelasco





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 Data source: General Topo - NSW LPI DT08 2015. Aerial Imagery - Smaprs 2018. Created by: kqvelasco





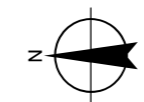
Legend
 The GreenWay Investigation Locations
 Augered Borehole
 Cored Borehole
 Hand Auger
 Testpit

Historic Contamination Investigation Locations
 Borehole
 Hand Auger

Historic Geotechnical Investigation Locations
 Borehole
 CPT
 Testpit

Contours
 Railways
 Watercourses
 Index

Paper Size ISO A3
 0 7.5 15 22.5 30
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_106

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 6



Legend The GreenWay Investigation Locations Augered Borehole Cored Borehole Hand Auger Testpit	Historic Contamination Investigation Locations Borehole Hand Auger	Historic Geotechnical Investigation Locations Borehole CPT Testpit	Contours Railways Watercourses Index	Paper Size ISO A3 0 7.5 15 22.5 30 Meters Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 56		The GreenWay Project Geotechnical and Contamination Investigations - LD_CD_107	Project No. 21-12515105 Revision No. A Date 03 Feb 2020
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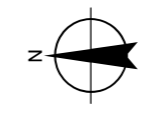
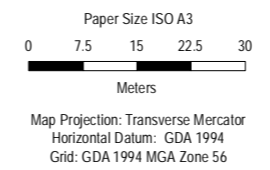


- Program
1. Gadigal Reserve Natural park
 2. Retain existing bush care and path
 3. Potential for public art

Exceedances:

- Depth (Field / Interlab Duplicates)
- Exceeds Human Health Criteria
- Exceeds Ecological Criteria

- Legend**
- | | | | |
|---|---|--|-----------------|
| The GreenWay Investigation Locations | Historic Contamination Investigation Locations | Historic Geotechnical Investigation Locations | Contours |
| Augered Borehole | Borehole | Borehole | Railways |
| Cored Borehole | Hand Auger | CPT | Watercourses |
| Hand Auger | Testpit | Testpit | Index |
| Testpit | | | |



The GreenWay Project

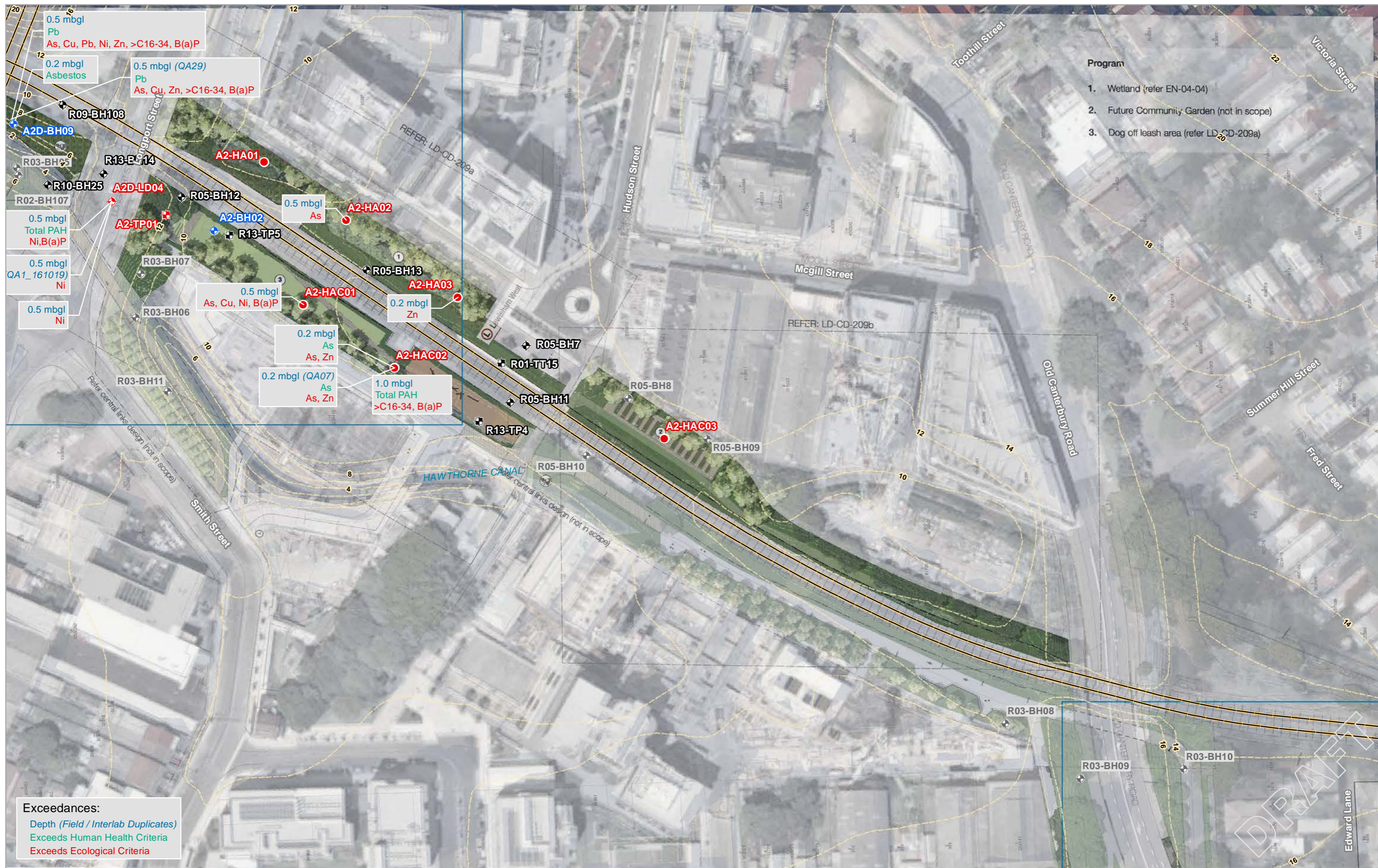
Geotechnical and Contamination Investigations - LD_CD_108

Project No. 21-12515105
Revision No. A
Date 03 Feb 2020

FIGURE 8

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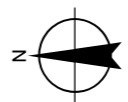


- Program**
1. Wetland (refer EN-04-04)
 2. Future Community Garden (not in scope)
 3. Dog off leash area (refer LD_CD-209a)

Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria

- Legend**
- | | | | |
|---|---|--|-----------------|
| The GreenWay Investigation Locations | Historic Contamination Investigation Locations | Historic Geotechnical Investigation Locations | Contours |
| Augered Borehole | Borehole | Borehole | Railways |
| Cored Borehole | Hand Auger | CPT | Watercourses |
| Hand Auger | Testpit | Testpit | Index |
| Testpit | | | |

Paper Size ISO A3
 0 7.5 15 22.5 30
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_109

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 9

G:\2111 2515105\GIS\Map\Deliverables\21_12515105_2004_GREENWAY_GCI_Exceedances.mxd
 Print date: 03 Feb 2020 - 16:17

Data source: General Topo - NSW LPI DT08 2015. Aerial Imagery - Smaprs 2018. Created by: kqvelasco



Program (refer EN-01-1/2/3/4/5/6)

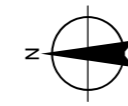
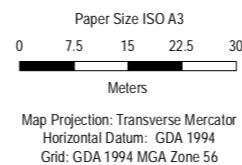
1. Future tunnel under Old Canterbury Road
2. Future bike boulevard to connect to future tunnel and retain access to homes at 115-123 Old Canterbury Road
3. Proposed signalised intersection at Old Canterbury Road, including closure of Weston Street and bike lanterns at GreenWay crossing (by others)
4. Continuous footpath treatment at Edward Lane
5. Continuous footpath treatment at Windsor Lane
6. Bike boulevard 40km/h zone. Future change to stamped asphalt and 30km/h zone pending RMS Approval
7. Continuous footpath treatment at Channel Street
8. Threshold treatment entry to bike boulevard

Exceedances:

- Depth (Field / Interlab Duplicates)
- Exceeds Human Health Criteria
- Exceeds Ecological Criteria

Legend

- | | | | |
|---|---|--|---|
| <p>The GreenWay Investigation Locations</p> <ul style="list-style-type: none"> ◆ Augered Borehole ◆ Cored Borehole ● Hand Auger + Testpit | <p>Historic Contamination Investigation Locations</p> <ul style="list-style-type: none"> ◆ Borehole ● Hand Auger | <p>Historic Geotechnical Investigation Locations</p> <ul style="list-style-type: none"> ◆ Borehole ▲ CPT + Testpit | <ul style="list-style-type: none"> — Contours — Railways — Watercourses Index |
|---|---|--|---|



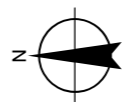
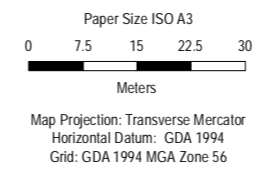
<p>The GreenWay Project</p> <p>Geotechnical and Contamination Investigations - LD_CD_110</p>	<p>Project No. 21-1251505 Revision No. A Date 03 Feb 2020</p> <p>FIGURE 10</p>
--	---



- Program**
1. Connection past Warrah Mills station to consider pedestrian, bike and vehicle movements
 2. Tunnel under Davis St (refer LD-CD-02-01)

Exceedances:
■ Depth (Field / Interlab Duplicates)
■ Exceeds Human Health Criteria
■ Exceeds Ecological Criteria

Legend	
+ Augered Borehole	Historic Contamination Investigation Locations
+ Cored Borehole	+ Borehole
● Hand Auger	● Hand Auger
+ Testpit	+ Borehole
	▲ CPT
	+ Testpit
— Contours	Historic Geotechnical Investigation Locations
— Railways	+ Borehole
— Watercourses	▲ CPT
 Index	+ Testpit



The GreenWay Project
Geotechnical and Contamination Investigations - LD_CD_111

Project No. 21-12515105
Revision No. A
Date 03 Feb 2020

FIGURE 11

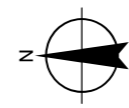
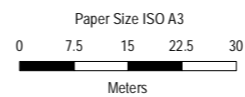


Legend
 The GreenWay Investigation Locations
 📍 Augered Borehole
 🔵 Cored Borehole
 🔴 Hand Auger
 📍 Testpit

Historic Contamination Investigation Locations
 📍 Borehole
 📍 Hand Auger

Historic Geotechnical Investigation Locations
 📍 Borehole
 📍 CPT
 📍 Testpit

Contours
 Railways
 Watercourses
 Index



The GreenWay Project
 Geotechnical and Contamination Investigations - LD_CD_112

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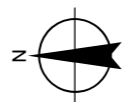
FIGURE 12



Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria

- Legend**
- | | | |
|------------------|------------|--------------|
| Augered Borehole | Borehole | Borehole |
| Cored Borehole | Hand Auger | CPT |
| Hand Auger | Testpit | Contours |
| Testpit | | Railways |
| | | Watercourses |
| | | Index |

Paper Size ISO A3
 0 8 16 24 32
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_113

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

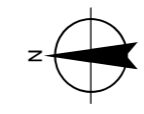
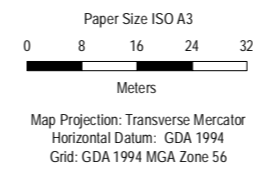
FIGURE 13



Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria

- Legend**
- | | | | | | |
|--|---|--|---|--|--|
| | The GreenWay Investigation Locations | | Historic Contamination Investigation Locations | | Historic Geotechnical Investigation Locations |
| | Augered Borehole | | Borehole | | Borehole |
| | Cored Borehole | | Hand Auger | | CPT |
| | Hand Auger | | Testpit | | Testpit |
| | Testpit | | | | |

- Contours
- Railways
- Watercourses
- Index



The GreenWay Project
 Geotechnical and Contamination Investigations -
 LD_CD_114

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 14

G:\2111 2515105\GIS\Map\Deliverables\21_12515105_2004_GREENWAY_GCI_Exceedances.mxd
 Print date: 03 Feb 2020 - 16:24

Data source: General Topo - NSW LPI DT08 2015. Aerial Imagery - Smapps 2018. Created by: kvelasco



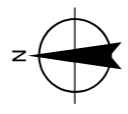
Program
 1. No left turn into Riverside Cr

Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria

- Legend**
- | | | | |
|---|---|--|-----------------|
| The GreenWay Investigation Locations | Historic Contamination Investigation Locations | Historic Geotechnical Investigation Locations | Contours |
| Augered Borehole | Borehole | Borehole | Railways |
| Cored Borehole | Hand Auger | CPT | Watercourses |
| Hand Auger | Testpit | Testpit | Index |
| Testpit | | | |

Paper Size ISO A3
 0 8 16 24 32
 Meters

Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project

Geotechnical and Contamination Investigations -
 LD_CD_115

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 15

Exceedances:
 Depth (Field / Interlab Duplicates)
 Exceeds Human Health Criteria
 Exceeds Ecological Criteria



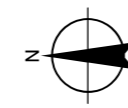
Program

1. Bike boulevard 40km/h zone. Future change to stamped asphalt and 30km/h zone pending SMS Approval
2. Bike boulevard (rafer EN-01-11/12)
3. Remove existing fence and provide vegetation screen - to be confirmed following Golf Course Master Plan
4. Relocate 14th tree forward 25m - to be confirmed following Golf Course Master Plan
5. Indicative location of path through golf course - to be confirmed following Golf Course Master Plan
6. Retrofit existing street trees with understorey planting and coir log surround. With area defined by coir logs, remove asphalt, add topsoil and mulch; plant with locally native grasses/sedges and groundcovers

Legend

Augered Borehole	Borehole	Borehole	Contours
Cored Borehole	Hand Auger	CPT	Railways
Hand Auger	Testpit	Testpit	Watercourses
Testpit			Index

Paper Size ISO A3
 0 8 16 24 32
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



The GreenWay Project
 Geotechnical and Contamination Investigations - LD_CD_116

Project No. 21-12515105
 Revision No. A
 Date 03 Feb 2020

FIGURE 16

SOURCES

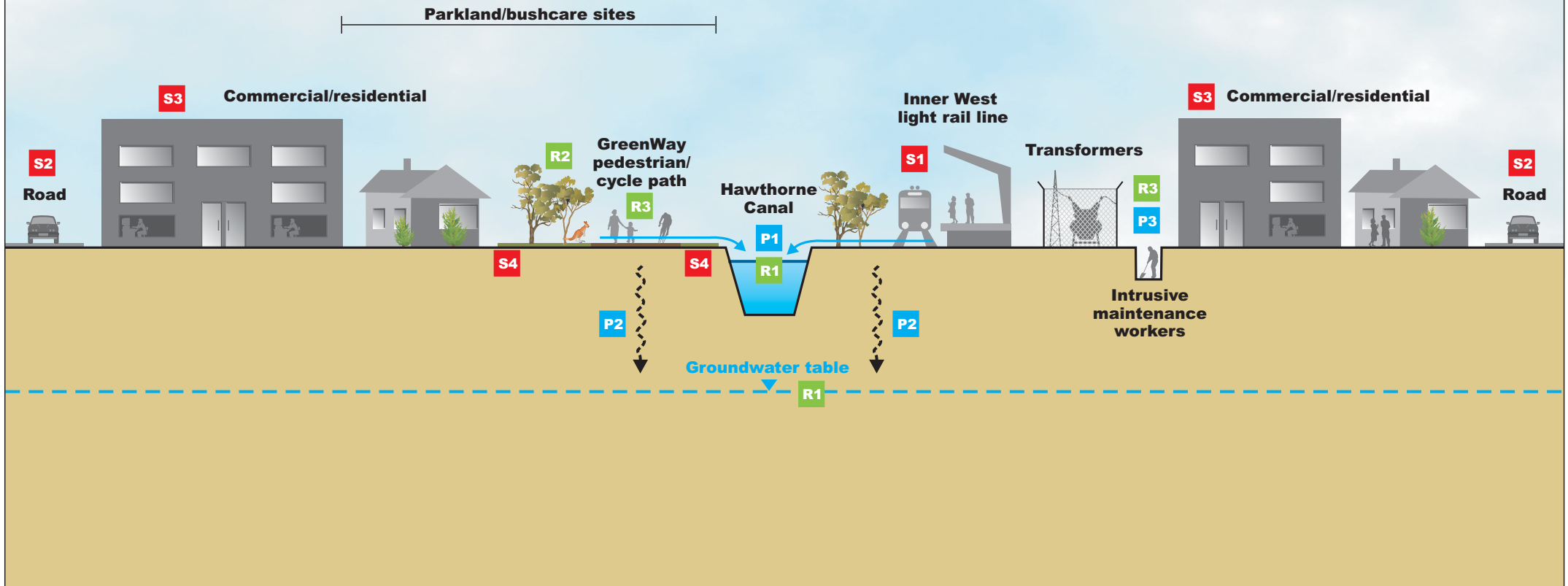
- S1** Light rail - hydrocarbons, heavy metals
- S2** Local traffic - hydrocarbons, heavy metals
- S3** Local industry/commerce - heavy metals, hydrocarbons, HBM (lead, asbestos)
- S4** Uncontrolled fill materials - hydrocarbons, heavy metals, asbestos

PATHWAYS

- P1** Surface runoff
- P2** Infiltration and lateral migration in groundwater
- P3** Direct contact (maintenance/construction workers)

RECEPTORS

- R1** Groundwater, Cooks River, Iron Cove, Hawthorne Canal
- R2** Bushcare sites/onsite vegetation/animal communities
- R3** Recreational users, construction/maintenance workers



Conceptual diagram only - not to scale

LEGEND

- Infiltration and lateral migration



Inner West Council
The GreenWay Geotechnical and Contamination Services

Conceptual Site Model

Job Number	12-515105
Revision	0
Date	20 Jan 2020

Figure 17

Appendix C – Site photographs

Photo_ID	Easting (m E)	Northing (m S)	Direction	Description	Area
greenway_3591	328439.27	6249401.59		bird	1
greenway_3592	328438.86	6249399.55		bird	1
greenway_3593	328525.38	6249590.75	south	path, runner	1
greenway_3594	328876.01	6250410.16	north	environmentally sensitive area	1
greenway_3596	328875.75	6250414.46	north	environmentally sensitive area	1
greenway_3597	328873.15	6250415.46	west	environmentally sensitive area	1
greenway_3599	328806.59	6250572.1	east	path, Iron Cove waterfront, walkers	1
greenway_3600	328878.36	6250520.3	west	path, Iron Cove waterfront, bike	1
greenway_3601	328760.18	6250657.45	west	UTS rowing club	1
greenway_3602	328763.5	6250652.7	east	path, Iron Cove waterfront, walkers	1
greenway_3604	328756.95	6250665.05	west	UTS rowing club, stairs	1
greenway_3605	328772.34	6250637.25	south-east	view along path, light poles to go on west side of path	1
greenway_3606	328809.19	6250579.8	south-east	retaining sea-wall	1
greenway_3607	328802.34	6250583.56	south-east	Greenway path sign	1
greenway_3608	328801.65	6250587.33	south-east	Greenway path sign	1
greenway_3609	328769.96	6250636.98	north-west	ramp up past existing fig tree at (12) on plan	1
greenway_3610	328809.14	6250570.93	east	Greenway path	1
greenway_3611	328809.37	6250569.13	east	Greenway path	1
greenway_3612	328826.56	6250553.21	east	Greenway path	1
greenway_3613	328827.12	6250552.02	east	ramp splits	1
greenway_3614	328835.55	6250541.74	east	ramp splits, ramp to south to be widened	1
greenway_3615	328854.39	6250519.07		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3616	328857.25	6250516.71		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3617	328854.23	6250517.27		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3619	328858.09	6250514.93		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3620	328863.05	6250516.81		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3621	328866.66	6250515.68		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3622	328862.13	6250512.22		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3623	328860.43	6250507.41		services on top of ramp at north end of pedestrian overpass bridge	1
greenway_3624	328874.34	6250498.53	east	pedestrian overpass bridge	1
greenway_3627	328873.5	6250490.18	east	split between pedestrian overpass bridge & West Link	1
greenway_3628	328899	6250479	east	view from pedestrian overpass bridge towards Canal Rd	1
greenway_3629	328960.39	6250467.28	south-east	view to Canal Rd, drain into canal	1
greenway_3630	328959.79	6250463.46	south-east	view to Canal Rd, drain into canal	1
greenway_3632	328801.32	6250187.88	north	view along proposed path line	1
greenway_3633	328800.3	6250186.11	south	view along proposed path line	1
greenway_3634	328772.07	6250127.38	south	toilet block , to be demolished (out of scope)	1
greenway_3635	328507.31	6249552.43	north	view along canal, netball courts to west	1
greenway_3636	328477.4	6249471.29	east	bridge demolished, submarine cable sign existing	1
greenway_3637	328470.45	6249465.55	south	existing path alignment to change here	1
greenway_3638	328412.82	6249191.64	south	connection point between existing and proposed paths	1
greenway_3639	328436.53	6248402.13	north	view along existing path from Haig St	2
greenway_3641	328444.78	6248415.9	east	view east from existing path to steep embankment up to light rail line	2
greenway_3645	328452.19	6248510.77	south	canal from Parramatta Rd overpass. No access to steep eastern embankment	2
greenway_3647	328466.97	6248507.14	west	canal under Parramatta Rd, sewer pipes across canal, steep banks, no access	2
greenway_3650	328454.42	6248489.02	south	along existing path, close to Parramatta Rd south towards Haig St	2
greenway_3651	328454.2	6248490.31	south	along existing path, close to Parramatta Rd south towards Haig St	2
greenway_3652	328451.63	6248428.91	south-east	view across to steep embankment on east side of canal	2
greenway_3653	328419.41	6248287.16		threatened species habitat	2
greenway_3654	328419.4	6248287.83	south	threatened species habitat	2
greenway_3655	328423.12	6248285.31	south	Cadigal Reserve - environmentally sensitive area	2
greenway_3657	328423.33	6248284.65	south	Cadigal Reserve - environmentally sensitive area	2
greenway_3658	328423.68	6248282.47	south	rail overpass, Cadigal Reserve	2
greenway_3659	328425.84	6248277.47	south	canal at Cadigal Reserve	2
greenway_3660	328426.95	6248278.61	north	canal, dog park	2
greenway_3662	328428.97	6248282.99	north	canal, dog park	2
greenway_3663	328429.63	6248284.73	north	canal, dog park	2
greenway_3664	328420.25	6248270.88	south	Cadigal Reserve	2
greenway_3665	328419.98	6248269.99	south	Cadigal Reserve	2
greenway_3666	328420.71	6248270.36	south	Cadigal Reserve	2
greenway_3667	328421.7	6248269.84	south	Cadigal Reserve	2
greenway_3668	328422.26	6248271.35	south	Cadigal Reserve - environmentally sensitive area	2
greenway_3669	328417.35	6248261.45	south	Cadigal Reserve artwork, canal underpass	2
greenway_3671	328416.53	6248262.83	south	Cadigal Reserve artwork, canal underpass	2
greenway_3672	328417.67	6248263.25	south	Cadigal Reserve artwork, canal underpass	2
greenway_3674	328417.47	6248263.44	south	Cadigal Reserve artwork, canal underpass	2
greenway_3677	328417.31	6248262.44	south	Cadigal Reserve artwork, canal underpass	2
greenway_3678	328418.27	6248263.27	south	Cadigal Reserve artwork, canal underpass	2
greenway_3680	328420.72	6248273.96	north	rail overpass, canal, Cadigal Reserve	2
greenway_3681	328405.57	6248295.06		environmental signage, Cadigal Reserve	2
greenway_3682	328386.69	6248328.5		Cadigal Reserve, flora & fauna	2
greenway_3683	328383.65	6248327.2		Cadigal and Wangal signage	2
greenway_3684	328393.33	6248189.47	south	along rail corridor from Longport St overpass	2
greenway_3686	328404.7	6248182.98	south	rail corridor, Mungo Scott Flour building apartments, view to Lewisham Station	2
greenway_3687	328408.36	6248182.12	south	rail corridor, Mungo Scott Flour building apartments, view to Lewisham Station	2
greenway_3690	328398.3	6248158.62		grevillea, near proposed wetlands	2
greenway_3691	328398.9	6248158.93		grevillea, near proposed wetlands	2

greenway_3692	328397.66	6248159.82	west	proposed wetlands area	2
greenway_3693	328382.34	6248135.6	west	proposed wetlands area	2
greenway_3694	328381.69	6248136.79		grevillea, near proposed wetlands	2
greenway_3696	328375.43	6248120.08	west	across light rail to wards proposed dog park	2
greenway_3700	328349.85	6248085.54	north	view from Lewisham Station	2
greenway_3701	328352.61	6248083.5	north	view from Lewisham Station	2
greenway_3702	328408.58	6248198.88	north	view from Longport St overpass - light rail, Sydney rail and canal	2
greenway_3704	328409.79	6248198.61	north	view from Longport St overpass - light rail, Sydney rail and canal	2
greenway_3706	328381.51	6248330.32		Greenway map	2
greenway_3707	328172.77	6247709.28	north	Weston St (from intersection with Windsor Lane)	2
greenway_3708	328171.5	6247708.62	south	Weston St (from intersection with Windsor Lane)	2
greenway_3709	327997.06	6247483.03	north	Waratah Mills Station, from Davis St overpass	3
greenway_3712	328014.78	6247496.67	south	Waratah Mills Station, Davis St overpass	3
greenway_3713	328015.04	6247496.29	south	Waratah Mills Station, Davis St overpass	3
greenway_3714	328015.79	6247497.2	south	Waratah Mills Station, Davis St overpass	3
greenway_3715	327942.05	6247499.77	south	Waratah Mills apartments	3
greenway_3716	327964.67	6247471.15	east	Dulwich Hill Greenway Bushcare area	3
greenway_3718	327964.54	6247471.14	east	Dulwich Hill Greenway Bushcare area	3
greenway_3721	327984.63	6247471.28	south	view from Davis St overpass	3
greenway_3723	327894.51	6247382.95	east	significant environmental area - Terry Rd	3
greenway_3726	327824.84	6247356.82	south	existing path alignment, Johnson Park	3
greenway_3728	327866.15	6247325.62	east	Johnson Park Greenway Bushcare area	3
greenway_3729	327866.86	6247326.96	east	Johnson Park Greenway Bushcare area	3
greenway_3731	327837.83	6247154.95	south	ramp down to Arlington Station	3
greenway_3732	327848.56	6247140.25	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3733	327848.31	6247140.12	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3734	327849.84	6247139.73	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3735	327847.24	6247139.88	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3736	327855.92	6247085.45	south	view south from Constitution Rd overpass	3
greenway_3738	327840.23	6247141.82	south	ramp down to Arlington Station	3
greenway_3739	327845.71	6247137.29	south	ramp down to Arlington Station	3
greenway_3740	327846.3	6247129.05	south	ramp down to Arlington Station	3
greenway_3741	327853.74	6247142.61	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3744	327854.46	6247143.45	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3745	327855.02	6247143.17	south	Arlington Station light rail line and Constitution Rd overpass	3
greenway_3747	327869.37	6246920.28	south	view towards New Canterbury Rd	3
greenway_3748	327934.88	6246844.87	south	Dulwich Grove station	3
greenway_3750	327912.1	6246835.26	south	pedestrian ramp beside Dulwich Grove station	3
greenway_3753	327919.13	6246854.7	north	New Canterbury Rd - commercial/industrial	3
greenway_3754	327966.85	6246747.6	south	Hercules St overpass	4
greenway_3755	327923	6246384	south	Hercules St	4
greenway_3757	327936.77	6246395.29	north	from Hercules St along proposed path line	4
greenway_3758	327936	6246393	north	from Hercules St along proposed path line	4
greenway_3759	327903.97	6246321.37	south	recreational, play structures, picnic areas	4
greenway_3760	327856.36	6246316.78	south	Ness Ave main Sydney rail line overpass	4
greenway_3761	327857.76	6246318.48	south	Ness Ave main Sydney rail line overpass	4
greenway_3762	327850.79	6246301.43	east	embankment under Ness Ave overpass	4
greenway_3763	327824.63	6246250	south	Ness Ave	4
greenway_1	328822	6250324	east	A1_LD01 site set up	1
greenway_2	328822	6250324	east	A1_LD01 site set up	1
greenway_3	328822	6250324	east	A1_LD01 site set up	1
greenway_4	328822	6250324	east	large diameter auger with drill reutrn	1
greenway_5	328822	6250324		drill returns including shells	1
greenway_6	328822	6250324		A1_LD01 bore hole	1
greenway_7	328822	6250324		A1_LD01 sign board	1
greenway_8	328831	6250260	east	A1_LD02 - set up	1
greenway_9	328831	6250260	east	A1_LD02 - set up	1
greenway_10	328831	6250260	east	A1_LD02 - set up	1
greenway_11	328831	6250260	east	A1_LD02 - set up	1
greenway_12	328831	6250260	east	A1_LD02 - set up	1
greenway_13	328831	6250260	east	A1_LD02 - set up	1
greenway_14	328831	6250260	east	A1_LD02 - set up	1
greenway_15	328831	6250260		A1_LD02 - sign board	1
greenway_16	328831	6250260		A1_LD02 - drill returns - muddy sands, brick fragments	1
greenway_17	328831	6250260		A1_LD02 - drill returns - muddy sands, brick fragments	1
greenway_18	328831	6250260	east	A1_LD02 - set up	1
greenway_19	328831	6250260	east	A1_LD02 - set up	1
greenway_20	328831	6250260	east	A1_LD02 - set up	1
greenway_21	328384.45	6248165.69	north	A2_BH02	2
greenway_22	328384.45	6248165.69	north	A2_BH02 - with light rail train	2
greenway_23	328384.45	6248165.69	north	A2_BH02 - with light rail train	2

Additional images of investigation locations are provided as part of the GHD geotechnical investigation report



greenway-3591



greenway-3592



greenway-3593



greenway-3594



greenway-3596



greenway-3597



greenway-3599



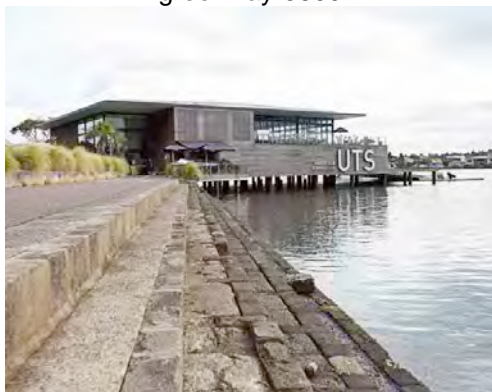
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greenway-3601



greenway-3602



greenway-3604



greenway-3605



greenway-3606



greenway-3607



greenway-3608



greenway-3609



greenway-3610



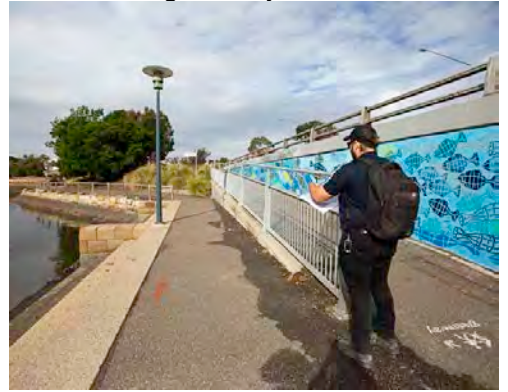
greenway-3611



greenway-3612



greenway-3613



greenway-3614



greenway-3615



greenway-3616



greenway-3617



greenway-3619



greenway-3620



greenway-3621



greenway-3622



greenway-3623



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greenway-3641



greenway-3645



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greenway-3691



greenway-3692



greenway-3693



greenway-3694



greenway-3696



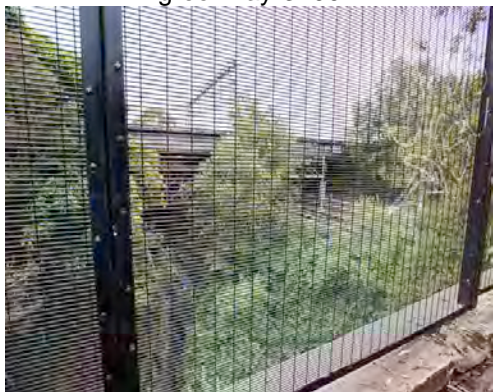
greenway-3700



greenway-3701



greenway-3702



greenway-3704



greenway-3706



greenway-3707



greenway-3708



greenway-3709



greenway-3712



greenway-3713



greenway-3714



greenway-3715



greenway-3716



greenway-3718



greenway-3721



greenway-3723



greenway-3726



greenway-3728



greenway-3729



greenway-3731



greenway-3732



greenway-3733



greenway-3734



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greenway-3738



greenway-3739



greenway-3740



greenway-3741



greenway-3744



greenway-3745



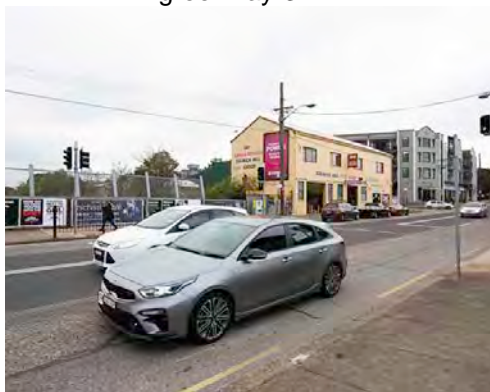
greenway-3747



greenway-3748



greenway-3750



greenway-3753



greenway-3754



greenway-3755



greenway-3757



greenway-3758



greenway-3759



greenway-3760



greenway-3761



greenway-3762



greenway-3763



Greenway-1



Greenway-2



Greenway-3



Greenway-4



Greenway-5



Greenway-6



Greenway-7



Greenway-8



Greenway-9



Greenway-10



Greenway-11



Greenway-12



Greenway-13



Greenway-14



Greenway-15



Greenway-16



Greenway-17



Greenway-18



Greenway-19



Greenway-20



Greenway-21



Greenway-22



Greenway-23

Appendix E – Analytical tables



	Inorganics		Asbestos	Metals								BTEXN						TRH - NEPM 2013												
	Moisture (%)	Moisture Content (%)		ACM Detected?	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction		
	%	%	Comment	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	
EQL	1	1	Yes/No	2	0.4	2	5	5	0.1	2	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.2	10	10	50	50	100	100	50	10			
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space												120	18,000	5,300			15,000	1,900		5,100	10	3,800	50	100	5,300	7,400				
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand												77	NL ^{#1}	NL ^{#1}			NL ^{#1}	NL ^{#1}		NL ^{#1}		NL ^{#1}								
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand												160	NL ^{#1}	NL ^{#1}			NL ^{#1}	NL ^{#1}		NL ^{#1}		NL ^{#1}								
NEPM 2013 Table 1A(1) HIL C Rec				300 ^{#2}	90	300 ^{#3}	17,000	600 ^{#4}	80 ^{#5}	1,200	30,000																			

Location Code	Depth	Field ID	Moisture (%)	Moisture Content (%)	ACM Detected?	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction
A1 BH01	0.5	A1-BH01-0.5	6.7	No	2.6	<0.4	10	17	15	<0.1	37	27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	180	<100	180	<20
A1 BH02	0.2	A1-BH02-0.2	5.2		<2	<0.4	39	85	<5	<0.1	230	95	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	<100	<100	<100	<20
A1 BH02	1.9 - 2	A1-BH02-2.0	9.8		7.0	<0.4	14	34	2,600	0.1	17	48	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	140	<100	140	<20
A1 BH05	3	A1-BH05-3.0	11		4.5	<0.4	8.2	45	67	0.1	<5	80	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	100	100	250	<100	350	<20
A1 BH06	0.5	A1-BH06-0.5	8.6		28	<0.4	36	49	95	<0.1	27	86	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	100	<100	100	<20
A1 BH06	0.5	QA5	9.1		69	<0.4	46	41	86	0.2	15	160	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	170	<100	170	<20
A1 BH07	0.2	A1-BH07-0.2	7.4		4.3	<0.4	130	46	13	<0.1	120	90	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	<100	<100	<100	<20
A1 HA01	0.2	A1-HA01-0.2	3.9		5.0	<0.4	10	16	30	<0.1	13	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	120	<100	120	<20
A1 HA01	0.5	A1-HA01-0.5	9.2		130	<0.4	37	25	100	0.1	29	98	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	440	150	590	<20
A1 LD01	0.5	A1-LD01-0.5	8.8		39	<0.4	7.9	13	67	<0.1	<5	62	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	180	<100	180	<20
A1 LD01	0.5	QA01	10		19	<0.4	13	34	85	<0.1	<5	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	180	<100	180	<20
A1 LD01	0.5	QA02	14.3		13	<1	12	21	78	<0.1	2	53	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	110	<100	110	<10	
A1 LD02	0.5	A1-LD02-0.5	11		33	<0.4	29	37	130	0.1	6.6	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	180	<100	180	<20
A1 LD03	1	A1-LD03-1.0	10	No	9.5	<0.4	12	46	120	<0.1	<5	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	160	<100	160	<20
A1 LD04	1.9 - 2	A1-LD04-2.0	36		34	2.3	31	160	580	0.9	17	980	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	1,500	250	1,750	<20
A1 LD05	0.5	A1-LD05-0.5	17		94	<0.4	22	39	79	<0.1	15	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	650	160	810	<20
A1 LD06	0.5	A1-LD06-0.5	27	Yes	55	0.8	26	68	210	0.3	14	270	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	140	<100	140	<20
A1 LD07	1.9 - 2	A1-LD07-2.0	15		6.1	<0.4	14	48	200	0.3	7.8	130	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	430	140	570	<20
A1 LD08	0.2	A1-LD08-0.2	24		11	0.5	7.2	21	96	<0.1	<5	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	220	100	320	<20
A1 LD08	1.9 - 2	A1-LD08-2.0	23		34	2.4	29	130	550	0.5	17	740	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	520	130	650	<20
A1 LD08	1.9 - 2	QA3	28		47	1.7	31	170	1,100	0.6	19	830	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	620	130	750	<20
A1 LD09	1	A1-LD09-1.0	8.3		16	<0.4	13	41	80	0.1	13	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	550	<100	550	<20
A1 LD10	0.5	A1-LD10-0.5	11		36	<0.4	24	18	220	<0.1	8.0	72	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	280	<100	280	<20
A1 LD11	0.2	A1-LD11-0.2	18	No	62	1.0	13	27	960	<0.1	9.6	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<0.2	<20	<20	<50	<50	1,100	180	1,280	<20

Comments

- #1 Not limiting: Derived soil HSL exceeds soil saturation concentration
- #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7).
- #3 In the absence of a guideline value for total chromium, chromium VI value adopted
- #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate
- #5 Elemental mercury: HIL does not address elemental mercury, a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
- #6 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
- #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
- #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken



	TRH - NEPM 1999				PAHs																							
	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indene(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPA/Vic	
EQL	20	50	50	50	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	0.1
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space																	1,900			1,900								
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand																	NL#1			NL#1								
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand																	NL#1			NL#1								
NEPM 2013 Table 1A(1) HIL C Rec																							300#6	3#7	3#7	3#7		

Location Code	Depth	Field ID	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indene(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPA/Vic	
A1 BH01	0.5	A1-BH01-0.5	<20	140	77	217		<0.5	<0.5	0.7	5.0	4.8	4.9	4.7	2.4	4.2	1.2	12		<0.5	3.8	<0.5	2.3	11	57	7.9	7.9	7.9	<0.2	
A1 BH02	0.2	A1-BH02-0.2	<20	<50	<50	<50		<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	0.6	1.2	<0.2
A1 BH02	1.9 - 2	A1-BH02-2.0	<20	86	88	174		<0.5	<0.5	<0.5	1.2	2.2	1.4	1.6	1.1	1.2	0.6	2.0		<0.5	1.7	<0.5	0.6	2.2	15.8	3.4	3.4	3.4	<0.2	
A1 BH05	3	A1 BH05 3.0	46	250	79	375		<0.5	<0.5	<0.5	0.6	0.9	0.6	0.6	<0.5	0.7	<0.5	1.5		<0.5	<0.5	<0.5	0.6	1.5	7	1.1	1.4	1.6	<0.2	
A1 BH06	0.5	A1 - BH06-0.5	<20	64	<50	64		<0.5	<0.5	<0.5	1.1	1.3	0.9	1.0	1.1	<0.5	3.0		<0.5	1.1	<0.5	0.8	3.0	14.4	1.7	2.0	2.2	<0.2		
A1 BH06	0.5	QA5	<20	100	80	180	13.9	<0.5	<0.5	<0.5	1.6	2.0	1.3	1.4	1.8	1.6	0.7	2.9		<0.5	1.9	<0.5	1.1	3.1	19.4	3.4	3.4	<0.2		
A1 BH07	0.2	A1 BH07 0.2	<20	53	56	109		<0.5	<0.5	<0.5	0.6	0.6	1.0	0.9	0.5	0.5	<0.5	0.9		<0.5	0.5	<0.5	<0.5	0.9	6.4	0.9	1.2	1.4	<0.2	
A1 HA01	0.2	A1 HA01 0.2	20	74	73	167		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7		<0.5	<0.5	<0.5	0.7	1.4	<0.5	0.6	1.2	<0.2		
A1 HA01	0.5	A1 HA01 0.5	<20	290	220	510		<0.5	0.7	1.4	6.1	6.6	4.9	5.6	4.3	5.9	1.5	14		<0.5	3.8	<0.5	5.7	13	73.5	10	10	10	<0.2	
A1 LD01	0.5	A1 LD01 0.5	<20	110	120	230		<0.5	<0.5	<0.5	0.8	1.1	0.8	1.0	0.8	0.9	<0.5	1.8		<0.5	0.9	<0.5	0.6	2.0	10.7	1.5	1.7	2.0	<0.1	
A1 LD01	0.5	QA01	<20	100	110	210		<0.5	<0.5	<0.5	1.5	1.9	1.4	1.4	1.3	1.4	<0.5	2.4		<0.5	1.4	<0.5	0.9	2.7	16.3	2.5	2.7	3.0	<0.1	
A1 LD01	0.5	QA02	<50	<100	100	100	13.9	<0.5	<0.5	<0.5	1.1	1.8	2.0	0.9	1.2	1.2	<0.5	2.0	<0.5	<0.5	0.9	0.5	2.3	2.3	2.6	2.6	2.8	<0.1		
A1 LD02	0.5	A1 LD02 0.5	<20	110	100	210		<0.5	<0.5	<0.5	2.1	2.4	1.8	2.0	1.6	1.9	0.5	3.2		<0.5	1.7	<0.5	0.8	3.5	21.5	3.7	3.7	3.7	<0.1	
A1 LD03	1	A1 LD03 1.0	<20	110	81	191		<0.5	<0.5	<0.5	0.8	1.0	0.6	0.8	1.0	1.0	<0.5	1.9		<0.5	1.2	<0.5	0.8	1.9	11	1.4	1.6	1.9	<0.1	
A1 LD04	1.9 - 2	A1 LD04 2.0	<20	1,000	660	1,660		<0.5	1.0	2.3	9.7	15	9.6	11	12	11	5.3	18		<0.5	18	<0.5	6.5	26	146	25	25	25	<0.1	
A1 LD05	0.5	A1 LD05 0.5	<20	430	330	760		<0.5	0.8	1.0	7.0	8.6	5.8	5.9	7.7	6.2	3.0	9.7		<0.5	7.1	<0.5	2.9	9.9	75.6	14	14	14	<0.1	
A1 LD06	0.5	A1 LD06 0.5	<20	86	81	167		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.7		<0.5	<0.5	<0.5	0.5	1.8	4.5	<0.5	0.6	1.2	<0.1	
A1 LD07	1.9 - 2	A1 LD07 2.0	<20	300	210	510		<0.5	0.5	2.0	4.1	7.4	4.2	5.0	1.0	3.9	0.8	14		<0.5	0.7	2.0	<0.5	6.3	14	65.9	9.8	9.8	9.8	<0.1
A1 LD08	0.2	A1 LD08 0.2	<20	130	160	290		<0.5	<0.5	<0.5	1.2	2.5	1.6	1.7	0.5	1.1	<0.5	3.3		<0.5	0.8	<0.5	1.0	3.4	17.1	3.0	3.3	3.5	<0.1	
A1 LD08	1.9 - 2	A1 LD08 2.0	<20	380	240	620		<0.5	1.0	3.4	6.3	5.3	3.9	4.5	2.9	5.3	1.2	15		1.1	3.3	0.7	11	14	78.9	8.4	8.4	8.4	<0.1	
A1 LD08	1.9 - 2	QA3	<20	410	320	730		<0.5	<0.5	0.8	2.8	3.4	2.5	3.0	2.2	2.7	0.8	5.8		<0.5	2.4	<0.5	2.1	6.8	35.3	5.3	5.3	5.3	<0.1	
A1 LD09	1	A1 LD09 1.0	20	440	190	650		0.5	1.1	3.7	6.6	5.3	3.7	4.8	3.2	5.6	1.3	14		1.9	3.8	1.0	11	13	80.5	8.6	8.6	8.6	0.51	
A1 LD10	0.5	A1 LD10 0.5	<20	200	130	330		<0.5	<0.5	0.9	3.8	4.2	2.8	3.2	2.9	3.6	0.8	7.0		<0.5	3.6	<0.5	2.6	6.9	42.3	6.4	6.4	6.4	<0.1	
A1 LD11	0.2	A1 LD11 0.2	21	790	470	1,281		<0.5	3.0	3.0	11	14	9.5	11	13	11	5.2	15		0.5	18	<0.5	7.2	17	138.4	24	24	24	<0.1	

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentration
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavail
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury, a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



	OC Pesticides																												
	Other organochlorine pesticides EPA/Vc	p,p'-DDE	p,p'-BHC	Aldrin	Aldrin + Dieldrin	p,p'-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	p,p'-BHC	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	p,p'-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene		
EQI	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	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	0.05	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	
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand																													
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand																													
NEPM 2013 Table 1A(1) HIL C Rec					10		70						400		340				20				10		10	400	30		

Location Code	Depth	Field ID	Other organochlorine pesticides EPA/Vc	p,p'-DDE	p,p'-BHC	Aldrin	Aldrin + Dieldrin	p,p'-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	p,p'-BHC	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	p,p'-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
A1 BH01	0.5	A1-BH01-0.5	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH02	0.2	A1-BH02-0.2	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH02	1.9 - 2	A1-BH02-2.0	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH05	3	A1 BH05 3.0	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH06	0.5	A1 -BH06-0.5	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH06	0.5	QA5	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 BH07	0.2	A1 BH07 0.2	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 HA01	0.2	A1 HA01 0.2	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 HA01	0.5	A1 HA01 0.5	<0.2	<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	<0.05	<0.05	<0.2	<1
A1 LD01	0.5	A1 LD01 0.5	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD01	0.5	QA01	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD01	0.5	QA02	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
A1 LD02	0.5	A1 LD02 0.5	<0.1	<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	<0.05	<0.05	<0.05	<0.2	<1
A1 LD03	1	A1 LD03 1.0	<0.1	<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	<0.05	<0.05	<0.05	<0.2	<1
A1 LD04	1.9 - 2	A1 LD04 2.0	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD05	0.5	A1 LD05 0.5	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD06	0.5	A1 LD06 0.5	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD07	1.9 - 2	A1 LD07 2.0	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1			<0.05	0.06	<0.05	0.06	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
A1 LD08	0.2	A1 LD08 0.2	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD08	1.9 - 2	A1 LD08 2.0	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD08	1.9 - 2	QA3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1			<0.05	0.07	<0.05	0.07	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
A1 LD09	1	A1 LD09 1.0	<0.1	0.19	<0.05	<0.05	<0.05	<0.05	<0.1			<0.05	0.32	<0.05	0.51	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
A1 LD10	0.5	A1 LD10 0.5	<0.1	<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	<0.05	<0.05	<0.2	<1
A1 LD11	0.2	A1 LD11 0.2	<0.1	<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	<0.05	<0.05	<0.2	<1

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury, a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



		OP Pesticides																											
		Toxuthion	Azinphos methyl	Boistar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfoton	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
EQL		0.2	0.05	0.2	0.05	0.05	0.05	0.05	0.05	2	0.2	0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.05	0.05	0.2	0.2	0.2	
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space																													
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand																													
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand																													
NEPM 2013 Table 1A(1) HIL C Rec								250																					
Location Code	Depth	Field ID	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH01	0.5	A1-BH01-0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH02	0.2	A1-BH02-0.2	<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			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH02	1.9 - 2	A1-BH02-2.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH05	3	A1-BH05-3.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH06	0.5	A1 - BH06-0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH06	0.5	QA5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 BH07	0.2	A1 BH07 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			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 HA01	0.2	A1 HA01 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			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 HA01	0.5	A1 HA01 0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD01	0.5	A1 LD01 0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD01	0.5	QA01	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD01	0.5	QA02	<0.2	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD02	0.5	A1 LD02 0.5	<0.2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD03	1	A1 LD03 1.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD04	1.9 - 2	A1 LD04 2.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD05	0.5	A1 LD05 0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD06	0.5	A1 LD06 0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD07	1.9 - 2	A1 LD07 2.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD08	0.2	A1 LD08 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			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD08	1.9 - 2	A1 LD08 2.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD08	1.9 - 2	QA3	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD09	1	A1 LD09 1.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD10	0.5	A1 LD10 0.5	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A1 LD11	0.2	A1 LD11 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			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury, a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiotos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	PCBs (Total)
EQL	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space														
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand														
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand														
NEPM 2013 Table 1A(1) HIL C Rec														1 ⁸

Location Code	Depth	Field ID													
A1 BH01	0.5	A1-BH01-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	0.2	A1-BH02-0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	1.9 - 2	A1-BH02-2.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH05	3	A1 BH05 3.0	<5	<0.5	<5	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	A1 - BH06-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	QA5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH07	0.2	A1 BH07 0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.2	A1 HA01 0.2	<2	<0.5	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.5	A1 HA01 0.5	<2	<0.5	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	A1 LD01 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA01	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA02	<0.2	<0.2	<2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD02	0.5	A1 LD02 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD03	1	A1 LD03 1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD04	1.9 - 2	A1 LD04 2.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD05	0.5	A1 LD05 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD06	0.5	A1 LD06 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD07	1.9 - 2	A1 LD07 2.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	0.2	A1 LD08 0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	A1 LD08 2.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	QA3	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD09	1	A1 LD09 1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD10	0.5	A1 LD10 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD11	0.2	A1 LD11 0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury, a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



	Inorganics		Asbestos	Metals								BTEXN						TRH - NEPM 2013						TR						
	Moisture (%)	Moisture Content (%)		ACM - Detected?	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)		>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction
EQL	1	1	Yes/No	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m				100		190 ^{#1}	60 ^{#1}	1,100		30 ^{#1}	70 ^{#1}						170													
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m												50	85	70		105			180 ^{#2}				120 ^{#3}	300	2,800					
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential / Public Open Space				230								800																		
Location Code	Depth	Field ID																												
A1 BH01	0.5	A1-BH01-0.5		6.7	No	2.6	<0.4	10	17	15	<0.1	37	27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20	<20
A1 BH02	0.2	A1-BH02-0.2		5.2		<2	<0.4	39	85	<5	<0.1	230	95	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100	<100	<20	<20
A1 BH02	1.9 - 2	A1-BH02-2.0		9.8		7.0	<0.4	14	34	2,600	0.1	17	48	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100	140	<20	<20
A1 BH05	3	A1 - BH05 3.0		11		4.5	<0.4	8.2	45	67	0.1	<5	80	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	100	100	250	<100	350	<20	46
A1 BH06	0.5	A1 - BH06-0.5		8.6		28	<0.4	36	49	95	<0.1	27	86	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	100	<100	100	<20	<20
A1 BH06	0.5	QA5		9.1		69	<0.4	46	41	86	0.2	15	160	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	170	<100	170	<20	<20
A1 BH07	0.2	A1 BH07 0.2		7.4		4.3	<0.4	130	46	13	<0.1	120	90	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100	<100	<20	<20
A1 HA01	0.2	A1 HA01 0.2		3.9		5.0	<0.4	10	16	30	<0.1	13	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	120	<100	120	<20	20
A1 HA01	0.5	A1 HA01 0.5		9.2		130	<0.4	37	25	100	0.1	29	98	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	440	150	590	<20	<20
A1 LD01	0.5	A1 LD01 0.5		8.8		39	<0.4	7.9	13	67	<0.1	<5	62	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20	<20
A1 LD01	0.5	QA01		10		19	<0.4	13	34	85	<0.1	<5	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20	<20
A1 LD01	0.5	QA02	14.3			13	<1	12	21	78	<0.1	2	53	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	110	<100	110	<10	<50
A1 LD02	0.5	A1 LD02 0.5		11		33	<0.4	29	37	130	0.1	6.6	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20	<20
A1 LD03	1	A1 LD03 1.0		10	No	9.5	<0.4	12	46	120	<0.1	<5	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	160	<100	160	<20	<20
A1 LD04	1.9 - 2	A1 LD04 2.0		36		34	2.3	31	160	580	0.9	17	980	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,500	250	1,750	<20	<20
A1 LD05	0.5	A1 LD05 0.5		17		94	<0.4	22	39	79	<0.1	15	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	650	160	810	<20	<20
A1 LD06	0.5	A1 LD06 0.5		27	Yes	55	0.8	26	68	210	0.3	14	270	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100	140	<20	<20
A1 LD07	1.9 - 2	A1 LD07 2.0		15		6.1	<0.4	14	48	200	0.3	7.8	130	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	430	140	570	<20	<20
A1 LD08	0.2	A1 LD08 0.2		24		11	0.5	7.2	21	96	<0.1	<5	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	220	100	320	<20	<20
A1 LD08	1.9 - 2	A1 LD08 2.0		23		34	2.4	29	130	550	0.5	17	740	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	520	130	650	<20	<20
A1 LD08	1.9 - 2	QA3		28		47	1.7	31	170	1,100	0.6	19	830	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	620	130	750	<20	<20
A1 LD09	1	A1 LD09 1.0		8.3		16	<0.4	13	41	80	0.1	13	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	550	<100	550	<20	20
A1 LD10	0.5	A1 LD10 0.5		11		36	<0.4	24	18	220	<0.1	8.0	72	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	280	<100	280	<20	<20
A1 LD11	0.2	A1 LD11 0.2		18	No	62	1.0	13	27	960	<0.1	9.6	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,100	180	1,280	<20	21

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)



H - NEPM 1999			PAHs																				Organochlorine pesticides EPA/vic	Other organochlorine pesticides EPA/vic	4,4'-DDE			
C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab Calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPA/vic	Other organochlorine pesticides EPA/vic	4,4'-DDE	
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
EQL	50	50	50	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	0.1	0.1	0.05	
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m															170			170										
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m								0.7																				

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Location Code	Depth	Field ID	140	77	217	<0.5	<0.5	0.7	5.0	4.8	4.9	4.7	2.4	4.2	1.2	12	<0.5	3.8	<0.5	2.3	11	57	7.9	7.9	7.9	<0.2	<0.2	<0.05	
A1 BH01	0.5	A1-BH01-0.5	140	77	217	<0.5	<0.5	0.7	5.0	4.8	4.9	4.7	2.4	4.2	1.2	12	<0.5	3.8	<0.5	2.3	11	57	7.9	7.9	7.9	<0.2	<0.2	<0.05	
A1 BH02	0.2	A1-BH02-0.2	<50	<50	<50	<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	<0.2	<0.2	<0.05		
A1 BH02	1.9 - 2	A1-BH02-2.0	86	88	174	<0.5	<0.5	<0.5	1.2	2.2	1.4	1.6	1.1	1.2	0.6	2.0	<0.5	1.7	<0.5	0.6	2.2	15.8	3.4	3.4	3.4	<0.2	<0.2	<0.05	
A1 BH05	3	A1 BH05 3.0	250	79	375	<0.5	<0.5	<0.5	0.6	0.9	0.6	0.6	<0.5	0.7	<0.5	1.5	<0.5	<0.5	0.6	1.5	7	1.1	1.4	1.6	<0.2	<0.2	<0.05		
A1 BH06	0.5	A1 - BH06-0.5	64	<50	64	<0.5	<0.5	<0.5	1.1	1.3	0.9	1.0	1.1	1.1	<0.5	3.0	<0.5	1.1	<0.5	0.8	3.0	14.4	1.7	2.0	2.2	<0.2	<0.2	<0.05	
A1 BH06	0.5	QA5	100	80	180	<0.5	<0.5	<0.5	1.6	2.0	1.3	1.4	1.8	1.6	0.7	2.9	<0.5	1.9	<0.5	1.1	3.1	19.4	3.4	3.4	3.4	<0.2	<0.2	<0.05	
A1 BH07	0.2	A1 BH07 0.2	53	56	109	<0.5	<0.5	<0.5	0.6	0.6	1.0	0.9	0.5	0.5	<0.5	0.9	<0.5	0.5	<0.5	0.9	6.4	0.9	1.2	1.4	<0.2	<0.2	<0.05		
A1 HA01	0.2	A1 HA01 0.2	74	73	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	0.7	1.4	<0.5	0.6	1.2	<0.2	<0.2	<0.05		
A1 HA01	0.5	A1 HA01 0.5	290	220	510	<0.5	0.7	1.4	6.1	6.6	4.9	5.6	4.3	5.9	1.5	14	<0.5	3.8	<0.5	5.7	13	73.5	10	10	10	<0.2	<0.2	<0.05	
A1 LD01	0.5	A1 LD01 0.5	110	120	230	<0.5	<0.5	<0.5	0.8	1.1	0.8	1.0	0.8	0.9	<0.5	1.8	<0.5	0.9	<0.5	0.6	2.0	10.7	1.5	1.7	2.0	<0.1	<0.1	<0.05	
A1 LD01	0.5	QA01	100	110	210	<0.5	<0.5	<0.5	1.5	1.9	1.4	1.4	1.3	1.4	<0.5	2.4	<0.5	1.4	<0.5	0.9	2.7	16.3	2.5	2.7	3.0	<0.1	<0.1	<0.05	
A1 LD01	0.5	QA02	<100	100	100	13.9	<0.5	<0.5	<0.5	1.1	1.8	2.0	0.9	1.2	<0.5	2.0	<0.5	0.9	<0.5	0.5	2.3	2.3	2.6	2.8	<0.1	<0.1	<0.05		
A1 LD02	0.5	A1 LD02 0.5	110	100	210	<0.5	<0.5	<0.5	2.1	2.4	1.8	2.0	1.6	1.9	0.5	3.2	<0.5	1.7	<0.5	0.8	3.5	21.5	3.7	3.7	3.7	<0.1	<0.1	<0.05	
A1 LD03	1	A1 LD03 1.0	110	81	191	<0.5	<0.5	<0.5	0.8	1.0	0.6	0.8	1.0	1.0	<0.5	1.9	<0.5	1.2	<0.5	0.8	1.9	11	1.4	1.6	1.9	<0.1	<0.1	<0.05	
A1 LD04	1.9 - 2	A1 LD04 2.0	1,000	660	1,660	<0.5	1.0	2.3	9.7	15	9.6	11	12	11	5.3	18	<0.5	18	<0.5	6.5	26	146	25	25	25	<0.1	<0.1	<0.05	
A1 LD05	0.5	A1 LD05 0.5	430	330	760	<0.5	0.8	1.0	7.0	8.6	5.8	5.9	7.7	6.2	3.0	9.7	<0.5	7.1	<0.5	2.9	9.9	75.6	14	14	14	<0.1	<0.1	<0.05	
A1 LD06	0.5	A1 LD06 0.5	86	81	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.7	<0.5	<0.5	0.5	1.8	4.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05		
A1 LD07	1.9 - 2	A1 LD07 2.0	300	210	510	<0.5	0.5	2.0	4.1	7.4	4.2	5.0	1.0	3.9	0.8	14	<0.5	0.7	<0.5	6.3	14	65.9	9.8	9.8	9.8	<0.1	<0.1	<0.05	
A1 LD08	0.2	A1 LD08 0.2	130	160	290	<0.5	<0.5	<0.5	1.2	2.5	1.6	1.7	0.5	1.1	<0.5	3.3	<0.5	0.8	<0.5	1.0	3.4	17.1	3.0	3.3	3.5	<0.1	<0.1	<0.05	
A1 LD08	1.9 - 2	A1 LD08 2.0	380	240	620	<0.5	1.0	3.4	6.3	5.3	3.9	4.5	2.9	5.3	1.2	15	<0.5	1.1	3.3	0.7	11	14	78.9	8.4	8.4	8.4	<0.1	<0.1	<0.05
A1 LD08	1.9 - 2	QA3	410	320	730	<0.5	<0.5	0.8	2.8	3.4	2.5	3.0	2.2	2.7	0.8	5.8	<0.5	2.4	<0.5	2.1	6.8	35.3	5.3	5.3	5.3	<0.1	<0.1	<0.05	
A1 LD09	1	A1 LD09 1.0	440	190	650	<0.5	1.1	3.7	6.6	5.3	3.7	4.8	3.2	5.6	1.3	14	<0.5	1.9	3.8	1.0	11	13	80.5	8.6	8.6	8.6	0.51	<0.1	0.19
A1 LD10	0.5	A1 LD10 0.5	200	130	330	<0.5	<0.5	0.9	3.8	4.2	2.8	3.2	2.9	3.6	0.8	7.0	<0.5	3.6	<0.5	2.6	6.9	42.3	6.4	6.4	6.4	<0.1	<0.1	<0.05	
A1 LD11	0.2	A1 LD11 0.2	790	470	1,281	<0.5	3.0	3.0	11	14	9.5	11	13	11	5.2	15	<0.5	18	<0.5	7.2	17	138.4	24	24	24	<0.1	<0.1	<0.05	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state
- #2 To obtain F1 subtract the sum of BTEX concentrations from
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted



			OP Pesticides																											
			Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfoton	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	2	0.2	0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.05	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2
NEPM 2013 EIL-Urban Residential- Public Open Space																														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																														
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /																														
Location Code	Depth	Field ID																												
A1 BH01	0.5	A1-BH01-0.5	<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	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 BH02	0.2	A1-BH02-0.2	<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	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 BH02	1.9 - 2	A1-BH02-2.0	<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	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 BH05	3	A1 BH05 3.0	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<5	<0.5	<5	<0.2
A1 BH06	0.5	A1 - BH06-0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 BH06	0.5	QA5	<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	<0.2	<1	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 BH07	0.2	A1 BH07 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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 HA01	0.2	A1 HA01 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	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2
A1 HA01	0.5	A1 HA01 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2
A1 LD01	0.5	A1 LD01 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD01	0.5	QA01	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD01	0.5	QA02	<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	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2
A1 LD02	0.5	A1 LD02 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD03	1	A1 LD03 1.0	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD04	1.9 - 2	A1 LD04 2.0	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD05	0.5	A1 LD05 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD06	0.5	A1 LD06 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD07	1.9 - 2	A1 LD07 2.0	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD08	0.2	A1 LD08 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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD08	1.9 - 2	A1 LD08 2.0	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD08	1.9 - 2	QA3	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD09	1	A1 LD09 1.0	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD10	0.5	A1 LD10 0.5	<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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2
A1 LD11	0.2	A1 LD11 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	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2

Comments
 #1 Develop site specific based on CEC, pH, clay content, state
 #2 To obtain F1 subtract the sum of BTEX concentrations from
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted



	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichlorate	Tetrachlorvinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQI	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m										
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m										

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Location Code	Depth	Field ID	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichlorate	Tetrachlorvinphos	PCBs
A1 BH01	0.5	A1-BH01-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	0.2	A1-BH02-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	1.9 - 2	A1-BH02-2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH05	3	A1 BH05 3.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	A1 - BH06-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	QA5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH07	0.2	A1 BH07 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.2	A1 HA01 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.5	A1 HA01 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	A1 LD01 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA01	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA02		<0.05		<0.05						
A1 LD02	0.5	A1 LD02 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD03	1	A1 LD03 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD04	1.9 - 2	A1 LD04 2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD05	0.5	A1 LD05 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD06	0.5	A1 LD06 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD07	1.9 - 2	A1 LD07 2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	0.2	A1 LD08 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	A1 LD08 2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	QA3	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD09	1	A1 LD09 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD10	0.5	A1 LD10 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD11	0.2	A1 LD11 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state
- #2 To obtain F1 subtract the sum of BTEX concentrations from
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted



Asbestos	Metals								BTEXN							TRH - NEPM 2013							
	ACM - Detected?	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	<C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)
Comment	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
EQL		2	0.4	2	5	5	0.1	2	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.2	10	10	50	50	100	100
NEPM 2013 EIL-Areas of Ecological Significance 0-2m		40		20 ^{#1}	470		5 ^{#1}	15 ^{#1}							10								
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m										10	65	40			1.6		125 ^{#2}				25 ^{#3}		
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance					270			50															

Location Code	Depth	Field ID	Sample Type	Matrix Type	No	2.6	<0.4	10	17	15	<0.1	37	27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100
A1 BH01	0.5	A1-BH01-0.5	Normal	soil		2.6	<0.4	10	17	15	<0.1	37	27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100
A1 BH02	0.2	A1-BH02-0.2	Normal	soil		<2	<0.4	39	85	<5	<0.1	230	95	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil		7.0	<0.4	14	34	2,600	0.1	17	48	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100
A1 BH05	3	A1-BH05-3.0	Normal	soil		4.5	<0.4	8.2	45	67	0.1	<5	80	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	100	100	250	<100
A1 BH06	0.5	A1-BH06-0.5	Normal	soil		28	<0.4	36	49	95	<0.1	27	86	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	100	<100
A1 BH06	0.5	QA5	Field D	soil		69	<0.4	46	41	86	0.2	15	160	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	170	<100
A1 BH07	0.2	A1-BH07-0.2	Normal	soil		4.3	<0.4	130	46	13	<0.1	120	90	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100
A1 HA01	0.2	A1-HA01-0.2	Normal	soil		5.0	<0.4	10	16	30	<0.1	13	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	120	<100
A1 HA01	0.5	A1-HA01-0.5	Normal	soil		130	<0.4	37	25	100	0.1	29	98	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	440	150
A1 LD01	0.5	A1-LD01-0.5	Normal	soil		39	<0.4	7.9	13	67	<0.1	<5	62	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100
A1 LD01	0.5	QA01	Field D	soil		19	<0.4	13	34	85	<0.1	<5	63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100
A1 LD01	0.5	QA02	Interlab D	soil		13	<1	12	21	78	<0.1	2	53	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	110	<100
A1 LD02	0.5	A1-LD02-0.5	Normal	soil		33	<0.4	29	37	130	0.1	6.6	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100
A1 LD03	1	A1-LD03-1.0	Normal	soil	No	9.5	<0.4	12	46	120	<0.1	<5	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	160	<100
A1 LD04	1.9 - 2	A1-LD04-2.0	Normal	soil		34	2.3	31	160	580	0.9	17	980	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,500	250
A1 LD05	0.5	A1-LD05-0.5	Normal	soil		94	<0.4	22	39	79	<0.1	15	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	650	160
A1 LD06	0.5	A1-LD06-0.5	Normal	soil	Yes	55	0.8	26	68	210	0.3	14	270	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100
A1 LD07	1.9 - 2	A1-LD07-2.0	Normal	soil		6.1	<0.4	14	48	200	0.3	7.8	130	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	430	140
A1 LD08	0.2	A1-LD08-0.2	Normal	soil		11	0.5	7.2	21	96	<0.1	<5	110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	220	100
A1 LD08	1.9 - 2	A1-LD08-2.0	Normal	soil		34	2.4	29	130	550	0.5	17	740	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	520	130
A1 LD08	1.9 - 2	QA3	Field D	soil		47	1.7	31	170	1,100	0.6	19	830	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	620	130
A1 LD09	1	A1-LD09-1.0	Normal	soil		16	<0.4	13	41	80	0.1	13	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	550	<100
A1 LD10	0.5	A1-LD10-0.5	Normal	soil		36	<0.4	24	18	220	<0.1	8.0	72	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	280	<100
A1 LD11	0.2	A1-LD11-0.2	Normal	soil	No	62	1.0	13	27	960	<0.1	9.6	120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,100	180

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)



Appendix E Table 2 Ecological results - Areas of Ecological Significance

	TRH - NEPM 1999										PAHs												
	>C10-C40 (Sum of Total)	C6-C8 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene
EQL	50	10	20	50	50	50	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
NEPM 2013 EIL-Areas of Ecological Significance 0-2m																			10			10	
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m											0.7												
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance																							

Location Code	Depth	Field ID	Sample Type	Matrix Type	>C10-C40 (Sum of Total)	C6-C8 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene
A1 BH01	0.5	A1-BH01-0.5	Normal	soil	180	<20	<20	140	77	217	<0.5	<0.5	0.7	5.0	4.8	4.9	4.7	2.4	4.2	1.2	12		<0.5	3.8	<0.5	2.3	
A1 BH02	0.2	A1-BH02-0.2	Normal	soil	<100	<20	<20	<50	<50	<50	<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
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil	140	<20	<20	86	88	174	<0.5	<0.5	<0.5	<0.5	1.2	2.2	1.4	1.6	1.1	1.2	0.6	2.0		<0.5	1.7	<0.5	0.6
A1 BH05	3	A1-BH05-3.0	Normal	soil	350	<20	46	250	79	375	<0.5	<0.5	<0.5	<0.5	0.6	0.9	0.6	0.6	<0.5	0.7	<0.5	1.5		<0.5	<0.5	<0.5	0.6
A1 BH06	0.5	A1-BH06-0.5	Normal	soil	100	<20	<20	64	<50	64	<0.5	<0.5	<0.5	1.1	1.3	0.9	1.0	1.0	1.1	1.1	<0.5	3.0		<0.5	1.1	<0.5	0.8
A1 BH06	0.5	QA5	Field D	soil	170	<20	<20	100	80	180	<0.5	<0.5	<0.5	1.6	2.0	1.3	1.4	1.4	1.8	1.6	0.7	2.9		<0.5	1.9	<0.5	1.1
A1 BH07	0.2	A1-BH07-0.2	Normal	soil	<100	<20	<20	53	56	109	<0.5	<0.5	<0.5	0.6	0.6	1.0	0.9	0.5	0.5	0.5	<0.5	0.9		<0.5	0.5	<0.5	<0.5
A1 HA01	0.2	A1-HA01-0.2	Normal	soil	120	<20	20	74	73	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7		<0.5	<0.5	<0.5	<0.5
A1 HA01	0.5	A1-HA01-0.5	Normal	soil	590	<20	<20	290	220	510	<0.5	0.7	1.4	6.1	6.6	4.9	5.6	4.3	5.9	1.5	14		<0.5	3.8	<0.5	5.7	
A1 LD01	0.5	A1-LD01-0.5	Normal	soil	180	<20	<20	110	120	230	<0.5	<0.5	<0.5	0.8	1.1	0.8	1.0	0.8	0.9	<0.5	1.8		<0.5	0.9	<0.5	0.6	
A1 LD01	0.5	QA01	Field D	soil	180	<20	<20	100	110	210	<0.5	<0.5	<0.5	1.5	1.9	1.4	1.4	1.3	1.4	<0.5	2.4		<0.5	1.4	<0.5	0.9	
A1 LD01	0.5	QA02	Interlab D	soil	110	<10	<50	<100	100	100	13.9	<0.5	<0.5	<0.5	1.1	1.8	2.0	0.9	1.2	1.2	<0.5	2.0	<0.5	<0.5	0.9	0.5	
A1 LD02	0.5	A1-LD02-0.5	Normal	soil	180	<20	<20	110	100	210	<0.5	<0.5	<0.5	2.1	2.4	1.8	2.0	1.6	1.9	0.5	3.2		<0.5	<0.5	1.7	<0.5	0.8
A1 LD03	1	A1-LD03-1.0	Normal	soil	160	<20	<20	110	81	191	<0.5	<0.5	<0.5	0.8	1.0	0.6	0.8	1.0	1.0	<0.5	1.9		<0.5	1.2	<0.5	0.8	
A1 LD04	1.9 - 2	A1-LD04-2.0	Normal	soil	1,750	<20	<20	1,000	660	1,660	<0.5	1.0	2.3	9.7	15	9.6	11	12	11	5.3	18		0.6	18	<0.5	6.5	
A1 LD05	0.5	A1-LD05-0.5	Normal	soil	810	<20	<20	430	330	760	<0.5	0.8	1.0	7.0	8.6	5.8	5.9	7.7	6.2	3.0	9.7		<0.5	7.1	<0.5	2.9	
A1 LD06	0.5	A1-LD06-0.5	Normal	soil	140	<20	<20	86	81	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.7		<0.5	<0.5	<0.5	0.5	
A1 LD07	1.9 - 2	A1-LD07-2.0	Normal	soil	570	<20	<20	300	210	510	<0.5	0.5	2.0	4.1	7.4	4.2	5.0	1.0	3.9	0.8	14		0.7	2.0	<0.5	6.3	
A1 LD08	0.2	A1-LD08-0.2	Normal	soil	320	<20	<20	130	160	290	<0.5	<0.5	<0.5	1.2	2.5	1.6	1.7	0.5	1.1	<0.5	3.3		<0.5	0.8	<0.5	1.0	
A1 LD08	1.9 - 2	A1-LD08-2.0	Normal	soil	650	<20	<20	380	240	620	<0.5	1.0	3.4	6.3	5.3	3.9	4.5	2.9	5.3	1.2	15		1.1	3.3	0.7	11	
A1 LD08	1.9 - 2	QA3	Field D	soil	750	<20	<20	410	320	730	<0.5	<0.5	0.8	2.8	3.4	2.5	3.0	2.2	2.7	0.8	5.8		<0.5	2.4	<0.5	2.1	
A1 LD09	1	A1-LD09-1.0	Normal	soil	550	<20	20	440	190	650	0.5	1.1	3.7	6.6	5.3	3.7	4.8	3.2	5.6	1.3	14		1.9	3.8	1.0	11	
A1 LD10	0.5	A1-LD10-0.5	Normal	soil	280	<20	<20	200	130	330	<0.5	<0.5	0.9	3.8	4.2	2.8	3.2	2.9	3.6	0.8	7.0		<0.5	3.6	<0.5	2.6	
A1 LD11	0.2	A1-LD11-0.2	Normal	soil	1,280	<20	21	790	470	1,281	<0.5	3.0	3.0	11	14	9.5	11	13	11	5.2	15		0.5	18	<0.5	7.2	

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naph)



Appendix E Table 2 Ecological results - Areas of Ecological Significance

					OC Pesticides																		
Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPA/c	Other organochlorine pesticides EPA/c	γ,γ-DDE	β-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	γ-BHC	γ,γ-DDD	γ,γ-DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	
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
EQI	0.5	0.5	0.5	0.5	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	0.05	0.05	0.05	0.05
NEPM 2013 EIL-Areas of Ecological Significance 0-2m																		3	3				
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m																							
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance																							

Location Code	Depth	Field ID	Sample Type	Matrix Type	11	57	7.9	7.9	7.9	<0.2	<0.2	<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
A1 BH01	0.5	A1-BH01-0.5	Normal	soil	11	57	7.9	7.9	7.9	<0.2	<0.2	<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
A1 BH02	0.2	A1-BH02-0.2	Normal	soil	<0.5	<0.5	<0.5	0.6	1.2	<0.2	<0.2	<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
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil	2.2	15.8	3.4	3.4	3.4	<0.2	<0.2	<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
A1 BH05	3	A1-BH05-3.0	Normal	soil	1.5	7	1.1	1.4	1.6	<0.2	<0.2	<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
A1 BH06	0.5	A1-BH06-0.5	Normal	soil	3.0	14.4	1.7	2.0	2.2	<0.2	<0.2	<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
A1 BH06	0.5	QA5	Field D	soil	3.1	19.4	3.4	3.4	3.4	<0.2	<0.2	<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
A1 BH07	0.2	A1-BH07-0.2	Normal	soil	0.9	6.4	0.9	1.2	1.4	<0.2	<0.2	<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
A1 HA01	0.2	A1-HA01-0.2	Normal	soil	0.7	1.4	<0.5	0.6	1.2	<0.2	<0.2	<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
A1 HA01	0.5	A1-HA01-0.5	Normal	soil	13	73.5	10	10	10	<0.2	<0.2	<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
A1 LD01	0.5	A1-LD01-0.5	Normal	soil	2.0	10.7	1.5	1.7	2.0	<0.1	<0.1	<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
A1 LD01	0.5	QA01	Field D	soil	2.7	16.3	2.5	2.7	3.0	<0.1	<0.1	<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
A1 LD01	0.5	QA02	Interlab D	soil	2.3		2.3	2.6	2.8			<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
A1 LD02	0.5	A1-LD02-0.5	Normal	soil	3.5	21.5	3.7	3.7	3.7	<0.1	<0.1	<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
A1 LD03	1	A1-LD03-1.0	Normal	soil	1.9	11	1.4	1.6	1.9	<0.1	<0.1	<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
A1 LD04	1.9 - 2	A1-LD04-2.0	Normal	soil	26	146	25	25	25	<0.1	<0.1	<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
A1 LD05	0.5	A1-LD05-0.5	Normal	soil	9.9	75.6	14	14	14	<0.1	<0.1	<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
A1 LD06	0.5	A1-LD06-0.5	Normal	soil	1.8	4.5	<0.5	0.6	1.2	<0.1	<0.1	<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
A1 LD07	1.9 - 2	A1-LD07-2.0	Normal	soil	14	65.9	9.8	9.8	9.8	<0.1	<0.1	<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
A1 LD08	0.2	A1-LD08-0.2	Normal	soil	3.4	17.1	3.0	3.3	3.5	<0.1	<0.1	<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
A1 LD08	1.9 - 2	A1-LD08-2.0	Normal	soil	14	78.9	8.4	8.4	8.4	<0.1	<0.1	<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
A1 LD08	1.9 - 2	QA3	Field D	soil	6.8	35.3	5.3	5.3	5.3	<0.1	<0.1	<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
A1 LD09	1	A1-LD09-1.0	Normal	soil	13	80.5	8.6	8.6	8.6	0.51	<0.1	0.19	<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
A1 LD10	0.5	A1-LD10-0.5	Normal	soil	6.9	42.3	6.4	6.4	6.4	<0.1	<0.1	<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
A1 LD11	0.2	A1-LD11-0.2	Normal	soil	17	138.4	24	24	24	<0.1	<0.1	<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

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naph)



Appendix E Table 2 Ecological results - Areas of Ecological Significance

	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Toxthion	Azinphos methyl	Bostar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon
EQL	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 1	mg/kg 0.2	mg/kg 0.05	mg/kg 0.2	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 0.05	mg/kg 2	mg/kg 0.2	mg/kg 0.2	mg/kg 0.05	mg/kg 0.05
NEPM 2013 EIL-Areas of Ecological Significance 0-2m																							
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m																							
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance																							

Location Code	Depth	Field ID	Sample Type	Matrix Type	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Toxthion	Azinphos methyl	Bostar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon
A1 BH01	0.5	A1-BH01-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH02	0.2	A1-BH02-0.2	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH05	3	A1-BH05-3.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH06	0.5	A1-BH06-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH06	0.5	QA5	Field D	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 BH07	0.2	A1-BH07-0.2	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 HA01	0.2	A1-HA01-0.2	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 HA01	0.5	A1-HA01-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD01	0.5	A1-LD01-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD01	0.5	QA01	Field D	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD01	0.5	QA02	Interlab D	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05				<0.05	<0.05
A1 LD02	0.5	A1-LD02-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD03	1	A1-LD03-1.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD04	1.9 - 2	A1-LD04-2.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD05	0.5	A1-LD05-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD06	0.5	A1-LD06-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD07	1.9 - 2	A1-LD07-2.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD08	0.2	A1-LD08-0.2	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD08	1.9 - 2	A1-LD08-2.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD08	1.9 - 2	QA3	Field D	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD09	1	A1-LD09-1.0	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD10	0.5	A1-LD10-0.5	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2
A1 LD11	0.2	A1-LD11-0.2	Normal	soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<2	<0.2	<0.2		<0.2

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naph)



		OP Pesticides																						
		Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfathion	Fenthion	Malathion	Meephos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiotos	Pyrazophos
		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
EQL		0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.05	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2
NEPM 2013 EIL-Areas of Ecological Significance 0-2m																								
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m																								
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance																								

Location Code	Depth	Field ID	Sample Type	Matrix Type	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfathion	Fenthion	Malathion	Meephos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiotos	Pyrazophos
A1 BH01	0.5	A1-BH01-0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2
A1 BH02	0.2	A1-BH02-0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2
A1 BH05	3	A1 BH05 3.0	Normal	soil	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<5	<0.5	<5	<0.2	<0.2		<0.2		<0.2
A1 BH06	0.5	A1 - BH06-0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2
A1 BH06	0.5	QA5	Field D	soil	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2
A1 BH07	0.2	A1 BH07 0.2	Normal	soil	<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
A1 HA01	0.2	A1 HA01 0.2	Normal	soil	<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	<0.5	<2	<0.2	<0.2		<0.2		<0.2
A1 HA01	0.5	A1 HA01 0.5	Normal	soil	<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	<0.5	<2	<0.2	<0.2		<0.2		<0.2
A1 LD01	0.5	A1 LD01 0.5	Normal	soil	<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
A1 LD01	0.5	QA01	Field D	soil	<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
A1 LD01	0.5	QA02	Interlab D	soil	<0.05	<0.05			<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.05		<0.05
A1 LD02	0.5	A1 LD02 0.5	Normal	soil	<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
A1 LD03	1	A1 LD03 1.0	Normal	soil	<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
A1 LD04	1.9 - 2	A1 LD04 2.0	Normal	soil	<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
A1 LD05	0.5	A1 LD05 0.5	Normal	soil	<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
A1 LD06	0.5	A1 LD06 0.5	Normal	soil	<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
A1 LD07	1.9 - 2	A1 LD07 2.0	Normal	soil	<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
A1 LD08	0.2	A1 LD08 0.2	Normal	soil	<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
A1 LD08	1.9 - 2	A1 LD08 2.0	Normal	soil	<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
A1 LD08	1.9 - 2	QA3	Field D	soil	<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
A1 LD09	1	A1 LD09 1.0	Normal	soil	<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
A1 LD10	0.5	A1 LD10 0.5	Normal	soil	<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
A1 LD11	0.2	A1 LD11 0.2	Normal	soil	<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

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naph)



	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQI	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Areas of Ecological Significance 0-2m					
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m					
NEPM 2013 Table 1B(1 & 2) Site-specific EILS for Areas of Ecological Significance					

Location Code	Depth	Field ID	Sample Type	Matrix Type					
A1 BH01	0.5	A1-BH01-0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH02	0.2	A1-BH02-0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH02	1.9 - 2	A1-BH02-2.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH05	3	A1 -BH05 3.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	A1 - BH06-0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH06	0.5	QA5	Field D	soil	<0.2	<0.2	<0.2	<0.2	
A1 BH07	0.2	A1 BH07 0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.2	A1 HA01 0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 HA01	0.5	A1 HA01 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	A1 LD01 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA01	Field D	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD01	0.5	QA02	interlab D	soil					
A1 LD02	0.5	A1 LD02 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD03	1	A1 LD03 1.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD04	1.9 - 2	A1 LD04 2.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD05	0.5	A1 LD05 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD06	0.5	A1 LD06 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD07	1.9 - 2	A1 LD07 2.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD08	0.2	A1 LD08 0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	A1 LD08 2.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD08	1.9 - 2	QA3	Field D	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD09	1	A1 LD09 1.0	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD10	0.5	A1 LD10 0.5	Normal	soil	<0.2	<0.2	<0.2	<0.2	
A1 LD11	0.2	A1 LD11 0.2	Normal	soil	<0.2	<0.2	<0.2	<0.2	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
- #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naph)



Appendix E Table 4 Area 1 Waste Classification

EQL	Inorganics		Asbestos ACM - Detected? Comment	Metals										BTEXN						TRH - NEPM 2013									
	Moisture (%)	Moisture Content (%)		Asenic	Cadmium	Chromium (III+VI)	Copper	Lead	Lead	Mercury	Nickel	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction
	%	%		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	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
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil	1	1	Yes/No	2	0.4	2	6	6	0.01	0.1	2	0.01	6	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.2	10	10	60	60	100	100	60	10
NSW EPA (2014) General Solid Waste CT1 (No Leaching)				100	20	100		100		4	40			10	288	600		1,000											650 ^{#3}
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)				400	80	400		400		16	160			40	1,152	2,400		4,000											2,600 ^{#3}
NSW EPA (2014) Special Waste - asbestos									5			2																	
NSW EPA (2014) General Solid Waste TCLP1									20			8																	
NSW EPA (2014) Restricted Solid Waste TCLP2																													
Location Code	Field ID																												
A1 BH01	A1-BH01-0.5	6.7	No	2.6	<0.4	10	17	15		<0.1	37		27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20
A1 BH02	A1-BH02-0.2	5.2		<2	<0.4	39	85	<5		<0.1	230	0.01	95	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100	<100	<20
A1 BH02	A1-BH02-2.0	9.8		7.0	<0.4	14	34	2,600	<0.1	0.1	17		48	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100	140	<20
A1 BH05	A1 BH05 3.0	11		4.5	<0.4	8.2	45	67		0.1	<5		80	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	100	100	250	<100	350	<20
A1 BH06	A1 - BH06-0.5	8.6		28	<0.4	36	49	95		<0.1	27		86	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	100	<100	100	<20
A1 BH06	QA5	9.1		69	<0.4	46	41	86		0.2	15		160	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	170	<100	170	<20
A1 BH07	A1 BH07 0.2	7.4		4.3	<0.4	130	46	13		<0.1	120		90	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	<100	<100	<100	<20
A1 HA01	A1 HA01 0.2	3.9		5.0	<0.4	10	16	30		<0.1	13		63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	120	<100	120	<20
A1 HA01	A1 HA01 0.5	9.2		130	<0.4	37	25	100		0.1	29		98	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	440	150	590	<20
A1 LD01	A1 LD01 0.5	8.8		39	<0.4	7.9	13	67		<0.1	<5		62	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20
A1 LD01	QA01	10		19	<0.4	13	34	85		<0.1	<5		63	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20
A1 LD01	QA02	14.3		13	<1	12	21	78		<0.1	2		53	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	110	<100	110	<10
A1 LD02	A1 LD02 0.5	11		33	<0.4	29	37	130		0.1	6.6		110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	180	<100	180	<20
A1 LD03	A1 LD03 1.0	10	No	9.5	<0.4	12	46	120		<0.1	<5		140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	160	<100	160	<20
A1 LD04	A1 LD04 2.0	36		34	2.3	31	160	580		0.9	17		980	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,500	250	1,750	<20
A1 LD05	A1 LD05 0.5	17		94	<0.4	22	39	79		<0.1	15		120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	650	160	810	<20
A1 LD06	A1 LD06 0.5	27	Yes	55	0.8	26	68	210		0.3	14		270	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	140	<100	140	<20
A1 LD07	A1 LD07 2.0	15		6.1	<0.4	14	48	200		0.3	7.8		130	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	430	140	570	<20
A1 LD08	A1 LD08 0.2	24		11	0.5	7.2	21	96		<0.1	<5		110	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	220	100	320	<20
A1 LD08	A1 LD08 2.0	23		34	2.4	29	130	550		0.5	17		740	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	520	130	650	<20
A1 LD08	QA3	28		47	1.7	31	170	1,100		0.6	19		830	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	620	130	750	<20
A1 LD09	A1 LD09 1.0	8.3		16	<0.4	13	41	80		0.1	13		140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	550	<100	550	<20
A1 LD10	A1 LD10 0.5	11		36	<0.4	24	18	220		<0.1	8.0		72	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	280	<100	280	<20
A1 LD11	A1 LD11 0.2	18	No	62	1.0	13	27	960	0.03	<0.1	9.6		120	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5		<20	<20	<50	<50	1,100	180	1,280	<20

Comments
 #1 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #2 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)
 #3 No TCLP analysis required



Appendix E Table 4 Area 1 Waste Classification

TRH - NEPM 1999					PAHs																								
C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Sum of polycyclic aromatic hydrocarbons	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Naphthalene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPAV/c	Other organochlorine pesticides EPAV/c	
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	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	
EQL	20	50	50	50	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	0.5	0.5	0.5	0.5	0.1	0.1
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coar																													
NSW EPA (2014) General Solid Waste CT1 (No Leach)				10,000 ^{NS}					0.8														200						
NSW EPA (2014) Restricted Solid Waste CT2 (No Leach)				40,000 ^{NS}					3.2														800						
NSW EPA (2014) Special Waste - asbestos										40																			
NSW EPA (2014) General Solid Waste TCLP1										160																			
NSW EPA (2014) Restricted Solid Waste TCLP2																													
Location Code	Field ID																												
A1 BH01	A1-BH01-0.5	<20	140	77	217	<0.5	<0.5	0.7	5.0	4.8	4.9	4.7	2.4	4.2	1.2	12		<0.5	3.8	<0.5	2.3	11	57	7.9	7.9	7.9	<0.2	<0.2	
A1 BH02	A1-BH02-0.2	<20	<50	<50	<50	<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	0.6	1.2	<0.2	<0.2
A1 BH02	A1-BH02-2.0	<20	86	88	174	<0.5	<0.5	<0.5	1.2	2.2	1.4	1.6	1.1	1.2	0.6	2.0		<0.5	1.7	<0.5	0.6	2.2	15.8	3.4	3.4	3.4	<0.2	<0.2	
A1 BH05	A1 BH05 3.0	46	250	79	375	<0.5	<0.5	<0.5	0.6	0.9	0.6	0.6	<0.5	0.7	<0.5	1.5		<0.5	<0.5	<0.5	0.6	1.5	7	1.1	1.4	1.6	<0.2	<0.2	
A1 BH06	A1 - BH06-0.5	<20	64	<50	64	<0.5	<0.5	<0.5	1.1	1.3	0.9	1.0	1.1	1.1	<0.5	3.0		<0.5	1.1	<0.5	0.8	3.0	14.4	1.7	2.0	2.2	<0.2	<0.2	
A1 BH06	QA5	<20	100	80	180	<0.5	<0.5	<0.5	1.6	2.0	1.3	1.4	1.8	1.6	0.7	2.9		<0.5	1.9	<0.5	1.1	3.1	19.4	3.4	3.4	3.4	<0.2	<0.2	
A1 BH07	A1 BH07 0.2	<20	53	56	109	<0.5	<0.5	<0.5	0.6	0.6	1.0	0.9	0.5	0.5	<0.5	0.9		<0.5	0.5	<0.5	<0.5	0.9	6.4	0.9	1.2	1.4	<0.2	<0.2	
A1 HA01	A1 HA01 0.2	20	74	73	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7		<0.5	<0.5	<0.5	0.7	1.4	<0.5	0.6	1.2	<0.2	<0.2		
A1 HA01	A1 HA01 0.5	<20	290	220	510	<0.5	0.7	1.4	6.1	6.6	4.9	5.6	4.3	5.9	1.5	14		<0.5	3.8	<0.5	5.7	13	73.5	10	10	10	<0.2	<0.2	
A1 LD01	A1 LD01 0.5	<20	110	120	230	<0.5	<0.5	<0.5	0.8	1.1	0.8	1.0	0.8	0.9	<0.5	1.8		<0.5	0.9	<0.5	0.6	2.0	10.7	1.5	1.7	2.0	<0.1	<0.1	
A1 LD01	QA01	<20	100	110	210	<0.5	<0.5	<0.5	1.5	1.9	1.4	1.4	1.3	1.4	<0.5	2.4		<0.5	1.4	<0.5	0.9	2.7	16.3	2.5	2.7	3.0	<0.1	<0.1	
A1 LD01	QA02	<50	<100	100	100	13.9	<0.5	<0.5	<0.5	1.1	1.8	2.0	0.9	1.2	1.2	<0.5	2.0	<0.5	0.9	<0.5	0.5	2.3	2.3	2.6	2.8				
A1 LD02	A1 LD02 0.5	<20	110	100	210	<0.5	<0.5	<0.5	2.1	2.4	1.8	2.0	1.6	1.9	0.5	3.2		<0.5	1.7	<0.5	0.8	3.5	21.5	3.7	3.7	3.7	<0.1	<0.1	
A1 LD03	A1 LD03 1.0	<20	110	81	191	<0.5	<0.5	<0.5	0.8	1.0	0.6	0.8	1.0	1.0	<0.5	1.9		<0.5	1.2	<0.5	0.8	1.9	11	1.4	1.6	1.9	<0.1	<0.1	
A1 LD04	A1 LD04 2.0	<20	1,000	660	1,660	<0.5	1.0	2.3	9.7	15	9.6	11	12	11	5.3	18		<0.5	18	<0.5	6.5	26	146	25	25	25	<0.1	<0.1	
A1 LD05	A1 LD05 0.5	<20	430	330	760	<0.5	0.8	1.0	7.0	8.6	5.8	5.9	7.7	6.2	3.0	9.7		<0.5	7.1	<0.5	2.9	9.9	75.6	14	14	14	<0.1	<0.1	
A1 LD06	A1 LD06 0.5	<20	86	81	167	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.7		<0.5	<0.5	<0.5	0.5	1.8	4.5	<0.5	0.6	1.2	<0.1	<0.1	
A1 LD07	A1 LD07 2.0	<20	300	210	510	<0.5	0.5	2.0	4.1	7.4	4.2	5.0	1.0	3.9	0.8	14		0.7	2.0	<0.5	6.3	14	65.9	9.8	9.8	9.8	<0.1	<0.1	
A1 LD08	A1 LD08 0.2	<20	130	160	290	<0.5	<0.5	<0.5	1.2	2.5	1.6	1.7	0.5	1.1	<0.5	3.3		<0.5	0.8	<0.5	1.0	3.4	17.1	3.0	3.3	3.5	<0.1	<0.1	
A1 LD08	A1 LD08 2.0	<20	380	240	620	<0.5	1.0	3.4	6.3	5.3	3.9	4.5	2.9	5.3	1.2	15		1.1	3.3	0.7	11	14	78.9	8.4	8.4	8.4	<0.1	<0.1	
A1 LD08	QA3	<20	410	320	730	<0.5	<0.5	0.8	2.8	3.4	2.5	3.0	2.2	2.7	0.8	5.8		<0.5	2.4	<0.5	2.1	6.8	35.3	5.3	5.3	5.3	<0.1	<0.1	
A1 LD09	A1 LD09 1.0	20	440	190	650	0.5	1.1	3.7	6.6	5.3	3.7	4.8	3.2	5.6	1.3	14		1.9	3.8	1.0	11	13	80.5	8.6	8.6	8.6	0.51	<0.1	
A1 LD10	A1 LD10 0.5	<20	200	130	330	<0.5	<0.5	0.9	3.8	4.2	2.8	3.2	2.9	3.6	0.8	7.0		<0.5	3.6	<0.5	2.6	6.9	42.3	6.4	6.4	6.4	<0.1	<0.1	
A1 LD11	A1 LD11 0.2	21	790	470	1,281	<0.5	3.0	3.0	11	14	<1	9.5	11	13	11	15		0.5	18	<0.5	7.2	17	138.4	24	24	24	<0.1	<0.1	

Comments
 #1 To obtain F1 subtract the sum of BTEX con
 #2 Errata 30 April 2014 - Naphthalene should n
 #3 No TCLP analysis required



		Pirimphos-ethyl	Pirimphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	PCBs (Total)
		0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
EQI										
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coar										
NSW EPA (2014) General Solid Waste CT1 (No Leach)										50
NSW EPA (2014) Restricted Solid Waste CT2 (No Leach)										50
NSW EPA (2014) Special Waste - asbestos										
NSW EPA (2014) General Solid Waste TCLP1										
NSW EPA (2014) Restricted Solid Waste TCLP2										
Location Code	Field ID									
A1 BH01	A1-BH01-0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	A1-BH02-0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH02	A1-BH02-2.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH05	A1 BH05 3.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	A1 - BH06-0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH06	QA5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 BH07	A1 BH07 0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	A1 HA01 0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 HA01	A1 HA01 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	A1 LD01 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	QA01		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD01	QA02	<0.05		<0.05						
A1 LD02	A1 LD02 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD03	A1 LD03 1.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD04	A1 LD04 2.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD05	A1 LD05 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD06	A1 LD06 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD07	A1 LD07 2.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	A1 LD08 0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	A1 LD08 2.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD08	QA3		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD09	A1 LD09 1.0		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD10	A1 LD10 0.5		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A1 LD11	A1 LD11 0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 To obtain F1 subtract the sum of BTEX con
 #2 Errata 30 April 2014 - Naphthalene should n
 #3 No TCLP analysis required



Appendix E Table 5
Area 2: Ecological results - urban residential / public open space

Greenway Contamination Assessment

Summary table showing H-NEPM 1999 and NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m. Columns include various chemical fractions and PAHs with corresponding mg/kg values and EQI.

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Main data table with columns: Location Code, Depth, Field ID, and various chemical concentrations (mg/kg) for parameters like A2-BH02-0.2, A2-HA01-0.2, etc.

- Comments
#1 Develop site specific based on CEC, pH, clay content, state
#2 To obtain F1 subtract the sum of BTEX concentrations from
#3 Errata 30 April 2014 - Naphthalene should not be subtracted



Appendix E Table 5
Area 2: Ecological results - urban residential / public open space

	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichlorate	Tetrachlorvinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg (Total)
EQI	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m										
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m										

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Location Code	Depth	Field ID	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichlorate	Tetrachlorvinphos	PCBs
A2 BH02	0.2	A2-BH02-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH03	0.5	A2 - BH03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH04	0.5	A2 - BH04-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA01	0.2	A2-HA01-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA02	0.5	A2-HA02-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA03	0.2	A2-HA03-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC01	0.5	A2 - HAC01-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	A2-HAC02-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	QA07	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	1	A2-HAC02-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC03	0.2	A2-HAC03-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH04	0.5	A2D BH04 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH05	0.2	A2D BH05 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH06	1	A2D BH06 (1.0)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	A2D BH7 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	DUP1	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	1.9 - 2	A2D BH7 (2.0)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH08	0.2	A2D-BH08-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.2	A2D-BH09-0.2(ACM)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.5	A2D-BH09-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.5	QA29	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD01	0.5	A2D-LD01(0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD02	0.2	A2D-LD02(0.2)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD02	0.2	Dup1 251019		<0.05		<0.05						<0.1
A2D LD03	0.2	A2D LD03 (0.2)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	A2D - LD04-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA1 161019	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA2 161019		<0.05		<0.05						
A2D LD04	1.9 - 2	A2D - LD04-2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state
- #2 To obtain F1 subtract the sum of BTEX concentrations from
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted



Appendix E Table 6
Area 2: Ecological results - Areas of Ecological Significance

EQL	ACM - Detected?	Metals								BTEXN							TRH - NEPM 2013							TRH - NEPM 19					
		Asenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction		
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
NEPM 2013 EIL-Areas of Ecological Significance 0-2m		40			20 ^{#1}	470		5 ^{#1}	15 ^{#1}						10														
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m										10	65	40			1.6		125 ^{#2}				25 ^{#3}								
NEPM 2013 Table 1B(1 & 2) Site-specific EILS for Areas of Ecological Significance					90				50																				
Location Code	Depth	Field ID																											
A2 BH02	0.2	A2-BH02-0.2																											
A2 BH03	0.5	A2 - BH03-0.5																											
A2 BH04	0.5	A2 - BH04-0.5																											
A2 HA01	0.2	A2-HA01-0.2																											
A2 HA02	0.5	A2-HA02-0.5																											
A2 HA03	0.2	A2-HA03-0.2																											
A2 HAC01	0.5	A2 - HAC01-0.5																											
A2 HAC02	0.2	A2-HAC02-0.2																											
A2 HAC02	0.2	QA07																											
A2 HAC02	1	A2-HAC02-1.0																											
A2 HAC03	0.2	A2-HAC03-0.2																											
A2D BH04	0.5	A2D BH04 0.5																											
A2D BH05	0.2	A2D BH05 0.2																											
A2D BH06	1	A2D BH06 (1.0)																											
A2D BH07	0.5	A2D BH7 (0.5)																											
A2D BH07	0.5	DUP1																											
A2D BH07	1.9 - 2	A2D BH7 (2.0)																											
A2D BH08	0.2	A2D-BH08-0.2																											
A2D BH09	0.2	A2D-BH09-0.2(ACM)																											
A2D BH09	0.5	A2D-BH09-0.5																											
A2D BH09	0.5	QA29																											
A2D LD01	0.5	A2D-LD01(0.5)																											
A2D LD02	0.2	A2D-LD02(0.2)																											
A2D LD02	0.2	Dup1 251019																											
A2D LD03	0.2	A2D LD03 (0.2)																											
A2D LD04	0.5	A2D - LD04-0.5																											
A2D LD04	0.5	QA1 161019																											
A2D LD04	0.5	QA2 161019																											
A2D LD04	1.9 - 2	A2D - LD04-2.0																											

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)



Appendix E Table 6
Area 2: Ecological results - Areas of Ecological Significance

	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Areas of Ecological Significance 0-2m												
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m												
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance												

Location Code	Depth	Field ID	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
A2 BH02	0.2	A2-BH02-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH03	0.5	A2 - BH03-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH04	0.5	A2 - BH04-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA01	0.2	A2-HA01-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA02	0.5	A2-HA02-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA03	0.2	A2-HA03-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC01	0.5	A2 - HAC01-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	A2-HAC02-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	QA07	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	1	A2-HAC02-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC03	0.2	A2-HAC03-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH04	0.5	A2D BH04 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH05	0.2	A2D BH05 0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH06	1	A2D BH06 (1.0)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	A2D BH7 (0.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	DUP1	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	1.9 - 2	A2D BH7 (2.0)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH08	0.2	A2D-BH08-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.2	A2D-BH09-0.2(ACM)												
A2D BH09	0.5	A2D-BH09-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.5	QA29	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD01	0.5	A2D-LD01(0.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD02	0.2	A2D-LD02(0.2)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD02	0.2	Dup1 251019		<0.2		<0.05		<0.05						<0.1
A2D LD03	0.2	A2D LD03 (0.2)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	A2D - LD04-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA1 161019	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA2 161019		<0.2		<0.05		<0.05						
A2D LD04	1.9 - 2	A2D - LD04-2.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and tra
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concen
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >



Appendix E Table 7
Area 2: Human health results

	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	0.2	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space																
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand																
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand																
NEPM 2013 Table 1A(1) HIL C Rec																1 [#]

Location Code	Depth	Field ID	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
A2 BH02	0.2	A2-BH02-0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH03	0.5	A2 - BH03-0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 BH04	0.5	A2 - BH04-0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA01	0.2	A2-HA01-0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA02	0.5	A2-HA02-0.5	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HA03	0.2	A2-HA03-0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC01	0.5	A2 - HAC01-0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	A2-HAC02-0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	0.2	QA07	<0.2	<0.2	<2	<1	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC02	1	A2-HAC02-1.0	<0.2	<0.2	<2	<1	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2 HAC03	0.2	A2-HAC03-0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH04	0.5	A2D - BH04 0.5	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH05	0.2	A2D BH05 0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH06	1	A2D BH06 (1.0)	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	A2D BH7 (0.5)	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	0.5	DUP1	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH07	1.9 - 2	A2D BH7 (2.0)	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH08	0.2	A2D-BH08-0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.2	A2D-BH09-0.2(ACM)																
A2D BH09	0.5	A2D-BH09-0.5	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D BH09	0.5	QA29	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD01	0.5	A2D-LD01(0.5)	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD02	0.2	A2D-LD02(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	
A2D LD02	0.2	Dup1 251019	<0.2	<0.2	<2			<0.2	<0.2	<0.05	<0.05							<0.1
A2D LD03	0.2	A2D LD03 (0.2)	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	A2D - LD04-0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA1 161019	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A2D LD04	0.5	QA2 161019	<0.2	<0.2	<2			<0.2	<0.2	<0.05	<0.05							
A2D LD04	1.9 - 2	A2D - LD04-2.0	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavail
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury. a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



Appendix E Table 8
Area 2: Waste classification table

Inorganics		Asbestos					Metals											BTEXN									
Moisture (%)	Moisture Content (%)	ACM - Detected?	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Asbestos Sample Dimensions	Arsenic (mg/kg)	Arsenic (mg/L)	Cadmium (mg/kg)	Chromium (III+VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Lead (mg/L)	Mercury (mg/kg)	Nickel (mg/kg)	Nickel (mg/L)	Zinc (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (o) (mg/kg)	Xylene (m & p) (mg/kg)	Xylene Total (mg/kg)	Naphthalene (BTEXN) (mg/kg)	BTEX (Sum of Total) - Lab Calc (mg/kg)	F1 (C6-C10 minus BTEX) (mg/kg)	C6-C10 Fraction (mg/kg)	
%	%	Comment	%w/w	%w/w	Comment	2	0.01	0.4	2	5	5	0.01	0.1	2	0.01	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.2	10	10	
EQL																											
NSW EPA (2014) General Solid Waste CT1 (No Leaching)																											
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)																											
NSW EPA (2014) Special Waste - Asbestos																											
NSW EPA (2014) General Solid Waste TCLP1																											
NSW EPA (2014) Restricted Solid Waste TCLP2																											
5 20 5 20 2 8																											
Location Code	Depth	Field ID																									
A2 BH02	0.2	A2-BH02-0.2																									
A2 BH03	0.5	A2 - BH03-0.5																									
A2 BH04	0.5	A2 - BH04-0.5																									
A2 HA01	0.2	A2-HA01-0.2																									
A2 HA02	0.5	A2-HA02-0.5																									
A2 HA03	0.2	A2-HA03-0.2																									
A2 HAC01	0.5	A2 - HAC01-0.5																									
A2 HAC02	0.2	A2-HAC02-0.2																									
A2 HAC02	0.2	QA07																									
A2 HAC02	1	A2-HAC02-1.0																									
A2 HAC03	0.2	A2-HAC03-0.2																									
A2D BH04	0.5	A2D BH04 0.5																									
A2D BH05	0.2	A2D BH05 0.2																									
A2D BH06	1	A2D BH06 (1.0)																									
A2D BH07	0.5	A2D BH7 (0.5)																									
A2D BH07	0.5	DUP1																									
A2D BH07	1.9 - 2	A2D BH7 (2.0)																									
A2D BH08	0.2	A2D-BH08-0.2																									
A2D BH09	0.2	A2D-BH09-0.2(ACM)																									
A2D BH09	0.5	A2D-BH09-0.5																									
A2D BH09	0.5	QA29																									
A2D LD01	0.5	A2D-LD01(0.5)																									
A2D LD02	0.2	A2D-LD02(0.2)																									
A2D LD02	0.2	Dup1 251019																									
A2D LD03	0.2	A2D LD03 (0.2)																									
A2D LD04	0.5	A2D - LD04-0.5																									
A2D LD04	0.5	QA1 161019																									
A2D LD04	0.5	QA2 161019																									
A2D LD04	1.9 - 2	A2D - LD04-2.0																									

Comments
#1 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#2 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)
#3 No TCLP analysis required



Appendix E Table 8
Area 2: Waste classification table

			Pesticides																	PCBs				
			Fenitrothion	Fensulfotthion	Fenitrothion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimphos-ethyl	Pirimphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetraclorvinphos	PCBs (Total)	
			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	
EQL			0.2	0.2	0.05	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1	
NSW EPA (2014) General Solid Waste CT1 (No Leaching)																							50	
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)																								50
NSW EPA (2014) Special Waste - Asbestos																								
NSW EPA (2014) General Solid Waste TCLP1																								
NSW EPA (2014) Restricted Solid Waste TCLP2																								
Location Code	Depth	Field ID																						
A2 BH02	0.2	A2-BH02-0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2 BH03	0.5	A2 - BH03-0.5	<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		
A2 BH04	0.5	A2 - BH04-0.5	<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		
A2 HA01	0.2	A2-HA01-0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2 HA02	0.5	A2-HA02-0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2 HA03	0.2	A2-HA03-0.2	<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		
A2 HAC01	0.5	A2 - HAC01-0.5	<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		
A2 HAC02	0.2	A2-HAC02-0.2	<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		
A2 HAC02	0.2	QA07	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<1	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2 HAC02	1	A2-HAC02-1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<1	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2 HAC03	0.2	A2-HAC03-0.2	<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		
A2D BH04	0.5	A2D BH04 0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH05	0.2	A2D BH05 0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH06	1	A2D BH06 (1.0)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH07	0.5	A2D BH7 (0.5)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH07	0.5	DUP1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH07	1.9 - 2	A2D BH7 (2.0)	<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		
A2D BH08	0.2	A2D-BH08-0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH09	0.2	A2D-BH09-0.2(ACM)																						
A2D BH09	0.5	A2D-BH09-0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D BH09	0.5	QA29	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D LD01	0.5	A2D-LD01(0.5)	<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		
A2D LD02	0.2	A2D-LD02(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		
A2D LD02	0.2	Dup1 251019			<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.05		<0.05						<0.1	
A2D LD03	0.2	A2D LD03 (0.2)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2		
A2D LD04	0.5	A2D - LD04-0.5	<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		
A2D LD04	0.5	QA1 161019	<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		
A2D LD04	0.5	QA2 161019			<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.05		<0.05							
A2D LD04	1.9 - 2	A2D - LD04-2.0	<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		

Comments
 #1 To obtain F1 subtract the sum of BTEX concentrations from the C6
 #2 Errata 30 April 2014 - Naphthalene should not be subtracted from >
 #3 No TCLP analysis required



Appendix E Table 9
Area 3: Ecological results - Urban Residential / Public Open Space

	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg (Total)
EQI	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m										
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m										

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Location Code	Depth	Field ID	Phorate	Phosphorus-ethyl	Phosphorus-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
A3 BH01	0.2	A3-BH01-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH01	0.2	QA4	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH02	1	A3-BH02-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH03	0.5	A3-BH03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH04	0.5	A3 BH04 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH05	1.9 - 2	A3 BH05 (2.0)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH06	1	A3 - BH06-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH07	0.2	A3-BH07-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	A3 - BH08-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	QA6	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH09	0.5	A3-BH09 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH10	0.2	A3-BH10 (0.2)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH11	0.5	A3-BH11-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA01	1	A3-HA01-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	A3 - HA02-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA11	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA12		<0.05		<0.05						
A3 HA03	0.5	QA10	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA03	0.5	A3 - HA03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA04	0.5	A3-HA04-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	A3-HA05-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	QA30	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA06	0.5	A3 HA06 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA07	0.2	A3 HA07 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	A3-LD/BH01 (2.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	DUP1 181019	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD01	1	A3 LD01 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD02	0.5	A3 - LD02-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state
- #2 To obtain F1 subtract the sum of BTEX concentrations from
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted



Appendix E Table 10
Area 3: Ecological Results - Areas of Ecological Significance

	Asbestos	Metals								BTEXN								TRH - NEPM 2013																		
		ACM - Detected?	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylylene (o)	Xylylene (m & p)	Xylylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C8 Fraction	C10-C14 Fraction	C15-C28 Fraction								
EQI																																				
NEPM 2013 EIL-Areas of Ecological Significance																																				
0-2m																																				
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil																																				
0-2m																																				
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance																																				

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and traffic volume
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >C10-C16 (as there is no separate ESL for naphthalene)



Appendix E Table 10
Area 3: Ecological Results - Areas of Ecological Significance

	Omethoate	Parathion	Phorate	Primphos-ethyl	Primphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQI	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Areas of Ecological Significance 0-2m												
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m												
NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Areas of Ecological Significance												

Location Code	Depth	Field ID	Omethoate	Parathion	Phorate	Primphos-ethyl	Primphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
A3 BH01	0.2	A3-BH01-0.2	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH01	0.2	QA4	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH02	1	A3-BH02-1.0	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH03	0.5	A3-BH03-0.5	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH04	0.5	A3 BH04 (0.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH05	1.9 - 2	A3 BH05 (2.0)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH06	1	A3 - BH06-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH07	0.2	A3-BH07-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	A3 - BH08-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	QA6	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH09	0.5	A3-BH09 (0.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH10	0.2	A3-BH10 (0.2)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH11	0.5	A3-BH11-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA01	1	A3-HA01-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	A3 - HA02-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA11	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA12	<2	<0.2	<0.2	<0.05	<0.05		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA03	0.5	QA10	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA03	0.5	A3 - HA03-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA04	0.5	A3-HA04-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	A3-HA05-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	QA30	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA06	0.5	A3 HA06 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA07	0.2	A3 HA07 0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	A3-LD/BH01 (2.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	DUP1 181019	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD01	1	A3 LD01 1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD02	0.5	A3 - LD02-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and tra
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concen
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >



Appendix E Table 11
Area 3: Human health results

	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Primphos-ethyl	Primphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space														
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand														
CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,2 to <4m,Sand														
NEPM 2013 Table 1A(1) HIL C Rec														1 ⁸

Location Code	Depth	Field ID													
A3 BH01	0.2	A3-BH01-0.2	<5	<0.5	<5	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH01	0.2	QA4	<5	<0.5	<5	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH02	1	A3-BH02-1.0	<5	<0.5	<5	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH03	0.5	A3-BH03-0.5	<5	<0.5	<5	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH04	0.5	A3 BH04 (0.5)	<2	<0.5	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH05	1.9 - 2	A3 BH05 (2.0)	<2	<0.5	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH06	1	A3 - BH06-1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH07	0.2	A3-BH07-0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	A3 - BH08-0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	0.2	QA6	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH09	0.5	A3-BH09 (0.5)	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH10	0.2	A3-BH10 (0.2)	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH11	0.5	A3-BH11-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA01	1	A3-HA01-1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	A3 - HA02-1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA11	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	1	QA12	<0.2	<0.2		<0.2	<0.2	<0.05	<0.05						
A3 HA03	0.5	QA10	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA03	0.5	A3 - HA03-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA04	0.5	A3-HA04-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	A3-HA05-1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	1	QA30	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA06	0.5	A3 HA06 0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA07	0.2	A3 HA07 0.2	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	A3-LD/BH01 (2.5)	<2	<1	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	2.5	DUP1 181019	<2	<0.5	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD01	1	A3 LD01 1.0	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD02	0.5	A3 - LD02-0.5	<2	<0.2	<2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury, a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



Appendix E Table 12
Area 3: Waste classification table

	Phosphate	Phospho-ethyl	Phospho-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NSW EPA (2014) General Solid Waste CT1 (No Lead)										50
NSW EPA (2014) Restricted Solid Waste CT2 (No Lead)										50
NSW EPA (2014) Special Waste - Asbestos										
NSW EPA (2014) General Solid Waste TCLP1										
NSW EPA (2014) Restricted Solid Waste TCLP2										

Location Code	Field ID	Phosphate	Phospho-ethyl	Phospho-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
A3 BH01	A3-BH01-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH01	QA4	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH02	A3-BH02-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH03	A3-BH03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH04	A3 BH04 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH05	A3 BH05 (2.0)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH06	A3 - BH06-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH07	A3-BH07-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	A3 - BH08-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH08	QA6	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH09	A3-BH09 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH10	A3-BH10 (0.2)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 BH11	A3-BH11-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA01	A3-HA01-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	A3 - HA02-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	QA11	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA02	QA12		<0.05		<0.05						
A3 HA03	QA10	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA03	A3 - HA03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA04	A3-HA04-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	A3-HA05-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA05	QA30	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA06	A3 HA06 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 HA07	A3 HA07 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	A3-LD/BH01 (2.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD/BH01	DUP1 181019	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD01	A3 LD01 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A3 LD02	A3 - LD02-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 To obtain F1 subtract the sum of BTEX con
 #2 Errata 30 April 2014 - Naphthalene should n
 #3 No TCLP analysis required



Appendix E Table 13
Area 4: Ecological results - Urban Residential / Public Open Space

	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prirniphos-ethyl	Prirniphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Urban Residential- Public Open Space 0-2m															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil 0-2m															

NEPM 2013 Table 1B(1 & 2) Site-specific EILs for Urban Residential /

Location Code	Depth	Field ID	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prirniphos-ethyl	Prirniphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
A4 BH01	1	A4 - BH01-1.0	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH02	0.5	A4 BH02 0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH03	1	A4 BH03 1.0	<2	<20	<2	<20	<2	<2		<2		<2	<2	<2	<2	<2	
A4 BH04	0.2	A4 BH04 0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH05	0.5	A4 BH05 0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	0.6	
A4 BH06	0.5	A4-BH06 (0.5)	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH07	0.5	A4 BH07 0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH08	0.2	A4-BH08 (0.2)	<0.2	<2	<0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	0.2	A4 BH09 0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	0.2	DUP1 221019	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH10	1	A4 BH10 1.0	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH11	0.2	A4 BH11 0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH12	0.2	A4 BH12 0.2	<2	<20	<2	<20	<2	<2		<2		<2	<2	<2	<2	<2	
A4 HAC01	1.9 - 2	A4 HAC01 2.0	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC02	0.5	A4 HAC02 0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	0.5	A4-HAC03-0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	0.5	QA13	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC04	0.2	A4-HAC04-0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC05	0.5	A4-HAC05-0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	A4-HAC06-0.5	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	QA14	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	QA15		<1.0			<1.0		<0.25		<0.25						<0.2
A4 HAC06	0.5	QA15															
A4 LD01	0.2	A4 - LD01-0.2	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 LD01	0.2	DUP1 211019	<0.2	<2	<0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0 - 0.2	A4-TP01 0.2	<0.2	<5	<0.2	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0 - 0.2	QA50	<0.2	<5	<0.2	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0.4 - 0.5	A4-TP01 0.5	<0.2	<5	<0.2	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments

- #1 Develop site specific based on CEC, pH, clay content, state
- #2 To obtain F1 subtract the sum of BTEX concentrations from
- #3 Errata 30 April 2014 - Naphthalene should not be subtracted



Appendix E Table 14
Area 4: Ecological results - Areas of Ecological Significance

	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NEPM 2013 EIL-Areas of Ecological Significance 0-2m												
NEPM 2013 Table 1B(6) ESLs for Areas of Ecological Significance, Fine Soil 0-2m												
NEPM 2013 Table 1B(1 & 2) Site-specific EILS for Areas of Ecological Significance												

Location Code	Depth	Field ID	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothifos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs (Total)
A4 BH01	1	A4 - BH01-1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH02	0.5	A4 BH02 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH03	1	A4 BH03 1.0	<20	<2	<2		<2		<2	<2	<2	<2	<2	
A4 BH04	0.2	A4 BH04 0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH05	0.5	A4 BH05 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	0.6	
A4 BH06	0.5	A4-BH06 (0.5)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH07	0.5	A4 BH07 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH08	0.2	A4-BH08 (0.2)	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	0.2	A4 BH09 0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	0.2	DUP1 221019	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH10	1	A4 BH10 1.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH11	0.2	A4 BH11 0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH12	0.2	A4 BH12 0.2	<20	<2	<2		<2		<2	<2	<2	<2	<2	
A4 HAC01	1.9 - 2	A4 HAC01 2.0	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC02	0.5	A4 HAC02 0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	0.5	A4-HAC03-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	0.5	QA13	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC04	0.2	A4-HAC04-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC05	0.5	A4-HAC05-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	A4-HAC06-0.5	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	QA14	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	0.5	QA15		<1.0		<0.25		<0.25						<0.2
A4 HAC06	0.5	QA15												
A4 LD01	0.2	A4 - LD01-0.2	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 LD01	0.2	DUP1 211019	<2	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0 - 0.2	A4-TP01 0.2	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0 - 0.2	QA50	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	0.4 - 0.5	A4-TP01 0.5	<5	<0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 Develop site specific based on CEC, pH, clay content, state and tra
 #2 Moderate reliability. To obtain F1 subtract the sum of BTEX concen
 #3 Errata 30 April 2014 - Naphthalene should not be subtracted from >



Appendix E Table 15
Area 4: Human health results

Table with columns for pesticides (DDE, BHC, Aldrin, etc.) and rows for EQL values and NEPM Table 1A(1) HIL C Rec values.

Table with columns for Location Code, Depth, Field ID, and 27 pesticide concentration values (mg/kg).

Comments
#1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
#2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
#3 In the absence of a guideline value for total chromium, chromium V
#4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
#5 Elemental mercury: HIL does not address elemental mercury. a site
#6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
#7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
#8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



Appendix E Table 15
Area 4: Human health results

	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prinphos-ethyl	Prinphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	PCBs
	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	PCBs (Total)
EQL	0.2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space														
CRC CARE 2011 Soil HSL Vap.int Intrusive Works,0 to <2m,Sand														
CRC CARE 2011 Soil HSL Vap.int Intrusive Works,2 to <4m,Sand														
NEPM 2013 Table 1A(1) HIL C Rec														1 [#]

Location Code	Depth	Field ID													
A4 BH01	1	A4 - BH01-1.0	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH02	0.5	A4 BH02 0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH03	1	A4 BH03 1.0	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
A4 BH04	0.2	A4 BH04 0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH05	0.5	A4 BH05 0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.6	<0.2
A4 BH06	0.5	A4-BH06 (0.5)	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH07	0.5	A4 BH07 0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH08	0.2	A4-BH08 (0.2)	<2	<0.5	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH09	0.2	A4 BH09 0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH09	0.2	DUP1 221019	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH10	1	A4 BH10 1.0	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH11	0.2	A4 BH11 0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 BH12	0.2	A4 BH12 0.2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
A4 HAC01	1.9 - 2	A4 HAC01 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
A4 HAC02	0.5	A4 HAC02 0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC03	0.5	A4-HAC03-0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC03	0.5	QA13	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC04	0.2	A4-HAC04-0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC05	0.5	A4-HAC05-0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC06	0.5	A4-HAC06-0.5	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC06	0.5	QA14	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 HAC06	0.5	QA15	<1.0	<2	<1.0	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
A4 LD01	0.2	A4 - LD01-0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 LD01	0.2	DUP1 211019	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 TP01	0 - 0.2	A4-TP01 0.2	<5	<0.2	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 TP01	0 - 0.2	QA50	<5	<0.2	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4 TP01	0.4 - 0.5	A4-TP01 0.5	<5	<0.2	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Comments
 #1 Not limiting: Derived soil HSL exceeds soil saturation concentratio
 #2 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavai
 #3 In the absence of a guideline value for total chromium, chromium V
 #4 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on a
 #5 Elemental mercury: HIL does not address elemental mercury. a site
 #6 Total PAHs: Based on sum of 16 most common reported (WHO 98).
 #7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to
 #8 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source i



	Phosphate	Phospho-ethyl	Phospho-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg (Total)
EQL	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.1
NSW EPA (2014) General Solid Waste CT1 (No Lead)										50
NSW EPA (2014) Restricted Solid Waste CT2 (No Lead)										50
NSW EPA (2014) Special Waste - Asbestos										
NSW EPA (2014) General Solid Waste TCLP1										
NSW EPA (2014) Restricted Solid Waste TCLP2										

Location Code	Field ID	Phosphate	Phospho-ethyl	Phospho-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos	PCBs
A4 BH01	A4 - BH01-1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH02	A4 BH02 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH03	A4 BH03 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH04	A4 BH04 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH05	A4 BH05 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	0.6	
A4 BH06	A4-BH06 (0.5)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH07	A4 BH07 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH08	A4-BH08 (0.2)	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	A4 BH09 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH09	DUP1 221019	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH10	A4 BH10 1.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH11	A4 BH11 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 BH12	A4 BH12 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC01	A4 HAC01 2.0	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC02	A4 HAC02 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	A4-HAC03-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC03	QA13	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC04	A4-HAC04-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC05	A4-HAC05-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	A4-HAC06-0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	QA14	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 HAC06	QA15		<0.25		<0.25						<0.2
A4 HAC06	QA15		<0.25		<0.25						<0.2
A4 LD01	A4 - LD01-0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 LD01	DUP1 211019	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	A4-TP01 0.2	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	QA50	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
A4 TP01	A4-TP01 0.5	<0.2		<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	

Comments
 #1 To obtain F1 subtract the sum of BTEX con
 #2 Errata 30 April 2014 - Naphthalene should n
 #3 No TCLP analysis required



Appendix E Table 17
Rinsate results

Date/Time	Field ID	Sample Type	Metals							BTEXN							TRH - NEPM 2013						TRH - NEPM 1999						
			Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylyne (o)	Xylyne (m & p)	Xylyne Total	Naphthalene (BTEXN)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C8 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
8/10/2019	R1	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
9/10/2019	R2	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
10/10/2019	R3	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
14/10/2019	R30	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
15/10/2019	R17	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
17/10/2019	R29	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
21/10/2019	R7	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.008	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
21/10/2019	R28	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
22/10/2019	R27	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
23/10/2019	R25	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
23/10/2019	RINSATE 11	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
24/10/2019	R20	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
24/10/2019	R24	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
24/10/2019	RINSATE 12	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.008	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
25/10/2019	RINSATE 13	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.011	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
28/10/2019	R21	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.006	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
30/10/2019	R23	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100
31/10/2019	R24	Rinsate	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<1	<1	<1	<1	<2	<3	<10	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100	<100



Appendix E Table 17
Rinsate results

Date/Time	Field ID	Sample Type	PAHs															PAHs (Sum of total) - Lab calc	Organochlorine pesticides EPA V/c	Other organochlorine pesticides EPA V/c	4,4'-DDE	p-BHC	Aldrin	Aldrin + Dieldrin	p-BHC	Chlordane	o-BHC	4,4' DDD								
			Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene												Pyrene							
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
8/10/2019	R1	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
9/10/2019	R2	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
10/10/2019	R3	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
14/10/2019	R30	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
15/10/2019	R17	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
17/10/2019	R29	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
21/10/2019	R7	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
21/10/2019	R28	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
22/10/2019	R27	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
23/10/2019	R25	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
23/10/2019	RINSATE 11	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
24/10/2019	R20	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
24/10/2019	R24	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
24/10/2019	RINSATE 12	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
25/10/2019	RINSATE 13	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
28/10/2019	R21	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
30/10/2019	R23	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
31/10/2019	R24	Rinsate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Appendix E Table 17
Rinsate results

			OC Pesticides																											
			4,4-DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Tokuthion	Azinphos methyl	Bostar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
			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	10	2	2	2	2	20	2	20	2	20	2	2	2	2
Date/Time	Field ID	Sample Type																												
8/10/2019	R1	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
9/10/2019	R2	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
10/10/2019	R3	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
14/10/2019	R30	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
15/10/2019	R17	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
17/10/2019	R29	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
21/10/2019	R7	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
21/10/2019	R28	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
22/10/2019	R27	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
23/10/2019	R25	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
23/10/2019	RINSATE 11	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
24/10/2019	R20	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
24/10/2019	R24	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
24/10/2019	RINSATE 12	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
25/10/2019	RINSATE 13	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
28/10/2019	R21	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
30/10/2019	R23	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2
31/10/2019	R24	Rinsate	<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	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2



Appendix E Table 17
Rinsate results

			OP Pesticides																					
			Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfotthion	Fenitthion	Malathion	Mepphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Date/Time	Field ID	Sample Type	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	20	2	2	2	2	2
8/10/2019	R1	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
9/10/2019	R2	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
10/10/2019	R3	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
14/10/2019	R30	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
15/10/2019	R17	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
17/10/2019	R29	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
21/10/2019	R7	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
21/10/2019	R28	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
22/10/2019	R27	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
23/10/2019	R25	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
23/10/2019	RINSATE 11	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
24/10/2019	R20	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
24/10/2019	R24	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
24/10/2019	RINSATE 12	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
25/10/2019	RINSATE 13	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
28/10/2019	R21	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
30/10/2019	R23	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2
31/10/2019	R24	Rinsate	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2

Appendix F – Borelogs

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : UTS Haberfield Club Carpark, Haberfield, NSW

HOLE No. A1-BH02

SHEET 1 OF 1

Position : 328762.99 E 6250647.90 N MGA94/ 56

Surface RL: 2.29m AHD

Angle from Horiz. : 90°

Processed : MAG

Rig Type : XP60

Mounting: Ute

Contractor : Terratest

Driller : CD

Checked : MG

Date Started : 10/10/2019

Date Completed : 10/10/2019

Logged by : LM

Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	TC-bit auger	Nil		ES D ES D ES	0.06		-	ASPHALT CARPARK PAVEMENT	-	-	0.2m, PID=6.7ppm 0.5m, PID=7.0ppm 1.0m, PID=7.0ppm 2.0m, PID=10.0ppm 2.1m, marine odour 3.0m, PID=5.5ppm
					0.60		-	[FILL] Silty Sandy GRAVEL: fine to coarse, angular, grey, fine to coarse grained sand.	M	-	
					1.15		-	[FILL] Sandy GRAVEL: fine, angular, brown, fine to coarse grained sand, with silt, trace brick and mortar.	M	-	
					1.50		-	[FILL] Sandy Clayey GRAVEL: fine to medium, angular, brown/grey, fine to coarse grained sand, trace brick.	M	-	
					2.10		-	[FILL] Silty SAND: fine to coarse grained, pale grey mottled yellow, with fine to medium, angular gravel.	M	-	
2				ES D ES	2.10		SC	Clayey SAND: fine to coarse grained, brown, low plasticity clay, with fine to coarse, sub-rounded gravel (alluvium).	W	L- MD	
					3.00			End of borehole at 3.00 metres. Target Depth			
3				ES	3.00						
4											
5											

See standard sheets for details of abbreviations & basis of descriptions



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Job No.
21-12515105

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A1-BH01	SHEET 1 OF 1
Project : The GreenWay Geotechnical and Contamination Services		
Location : UTS Haberfield Club Carpark, Haberfield, NSW		
Position : 328719.58 E 6250682.54 N MGA94/ 56	Surface RL: 1.93m AHD	Angle from Horiz. : 90°
Rig Type : XP60	Mounting: Ute	Contractor : Terratest
	Driller : CD	Checked : MG
Date Started : 10/10/2019	Date Completed : 10/10/2019	Logged by : LM
		Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1 2 3 4 5	↑ TC-bit auger ↓	Nil	∇ 10/10/19	ES D ES D ES D	0.06	-	-	ASPHALT CARPARK PAVEMENT	-	-	0.2m, PID=5.3ppm 0.5m, PID=7.9ppm 1.0m, PID=4.7ppm 2.0m, PID=5.7ppm
					0.40	-	-	[FILL] Silty Sandy GRAVEL: fine to coarse, angular, dark grey, fine to coarse grained sand.	M	-	
					1.00	-	-	[FILL] Gravelly SAND: fine to medium grained, pale brown, fine, angular gravel, with silt.	M	-	
					1.40	-	-	[FILL] Gravelly CLAY: high plasticity, brown, medium to coarse, angular gravel.	M	-	
					1.60	-	-	[FILL] Silty Gravelly SAND: medium to coarse grained, brown, fine to medium, angular gravel, trace clay.	W	-	
					2.00	-	-	[FILL] Silty Gravelly SAND: medium to coarse grained, brown, fine to medium, angular gravel, trace clay.	W	-	
					2.50	-	-	SC Clayey SAND: fine to coarse grained, brown, low plasticity clay, with fine to coarse, sub-rounded gravel (alluvium).	W	L	
							End of borehole at 2.50 metres. Refusal on bedrock				

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20



Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH03

SHEET 1 OF 1

Position : 328835.36 E 6250540.90 N MGA94/ 56 **Surface RL:** 1.38m AHD **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XC Rig **Mounting:** Track **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 14/10/2019 **Date Completed :** 14/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
	Diatube	Nil			0.05		-	ASPHALT FOOTPATH.	-	-	0.1m, damage to diatube due to steel reinforcement
					0.25		-	REINFORCED CONCRETE.	-	-	
1								End of borehole at 0.25 metres. Hole abandoned at 250mm due to diatube refusal. Very hard concrete with 16mm steel reo-bar			
2											
3											
4											
5											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH04

SHEET 1 OF 1

Position : 328840.73 E 6250534.16 N MGA94/ 56 **Surface RL:** 1.40m **AHD** **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XC Rig **Mounting:** Track **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 11/10/2019 **Date Completed :** 11/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
					0.05			ASPHALT FOOTPATH. REINFORCED CONCRETE.			
					0.45			End of borehole at 0.45 metres. Hole abandoned at 450mm due to diatube refusal. Very hard concrete with 12mm vertical and 16mm steel reo-bar			
1											
2											
3											
4											
5											

GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE_2.00.GDT 28/1/20

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH05

SHEET 1 OF 1

Position : 328847.11 E 6250523.04 N MGA94/ 56 **Surface RL:** 3.09m AHD **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XC Rig **Mounting:** Track **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 14/10/2019 **Date Completed :** 14/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1 2 3 4 5	TC-bit auger	Nil		ES ES SPT 4/4/5 N=9 ES D SPT 5/2/6 N=8 D ES D SPT 2/1/3 N=4 ES D SPT 2/2/3 N=5 D SPT 4/4/11 N=15	0.10		-	ASPHALT FOOTPATH	-	-	0.2m, PID=2.7ppm 0.5m, PID=3.6ppm 1.0m, PID=3.7ppm 1.1 - 1.7m, high drilling resistance, possible stabilised layer. 2.0m, PID=3.1ppm 3.0m, PID=5.1ppm 3.0m, hydrocarbon odour 4.0m, PID=3.0ppm 4.0m, marine odour
					0.50		-	[FILL] Silty SAND: fine to coarse grained, grey/brown, with fine to medium gravel.	-	-	
					1.10		-	[FILL] SAND: fine to medium grained, brown, trace silt, trace fine to medium, angular gravel, trace concrete rubble.	M	-	
					1.70		-	[FILL] Silty SAND: fine to medium grained, brown.	M	-	
					2.20		SC	Sandy CLAY: low plasticity, dark grey, fine to medium grained sand, dark grey, with fine to medium, sub-angular gravel, trace rootlets and wood fibres (alluvium).	w = PL	S-F	
					2.80		SC	Clayey SAND: fine to coarse grained, pale grey, low plasticity clay, with fine to coarse, sub-rounded to subangular gravel (alluvium).	M	L	
					4.00		SC	Clayey SAND: fine to medium grained, dark grey, trace coarse, sub-rounded gravel (residual).	w < LL	MD	
					5.00						

End of borehole at 5.00 metres.
 Target Depth

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH06

SHEET 1 OF 4

Position : 328855.30 E 6250530.33 N MGA94/ 56	Surface RL: 1.57m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Checked : MG
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : LM	Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
0 1 2 3 4 5	TC-bit auger	Nil	16/10/19	0.05		-	ASPHALT FOOTPATH.	-	-	
				0.10		-	[FILL] Sandy GRAVEL: fine to coarse, angular, grey, fine to coarse grained sand, with silt.	M	-	0.2m, PID=4.4ppm
				0.50		-	[FILL] Silty SAND: fine to coarse grained, pale brown, with fine to coarse, sub-angular gravel.	M	-	
				0.50		-	[FILL] Clayey SAND: fine to coarse grained, brown mottled orange, medium plasticity clay, with fine to coarse, angular gravel.	w > PL	-	0.5m, PID=11.8ppm
				1.30		-	[FILL] Sandy GRAVEL: fine to coarse, angular, brown, fine to coarse grained sand, with silt.	M	-	1.0m, PID=6.9ppm 1.0m, water level measured during high tide
2.00		-	SAND: fine to coarse grained, dark grey/black, with silt, with fine to coarse, sub-angular gravel, trace shells (alluvium).	W	VL					
2.60		-	CLAY: medium plasticity, black, with fine to medium grained sand (alluvium).	w > LL	S	2.5m, PID=7.4ppm 2.6m, marine odour				
4.50		-	Sandy CLAY: low plasticity, grey/brown, fine to medium grained sand (alluvium).	w > LL	S	4.4m, PID=1.5ppm				
5.00		-								

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A1-BH06		
Project : The GreenWay Geotechnical and Contamination Services	SHEET 2 OF 4		
Location : The Bay Run, Haberfield, NSW	Position : 328855.30 E 6250530.33 N MGA94/ 56	Surface RL: 1.57m AHD	Angle from Horiz. : 90°
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : CD
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : LM	Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	Washbore	HQ casing			5.80		SC	Sandy CLAY: as previous. 5.6m, trace shell fragments.	w > LL	S	5.0m, casing advanced due to hole collapsing.
					7.97		SC	Clayey SAND: fine to coarse grained, brown (inferred residual)	(w > PL)	(St)	5.8m, material and origin inferred from drilling fluid and resistance.
8								Start of coring at 7.97 metres. For cored interval, see Core Log Sheet.			
9											
10											

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CORE LOG SHEET


GEO_COREHOLE_NO_VISUAL_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A1-BH06		
Project : The GreenWay Geotechnical and Contamination Services	SHEET 3 OF 4		
Location : The Bay Run, Haberfield, NSW	Position : 328855.30 E 6250530.33 N MGA94/ 56	Surface RL: 1.57m AHD	Angle from Horiz. : 90°
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : CD
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : LM	Date Logged : 16/10/2019
			Processed : MAG
			Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					NATURAL FRACTURES			
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa		Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.			
SCALE (m)	Drilling & Casing Water	Drill Depth (m)	(Core Loss / Run %)			SAMPLES & TESTS	Depth / (RL) metres		Graphic Log	Soil	Strength	Additional Data
6												
7												
8					7.97							
9	NMLC coring		(74)		8.50							
					8.77							
		9.00			9.12							
					9.22							
10			(8)									

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Job No.
21-12515105

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH06

SHEET 4 OF 4

Position : 328855.30 E 6250530.33 N MGA94/ 56	Surface RL: 1.57m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : CD
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : LM	Date Logged : 16/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress		Drill Depth (m)	(Core Loss / Run %)	Description	Weathering	Estimated Strength I_s (MPa)	Spacing (mm)	Additional Data			
SCALE (m)	SAMPLES & TESTS									Depth / (RL) metres	Graphic Log
11	NMLC coring	10.50	(3)	SANDSTONE: as previous. 10.7m, orange red, iron staining. 11.0m, orange red, iron oxide bands.	SW	VL 0.03 L 0.1 M 0.3 H 1 VH 3 EH 10	20 40 100 300 1000	10.50m, Pt, 0°, Rf, Pln, Cn 10.54m, Pt, 0°, Rf, Pln, Cn 10.66m, Pt, 0°, Rf, Pln, Cn			
				CORE LOSS 50mm SANDSTONE: fine to coarse grained, pale grey and pale brown, indistinctly bedded at 0-5°.	SW			11.16m, Jt, 5°, Rf, Un, Cn 11.29m, WSm, 40mm 11.52m, WSm, 20mm			
12		12.00		End of Borehole at 12.00 metres. Target Depth							
13											
14											
15											

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GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH07

SHEET 1 OF 4

Position : 328866.95 E 6250528.51 N MGA94/ 56 **Surface RL:** 1.44m AHD **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XC Rig **Mounting:** Track **Contractor :** Terratest **Driller :** FF **Checked :** MG
Date Started : 23/10/2019 **Date Completed :** 23/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
1 2 3 4 5	TC-bit auger	Nil	23/10/19	ES SPT 4 for 150mm HB N=ref ES ES ES ES ES ES SPT 0/0/0 (HWT) N=0 SPT 0/0/0 (HWT) N=0 SPT 0/0/0 (HWT) N=0	0.05	[Cross-hatched pattern]	-	ASPHALT FOOTPATH.	-	-	0.2m, PID=0.8ppm 0.5m, PID=0.7ppm 0.65m, SPT refusal on boulder 1.0m, PID=0.8ppm 1.1m, hard drilling resistance. 1.5m, hard drilling resistance.	
					0.20	[Cross-hatched pattern]	-	[FILL] Silty Sandy GRAVEL: fine to coarse, sub-angular, grey-brown, fine to coarse grained sand. [FILL] Clayey SAND: fine to coarse grained, brown, with fine to coarse, angular gravel, trace sandstone boulders.	M	-		
					2.50	[Diagonal lines pattern]	CH	CLAY: high plasticity, dark grey-black, with fine to medium, angular gravel (alluvium).	w >> LL	VS		2.5m, PID=0.9ppm marine odour
					4.50	[Dotted pattern]	SC	Sandy CLAY: low plasticity, grey/brown, fine to medium grained sand, trace shell fragments (alluvium).	w > LL	VS		
					5.00	[Dotted pattern]						

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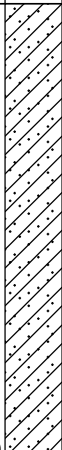
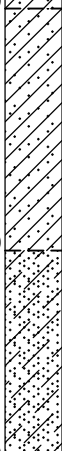


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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A1-BH07	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 4	
Location : The Bay Run, Haberfield, NSW		Position : 328866.95 E 6250528.51 N MGA94/ 56	Surface RL: 1.44m AHD Angle from Horiz. : 90°
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : FF
Date Started : 23/10/2019		Date Completed : 23/10/2019	
		Logged by : LM	Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
6	TC-bit auger	Nil		U50	6.50		SC	Sandy CLAY: as previous. 5.0m, shell fragments observed.	w > LL	VS		
					6.50		SC	Sandy CLAY: medium plasticity, grey, fine to coarse grained sand (residual).	w < PL	St		6.5m, consistency inferred from drilling resistance and tactile assessment.
					7.30		SC	Clayey SAND: fine to coarse grained, pale grey mottled pale brown, low plasticity clay (residual).	M	St		
8				SPT 1/4/4 N=8	8.00			Start of coring at 8 metres. For cored interval, see Core Log Sheet.				
9												
10												

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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017_2112515105-THEGREENWAY.GPJ GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council			HOLE No. A1-BH07		
Project : The GreenWay Geotechnical and Contamination Services			SHEET 3 OF 4		
Location : The Bay Run, Haberfield, NSW			Position : 328866.95 E 6250528.51 N MGA94/ 56	Surface RL: 1.44m AHD	Angle from Horiz. : 90°
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : FF	Processed : MAG	
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Good	Checked : MG	
Date Started : 23/10/2019		Date Completed : 23/10/2019		Logged by : LM	Date Logged : 27/10/2019

DRILLING			MATERIAL						NATURAL FRACTURES											
Progress			Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa			Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.											
SCALE (m)	Drilling & Casing Water	Drill Depth (m)			(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres					Graphic Log	Soil	VL	L	M	H	VH	EH	20	40	100	300	1000
6																				
8						Start of coring at 8 metres. For Non Cored interval, see Borehole Log Sheet.														
						CORE LOSS 200mm.														
			(36)			Clayey SAND: fine to coarse grained, pale brown (residual).	RS													
			8.56			CORE LOSS 690mm.														
9	NMLC		(100)																	
			9.25			Clayey SAND: fine to coarse grained, pale blue-grey (residual).	RS													
10			(0)																	

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The Bay Run, Haberfield, NSW

HOLE No. A1-BH07

SHEET 4 OF 4

Position : 328866.95 E 6250528.51 N MGA94/ 56	Surface RL: 1.44m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Checked : MG
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Good
Date Started : 23/10/2019	Date Completed : 23/10/2019	Logged by : LM	Date Logged : 27/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING			MATERIAL						NATURAL FRACTURES				
Progress	SCALE (m)	Drilling & Casing Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.	
													Soil	0.03	VL	0.1	L	0.3	M	1	H	3	VH	10	EH
			10.06			10.06		Clayey SAND: as previous. CORE LOSS 690mm.					
				(46)		10.75		Clayey SAND: fine to coarse grained, pale blue-grey (residual).	RS				
						11.23		SANDSTONE: medium to coarse grained, orange brown mottled blue-grey, indistinctly bedded.	EW				
			11.56			12.00		SANDSTONE: fine to coarse grained, dark red-brown and purple with orange-brown mottling, indistinctly bedded.	HW				12.22m, WSm, 40mm.
				(0)				12.50-13.00m, with fine gravel sized voids					12.46m, WSm, 70mm.
													12.60m, Pt, 10°, Pln, Rf, Fe.
													12.63m, Pt, 10°, Pln, Rf, Fe.
				(0)					MW				12.85m, Jt, 75-80°, Un, Rf, Fe.
													13.31m, Pt, 10°, Pln, Rf, Fe.
													13.36m, Pt, 10°, Pln, Rf, Fe.
				(0)					SW				
													13.98m, ISm, X, 10mm.
			14.00					14m, pale grey, trace carbonaceous laminations.					14.13m, WSm, 15mm.
				(0)					Fr				
			14.64			14.64		End of Borehole at 14.64 metres. Target Depth					

GEO COREHOLE NO VISUAL AST726 2017 2112515105-THEGREENWAY.GPJ GEO TEMPLATE 2.00 GDT 28/1/20

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A1-HA01		
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1		
Location : The Bay Run, Haberfield, NSW	Position : 328782.42 E 6250614.56 N MGA94/ 56	Surface RL: 1.99m AHD	Angle from Horiz. : 90°
Rig Type : Hand auger	Mounting: NA	Contractor : NA	Driller : NA
Date Started : 11/10/2019	Date Completed : 11/10/2019	Logged by : LM	Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					Comments/ Observations
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
↑ Hand Auger ↓	Nil	Groundwater Not Encountered		0.25		-	[TOPSOIL] Silty SAND: fine to medium grained, light brown, trace sub-angular gravel, trace rootlets.	M	-
				0.80		-	[FILL] Silty SAND: fine to medium grained, brown, with fine to coarse, sub-angular gravel.	M	-
				0.90		-	[FILL] CLAY: medium to high plasticity, pale brown, with fine grained sand.	M	-
1							End of borehole at 0.90 metres. Refusal		
2									
3									

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD01

SHEET 1 OF 1

Position : 328833.04 E 6250325.29 N MGA94/ 56 **Surface RL:** 1.48m **AHD** **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 8/10/2019 **Date Completed :** 8/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
0 ↑ TC-bit auger 1 2 3	Nil 8/10/2019			ES B ES ES B D ES	0.10		-	[TOPSOIL] SAND: medium grained, light brown, trace gravel, with rootlets.	M	-	0.2m, PID=3.8ppm 0.5m, PID=4.1ppm 1.0m, PID=5.2ppm 2.0m, PID=4.1ppm
					-		[FILL] SAND: medium grained, light brown, with angular gravel.	M	-		
					0.80		-	[FILL] Silty SAND: fine to coarse grained, brown, dark brown, trace fine to medium, sub-angular to angular gravel.	M	-	
					1.10		-	[FILL] Sandy CLAY: low plasticity, dark grey and dark brown, fine to coarse grained sand, trace fine to medium, sub-angular gravel.	M	-	
					1.50		SC	Sandy CLAY: low plasticity, dark grey, fine to coarse grained sand, trace shells (alluvium).	w > PL	F	
					2.00			End of borehole at 2.00 metres. Target Depth			

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD02

SHEET 1 OF 1

Position : 328829.30 E 6250260.83 N MGA94/ 56 **Surface RL:** 1.40m AHD **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 8/10/2019 **Date Completed :** 8/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	TC-bit auger	Nil	8/10/19	ES	0.20	[TOPSOIL]	-	[TOPSOIL] Silty SAND: fine to coarse grained, dark brown, low plasticity silt, with/ trace fine to medium, sub-angular gravel, rootlets present.	M	-	0.2m, PID=3.3ppm
				ES/QA1/QA2	0.30	[FILL]	-	[FILL] Clayey SAND: fine to coarse grained, dark grey, medium plasticity clay, with medium sub-angular gravel.	M	-	0.5m, PID=6.0ppm
				B		[FILL]	-	[FILL] Sandy CLAY: medium plasticity, dark grey, fine to medium grained sand, with coarse, sub-angular gravel, trace brick.	M	-	
				ES	1.10					0.9m, trace organics.	W		1.0m, PID=6.2ppm
2				D			Cl	CLAY: medium plasticity, black with grey lenses, trace fine grained sand, trace shells (alluvium)	w > PL	F	1.1m, possible reworked alluvium
				ES	2.00					End of borehole at 2.00 metres. Target Depth	
3											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD03

SHEET 1 OF 1

Position : 328757.75 E 6250089.97 N MGA94/ 56		Surface RL: 1.30m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XP60	Mounting: Ute	Contractor : Terratest	Driller : CD	Checked : MG
Date Started : 8/10/2019		Date Completed : 8/10/2019		Logged by : LM

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index	
<div style="display: flex; justify-content: center; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100%; margin-right: 10px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TC-bit auger</div> </div>	Nil	Groundwater Not Encountered	ES	ES	0.20	-	-	[TOPSOIL] Silty SAND: medium grained, brown, trace rootlets.	M	-	0.2m, PID=2.2ppm 0.5m, PID=3.3ppm 1.0m, PID=2.2ppm 1.8m, pale grey. 2.0m, PID=3.0ppm	
				ES	0.40	-	-	[FILL] Silty SAND: medium grained, brown, with medium to coarse, angular gravel.	M	-		
				ES	0.40	-	-	[FILL] Silty SAND: medium grained, black, with clay, trace medium to coarse, angular gravel.	M	-		
				B								
				ES	1.10	-	-	[FILL] Clayey SAND: medium to coarse grained, dark grey, with sub-angular, medium to coarse sandstone gravel.	M	-		
2			ES	2.00				End of borehole at 2.00 metres. Target Depth				

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BOREHOLE LOG SHEET

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Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD04

SHEET 1 OF 1

Position : 328697.96 E 6249983.50 N MGA94/ 56 **Surface RL:** 1.43m **AHD** **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 8/10/2019 **Date Completed :** 8/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
0	TC-bit auger	Nil		ES	0.30		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace rounded gravel, trace rootlets.	M	-	0.2m, PID=1.8ppm
0.5						-	[FILL] Clayey SAND: fine to medium grained, brown with orange-red mottles, medium plasticity clay, with fine to coarse, sub-angular gravel.	M	-	0.5m, PID=2.2ppm	
1.0						-	[FILL] Sandy Gravelly CLAY: medium to high plasticity, fine to medium grained sand, sub-rounded gravel, trace shells.	w = PL	-	1.0m, PID=2.5ppm	
1.5						Cl	CLAY: medium plasticity, black with grey lenses, trace fine grained sand, trace shells (alluvium)	w > PL	F	1.5m, possible reworked alluvium	
2.0						D				2.0m, PID=1.8ppm	
2.0				ES	2.00			End of borehole at 2.00 metres. Target Depth			
3.0											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD05

SHEET 1 OF 1

Position : 328632.51 E 6249919.40 N MGA94/ 56 **Surface RL:** 1.55m AHD **Angle from Horiz. :** 90° **Processed :** MAG
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 8/10/2019 **Date Completed :** 8/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index	
1 2	TC-bit auger	Nil		ES ES ES B ES B ES	0.20	[Pattern: Dotted]	-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace rootlets.	M	-	0.2m, PID=1.5ppm 0.5m, PID=1.6ppm 1.0m, PID=1.8ppm 2.0m, PID=0.8ppm	
					0.50	[Pattern: Diagonal lines /]	-	[FILL] Clayey SAND: fine to medium grained, brown, medium plasticity clay, with fine gravel, trace shells.	M	-		
					0.70	[Pattern: Diagonal lines \]	-	[FILL] Silty CLAY: medium plasticity, dark grey, with fine to medium grained sand, trace fine gravel.	w = PL	-		
					1.10	[Pattern: Diagonal lines /]	-	[FILL] Silty SAND: fine to coarse grained, grey, trace fine to medium, angular gravel, trace shells.	M	-		
					1.50	[Pattern: Diagonal lines \]	Cl	CLAY: medium plasticity, black with grey lenses, with fine grained sand, trace shells (alluvium)	w > PL	St		
2				ES	2.00						End of borehole at 2.00 metres. Target Depth	
3												

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council				HOLE No. A1-LD06			
Project : The GreenWay Geotechnical and Contamination Services				SHEET 1 OF 1			
Location : Richard Murden Reserve, Haberfield, NSW				Position : 328613.72 E 6249806.37 N MGA94/ 56	Surface RL: 1.73m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XP60		Mounting: Ute		Contractor : Terratest		Driller : CD	Checked : MG
Date Started : 8/10/2019			Date Completed : 8/10/2019		Logged by : LM		Date: 16/01/2020

DRILLING				MATERIAL						Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
0		Nil	∇		0.20	[TOPSOIL]	-	Silty SAND: fine to medium grained, brown, with rootlets.	M	-	
0.2				ES	0.60	[FILL]	-	Silty Gravelly SAND: fine to medium grained, brown, angular, fine to coarse gravel with clay.	M	-	0.2m, PID=2.0ppm 0.2m, possible ACM.
0.4				ES	1.10	[FILL]	-	Sandy CLAY: medium plasticity, black, fine to coarse grained sand, with fine to coarse gravel.	w = PL	-	0.5m, PID=2.2ppm
0.6				B							
0.8				ES	1.10	Cl	-	CLAY: medium plasticity, black with grey lenses, trace fine grained sand, trace shells (alluvium)	w > PL	F	1.0m, PID=2.5ppm 1.1m, possible reworked alluvium
1.0				B						St	
1.2				ES							
1.4				B							
1.6				ES	2.00			End of borehole at 2.00 metres. Target Depth			2.0m, PID=1.7ppm
1.8											
2.0				ES							
2.2											
2.4											
2.6											
2.8											
3.0											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD07

SHEET 1 OF 1

Position : 328582.19 E 6249715.10 N MGA94/ 56 Surface RL: 1.75m AHD Angle from Horiz. : 90°
Rig Type : XP60 Mounting: Ute Contractor : Terratest Driller : CD
Date Started : 9/10/2019 Date Completed : 9/10/2019 Logged by : LM
Processed : MAG
Checked : MG
Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES B ES B	0.20		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace rootlets.	M	-	0.2m, PID=1.5ppm
					0.50		-	[FILL] Silty SAND: fine to coarse grained, light brown yellow, with fine to medium, angular gravel.	M	-	0.5m, PID=1.3ppm
					1.00		-	[FILL] CLAY: medium plasticity, black, with fine to medium grained sand, trace fine to coarse, angular gravel, trace cobbles.	w = PL	-	1.0m, PID=2.1ppm
					1.80		-	[FILL] Silty Gravelly SAND: fine to coarse grained, black, fine to coarse, angular gravel.	M	-	2.0m, PID=5.6ppm
					2.00		-	[FILL] Silty Gravelly SAND: fine to coarse grained, black, fine to coarse, angular gravel.	M	-	2.0m, PID=5.6ppm
2				ES	2.00		-	End of borehole at 2.00 metres. Target Depth			

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD08

SHEET 1 OF 1

Position : 328549.70 E 6249650.72 N MGA94/ 56	Surface RL: 1.66m AHD	Angle from Horiz. : 90°	Processed : MAG
Rig Type : XP60	Mounting: Ute	Contractor : Terratest	Checked : MG
Date Started : 9/10/2019	Date Completed : 9/10/2019	Logged by : LM	Date: 16/01/2020

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DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.20		-	[TOPSOIL] Silty SAND: fine to medium grained, dark brown, trace rootlets.	M	-	0.2m, PID=3.4ppm
					0.50		-	[FILL] Silty Gravelly SAND: fine to coarse grained, dark brown, angular, fine to coarse gravel, trace glass fragments.	M	-	
					1.00		-	[FILL] Clayey Gravelly SAND: fine to coarse grained, dark brown, medium plasticity clay, angular, fine to coarse gravel, with cobbles, trace glass fragments.	M	-	1.0m, PID=3.4ppm
					1.20		-	[FILL] Sandy CLAY: medium plasticity, black, fine to coarse grained sand, with fine to medium, angular gravel.	w = PL	-	1.5m, organic odour
2				ES/QA3	2.00			End of borehole at 2.00 metres. Target Depth			2.0m, PID=1.4ppm
3											

GEO_BOREHOLE_A51726 2017 2112515105-THEGREENWAY.GPJ GHD_TEMPLATE 2.00 GDT 28/1/20

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A1-LD09			
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1			
Location : Richard Murden Reserve, Haberfield, NSW	Position : 328498.31 E 6249539.31 N MGA94/ 56	Surface RL: 1.83m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : XP60	Mounting: Ute	Contractor : Terratest	Driller : CD	Checked : MG
Date Started : 9/10/2019	Date Completed : 9/10/2019		Logged by : LM	Date: 16/01/2020

DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
↑ TC-bit auger ↓		Nil	Groundwater Not Encountered	ES	0.10		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace rootlets.	M	-	0.2m, PID=1.7ppm 0.5m, PID=2.3ppm 1.0m, PID=2.1ppm 2.0m, PID=3.5ppm
				ES	0.50		-	[FILL] Sandy CLAY: brown, medium plasticity, fine to coarse grained, with fine to coarse, angular gravel, with brick, tile and glass.	M	-	
				ES	1.40		-	[FILL] Silty SAND: fine to coarse grained, black, with angular gravel, trace metal fragments.	M	-	
				ES	1.70		-	[FILL] Silty Gravelly SAND: fine to coarse grained, black, fine to medium, angular gravel, with clay.	M	-	
				ES	2.00			End of borehole at 2.00 metres. Target Depth			

See standard sheets for details of abbreviations & basis of descriptions

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Job No.
21-12515105

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD10

SHEET 1 OF 1

Position : 328404.64 E 6249367.76 N MGA94/ 56 **Surface RL:** 1.82m AHD **Angle from Horiz. :** 90°
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD
Date Started : 9/10/2019 **Date Completed :** 9/10/2019 **Logged by :** LM
Processed : AJET
Checked : MG
Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
1	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.20	[Pattern: Triangles]	-	[TOPSOIL] Silty SAND: fine to medium grained, brown, with rootlets.	M	-	0.2m, PID=2.4ppm	
					0.50	[Pattern: X's]	-	[FILL] Silty SAND: fine to coarse grained, brown/yellow, with fine to coarse, angular gravel.	M	-		
					1.10	[Pattern: Dashed]	-	[FILL] Silty Gravelly SAND: fine to coarse grained, light brown, fine to coarse, angular gravel.	M	-	0.5m, PID=4.3ppm	
					1.50	[Pattern: Diagonal Lines]	CI	CLAY: medium plasticity, brown with grey lenses, with fine to medium grained sand (alluvium)	w = PL	St	1.0m, PID=2.8ppm	
					2.00	[Pattern: Diagonal Lines]	ES					
2											2.0m, PID=2.3ppm	
								End of borehole at 2.00 metres. Target Depth				
3												
4												
5												

See standard sheets for details of abbreviations & basis of descriptions



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GEO_BOREHOLE_AST726 2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Richard Murden Reserve, Haberfield, NSW

HOLE No. A1-LD11

SHEET 1 OF 1

Position : 328400.15 E 6249225.91 N MGA94/ 56 **Surface RL:** 2.20m AHD **Angle from Horiz. :** 90° **Processed :** AJET
Rig Type : XP60 **Mounting:** Ute **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 9/10/2019 **Date Completed :** 9/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil		ES	0.30	[Pattern]	-	[TOPSOIL] Silty SAND: fine grained, brown, with rootlets.	M	-	0.2m, PID=1.3ppm
					0.50	[Pattern]	-	[FILL] Silty SAND: fine to coarse grained with fine to coarse, angular gravel, with sandstone cobbles.	M	-	0.5m, PID=2.5ppm
						[Pattern]	-	[FILL] Silty Gravelly SAND: fine to coarse grained, brown, fine to coarse, angular gravel.	M	-	
					1.00	[Pattern]	-	[FILL] Silty Clayey SAND: fine grained, brown, medium plasticity clay, trace fine, angular gravel.	M	-	1.0m, PID=1.7ppm
						[Pattern]	-				
2				ES	1.70	[Pattern]	SC	Clayey SAND: medium to coarse grained, black, medium plasticity clay (alluvium).	W	MD	
					2.00	[Pattern]					
								End of borehole at 2.00 metres. Target Depth			
3											
4											
5											

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GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Lewisham, NSW

HOLE No. A2-BH02

SHEET 1 OF 3

Position : 328380.23 E 6248168.58 N MGA94/ 56	Surface RL: 9.24m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Checked : MG
Date Started : 18/10/2019	Date Completed : 18/10/2019	Logged by : LM	Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index	
1 2 3 4 5	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.20	▲▲▲▲	-	[TOPSOIL] Sandy GRAVEL: fine to coarse, angular, brown, fine to medium grained sand, with silt.	M	-	0.2m, PID=4.8ppm	
				ES	0.50	X X X X	-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, angular gravel.	M	-	0.5m, PID=5.6ppm	
				SPT 3/2/3 N=5 ES	0.80	X X X X	-	[FILL] Sandy CLAY: medium plasticity, brown, fine to coarse grained sand, with fine to medium, angular gravel.	w < PL	-	1.0m, PID=5.2ppm	
				ES	1.10	X X X X	SC	Clayey SAND: medium to coarse grained, orange brown, medium plasticity clay (residual).	w < PL	L		
				SPT 3/4/5 N=9 ES	1.90	X X X X	CH	CLAY: high plasticity, pale red, trace fine to coarse grained sand, trace fine to medium, rounded ironstone gravel (residual).	w = PL	St	2.0m, PID=5.9ppm	
				ES	2.50	X X X X	SC	Sandy CLAY: medium plasticity, red mottled pale grey and pale brown, trace fine, sub-rounded ironstone gravel (residual).	w = PL	St		
				SPT 3/4/5 N=9								
				SPT 2/5/8 N=13								
				ES	4.50	X X X X	-	SANDSTONE: fine grained, red-brown, highly weathered (bedrock)	-	-	4.5m, PID=12.3ppm	
				SPT 12 for 150mm HB N=ref	4.70	X X X X	-	Start of coring at 4.7 metres. For cored interval, see Core Log Sheet.	-	-		

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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A2-BH02	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : IWLR Corridor, Lewisham, NSW			
Position : 328380.23 E 6248168.58 N MGA94/ 56	Surface RL: 9.24m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : CD
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair
Date Started : 18/10/2019	Date Completed : 18/10/2019	Logged by : LM	Date Logged : 18/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					NATURAL FRACTURES														
Progress					Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.															
SCALE (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)					SAMPLES & TESTS	Depth / (RL) metres	Graphic Log													
1																								
2																								
3																								
4																								
5						4.70																		
						5.00	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"><div style="border: 1px solid black; width: 10px; height: 10px;"></div></div>																	

Start of coring at 4.7 metres.
For Non Cored interval, see Borehole Log Sheet.
CORE LOSS 300mm.

CORE LOG SHEET

HOLE No. A2-BH02

SHEET 3 OF 3

Client :	Inner West Council		
Project :	The GreenWay Geotechnical and Contamination Services		
Location :	IWLR Corridor, Lewisham, NSW		
Position :	328380.23 E 6248168.58 N MGA94/ 56	Surface RL: 9.24m AHD	Angle from Horiz. : 90°
Rig Type :	XC Rig	Mounting: Track	Contractor : Terratest
Casing Dia. :	HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)
Date Started :	18/10/2019	Date Completed : 18/10/2019	Logged by : LM
			Date Logged : 18/10/2019
			Processed : AJET
			Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress				Description	Estimated Strength Is ₍₅₀₎ MPa	Spacing (mm)	Additional Data				
SCALE (m)	Drilling & Casing	Water	SAMPLES & TESTS								
Drill Depth (m)	(Core Loss / Run %)	Depth / (RL) metres	Graphic Log	Soil	Weathering						
		5.45	.....	SANDSTONE: fine grained, red-yellow, indistinctly bedded at 0-10°.	VL	20		5.05m, WSm, CLAY, 40mm		
			SANDSTONE: fine grained, red-brown, bleached pale grey at defects, indistinctly bedded at 10-15°, trace carbonaceous laminations.	L	40		5.53m, WSm, CLAY and rock fragments, 50mm			
				M	100		5.97m, WSm, CLAY and rock fragments, 50mm			
				H	300		6.64m, WSm, CLAY, 50mm			
				VH	1000					
		7.03	.....	CORE LOSS 40mm.	EH					
		7.07	.....	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0-15°, trace fine grained and carbonaceous laminations.	SW			7.19m, WSm, CLAY, 10mm		
				SW			7.79m, WSm, CLAY, 15mm			
		8.10	.....	CORE LOSS 30mm.						
		8.13	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0-10°.							
		8.60	End of Borehole at 8.60 metres. Target Depth							

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21-12515105

GEO COREHOLE NO VISUAL AST726 2017 2112515105-THEGREENWAY.GPJ GEO TEMPLATE 2.00 GDT 28/1/20

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A2-BH03	
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1	
Location : Weston Street, Dulwich Hill, NSW	Position : 328173.66 E 6247796.87 N MGA94/ 56	Surface RL: 17.28m AHD Angle from Horiz. : 90°
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore Driller : DM
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : JS Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
1	TC-bit auger	Nil	Groundwater Not Encountered	ES D ES	0.10 0.70 1.20 1.50		- - CI - -	ASPHALT PAVEMENT. [FILL] Gravelly SAND: fine to coarse grained, fine to coarse, sub-angular to angular gravel. CLAY: medium plasticity, orange-brown, with fine to coarse grained sand (residual). SANDSTONE: brown and orange brown, inferred medium strength, moderately to highly weathered (bedrock).	- D w < PL - -	- - VSt H	0.5m, PID=3.7ppm 1.0m, PID=3.8ppm	
								End of borehole at 1.50 metres. Refusal				

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-BH04	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : Weston Street, Dulwich Hill, NSW		Position : 328174.74 E 6247742.24 N MGA94/ 56	Surface RL: 15.82m AHD Angle from Horiz. : 90°
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Date Started : 16/10/2019		Date Completed : 16/10/2019	
		Logged by : JS	Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1 2 3 4 5	↑ TC-bit auger ↓ Nil	Groundwater Not Encountered	ES D ES ES	0.08		-	ASPHALT PAVEMENT.	-	-	0.2m, PID=4.6ppm 0.5m, PID=9.1ppm 0.5m, Hydrocarbon odour 1.0m, PID=11.5ppm
				0.30		-	[FILL] Gravelly SAND: fine to coarse grained, dark grey, brown, pale brown, fine to coarse, sub-angular to angular gravel, trace clay.	M	-	
				0.80		-	[FILL] Clayey SAND: fine to coarse grained, dark grey, low plasticity clay.	M	-	
				1.05		-	SANDSTONE: pale grey and pale brown, inferred medium strength, highly to moderately weathered (bedrock).	-	-	
End of borehole at 1.05 metres. Refusal										

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The GreenWay Footpath, Summer Hill, NSW

HOLE No. A2D-BH04


SHEET 1 OF 3

Position : 328450.98 E 6248456.48 N MGA94/ 56	Surface RL: 3.57m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Date Started : 15/10/2019	Date Completed : 15/10/2019	Logged by : JS	Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index	
	TC-bit auger	Nil	Groundwater Not Encountered		0.07	████████	-	ASPHALT FOOTPATH.	-	-		
				ES	-	-	0.50	████████	-	[FILL] Clayey SAND: fine to coarse grained, dark brown, trace fine to coarse, sub-angular to angular gravel.	M	-
1				ES	-	-	SPT 5/8/5 N=13 ES/QA1	████████	-	[FILL] Gravelly Sandy CLAY: low plasticity, brown and dark brown, medium to coarse grained sand, fine to coarse, sub-angular sandstone gravel.	w = PL	-
2				SPT 3/3/5 N=8	-	-	1.50	████████	CH	CLAY: high plasticity, pale grey mottled pale brown, brown and red brown, with fine to coarse grained sand (residual).	w > PL	F
3				SPT 6/9/6 N=15	-	-	2.50	████████	SC	Sandy CLAY: medium plasticity, pale grey mottled pale brown and red brown, fine to coarse grained sand, trace fine to medium, sub-rounded ironstone gravel (residual).	w = PL	St
					3.30	████████	-	SANDSTONE: medium to coarse grained, pale grey and brown, highly weathered, very low strength (bedrock).	-	-		
4					3.88	████████	-	Start of coring at 3.88 metres. For cored interval, see Core Log Sheet.				
5												

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CORE LOG SHEET

GEO. COREHOLE - NO VISUAL - AST726 2017 2112515105-THEGREENWAY.GPJ GEO. TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-BH04		
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3		
Location : The GreenWay Footpath, Summer Hill, NSW		Position : 328450.98 E 6248456.48 N MGA94/ 56	Surface RL: 3.57m AHD	Angle from Horiz. : 90°
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM	Processed : AJET
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New	Checked : MG
Date Started : 15/10/2019	Date Completed : 15/10/2019	Logged by : JS	Date Logged : 15/10/2019	<small>Note: * indicates signatures on original issue of log or last revision of log.</small>

DRILLING						MATERIAL						NATURAL FRACTURES					
Progress		SCALE (m)	Drilling & Casing Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.				
Drilling & Casing	Water																
							3.88										
								Start of coring at 3.88 metres. For Non Cored interval, see Borehole Log Sheet.									
	NMMLC coring				(0)			SANDSTONE: medium to coarse grained, brown to pale brown, indistinctly bedded at 0-5°.	HW				3.95m, WSm, 20mm 4.04m, Pt, 0°, Rf, Pln, Cn 4.12m, Pt, 5°, Rf, Pln, Cn 4.20m, WSm, 10mm 4.34m, WSm, 70mm 4.50m, Pt, 0°, RF, Pln, rock fragments 4.61m, Pt, 0°, RF, Pln, rock fragments				
								4.61m, fine to coarse grained.	SW								
								4.95m, pale grey, distinct fine grained laminations at 20°.									

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CORE LOG SHEET

GEO_COREHOLE_NO_VISUAL_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-BH04	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : The GreenWay Footpath, Summer Hill, NSW		Position : 328450.98 E 6248456.48 N MGA94/ 56	Surface RL: 3.57m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 1.5m	Bit : Diamond (stepfaced)
Date Started : 15/10/2019		Date Completed : 15/10/2019	Logged by : JS
		Angle from Horiz. : 90°	Processed : AJET
		Driller : DM	Checked : MG
		Bit Condition : New	Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL					NATURAL FRACTURES				
Progress	SCALE (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Weathering	Estimated Strength Is(50) MPa <small>● Axial ○ Diametral</small>	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>
NMMLC coring				5.46	(0)				SANDSTONE: as previous.	Fr		20 40 100 300 1000	5.08m, Pt, 5°, Rf, Pln, Cn
	6												
	7			7.09			7.09		End of Borehole at 7.09 metres. Target Depth				6.83m, Pt, 0°, Rf, Pln, Cn
	8												
	9												
	10												

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The GreenWay Footpath, Summer Hill, NSW

HOLE No. A2D-BH05

SHEET 1 OF 3

Position : 328443.59 E 6248434.57 N MGA94/ 56	Surface RL: 3.69m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 15/10/2019		Date Completed : 15/10/2019	
		Logged by : JS	Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
								[COBBLES/BOULDERS/FILL/TOPSOIL] then SOIL NAME: plasticity / primary particle characteristics, colour, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric / texture, inclusions or minor components, durability, strength, weathering / alteration, defects			
1	TC-bit auger	Nil	Groundwater Not Encountered	ES ES SPT 6/14/22 N=36 ES	0.07		-	ASPHALT FOOTPATH. [FILL] Gravelly SAND: fine to coarse grained, dark grey, fine to medium, sub-angular gravel.	M	-	0.2m, PID=2.9ppm
								0.5m, PID=3.6ppm			
								0.8m, sandstone boulder.			1.0m, PID=2.9ppm
					1.30	CH	CLAY: high plasticity, pale brown mottled brown, pale grey and red brown, with fine to coarse grained sand (residual).	w > PL	F	1.5m, PP=100kPa	
					2.10	GC	Gravelly CLAY: low to medium plasticity, red-brown, fine to coarse, sub-rounded ironstone gravel (residual).	w = PL	St	2.0m, PID=5.5ppm	
3				SPT 6/2 for 140mm HB N=ref	2.70		-	SANDSTONE: fine to coarse grained, pale grey and brown, highly weathered, very low strength (bedrock).			
				2.93					Start of coring at 2.93 metres. For cored interval, see Core Log Sheet.		

GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

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Job No.
21-12515105

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The GreenWay Footpath, Summer Hill, NSW

HOLE No. A2D-BH05

SHEET 2 OF 3

Position : 328443.59 E 6248434.57 N MGA94/ 56	Surface RL: 3.69m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 15/10/2019	Date Completed : 15/10/2019	Logged by : JS	Date Logged : 15/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					NATURAL FRACTURES			
Progress				Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Weathering	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>				
SCALE (m)	Drilling & Casing	Water	Drill Depth (m)									
1												
2												
3				2.93	Start of coring at 2.93 metres. For Non Cored interval, see Borehole Log Sheet.							
3					CORE LOSS 650mm.							
4	NMMLC coring		4.23	3.58	SANDSTONE: fine to coarse grained, pale grey stained orange-brown, indistinctly bedded at 0-5°. 4.1m, trace carbonaceous laminations.	MW			4.03m, Pt, 5°, Rf, Pln, Cn 4.08m, Pt, 0°, Rf, Pln, Cn			
4									4.29m, Pt, 0°, Rf, Pln, X 4.30m, Pt, 0°, Rf, Pln, Sn			
4						SW			4.48m, Pt, 0°, Rf, Pln, Sn			
5			(0)						4.86m, Pt, 5°, Rf, Pln, Cn			

GEO COREHOLE_NO VISUAL_AST726_2017_2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

See standard sheets for details of abbreviations & basis of descriptions



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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017_2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-BH05	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : The GreenWay Footpath, Summer Hill, NSW			
Position : 328443.59 E 6248434.57 N MGA94/ 56	Surface RL: 3.69m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 15/10/2019	Date Completed : 15/10/2019	Logged by : JS	Date Logged : 15/10/2019

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DRILLING				MATERIAL				NATURAL FRACTURES										
Progress				Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Weathering	Estimated Strength Is(50) MPa <small>● Axial ○ Diametral</small>	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>	Scale (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log		
Scale (m)	Drilling & Casing	Water	Drill Depth (m)														(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
NIMLC coring				SANDSTONE: as previous.	SW													
			5.62	5.8m, trace carbonaceous flecks													5.40m, Pt, 5°, Rf, Pln, Cn	
																		5.71m, Pt, 2°, Rf, Pln, X
																		6.00m, Pt, 0°, Rf, Pln, X
			6.97															6.70m, Pt, 5°, Rf, Pln, Cn
				End of Borehole at 6.97 metres. Target Depth														

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
BOREHOLE LOG SHEET

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Gadigal Reserve, Summer Hill, NSW

HOLE No. A2D-BH06
SHEET 1 OF 3
Position : 328426.96 E 6248282.39 N MGA94/ 56 **Surface RL:** 3.91m **AHD** **Angle from Horiz. :** 90° **Processed :** AJET
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 14/10/2019 **Date Completed :** 14/10/2019 **Logged by :** VW **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL				Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index		
0.00	TC-bit auger	Nil		ES	0.30		-	[FILL] SAND: fine to medium grained, dark grey and grey, with medium, sub-angular to sub-rounded gravel.	M	-	0.2m, PID=3.1ppm		
0.50				ES	0.70		-	[FILL] Sandy CLAY/ Clayey SAND: fine to medium grained, brown and red, grey, low to medium plasticity clay, with fine, angular to subangular gravel, trace rootlets.	M	-	w > PL	0.5m, PID=4.5ppm	
1.00				SPT 5/4/5 N=9			-	[FILL] Sandy CLAY: medium plasticity, dark grey and brown, fine to medium grained sand.	w > PL	-			1.0m, PID=4.0ppm
1.50				ES									
2.00	Groundwater Not Encountered			SPT 6/3/2 N=5	2.50		-						
2.50				ES	2.65		-	SAND: medium to coarse grained, pale grey (residual).	M	VD			2.0m, PID=6.0ppm
3.00				SPT 15 for 140mm HB N=ref	2.65			Start of coring at 2.65 metres. For cored interval, see Core Log Sheet.					
4.00													
5.00													

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GEO COREHOLE - NO VISUAL - AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00.GDT 28/1/20

CORE LOG SHEET


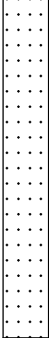
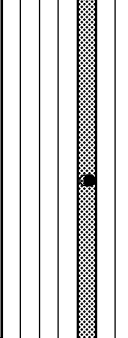
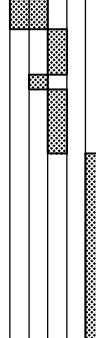
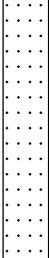
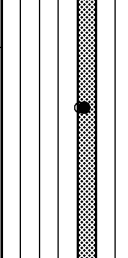
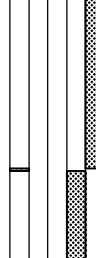
Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Gadigal Reserve, Summer Hill, NSW

HOLE No. A2D-BH06

SHEET 2 OF 3

Position : 328426.96 E 6248282.39 N MGA94/ 56	Surface RL: 3.91m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair
Date Started : 14/10/2019	Date Completed : 14/10/2019	Logged by : VW	Date Logged : 14/10/2019

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DRILLING					MATERIAL					NATURAL FRACTURES				
Progress		Drilling & Casing	Water	Drill Depth (m)	Core Loss / Run (%)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Weathering	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>	
SCALE (m)														
1														
							2.65		Start of coring at 2.65 metres. For Non Cored interval, see Borehole Log Sheet.					
							2.95		CORE LOSS 300mm.					
3					(18)				SANDSTONE: fine grained, pale orange-brown, massive.	MW			2.98m, Pt, 0-5°, Rf, Un, Sand 3.02m, FZ, 0-5°, Rf, Pln, Gravel 3.05m, Pt, 5°, Rf, Pln, Fe 3.20m, Pt, 5°, Rf, Pln, Cn 3.25m, Jt, 25°, Rf, Pln, Cn 3.46m, Pt, 5°, So, Pln, Fe	
4	NMLC coring			4.26			4.07		3.90m, indistinctly thinly bedded. SANDSTONE: fine to medium grained, pale grey, distincutly bedded at 0-15°, with fine grained and carbonaceous laminations.	SW Fr			4.66m, Pt, 0°, Rf, Pln, Cn 4.67m, Pt, 0°, Rf, Pln, Cn	
5														

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Job No.

21-12515105

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017_2112515105-THEGREENWAY.GPJ GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-BH06		
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3		
Location : Gadigal Reserve, Summer Hill, NSW		Position : 328426.96 E 6248282.39 N MGA94/ 56	Surface RL: 3.91m AHD	Angle from Horiz. : 90°
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM	Processed : AJET
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair	Checked : MG
Date Started : 14/10/2019		Date Completed : 14/10/2019		Date Logged : 14/10/2019
		Logged by : VW		Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				NATURAL FRACTURES				
Progress		Drilling & Casing Water	Drill Depth (m)	Core Loss / Run (%)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)	Drilling & Casing											
6	NMLC coring		5.83	(0)				SANDSTONE: as previous.	Fr			5.08m, Pt, 5°, So, Pln, Cn 5.17m, Pt, 5°, So, Pln, Cn
7			7.24	(0)		7.24		End of Borehole at 7.24 metres. Target Depth				6.49m, Pt, 0°, So, Pln, CLAY Ve 6.61m, Pt, 5°, Rf, Pln, CLAY Ve 6.64m, WSm, 20mm 7.12m, Pt, 0°, RF, Pln, CLAY
8												
9												
10												

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : The GreenWay Footpath, Summer Hill, NSW

HOLE No. A2D-BH07

SHEET 1 OF 3

Position : 328415.14 E 6248285.31 N MGA94/ 56	Surface RL: 4.57m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 14/10/2019	Date Completed : 14/10/2019	Logged by : VW	Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
0.0	TC-bit auger	Nil	Groundwater Not Encountered	ES SPT 3/4/3 N=7 ES SPT 4/ 6 for 80mm HB N=ref ES/DUP1 SPT 3/3/3 N=6 ES SPT 5 for 100mm HB N=ref	0.40	[Solid black fill]	-	ASPHALT FOOTPATH		-	-
0.5					ES	[Cross-hatch pattern]	-	[FILL] Sandy CLAY: low plasticity, dark brown, fine to medium grained sand, with fine to medium, sub-angular to angular gravel.	SM	F	0.5m, PID=3.4ppm
1.0					SPT 3/4/3 N=7 ES	[Cross-hatch pattern]	-	[FILL] Sandy CLAY: low plasticity, dark brown, fine to medium grained sand, with fine to medium, sub-angular to angular gravel.			1.0m, PID=3.7ppm
1.5						[Cross-hatch pattern]	-	[FILL] Sandy CLAY: low plasticity, dark brown, fine to medium grained sand, with fine to medium, sub-angular to angular gravel.			2.0m, PID=3.5ppm 2.1m, PID=5.8ppm
2.0					SPT 4/ 6 for 80mm HB N=ref ES/DUP1	[Cross-hatch pattern]	-	[FILL] Sandy CLAY: low plasticity, dark brown, fine to medium grained sand, with fine to medium, sub-angular to angular gravel.			
2.5						[Diagonal hatch pattern]	-	Sandy CLAY: low plasticity, pale brown mottled orange, fine grained sand (residual).	w > PL	F	
3.0					SPT 3/3/3 N=6 ES	[Diagonal hatch pattern]	-	Sandy CLAY: low plasticity, pale brown mottled orange, fine grained sand (residual).			
3.10		[Diagonal hatch pattern]	-	CLAY: medium plasticity, red (residual).	w > PL	F	3.0m, PID=3.2ppm				
3.20	SPT	[Dotted pattern]	-	SAND: fine to medium grained, pale brown (residual).	M	VD					
				5 for 100mm HB N=ref	3.20			Start of coring at 3.2 metres. For cored interval, see Core Log Sheet.			
4.0											
5.0											

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GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00_GDT 28/1/20

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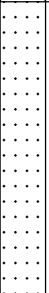
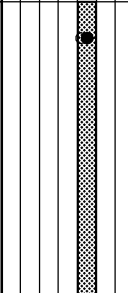

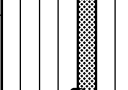
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CORE LOG SHEET

GEO_COREHOLE_NO_VISUAL_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

Client : Inner West Council	HOLE No. A2D-BH07			
Project : The GreenWay Geotechnical and Contamination Services				SHEET 2 OF 3
Location : The GreenWay Footpath, Summer Hill, NSW				
Position : 328415.14 E 6248285.31 N MGA94/ 56	Surface RL: 4.57m AHD	Angle from Horiz. : 90°	Processed : AJET	
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM	Checked : MG
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Fair	Date: 16/01/2020
Date Started : 14/10/2019	Date Completed : 14/10/2019	Logged by : VW	Date Logged : 14/10/2019	<small>Note: * indicates signatures on original issue of log or last revision of log.</small>

DRILLING				MATERIAL						NATURAL FRACTURES			
Progress		Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Estimated Strength Is(50) MPa <small>● Axial ○ Diametral</small>	Weathering	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>
SCALE (m)													
1													
2													
3													
							3.20		Start of coring at 3.2 metres. For Non Cored interval, see Borehole Log Sheet.				
							X		CORE LOSS 500mm.				
							3.70		SANDSTONE: medium grained, orange-brown, indistinctly bedded at 0-20°.	MW			3.79m, Pt, 5°, Rf, Pln, Cn 3.82m, Pt, 5°, Rf, Pln, Cn
4	NMLC coring				(18)		4.71		SANDSTONE: medium grained, pale grey, indistinctly thinly bedded at 0-10°, with fine grained and carbonaceous laminations.	SW			4.47m, Jt, 20°, Rf, Pln, Cn 4.62m, Pt, 5°, Rf, Pln, Cn 4.75m, Pt, 0°, So, Pln, Cn
5													

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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-BH07	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : The GreenWay Footpath, Summer Hill, NSW		Position : 328415.14 E 6248285.31 N MGA94/ 56	Surface RL: 4.57m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 1.5m	Bit : Diamond (stepfaced)
Date Started : 14/10/2019		Date Completed : 14/10/2019	Logged by : VW
		Angle from Horiz. : 90°	Processed : AJET
		Driller : DM	Checked : MG
		Bit Condition : Fair	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log			

DRILLING				MATERIAL				NATURAL FRACTURES														
Progress				Description				Estimated Strength				Additional Data										
SCALE (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Soil Classification				Spacing (mm)				Additional Data						
				ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)				Weathering Soil 0.03 VL 0.1 L 0.3 M 1 H 3 VH 10 EH				20 40 100 300 1000				(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.						
6	NMILC coring		6.00			6.00		SW														5.34m, Pt, 3°, So, Pln, Fe Ve
6								Fr														
10																						

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Gadigal Reserve, Summer Hill, NSW

HOLE No. A2D-BH08
SHEET 1 OF 3

Position : 328425.91 E 6248261.63 N MGA94/ 56 **Surface RL:** 4.78m AHD **Angle from Horiz. :** 90° **Processed :** AJET
Rig Type : Hand Carry Rig **Mounting:** NA **Contractor :** Stratacore **Driller :** CW **Checked :** MG
Date Started : 28/10/2019 **Date Completed :** 28/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL						Comments/ Observations
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition	Consistency / Density Index	
0	Hand Auger	Nil	None	None	0.20		-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, subangular ballast gravel.	M	-	0.2m, PID=2.3ppm
1	Hand Auger	Nil	None	ES D	0.70		-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, sub-angular gravel.	M	-	0.5m, PID=2.0ppm
2	Hand Auger	Nil	None	ES D	1.00		-	[FILL] Sandy CLAY: low plasticity, brown with yellow mottles, fine to coarse grained sand, trace fine to medium, sub-angular gravel, trace brick and glass.	w = PL	-	1.0m, PID=1.7ppm
3	Washbore	None	Groundwater Not Encountered	None	2.20		-	CLAY: red, with medium to coarse, sub-rounded ironstone gravel (residual).			2.2m, material description inferred from drilling fluid.
4	Washbore	None	Groundwater Not Encountered	None	2.33		-	Start of coring at 2.33 metres. For cored interval, see Core Log Sheet.			
5	Washbore	None	Groundwater Not Encountered	None	> 5.00		-				

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Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : Gadigal Reserve, Summer Hill, NSW

HOLE No. A2D-BH08

SHEET 2 OF 3

Position : 328425.91 E 6248261.63 N MGA94/ 56

Surface RL: 4.78m AHD

Angle from Horiz. : 90°

Processed : AJET

Rig Type : Hand Carry Rig

Mounting: NA

Contractor : Stratacore

Driller : CW

Checked : MG

Casing Dia. : 90mm

Barrel (m) : 1.0m

Bit : Diamond (stepfaced)

Bit Condition : Good

Date: 16/01/2020

Date Started : 28/10/2019

Date Completed : 28/10/2019

Logged by : LM

Date Logged : 28/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL							NATURAL FRACTURES			
Progress			Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.	Scale (m)		Core Loss / Run (%)		Samples & Tests	
Drilling & Casing	Water	Drill Depth (m)								Scale (m)	Core Loss / Run (%)	Samples & Tests			
			2.33		Start of coring at 2.33 metres. For Non Cored interval, see Borehole Log Sheet.										
			2.50	(0)	SANDSTONE: medium to coarse grained, pale brown, indistinctly bedded at 0-10°.	MW									
			3.50	(15)											
			3.30		CORE LOSS 150mm.	EW									3.04m, Pt, 15°, Rf, Un, Fe 3.09m, WSm, 10mm
			3.45												
			3.52		SANDSTONE: as above.	EW									
			3.79		CORE LOSS 270mm.										
			4.50	(27)	SANDSTONE: fine to medium grained, pale grey stained orange, indistinctly thinly bedded to bedded at 0-15°, with fine grained and carbonaceous laminations.	SW									3.84m, Pt, 10°, Rf, Un, CLAY 4.25m, Pt, 0°, RF, Pln, CLAY
			4.5m		4.5m, pale grey.	SW-Fr									

See standard sheets for details of abbreviations & basis of descriptions



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Job No. 21-12515105

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Summer Hill, NSW

HOLE No. A2D-BH09**SHEET 1 OF 3**

Position : 328412.37 E 6248228.80 N MGA94/ 56 **Surface RL:** 4.89m **AHD** **Angle from Horiz. :** 90° **Processed :** AJET
Rig Type : Hand Carry Rig **Mounting:** NA **Contractor :** Stratacore **Driller :** CW **Checked :** MG
Date Started : 29/10/2019 **Date Completed :** 29/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL			Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
	Hand Auger	Nil		ES	0.25	[Diagonal lines /]	-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, subangular ballast gravel.	M	-	0.2m, PID=1.6ppm 0.2m, Possible ACM 0.5m, PID=2.7ppm 1.0m, PID=1.6ppm 2.0m, PID=0.9ppm
				ES/QA29	0.65	[Cross-hatch]	-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, angular gravel, trace brick.	M	-	
				ES	1.10	[Diagonal lines \]	-	[FILL] Gravelly Silty SAND: fine to coarse grained, brown, medium to coarse, angular gravel.	M	-	
				D	1.60	[Horizontal lines]	SC	Sandy CLAY: medium plasticity, grey, fine to coarse grained sand, with fine to medium, sub-rounded, ironstone gravel (residual).	w = PL	F-St	
				ES	2.60	[Diagonal lines /]	GC	Gravelly CLAY: medium plasticity, grey mottled red, fine to medium, sub-rounded, ironstone gravel, trace fine to coarse grained sand.	w < PL	St	
3					3.00	[Diagonal lines /]		Start of coring at 3 metres. For cored interval, see Core Log Sheet.			
4											
5											

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 details of abbreviations
 & basis of descriptions



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Job No.

21-12515105

GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT 28/1/20

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Summer Hill, NSW

HOLE No. A2D-BH09

SHEET 2 OF 3

Position : 328412.37 E 6248228.80 N MGA94/ 56 Surface RL: 4.89m AHD Angle from Horiz. : 90° Processed : AJET
Rig Type : Hand Carry Rig Mounting: NA Contractor : Stratacore Driller : CW Checked : MG
Casing Dia. : 90mm Barrel (m) : 1.0m Bit : Diamond (stepfaced) Bit Condition : Good Date: 16/01/2020
Date Started : 29/10/2019 Date Completed : 29/10/2019 Logged by : LM Date Logged : 29/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

Table with columns: DRILLING, MATERIAL, NATURAL FRACTURES. Sub-columns include Progress, SCALE (m), Description, Estimated Strength, Spacing, Additional Data. Contains depth markers (3.00, 3.14, 4.08, 4.46, 4.96) and soil descriptions like CONGLOMERATE and SANDSTONE.

See standard sheets for details of abbreviations & basis of descriptions



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GEO. COREHOLE - NO VISUAL - AST726 2017 - 2112515105-THEGREENWAY.GPJ GHD GEO. TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Gadigal Reserve, Summer Hill, NSW

HOLE No. A2D-LD01

SHEET 1 OF 3

Position : 328454.12 E 6248404.93 N MGA94/ 56 **Surface RL:** 4.69m AHD **Angle from Horiz. :** 90°
Rig Type : Geo 205 **Mounting:** Track **Contractor :** Stratacore **Driller :** DM
Date Started : 25/10/2019 **Date Completed :** 25/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL			Moisture Condition Consistency / Density Index	Comments/ Observations									
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log			USC Symbol	Description							
1	TC-bit auger	Nil	Groundwater Not Encountered	ES			-	[FILL] Gravelly Sandy SILT: dark grey and dark brown, fine to medium grained sand, fine to coarse, sub-angular to angular gravel.	D	-	0.2m, PID=3.6ppm						
				ES			-						0.5m, PID=4.4ppm SPT refusal on ballast/gravel.				
				B													
				ES										1.0m, PID=4.6ppm			
2				SPT 3/4/6 N=10 B													
				ES			2.00		-	[FILL] Gravelly SAND: fine to coarse grained, pale brown, brown, yellow brown, fine to coarse, sub-angular to angular gravel, occasional sandstone cobbles, trace glass, plastic, concrete, brick.	D	-	2.0m, PID=5.7ppm				
				SPT 10/17/11 N=28													
3				ES							M		3.0m, PID=2.6ppm 3.1m, water added to borehole due to cave-in of cuttings.				
				SPT 4/8/8 N=16													
4				ES				GC	Gravelly CLAY: medium plasticity, red brown mottled pale brown; red, fine to medium, sub-rounded to rounded ironstone gravel (residual).	w < PL	VSt		4.0m, PID=6.4ppm				
				SPT 8/ 3 for 90mm HB N=ref			3.90 4.15 4.30									SANDSTONE: pale grey and pale brown, inferred low strength, moderately weathered, low strength (bedrock). Start of coring at 4.3 metres. For cored interval, see Core Log Sheet.	
5																	

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GEO_BOREHOLE_A51726 2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017_2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council				HOLE No. A2D-LD01		
Project : The GreenWay Geotechnical and Contamination Services				SHEET 2 OF 3		
Location : Gadigal Reserve, Summer Hill, NSW						
Position : 328454.12 E 6248404.93 N MGA94/ 56	Surface RL: 4.69m AHD	Angle from Horiz. : 90°	Processed : AJET			
Rig Type : Geo 205	Mounting: Track	Contractor : Stratacore	Driller : DM	Checked : MG		
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New	Date: 16/01/2020		
Date Started : 25/10/2019		Date Completed : 25/10/2019	Logged by : JS	Date Logged : 25/10/2019		

Note: * indicates signatures on original issue of log or last revision of log

DRILLING		MATERIAL								NATURAL FRACTURES		
Progress		Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength <i>I_{s(50)}</i> MPa <small>● Axial ○ Diametral</small>	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.			Depth / (RL) metres	Graphic Log	SCALE (m)	
Drilling & Casing	Water											Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS
										1		
										2		
										3		
										4		
								4.30	X			
								4.47	X			
NMLC coring			HW	●	-	-	-		SANDSTONE: fine to coarse grained, pale grey and pale brown, indistinctly bedded at 0-5°, iron staining.	5		
									CORE LOSS 170mm.			
									4.49m, Pt, 2°, Rf, Pln, Fe			

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CORE LOG SHEET

GEO. COREHOLE - NO VISUAL - AST1726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-LD01			
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3			
Location : Gadigal Reserve, Summer Hill, NSW		Position : 328454.12 E 6248404.93 N MGA94/ 56	Surface RL: 4.69m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : Geo 205	Mounting: Track	Contractor : Stratacore	Driller : DM	Checked : MG	
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New	Date: 16/01/2020	
Date Started : 25/10/2019		Date Completed : 25/10/2019		Logged by : JS	Date Logged : 25/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL				NATURAL FRACTURES					
Progress		Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)													
NMLC coring					(17)		5.11	.....	SANDSTONE: as previous.	HW	VL	20	5.04m, Pt, 0°, Rf, Pln, Fe 5.08m, Pt, 0°, Rf, Pln, Fe
							5.45	.....	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0-10°, with fine grained and carbonaceous laminations.	SW	L	40	
							5.55	X	CORE LOSS 100mm.				
				5.92				.....	SANDSTONE: fine to medium grained, pale grey and pale brown, indistinctly bedded at 0-5°, iron staining.		M	100	6.72m, Pt, 5°, Rf, Pln, X
					(0)			.....	6.27m, lamination at 25°.	SW	3	300	
								7.0m, trace carbonaceous flecks and laminations.		EH	1000	
				7.46			7.46	End of Borehole at 7.46 metres. Target Depth				

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A2D-LD02	
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1	
Location : Gadigal Reserve, Summer Hill, NSW	Position : 328446.99 E 6248370.57 N MGA94/ 56	Surface RL: 4.90m AHD Angle from Horiz. : 90°
Rig Type : Geo 205	Mounting: Track	Contractor : Stratacore Driller : DM
Date Started : 25/10/2019	Date Completed : 25/10/2019	Logged by : JS Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES/DUP 25/10/19 ES SPT 6/6/6 N=12 ES B	1.50	[X]	-	[FILL] Gravelly Sandy SILT: dark grey and dark brown, fine to coarse grained sand, fine to coarse, sub-angular to angular gravel, with cobbles of ballast. 1.0m, without cobbles of ballast.	D-M	-	0.2m, PID=4.7ppm 0.5m, PID=3.4ppm 1.0m, PID=5.0ppm
2				SPT 4/4/5 N=9	2.00	[X]	-	[FILL] Gravelly SAND: fine to coarse grained, brown and dark brown, fine to coarse, sub-angular to angular gravel, with silt.	M	-	2.0m, PID=4.2ppm
3								End of borehole at 2.00 metres. Target Depth			
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-LD03	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : Gadigal Reserve, Summer Hill, NSW		Surface RL: 5.08m AHD	Angle from Horiz. : 90°
Position : 328433.12 E 6248307.75 N MGA94/ 56	Contractor : Stratacore	Driller : DM	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 14/10/2019	Date Completed : 14/10/2019	Logged by : VW	Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index	
1	TC-bit auger	Nil	Groundwater Not Encountered	0.10	^ ^ ^ ^ ^ ^ ^ ^ ^ ^	-	[TOPSOIL] Sandy SILT: brown, fine to coarse grained sand, trace rootlets.	D	-	0.2m, PID=2.1ppm 0.5m, PID=1.8ppm	
				0.95	/ / / / / / / / / /	CH	CLAY: high plasticity, red mottled orange and grey (residual).	w > PL	VSt		1.0m, PID=2.5ppm
				2.00	/ / / / / / / / / /		End of borehole at 2.00 metres. Target Depth				2.0m, PID=2.0ppm
2											
3											
4											
5											

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST126 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Longport Street, Summer Hill, NSW

HOLE No. A2D-LD04

SHEET 1 OF 3

Position : 328389.07 E 6248199.24 N MGA94/ 56	Surface RL: 14.81m AHD	Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Date Started : 16/10/2019	Date Completed : 16/10/2019	Logged by : JS	Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
0.10				0.10		-	ASPHALT PAVEMENT.	-	-	
0.15				0.15		-	[FILL] Sandy GRAVEL: fine to coarse, sub-angular to angular, dark grey, fine to coarse grained sand.	D	-	
0.45				0.45		-	CONCRETE.	-	-	
0.5m				0.5m		-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, sub-angular shale gravel.	D	-	0.5m, PID=3.2ppm
1.0m				1.0m		-				1.0m, PID=5.6ppm
1.5m				1.5m		-	[FILL] Sandy CLAY: low plasticity, brown, grey, red-brown mixed, fine to coarse grained sand, trace fine to coarse, sub-angular gravel.	w < PL	-	1.5m, possible ripped shale fill material
2.0m				2.0m		-				2.0m, PID=4.3ppm
3.0m				3.0m		-	3.0m, trace of building refuse (5%) of brick, metal, concrete, tile.			3.0m, PID=4.2ppm
3.5m				3.5m		-	3.5m, dark grey to black.			
4.0m				4.0m		-				4.0m, PID=4.8ppm
5.0m				5.0m		-				

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Longport Street, Summer Hill, NSW

HOLE No. A2D-LD04

SHEET 2 OF 3

Position : 328389.07 E 6248199.24 N MGA94/ 56 **Surface RL:** 14.81m **AHD** **Angle from Horiz. :** 90° **Processed :** AJET
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 16/10/2019 **Date Completed :** 16/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index			
5.0	TC-bit auger	Nil	Groundwater Not Encountered	ES			-	[FILL] Sandy CLAY: as previous.	w < PL	-	5.0m, PID=5.5ppm			
6.0				SPT 6/18/19 N=27 ES						5.5m, trace fine to coarse, sub-rounded basalt gravel.	w = PL	-	6.0m, PID=6.8ppm	
7.0				SPT 5/6/8 N=14				7.00		-	[FILL] CLAY: medium plasticity, dark grey and grey mottled, with fine to coarse grained sand, trace fine, sub-angular gravel.	w = PL	-	7.5m, PID=3.0ppm
8.0				ES										
9.0				SPT 1/2/2 N=4										
9.0				ES										
9.0				SPT 2/3/7 N=10			CI	CLAY: medium plasticity, brown mottled dark brown, trace fine to coarse grained sand, trace fine to medium, sub-rounded, ironstone gravel, trace rootlets (alluvium).	w > PL	F	9.0m, PID=3.7ppm 9.2m, organic odour			
10.0														

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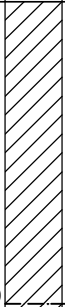
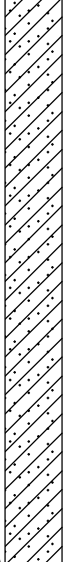

Job No.
21-12515105

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2D-LD04	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : Longport Street, Summer Hill, NSW		Position : 328389.07 E 6248199.24 N MGA94/ 56	Surface RL: 14.81m AHD
		Angle from Horiz. : 90°	Processed : AJET
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Date Started : 16/10/2019		Date Completed : 16/10/2019	Logged by : JS
			Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
11	TC-bit auger	Nil	Groundwater Not Encountered	SPT 6/4/4 N=8	11.00		CI	CLAY: as previous.	w > PL	F	
12					11.00		SC	Sandy CLAY: medium plasticity, pale grey, red brown and pale brown mottled, medium to coarse grained sand, trace lenses of fine to coarse, sub-rounded to rounded, ironstone gravel (residual).	w > PL	F	
13					12.90 13.00		-	SANDSTONE: pale grey and pale brown, moderately to highly weathered (bedrock). End of borehole at 13.00 metres. Target Depth	-	-	
14											
15											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_A51726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-HA01	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Lewisham, NSW		Position : 328400.97 E 6248153.46 N MGA94/ 56	Surface RL: 9.18m AHD
Rig Type : Hand auger		Mounting: NA	Contractor : NA
Date Started : 18/10/2019		Date Completed : 18/10/2019	Logged by : LM
			Processed : RCO
			Checked : MG
			Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
	Hand Auger	None	Groundwater Not Encountered		0.10	[Symbol: Dotted]	-	CONCRETE.	-	-	0.2m, PID=5.5ppm 0.4m, PID=8.9ppm
	Hand Auger	None	Groundwater Not Encountered	ES	0.30	[Symbol: Cross-hatch]	-	[FILL] Sandy GRAVEL: fine to coarse, angular, fine to medium grained sand.	-	-	
	Hand Auger	None	Groundwater Not Encountered	ES	0.50	[Symbol: Cross-hatch]	-	[FILL] Silty SAND: fine to coarse grained, yellow, with fine to coarse, sub-angular gravel, trace brick fragments.	-	-	
	Hand Auger	None	Groundwater Not Encountered					End of borehole at 0.50 metres. Auger refusal			

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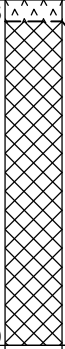
Job No.
21-12515105

BOREHOLE LOG SHEET

GEO_BOREHOLE_A51726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-HA02	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Lewisham, NSW		Position : 328383.43 E 6248128.85 N MGA94/ 56	Surface RL: 10.18m AHD
Rig Type : Hand auger		Mounting: NA	Contractor : NA
Date Started : 18/10/2019		Date Completed : 18/10/2019	Logged by : LM
		Angle from Horiz. : 90°	Processed : RCO
		Driller : NA	Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES	0.05		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with fine to coarse, angular gravel, trace rootlets. [FILL] Sandy GRAVEL: fine to coarse, fine to coarse grained sand.	D	-	0.2m, PID=1.5ppm
				ES					M		0.5m, PID=2.5ppm
				ES	0.80			0.75m, with sandstone cobbles. End of borehole at 0.80 metres. Refusal			0.8m, PID=1.9ppm
2											
3											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-HA03	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Lewisham, NSW		Position : 328360.23 E 6248095.32 N MGA94/ 56	Surface RL: 10.99m AHD
		Angle from Horiz. : 90°	Processed : RCO
Rig Type : Hand auger	Mounting: NA	Contractor : NA	Driller : NA
Date Started : 18/10/2019		Date Completed : 18/10/2019	Logged by : LM
			Checked : MG
			Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
0	Hand Auger	Nil			0.15	▲▲▲▲▲▲▲▲▲▲	-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with fine to coarse, angular gravel.	M	-	
1	Hand Auger		Groundwater Not Encountered	FS				End of borehole at 0.15 metres. Auger refusal			0.15m, PID=2.6ppm 0.15m, stabilised or heavily compacted sand/gravel.
2											
3											


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BOREHOLE LOG SHEET

GEO_BOREHOLE_A51726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A2-HAC01		
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1		
Location : IWLR Corridor, Lewisham, NSW	Position : 328358.07 E 6248141.73 N MGA94/ 56	Surface RL: 9.25m AHD	Angle from Horiz. : 90°
Rig Type : Hand auger	Mounting: NA	Contractor : NA	Driller : NA
Date Started : 18/10/2019	Date Completed : 18/10/2019	Logged by : JW	Date: 16/01/2020

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DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES QA8/QA9	0.60		-	[FILL] Sandy CLAY: grey, fine to coarse grained sand, trace ballast gravel, trace ash.	D	-	No odour, no staining. Possible clinkers (fill material), ash/coal present 0.2m, PID=1.0ppm
2								End of borehole at 0.60 metres. Auger refusal on ballast	M		0.5m, PID=1.6ppm
3											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-HAC02	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Lewisham, NSW		Position : 328339.10 E 6248114.36 N MGA94/ 56	Surface RL: 9.74m AHD
Rig Type : Hand auger		Mounting: NA	Contractor : NA
Date Started : 18/10/2019		Date Completed : 18/10/2019	Logged by : JW
		Angle from Horiz. : 90°	Processed : RCO
		Driller : NA	Checked : MG
			Date: 16/01/2020

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DRILLING				MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES	[Cross-hatch pattern]	-	[FILL] Gravelly SAND: fine to medium grained, dark brown, fine to coarse gravel, trace rootlets.	M	-	No staining, no odour, ash (gravel) 0.2m, PID=0.9ppm
				ES	[Cross-hatch pattern]	-		M	-	0.5m, PID=1.6ppm
				ES	[Diagonal lines]	Cl	CLAY: high plasticity, reddish brown, trace sand (residual).	M	-	No staining, no odour
				ES	[Diagonal lines]	Cl	CLAY: medium plasticity, reddish grey (residual).	M	-	No staining, no odour
				ES	[Dotted pattern]	Cl	Sandy CLAY: medium plasticity, yellow-reddish grey, fine to coarse grained sand, trace rock fragments [40mm] (residual).	M	-	No staining, no odour
2				ES	[Dotted pattern]		End of borehole at 2.00 metres. Target Depth			2.0m, PID=0.9ppm
3										

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A2-HAC03	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Lewisham, NSW		Position : 328317.82 E 6248033.28 N MGA94/ 56	Surface RL: 10.21m AHD
Rig Type : Hand auger		Mounting: NA	Contractor : NA
Date Started : 22/10/2019		Date Completed : 22/10/2019	Logged by : JW
		Angle from Horiz. : 90°	Processed : RCO
			Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES	0.05		Cl	[TOPSOIL] Silty SAND: dark brown, trace rootlets, trace cobbles. CLAY: medium plasticity, yellow with red mottles, trace fine to medium, sub-rounded, ironstone gravel (residual).	M w PL	-	No odour, no staining 0.2m, PID=2.9ppm 0.5m, PID=2.5ppm
				ES	0.90		SC	Clayey SAND: fine to coarse grained, pale brown, medium plasticity clay, trace fine to medium, sub-rounded, ironstone gravel (residual). End of borehole at 1.00 metres. Refusal on bedrock	M	-	No odour, no staining 1.0m, PID=3.8ppm
2											
3											

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TEST PIT LOG SHEET

Client: Inner West Council
Project: The GreenWay Geotechnical and Contamination Services
Location: IWLR Corridor, Lewisham, NSW

HOLE No. A2-TP01

SHEET 1 OF 1

Position: 328385.00 E 6248182.90 N MGA94/ 56 **Surface RL:** 12.25m AHD **Processed:** RCO

Method of Exploration: Hand dug **Hole Size:** 0.5m x 0.3m **Checked:** MG

Date: 18/10/19 **Logged by:** LM **Date:** 16/01/2020

Scale (m)	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Material Description [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: Grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering / alteration, defects	Moisture Condition	Consistency / Density Index	Comments Observations <small>Note: * indicates signatures on original issue of log or last revision of log</small>
	Groundwater Not Encountered		0.20		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, with rootlets.	M	-	
			0.40		-	[FILL] Gravelly SAND: fine to medium grained, brown, medium to coarse, sub-angular, shale gravel, trace glass fragments.	M	-	
			0.70		-	[FILL] Silty Gravelly SAND: fine to medium grained, brown, with shale cobbles, trace rootlets, trace glass and plastic fragments.	M	-	
						End of test pit at 0.7 metres. Target Depth.			

GEO_TEST_PIT_AS1726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A3-BH01		
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1		
Location : Johnson Park, Dulwich Hill, NSW	Position : 327838.29 E 6247276.84 N MGA94/ 56	Surface RL: 22.67m AHD	Angle from Horiz. : 90°
Rig Type : XP60	Mounting: Ute	Contractor : Terratest	Driller : CD
Date Started : 10/10/2019	Date Completed : 10/10/2019	Logged by : LM	Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES/QA4	0.30	[TOPSOIL] Silty SAND: fine to medium grained, dark brown, with rootlets.	-	M	-	0.2m, PID=19.9ppm	
				ES	0.50	[FILL] Silty SAND: fine to medium grained, dark brown, trace fine to medium, angular gravel.	-	M	-	0.5m, PID=4.8ppm	
				D	0.70	CH	CLAY: high plasticity, pale brown, trace fine to medium, sub-rounded, ironstone gravel (residual).	w = PL	VSt	1.0m, PID=5.5ppm	
				ES	1.00	CH	CLAY: high plasticity, red with grey mottles, trace fine to coarse grained sand and fine to medium, sub-rounded, ironstone gravel (residual).	w = PL	VSt	1.0m, PID=5.5ppm	
2				D				H			
2				ES	2.00			End of borehole at 2.00 metres. Target Depth			2.0m, PID=4.5ppm
3											
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH02

SHEET 1 OF 1

Position : 327833.55 E 6247234.34 N MGA94/ 56

Surface RL: 22.86m AHD

Angle from Horiz. : 90°

Processed : RCO

Rig Type : XP60

Mounting: Ute

Contractor : Terratest

Driller : CD

Checked : MG

Date Started : 10/10/2019

Date Completed : 10/10/2019

Logged by : LM

Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES D ES D ES D	0.30		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace fine to medium, angular gravel.	M	-	0.2m, PID=8.1ppm
					0.50		-	[FILL] CLAY: high plasticity, pale brown, trace fine to coarse grained sand, fine to medium, angular gravel.	M	-	0.5m, PID=11.3ppm
					0.80		-	0.8m, pale brown mottled orange.			
					1.00		CH	CLAY, high plasticity, grey with red lenses, trace medium to coarse grained sand, trace, fine, sub-rounded, ironstone gravel (residual).	w > PL	St	1.0m, PID=16.5ppm
2				ES D	1.40		SC	Sandy CLAY: grey mottled red and orange, trace medium to coarse, sub-rounded, ironstone gravel (residual).	w = PL	VSt	
					2.00			End of borehole at 2.00 metres. Target Depth			2.0m, PID=6.3ppm
3											
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH03

SHEET 1 OF 1

Position : 327830.22 E 6247201.66 N MGA94/ 56

Surface RL: 23.12m AHD

Angle from Horiz. : 90°

Processed : RCO

Rig Type : XP60

Mounting: Ute

Contractor : Terratest

Driller : CD

Checked : MG

Date Started : 10/10/2019

Date Completed : 10/10/2019

Logged by : LM

Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES D ES D ES D	0.30		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, trace fine to medium, angular gravel.	M	-	0.2m, PID=4.4ppm
					0.50		-	[FILL] CLAY: high plasticity, brown mottled red, trace fine to medium grained sand.	w = PL	-	0.5m, PID=9.2ppm
					1.00		CH	CLAY: high plasticity, red mottled grey, trace fine to medium grained sand, trace fine to medium, sub-rounded, ironstone gravel (residual).	w > PL	St	
2				ES	2.00			End of borehole at 2.00 metres. Target Depth			2.0m, PID=7.5ppm
3											
4											
5											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH04

SHEET 1 OF 3

Position : 327820.64 E 6247149.62 N MGA94/ 56 **Surface RL:** 23.91m **AHD** **Angle from Horiz. :** 90° **Processed :** RCO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** TR **Checked :** MG
Date Started : 11/10/2019 **Date Completed :** 11/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.30	-	[TOPSOIL] Silty SAND: fine to coarse grained, dark brown and brown, trace rootlets.	M	-	0.2m, PID=1.6ppm
				ES	0.50	-	[FILL] SAND: fine to coarse grained, dark grey and dark brown, 5% building rubble consisting; tile, brick, concrete fragments.	M	-	0.5m, PID=2.0ppm
				SPT 3/6/7 N=13 ES	1.00	-	[FILL] Sandy CLAY: low plasticity, dark grey and dark brown, fine to medium grained sand, trace fine to medium, sub-angular gravel.	w < PL	-	1.0m, PID=1.7ppm
				SPT 6/9/9 N=18 ES	1.70	GC	Gravelly CLAY: low plasticity, pale brown mottled yellow-brown, fine to medium, sub-rounded gravel, with fine to coarse grained sand (residual)	w < PL	VSt	1.5m, PP test failed due to low moisture content.
				2.00			2.1m, becoming red-brown.			2.0m, PID=3.8ppm
3				SPT 5/9/8 N=17	3.00	CH	CLAY: high plasticity, pale grey mottled pale brown (residual).	w < PL	VSt	2.5m, mottled pale grey, pale brown and red brown.
										3.0m, PP test failed due to low moisture content.
4				SPT 4/6/10 N=16						
5				SPT 3/9/15 N=24						

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH04	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327820.64 E 6247149.62 N MGA94/ 56	Surface RL: 23.91m AHD
		Angle from Horiz. : 90°	Processed : RCO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : TR
Date Started : 11/10/2019		Date Completed : 11/10/2019	Logged by : JS
			Checked : MG
			Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil		SPT 10 for 50mm HB N=ref	5.10	[Diagonal Hatching]	CH	[COBBLES/BOULDERS/FILL/TOPSOIL] then SOIL NAME: plasticity / primary particle characteristics, colour, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric / texture, inclusions or minor components, durability, strength, weathering / alteration, defects CLAY: as previous SANDSTONE: fine grained, brown, inferred low strength, extremely to highly weathered (bedrock).	w < PL	VSt
6					5.90			Start of coring at 5.9 metres. For cored interval, see Core Log Sheet.		
7										
8										
9										
10										

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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH04	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327820.64 E 6247149.62 N MGA94/ 56	Surface RL: 23.91m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 3.0m	Bit : Diamond (stepfaced)
Date Started : 11/10/2019		Date Completed : 11/10/2019	Logged by : JS
Angle from Horiz. : 90°		Processed : RCO	Checked : MG
Driller : TR		Bit Condition : Good	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log			

DRILLING				MATERIAL				NATURAL FRACTURES					
Progress		Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)													
6	7	8	9	10	10.00	10.00	5.90	Start of coring at 5.9 metres. For Non Cored interval, see Borehole Log Sheet.	SW	●	20 40 100 300 1000	5.97m, Pt, 0°, Rf, Pln, Cn 6.11m, Pt, 0°, Rf, Pln, Fe 6.20m, Jt, Rf, St, Fe 6.46m, Pt, 0°, Rf, Pln, Fe 6.93m, Pt, 0°, Rf, Pln, Cn 7.08m, Pt, 0°, Rf, Pln, Fe
10	NMLC coring		(0)	7.30	(0)	10.00		Fr	●		9.75m, Pt, 2°, Rf, Pln, X

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH05

SHEET 1 OF 3

Position : 327831.66 E 6247124.07 N MGA94/ 56 **Surface RL:** 23.87m **AHD** **Angle from Horiz. :** 90° **Processed :** RCO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** TR **Checked :** MG
Date Started : 11/10/2019 **Date Completed :** 11/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1 2 3 4 5	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.20	[Pattern]	-	[TOPSOIL] Silty SAND: fine to medium grained, dark brown, trace rootlets.	M	-	0.2m, PID=2.7ppm
					ES	[Pattern]	-	[FILL] Silty Clayey SAND: fine to coarse grained, dark brown, low plasticity clay, with fine to coarse, sub-angular gravel.	M	-	0.5m, PID=4.4ppm
					SPT 2/4/5 N=9 ES	[Pattern]	-				1.0m, PID=5.1ppm
					SPT 3/3/3 N=6 ES	[Pattern]	-	1.5m, orange-brown, pale brown, brown, dark brown, trace ash.			
					2.10	[Pattern]	CH	CLAY: high plasticity, orange brown mottled pale grey and brown, occasional bands of fine to medium, red ironstone gravel (residual).	w < PL	VSt	2.0m, PID=4.1ppm
3				SPT 4/6/9 N=15 ES	[Pattern]	-					2.5m, PP=400kPa
4				SPT 9/6/8 N=14	[Pattern]	-					3.0m, PID=4.4ppm
5				SPT 4/ 10 for 50mm HB N=ref	4.60	[Pattern]	-	SANDSTONE: fine to coarse grained, pale grey, inferred low strength, highly weathered (bedrock).	-	-	
					4.83	[Pattern]	-	Start of coring at 4.83 metres. For cored interval, see Core Log Sheet.			

See standard sheets for details of abbreviations & basis of descriptions



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Job No.
21-12515105

GEO_BOREHOLE_A31726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH05	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327831.66 E 6247124.07 N MGA94/ 56	Surface RL: 23.87m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 3.0m	Bit : Diamond (stepfaced)
Date Started : 11/10/2019		Date Completed : 11/10/2019	Logged by : JS
Angle from Horiz. : 90°		Processed : RCO	Checked : MG
Driller : TR		Bit Condition : Good	Date: 16/01/2020

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Estimated Strength Is (50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.				
SCALE (m)	Drilling & Casing	Water	Drill Depth (m)				(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Weathering	Soil

1																						
2																						
3																						
4																						
5						4.83	Start of coring at 4.83 metres. For Non Cored interval, see Borehole Log Sheet.															
							SANDSTONE: fine to medium grained, dark orange-brown with pale grey bleaching at	MW														

<p>See standard sheets for details of abbreviations & basis of descriptions</p>		<p>GHD Level 2 29 Christie Street, St Leonards NSW 2065 Australia T: +61 2 9462 4700 F: +61 2 9462 4710 E: slnmail@ghd.com CONSULTING GEOTECHNICAL ENGINEERS AND GEOLOGISTS</p>	<p>Job No. 21-12515105</p>
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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH05	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327831.66 E 6247124.07 N MGA94/ 56	Surface RL: 23.87m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 3.0m	Bit : Diamond (stepfaced)
Date Started : 11/10/2019		Date Completed : 11/10/2019	Logged by : JS
Angle from Horiz. : 90°		Processed : RCO	Checked : MG
Driller : TR		Bit Condition : Good	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log			

DRILLING				MATERIAL				NATURAL FRACTURES					
Progress		Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is ₍₅₀₎ MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)	Drilling & Casing												
6	(0)			6.40			6.20	.....	defects, indistinctly bedded at 0-5°. SANDSTONE: as previous.	MW	●		5.08m, Pt, 0°, Rf, Pln, Fe 5.18m, Pt, 0°, Rf, Pln, Cn 5.36m, Pt, 0°, Rf, Pln, Fe 5.39m, Pt, 0°, Rf, Pln, Fe 5.43m, Pt, 0°, Rf, Pln, Cn
7	(0)							.....	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0-10°, trace carbonaceous laminations.	SW	●		5.89m, Pt, 0°, Rf, Pln, Cn 5.97m, Pt, 0°, Rf, Pln, Cn 6.00-6.10m, Pt, 0°, Rf, Pln, Cn
8									Fr	●		6.72m, Pt, 0°, Rf, Pln, Cn 7.03m, Pt, 0°, Rf, Pln, Cn 7.46m, Pt, 0°, Rf, Pln, Fe 7.84-7.86m, Pt, 2°, Rf, Pln, X
9				8.65			8.65	End of Borehole at 8.65 metres. Target Depth				

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH06

SHEET 1 OF 4

Position : 327842.71 E 6247095.59 N MGA94/ 56 **Surface RL:** 26.16m AHD **Angle from Horiz. :** 90° **Processed :** RCO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 17/10/2019 **Date Completed :** 17/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index		
	TC-bit auger	Nil		ES	0.10		-	ASPHALT PAVEMENT.	-	-			
				ES	0.50		-	[FILL] Gravelly SAND: fine to coarse grained, dark grey, fine to coarse, sub-angular gravel.	M	-	-	0.2m, PID=2.0ppm	
1				SPT 7/4/4 N=8	ES		-	[FILL] Gravelly Sandy CLAY: dark brown and dark grey, fine to coarse grained sand, fine to coarse, sub-angular to angular, sandstone gravel, trace sandstone cobbles.	w < PL	-	-	0.5m, PID=2.6ppm	
				ES			-						1.0m, PID=2.3ppm 1.1-1.3m, encountered concrete obstruction.
2				SPT 4/6/6 N=12			-	[FILL] Clayey SAND: fine to coarse grained, pale grey, red-brown, brown and dark brown, low plasticity clay, trace fine to coarse gravel of ironstone, sandstone and shale.	M	-	-	-	2.0m, reworked ripped shale material.
				ES									2.4m, PID=4.2ppm
3				SPT 3/6/3 N=9									
				ES									3.5m, PID=3.4ppm
4	SPT 3/6/4 N=10				3.65		-	[FILL] CLAY: low plasticity, brown, pale brown, pale grey, dark brown mottled, with fine to medium, sub-angular to angular gravel, trace fine to coarse grained sand, trace ash.	w = PL	-	4.1-5.0m, perched water table.		
	ES										4.5m, PID=3.4ppm		
5	SPT 5/3/3 N=6				5.00								

▽
17/10/19

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH06	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 4	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327842.71 E 6247095.59 N MGA94/ 56	Surface RL: 26.16m AHD
		Angle from Horiz. : 90°	Processed : RCO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Date Started : 17/10/2019		Date Completed : 17/10/2019	Logged by : JS
			Checked : MG
			Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil		ES SPT 3/5/6 N=11	6.5	[diagonal hatching]	Cl	CLAY: medium plasticity, pale grey mottled pale brown, trace red-brown, fine to coarse, sub-rounded ironstone gravel (residual). 6.5m, trace fine to coarse grained sand.	w = PL	St	5.1m, PID=5.3ppm 5.5m, PP=300kPa 6.5m, PP=300kPa
7				SPT 7/5/9 N=14	7.10	[dotted pattern]	-	SANDSTONE: red-brown, inferred low strength, highly weathered (bedrock).	-	-	
8					7.41			Start of coring at 7.41 metres. For cored interval, see Core Log Sheet.			
9											
10											

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH06	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 4	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327842.71 E 6247095.59 N MGA94/ 56	Surface RL: 26.16m AHD
Rig Type : SD05		Mounting: Ute	Contractor : Stratacore
Casing Dia. : HQ		Barrel (m) : 1.5m	Bit : Diamond (stepfaced)
Date Started : 17/10/2019		Date Completed : 17/10/2019	Logged by : JS
Angle from Horiz. : 90°		Processed : RCO	Checked : MG
Driller : DM		Bit Condition : New	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log.			

DRILLING				MATERIAL				NATURAL FRACTURES								
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is (50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.	Scale (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
				Start of coring at 7.41 metres. For Non Cored interval, see Borehole Log Sheet.												
				CORE LOSS 370mm.												
NMLC coring				SANDSTONE: fine to medium grained, orange-brown, brown, red-brown, pale brown and pale grey, indistinctly bedded to bedded at 0-5°, with bleaching at defects.	MW			7.95m, Pt, 0°, Rf, Un, Fe 8.05m, WSm, 20mm 8.71m, WSm, 40mm 8.82m, Pt, 0°, Rf, Un, Fe 8.90m, WSm, 20mm	8.88			(25)		7.41		
				9.39m, occasional carbonaceous laminations.														9.35m, Pt, 5°, Rf, Pln, Cn 9.53m, WSm, 10mm
				SANDSTONE: medium grained, pale grey stained orange and orange-brown, indistinctly bedded at 0-20°, trace fine grained and carbonaceous laminations.	SW			9.71m, Pt, 0°, Rf, Pln, Fe				(0)		9.60		

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Job No.
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CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Johnson Park, Dulwich Hill, NSW

HOLE No. A3-BH06

SHEET 4 OF 4

Position : 327842.71 E 6247095.59 N MGA94/ 56	Surface RL: 26.16m AHD	Angle from Horiz. : 90°	Processed : RCO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 17/10/2019	Date Completed : 17/10/2019	Logged by : JS	Date Logged : 17/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress		Drill Depth (m)	(Core Loss / Run %)	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.			
SCALE (m)	Drilling & Casing Water								SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
11	NMLC coring	10.39	(0)	SANDSTONE: as previous.	SW			10.13m, Pt, 0°, Rf, Pln, Fe			
		11.79		End of Borehole at 11.79 metres. Target Depth	Fr			10.66m, ISm, 70mm, CLAY 10.91m, Pt, 2°, Rf, Pln, Fe 11.04m, Pt, 2°, Rf, Cn, X			
12											
13											
14											
15											

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GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GEO_TEMPLATE 2.00 GDT 28/1/20

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH07

SHEET 1 OF 3

Position : 327848.90 E 6247079.98 N MGA94/ 56 **Surface RL:** 23.63m **AHD** **Angle from Horiz. :** 90° **Processed :** RCO
Rig Type : Hand Carry Rig **Mounting:** NA **Contractor :** Stratacore **Driller :** CW **Checked :** MG
Date Started : 30/10/2019 **Date Completed :** 30/10/2019 **Logged by :** LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1 2 3	Hand Auger	Nil	Groundwater Not Encountered		0.20		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with sub-angular gravel.	D	-	0.2m, PID=0.9ppm 0.2m, Possible ACM
							-	[FILL] Gravelly SAND: fine to coarse grained, brown, fine to coarse, sub-angular gravel, trace brick and mortar fragments.	D	-		0.5m, PID=0.7ppm
					1.00		-	[FILL] CLAY: low plasticity, brown, with fine to coarse grained sand.	M	-	1.0m, PID=0.7ppm
					1.85		SC	Sandy CLAY: medium plasticity, pale brown mottled red, fine to coarse grained sand (residual).	w < PL	VSt	2.0m, PID=0.6ppm
					2.40			CLAY: red, with fine to medium, sub-rounded ironstone gravel (residual).			2.4m, material description and origin inferred from drilling fluid.
5					3.22			Start of coring at 3.22 metres. For cored interval, see Core Log Sheet.			

See standard sheets for details of abbreviations & basis of descriptions



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CORE LOG SHEET

GEO COREHOLE NO VISUAL AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH07	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : IWLR Corridor, Dulwich Hill, NSW		Position : 327848.90 E 6247079.98 N MGA94/ 56	Surface RL: 23.63m AHD
Rig Type : Hand Carry Rig		Mounting: NA	Contractor : Stratacore
Casing Dia. : 90mm		Barrel (m) : 1.0m	Bit : Diamond (stepfaced)
Date Started : 30/10/2019		Date Completed : 30/10/2019	Logged by : LM
Angle from Horiz. : 90°		Processed : RCO	Checked : MG
Driller : CW		Bit Condition : Good	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log.			

DRILLING				MATERIAL				NATURAL FRACTURES									
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Estimated Strength Is(50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.		Weathering	Scale (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
Scale (m)	Drilling & Casing	Water	Drill Depth (m)															(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
1																	
2																	
3																	
4	NMLC coring				SILTSTONE: red-brown with pale grey and yellow bands, indistinctly laminated.	EW								(0)			
5					SANDSTONE: fine to coarse grained, white with yellow and red bands, laminated at 5°.	EW								(0)			

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CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH07	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : IWLR Corridor, Dulwich Hill, NSW		Position : 327848.90 E 6247079.98 N MGA94/ 56	Surface RL: 23.63m AHD
		Angle from Horiz. : 90°	Processed : RCO
Rig Type : Hand Carry Rig	Mounting: NA	Contractor : Stratacore	Driller : CW
Checked : MG		Bit : Diamond (stepfaced)	Bit Condition : Good
Casing Dia. : 90mm	Barrel (m) : 1.0m	Bit Condition : Good	Date: 16/01/2020
Date Started : 30/10/2019		Date Completed : 30/10/2019	Logged by : LM
		Date Logged : 30/10/2019	<small>Note: * indicates signatures on original issue of log or last revision of log.</small>

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress		Depth / (RL) metres	Graphic Log	Description <small>ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)</small>	Weathering	Estimated Strength Is (50) MPa <small>● Axial ○ Diametral</small>	Spacing (mm)	Additional Data <small>(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.</small>			
SCALE (m)	Drilling & Casing Water										Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS
6	NMLC coring	5.13	X	CORE LOSS 180mm.							
		5.22	.....	SANDSTONE: as above.	EW					
		(19)	.....	SANDSTONE: fine to medium grained, pale brown-pale pink, laminated to thinly laminated at 10-15°.	HW	●			5.57m, WSm, CLAY, 30mm	
			5.88	.....	CORE LOSS 320mm.					
		(57)	6.20	X	CORE LOSS 320mm.						
			6.40	.....	SANDSTONE: fine to medium grained, pale purple with white bands, thinly laminated at 10-15°.	HW	●		6.29m, Jt, 45°, Rf, Pln, Fe 6.30m, Jt, 0°, Rf, Un 6.35m, WSm, 0°, Rf, Sn Fe, CLAY 20mm	
(0)	6.45	.....	SANDSTONE: fine to medium grained, pale grey and yellow with black laminates, thinly laminated at 5°.	HW	●					
		6.74	.....	End of Borehole at 6.74 metres. Target Depth						
7											
8											
9											
10											

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : 1-3 Williams Parade, Dulwich Hill, NSW

HOLE No. A3-BH08

SHEET 1 OF 3

Position : 327846.26 E 6247047.85 N MGA94/ 56 **Surface RL:** 21.80m **AHD** **Angle from Horiz. :** 90° **Processed :** RCO
Rig Type : XC Rig **Mounting:** Track **Contractor :** Terratest **Driller :** CD **Checked :** MG
Date Started : 17/10/2019 **Date Completed :** 17/10/2019 **Logged by :** JF/LM **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
	Diaphane			ES/QA6	0.12		-	CONCRETE PAVEMENT	-	-	
				ES	0.60		-	[FILL] Gravelly SAND: fine to coarse grained, brown, fine to coarse, angular gravel, with silt, trace brick fragments.	M	-	0.2m, PID=4.7ppm
				SPT 7/8/10 N=18			-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, angular gravel.	M	-	0.5m, PID=4.9ppm
1				ES	1.20		-	[FILL] Sandy CLAY: low plasticity, grey brown, fine to medium grained sand, trace brick and concrete	M	-	1.0m, PID=4.0ppm
				SPT 4/4/4 N=8	1.90		GC	Gravelly CLAY: high plasticity, brown mottled pale brown, fine to medium, sub-rounded gravel, with fine to coarse grained sand (residual).	w = PL	St	2.0m, PID=6.3ppm
	TC-bit auger	Nil	Groundwater Not Encountered	ES	2.70		CH	CLAY: high plasticity, brown mottled pale grey, trace fine to medium, sub-rounded ironstone gravel (residual).	w < PL	VSt	3.0m, PID=8.6ppm
3				SPT 5/8/9 N=17							
				ES				3.5m, pale brown mottled pale grey.			
				SPT 3/6/12 N=18							
4				ES							
				SPT 2/8/11 N=19				4.7m, trace fine grained sand.			
5											

See standard sheets for details of abbreviations & basis of descriptions



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Job No.
21-12515105

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH08	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : 1-3 Williams Parade, Dulwich Hill, NSW		Surface RL: 21.80m AHD	Angle from Horiz. : 90°
Position : 327846.26 E 6247047.85 N MGA94/ 56	Contractor : Terratest	Driller : CD	Processed : RCO
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Checked : MG
Date Started : 17/10/2019	Date Completed : 17/10/2019	Logged by : JF/LM	Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil	GNO	SPT 8 for 200mm HB N=ref	6.00		CH	CLAY: as previous.	w < PL w = PL w > PL	VSt	
7								Start of coring at 6 metres. For cored interval, see Core Log Sheet.			
8											
9											
10											

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH08	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 3	
Location : 1-3 Williams Parade, Dulwich Hill, NSW		Surface RL: 21.80m AHD	Angle from Horiz. : 90°
Position : 327846.26 E 6247047.85 N MGA94/ 56	Processed : RCO	Rig Type : XC Rig	Mounting: Track
Contractor : Terratest	Driller : CD	Checked : MG	
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : Good
Date Started : 17/10/2019	Date Completed : 17/10/2019	Logged by : JF/LM	Date Logged : 30/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL				NATURAL FRACTURES					
Progress		Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is ₍₅₀₎ MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)													
							6.00		Start of coring at 6 metres. For Non Cored interval, see Borehole Log Sheet.				
					(0)		6.00 - 7.70		SANDSTONE: fine to medium grained, pale purple and red-yellow, indistinctly very thinly bedded at 5-10°, iron stained.	HW			6.30m, Jt, 0°, Rf, Pln, Fe Sn 6.52m, Jt (healed), Fe filled 6.59m, WSm, 10°, Rf, Pln, CLAY 60mm 6.64m, Jt (healed), 60°, Pln, Fe 6.71m, Jt (healed), 10°, Pln, Fe
				7.00			7.70		SANDSTONE: fine to medium grained, orange-brown, brown and pale grey, indistinctly laminated to thinly laminated at 5-10°.	MW			7.06m, Jt, 10°, Rf, Pln, Un, Fe Sn 7.20m, Jt (healed), St, Fe Sn 7.26m, Jt, St, Fe Sn 7.30m, Jt (healed), 70°, St, Fe Sn 7.38m, Jt, 5-30°, St, Fe Sn 7.40m, Jt, 90°, Un, Co 7.48m, Jt, 0°, St, Fe Sn 7.56m, Jt, 90°, St, Fe Sn 7.66m, Pt, 5-10°, Pln, CLAY
				8.50					8.5m, iron staining.	HW			7.95m, Pt, 5-10°, Pln, CLAY 8.37m, WSm, 0°, Rf, Pln, CLAY/Qz 30mm
										MW			8.80m, Jt, 80°, Rf, Cu, Fe 120mm 8.90m, Jt, 90°, Un, Fe 250mm 9.47m, WSm, 15°, Rf, Pln, Qz 20mm
							10.00		End of Borehole at 10.00 metres.				

See standard sheets for details of abbreviations & basis of descriptions

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH09

SHEET 1 OF 3

Position : 327867.74 E 6246929.15 N MGA94/ 56 **Surface RL:** 28.86m **AHD** **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 23/10/2019 **Date Completed :** 23/10/2019 **Logged by :** JS
Processed : RCO
Checked : MG
Date: 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index		
1 2 3 4 5	TC-bit auger	-	-	ES	0.20		-	[FILL] Gravelly SAND: fine to coarse grained, dark grey, fine to coarse, sub-angular to angular gravel, trace rootlets.	M	-	0.2m, PID=8.7ppm		
				ES	0.60		CH	CLAY: high plasticity, pale grey mottled orange-brown, trace fine to coarse grained sand, trace rootlets (residual).	w < PL	St-VSt	0.5m, PID=9.6ppm 0.6m, PP test failed due to low moisture content.		
				SPT 3/6/9 N=15	1.00								1.0m, PID=14.2ppm
				SPT 15/18/21 N=39	2.00		GC	Gravelly CLAY: high plasticity, pale grey mottled red-brown, fine to coarse, sub-rounded ironstone gravel (residual).	w < PL	VSt			
				SPT 17/ 30 for 130mm N=ref	2.50						1.5m, with fine to medium, sub-rounded ironstone gravel.		
	NMLC coring	-	-	D							2.7m, disturbed sample collected from core.		
	HQ casing			D								3.5m, disturbed sample collected from core.	
	Wash boring	-	-	SPT 23/ 30 for 120mm HB	4.50		-	SHALE: grey and pale brown, inferred very low strength, highly weathered (bedrock).	-	-			
							4.80						Start of coring at 4.8 metres. For cored interval, see Core Log Sheet.

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21-12515105

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017_2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH09	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 3	
Location : IWLR Corridor, Dulwich Hill, NSW		Position : 327867.74 E 6246929.15 N MGA94/ 56	Surface RL: 28.86m AHD
		Angle from Horiz. : 90°	Processed : RCO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 23/10/2019	Date Completed : 23/10/2019	Logged by : JS	Date Logged : 23/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL					NATURAL FRACTURES											
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Estimated Strength Is ₍₅₀₎ MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.													
SCALE (m)	Drilling & Casing	Water	Drill Depth (m)																	
			(Core Loss / Run %)	SAMPLER & TESTS	Depth / (RL) metres	Graphic Log	Weathering	Soil	VL	L	M	H	VF	EH	20	40	100	300	1000	
1																				
2																				
3																				
4																				
5					4.80	X														

Start of coring at 4.8 metres.
For Non Cored interval, see Borehole Log Sheet.
CORE LOSS 250mm.

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH09

SHEET 3 OF 3

Position : 327867.74 E 6246929.15 N MGA94/ 56	Surface RL: 28.86m AHD	Angle from Horiz. : 90°	Processed : RCO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Casing Dia. : HQ	Barrel (m) : 1.5m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 23/10/2019	Date Completed : 23/10/2019	Logged by : JS	Date Logged : 23/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL						NATURAL FRACTURES		
Progress		Drill Depth (m)	(Core Loss / Run %)	Description	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data					
SCALE (m)	SAMPLES & TESTS						Depth / (RL) metres	Graphic Log	Weathering	(joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.		
5.05		5.85	(24)	Interlaminated SILTSTONE / SANDSTONE (70:30): siltstone is grey; sandstone is fine grained, pale grey, indistinctly laminated to thickly laminated at 0-10°, trace red-brown, iron staining on defects.			5.11m, Pt, 0°, So, Pln, Cn 5.19m, Pt, 0°, So, Pln, Cn					
5.85				5.85	CORE LOSS 70mm			5.40m, WSm, Sandy CLAY 100mm 5.67m, Pt, 0°, So, Pln, Cn				
5.91		6.65	(5)	Interlaminated SILTSTONE / SANDSTONE (70:30): siltstone is grey; sandstone is fine grained, pale grey, indistinctly laminated to thickly laminated at 0-10°, trace red-brown, iron staining on defects.			5.97m, WSm, 70mm 6.05m, Sm, CLAY 20mm 6.13m, Pt, 0°, So, Pln, Cn					
6.65				6.65	SANDSTONE: fine to medium grained, red-brown, orange-brown and pale grey, indistinctly thinly bedded as 0-5°.			6.35m, Sm, CLAY 5mm 6.35m, Sm, CLAY 5mm 6.43m, Pt, 0°, Rf, Pln, Fe 6.47m, Sm, CLAY 30mm 6.59m, WSm 130mm				
7.75		8.40	(0)	7.75m, indistinctly bedded at 0-5°.			6.75m, Jt, 45°, Rf, Pln, Cn 6.89m, Jt, 50°, Rf, Pln, Cn					
8.40				8.40	End of Borehole at 8.40 metres. Excessive water loss			7.09m, Pt, 0°, Rf, Pln 7.13m, Pt, 0°, Rf, Pln 8.19m, Pt, 2°, Rf, Pln, Fe				

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GEO COREHOLE NO VISUAL AST726 2017 2112515105-THEGREENWAY.GPJ GEO TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH10

SHEET 1 OF 4

Position : 327889.58 E 6246878.04 N MGA94/ 56	Surface RL: 29.64m AHD	Angle from Horiz. : 90°	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 24/10/2019		Date Completed : 24/10/2019	Logged by : JS
			Date: 16/01/2020

DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	↑ TC-bit auger	Nil	Groundwater Not Encountered	ES	-	[FILL] Gravelly SAND: fine to coarse grained, dark brown, dark grey, fine to coarse, sub-angular to angular gravel, trace rootlets.	M	-	0.2m, PID=3.9ppm		
				ES	-	0.5m, PID=2.9ppm					
				SPT 4/6/6 N=12	-	1.0m, PID=3.3ppm					
				ES	-	1.30	-	[FILL] Gravelly CLAY: medium plasticity, brown, pale grey, pale brown and red-brown, sub-angular to sub-rounded, trace of carbonaceous material.	w < PL	-	1.3m, reworked residual
				SPT 4/6/7 N=13	-	D	-	2.5m, PID=4.1ppm			
2	Nil	Groundwater Not Encountered	Groundwater Not Encountered	ES	-	2.5m, PID=4.1ppm					
				SPT 5/10/8 N=18	-	3.5m, PID=8.0ppm					
				ES	-	3.90	Cl	CLAY: medium plasticity, pale grey mottled red brown, fine to medium, sub-rounded ironstone gravel (residual).	w < PL	St	4.50
3	Nil	Groundwater Not Encountered	Groundwater Not Encountered	SPT 3/2/4 N=6	-	4.50	-	SHALE: pale grey and orange-brown, inferred extremely low strength, highly weathered (bedrock).	-	-	
				ES	-	4.50	-	-	-	-	-
4	Nil	Groundwater Not Encountered	Groundwater Not Encountered	SPT 19/ 30 for 140mm HB	-	4.50	-	SHALE: pale grey and orange-brown, inferred extremely low strength, highly weathered (bedrock).	-	-	
				ES	-	4.50	-	-	-	-	
5	Nil	Groundwater Not Encountered	Groundwater Not Encountered	ES	-	4.50	-	SHALE: pale grey and orange-brown, inferred extremely low strength, highly weathered (bedrock).	-	-	

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See standard sheets for details of abbreviations & basis of descriptions



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21-12515105

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH10

SHEET 2 OF 4

Position : 327889.58 E 6246878.04 N MGA94/ 56 **Surface RL:** 29.64m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 24/10/2019 **Date Completed :** 24/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil			5.64		-	SHALE: as previous.	-	-	
								Start of coring at 5.64 metres. For cored interval, see Core Log Sheet.			
7											
8											
9											
10											

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

See standard sheets for details of abbreviations & basis of descriptions



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Job No.
21-12515105

CORE LOG SHEET

GEO. COREHOLE - NO VISUAL - A51726 2017 - 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH10	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 3 OF 4	
Location : IWLR Corridor, Dulwich Hill, NSW		Position : 327889.58 E 6246878.04 N MGA94/ 56	Surface RL: 29.64m AHD
		Angle from Horiz. : 90°	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Checked : MG	Casing Dia. : HQ	Barrel (m) : 3.0m	Bit : Diamond (stepfaced)
Date : 16/01/2020	Bit Condition : New	Date Started : 24/10/2019	Date Completed : 24/10/2019
Logged by : JS	Date Logged : 24/10/2019	<small>Note: * indicates signatures on original issue of log or last revision of log</small>	

DRILLING				MATERIAL				NATURAL FRACTURES			
Progress		Drilling & Casing Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Estimated Strength Is (50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.
SCALE (m)											
5.64						5.64					
6							SANDSTONE: fine to coarse grained, pale grey, red-brown and pale brown, indistinctly bedded at 0-5°, iron staining, trace siltstone and carbonaceous laminations.				5.81m, Pt, 0°, Rf, Pln, Fe 5.99m, Pt, 0°, Rf, Pln, Fe
7				(0)							6.42m, Pt, 0°, Rf, Pln, Fe 6.46m, Pt, 0°, Rf, Pln, Fe 6.6m, WSm, 100mm
8	NMLC coring						8.24m, bedding becomes 15° and lacks siltstone laminations.				7.59m, Pt, 0-2°, Rf, Un, Fe 8.18m, ISm, CLAY 20mm 8.45m, WSm, 40mm
9											8.84m, Pt, 2°, Rf, Pln, Fe 9.13m, Pt, 0°, Rf, Pln, Fe 9.51m, Pt, 2°, Rf, Pln, Fe
10											9.83m, Jt, 10°, Rf, Pln, Fe

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CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-BH10

SHEET 4 OF 4

Position : 327889.58 E 6246878.04 N MGA94/ 56	Surface RL: 29.64m AHD	Angle from Horiz. : 90°	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Driller : DM
Casing Dia. : HQ	Barrel (m) : 3.0m	Bit : Diamond (stepfaced)	Bit Condition : New
Date Started : 24/10/2019	Date Completed : 24/10/2019	Logged by : JS	Date Logged : 24/10/2019

Note: * indicates signatures on original issue of log or last revision of log

DRILLING				MATERIAL				NATURAL FRACTURES				
Progress		Drill Depth (m)	Core Loss / Run (%)	Description	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data		Weathering	Scale (m)	Drilling & Casing	Water
Depth / (RL) metres	Graphic Log												Soil	Fracture
			(0)	SANDSTONE: as previous.								
		11.77										
			(0)									
		13.32										
				End of Borehole at 13.32 metres. Target Depth								

See standard sheets for details of abbreviations & basis of descriptions



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GEO COREHOLE NO VISUAL - AST726 2017 2112515105-THEGREENWAY.GPJ GEO_TEMPLATE 2.00 GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH11	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 4	
Location : Dulwich Grove Footpath, Duwlich Hill, NSW		Position : 327927.23 E 6246811.00 N MGA94/ 56	Surface RL: 28.30m AHD
		Angle from Horiz. : 90°	Processed : SBO
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : FF
		Checked : MG	
Casing Dia. : HQ	Barrel (m) : 3.0m	Bit : Diamond (stepfaced)	Bit Condition : Good
		Date: 16/01/2020	
Date Started : 24/10/2019		Date Completed : 24/10/2019	Logged by : LM
		Date Logged : 24/10/2019	<small>Note: * indicates signatures on original issue of log or last revision of log</small>

DRILLING				MATERIAL						NATURAL FRACTURES								
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Estimated Strength Is(50) MPa	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.											
SCALE (m)	Drilling & Casing Water	Drill Depth (m)	(Core Loss / Run %) SAMPLES & TESTS															
1																		
2																		
3																		
4																		
5	NMLC coring			4.55	Start of coring at 4.55 metres. For Non Cored interval, see Borehole Log Sheet. SANDSTONE: fine to coarse grained, pale grey and pale purple, indistinctly thinly bedded at 5°.	Weathering Soil 0.03 VL 0.1 L 0.3 M 1 H 3 VH 10 EH	20 40 100 300 1000											

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Job No.
21-12515105

CORE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Dulwich Grove Footpath, Dulwich Hill, NSW

HOLE No. A3-BH11

SHEET 3 OF 4

Position : 327927.23 E 6246811.00 N MGA94/ 56	Surface RL: 28.30m AHD	Angle from Horiz. : 90°	Processed : SBO
Rig Type : XC Rig	Mounting: Track	Contractor : Terratest	Driller : FF
Casing Dia. : HQ	Barrel (m) : 3.0m	Bit : Diamond (stepfaced)	Bit Condition : Good
Date Started : 24/10/2019	Date Completed : 24/10/2019	Logged by : LM	Date Logged : 24/10/2019

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING				MATERIAL				NATURAL FRACTURES										
Progress		Drill Depth (m)	(Core Loss / Run %)	Description	Estimated Strength I_s (50) MPa	Spacing (mm)	Additional Data		Depth / (RL) metres	Graphic Log	Weathering	Soil	L	M	H	VH	EH	
SCALE (m)	Drilling & Casing																	Water	SAMPLES & TESTS	Rock Name	Soil Name	Fracture Type	Orientation
6				5.0m, pale grey, occasional carbonaceous laminations.														
				5.7-5.9m, pale brown iron staining.			5.78m, WSm, CLAY, 40mm											
				SANDSTONE: medium grained, pale grey trace orange-brown staining, indistinctly bedded at 5-10°, with fine grained laminations.														
			(0)				6.88m, Pt, 0°, Pln, Rf, CLAY 10mm											
							6.96m, Pt, 0°, Pln, Rf, CLAY 10mm											
							7.07m, Pt, 0°, Pln, Rf, CLAY 10mm											
							7.64m, WSm, CLAY and rock fragments, 20mm											
				7.5-7.6m, pale orange brown, iron stained patches.														
							9.1m, Pt, 5°, Pln, Rf, CLAY											
							9.3m, Pt, 5°, Pln, Rf, CLAY											
							9.33m, Pt, 5°, Pln, Rf, CLAY											
							9.55m, WSm, 15mm											
							9.71m, Pt, 5°, Pln, Rf, CLAY											
							9.73m, Pt, 5°, Pln, Rf, CLAY											

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GEO COREHOLE NO VISUAL AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO TEMPLATE 2.00 GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council		HOLE No. A3-BH11	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 4 OF 4	
Location : Dulwich Grove Footpath, Duwlich Hill, NSW		Position : 327927.23 E 6246811.00 N MGA94/ 56	Surface RL: 28.30m AHD
Rig Type : XC Rig		Mounting: Track	Contractor : Terratest
Casing Dia. : HQ		Barrel (m) : 3.0m	Bit : Diamond (stepfaced)
Date Started : 24/10/2019		Date Completed : 24/10/2019	Logged by : LM
Angle from Horiz. : 90°		Processed : SBO	Checked : MG
Driller : FF		Bit Condition : Good	Date: 16/01/2020
Note: * indicates signatures on original issue of log or last revision of log.			

DRILLING				MATERIAL				NATURAL FRACTURES								
Progress				Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength Is(50) MPa ● Axial ○ Diametral	Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.	Scale (m)	Drilling & Casing	Water	Drill Depth (m)	(Core Loss / Run %)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log
				SANDSTONE: as previous.	MW	VL	20	10.19m, WSm, 20mm	10.28			10.28				
				End of Borehole at 10.28 metres. Target Depth												

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A3-HA01

SHEET 1 OF 1

Position : 327963.90 E 6247462.09 N MGA94/ 56 **Surface RL:** 18.65m AHD **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 25/10/2019 **Date Completed :** 25/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES D	0.20		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with fine to coarse gravel, with ballast cobbles, trace brick and concrete fragments.	M	-	0.2m, PID=3.3ppm
							-	[FILL] Clayey Sandy GRAVEL: fine to coarse, sub-angular to angular, brown, fine to coarse grained sand, trace ballast cobbles, trace brick and concrete fragments.	M	-	0.5m, PID=4.7ppm
					1.00		-	[FILL] Gravelly SAND: fine to coarse grained, dark grey/black, fine to coarse, angular gravel.	M	-	1.0m, PID=3.9ppm
					1.20						End of borehole at 1.20 metres. Auger refusal

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A3-HA02

SHEET 1 OF 1

Position : 327940.94 E 6247442.12 N MGA94/ 56 **Surface RL:** 18.96m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 21/10/2019 **Date Completed :** 21/10/2019 **Logged by :** LM/JW **Date:** 16/01/2020

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DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	S/QA11/QA12	0.10		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace fine to medium, angular gravel, trace rootlets.	M	-	0.2m, PID=1.8ppm
							-	[FILL] Gravelly SAND: fine to medium grained, brown, fine to coarse, sub-rounded gravel, with brick and tile fragments.	M	-	
					0.60		-	[FILL] Clayey Sandy GRAVEL: fine to medium, angular dark grey, fine to coarse grained sand.	M	-	1.0m, PID=2.3ppm
					0.80		-	[FILL] CLAY: low-medium plasticity, pale brown mottled yellow, trace fine to medium, angular gravel.	w = PL	-	
2				ES	2.00					2.0, PID=1.8ppm	
								End of borehole at 2.00 metres. Target Depth			
3											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20





Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A3-HA03

SHEET 1 OF 1

Position : 327919.93 E 6247418.15 N MGA94/ 56 **Surface RL:** 19.16m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 21/10/2019 **Date Completed :** 21/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES ES/QA10 D	0.10		-	[TOPSOIL] Silty SAND: fine to medium grained, brown, trace fine, angular gravel.	M	-	0.1m, Possible ACM 0.2m, PID=4.0ppm 0.5m, PID=3.4ppm
					0.20		-	[FILL] Clayey SAND: fine to medium grained, brown, with fine to coarse, sub-angular, gravel, trace brick and concrete.	M	-	
					0.60		-	0.5m, with bricks.	w = PL	-	
					1.00		-	[FILL] CLAY: medium plasticity, brown mottled red and grey, with fine to coarse grained sand, with fine to coarse, sub-angular gravel, trace cobble-sized brick fragments.			1.0m, PID=3.3ppm
								End of borehole at 1.00 metres. Auger refusal			

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A3-HA04

SHEET 1 OF 1

Position : 327898.55 E 6247386.87 N MGA94/ 56 **Surface RL:** 19.49m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 25/10/2019 **Date Completed :** 25/10/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING				MATERIAL					Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index	
1	Hand Auger	Nil	Groundwater Not Encountered	ES	0.20		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with ballast cobbles.	M	-	0.2m, PID=6.5ppm	
					0.30		-	CONCRETE.	-	-		
					ES	0.60		-	[FILL] CLAY: medium plasticity, yellow mottled orange, with fine to coarse grained sand, with ballast cobbles.	w = PL	-	0.5m, PID=9.8ppm hydrocarbon odour
					ES			-	[FILL] CLAY: high plasticity, grey, trace fine to coarse grained sand.	w = PL	-	
				D				1.0m, mottled yellow.	w > PL		1.0m, PID=1.9ppm	
				ES				1.3m, with red, fine to coarse grained sand.	w = PL			
2					2.00			End of borehole at 2.00 metres. Target Depth				
3												

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A3-HA05

SHEET 1 OF 1

Position : 327868.61 E 6247329.85 N MGA94/ 56

Surface RL: 20.06m AHD

Angle from Horiz. : 90°

Processed : SBO

Rig Type : Hand auger

Mounting: NA

Contractor : NA

Driller : NA

Checked : MG

Date Started : 31/10/2019

Date Completed : 31/10/2019

Logged by : LM

Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES D ES D ES/QA30 D D ES	0.20		-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, fine to medium, angular gravel, with rootlets.	D	-	0.2m, PID=2.4ppm
					0.60		-	[FILL] Clayey Sandy GRAVEL: fine to medium, angular, brown, fine to coarse grained sand.	D	-	0.5m, PID=1.6ppm
					1.10		GC	Gravelly CLAY: medium plasticity, pale brown mottled pale grey, fine to coarse, rounded, ironstone gravel (residual).	w = PL	VSt	1.0m, PID=1.6ppm
					2.00		Cl	CLAY: medium plasticity, pale brown mottled pale grey, trace fine to medium, sub-rounded ironstone gravel (residual).	w = PL	VSt	1.7m, high augering resistance. 2.0m, PID=1.2ppm
2					2.00			End of borehole at 2.00 metres. Target Depth			
3											

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BOREHOLE LOG SHEET

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Client : Inner West Council		HOLE No. A3-HA06	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : IWLR Corridor, Dulwich Hill, NSW		Position : 327857.00 E 6247021.00 N MGA94/ 56	Surface RL: 21.40m AHD Angle from Horiz. : 90°
Rig Type : Hand auger	Mounting: NA	Contractor : NA	Driller : NA
Date Started : 15/11/2019		Date Completed : 15/11/2019	
		Logged by : LM	
		Processed : HAL	
		Checked : MG	
		Date: 16/01/2020	

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DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES D ES D ES D	0.30	-	-	[TOPSOIL] Silty SAND: fine to coarse grained, brown, with fine to medium, sub-rounded gravel.	D	-	0.2m, PID=1.0ppm
					0.60	-	-	[FILL] Silty SAND: fine to coarse grained, brown, with fine to coarse, sub-rounded gravel and angular cobbles.	D	-	0.5m, PID=1.0ppm
					1.00	SM	-	Silty SAND: fine to medium grained, grey, with fine to medium, sub-rounded gravel (residual).	D	MD	
					1.15	-	-	SHALE: grey, inferred low strength, highly weathered (bedrock).	-	-	1.0m, PID=1.1ppm
								End of borehole at 1.15 metres. Refusal on Bedrock			

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BOREHOLE LOG SHEET






Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-HA07

SHEET 1 OF 1

Position : 327864.10 E 6246965.50 N MGA94/ 56 **Surface RL:** 23.72m AHD **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 15/11/2019 **Date Completed :** 15/11/2019 **Logged by :** LM **Date:** 16/01/2020

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DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	Hand Auger	Nil	Groundwater Not Encountered	ES D ES D ES D	0.20		-	[FILL] Sandy GRAVEL: fine to coarse, sub-angular to angular, brown and grey, fine to coarse grained sand, with ballast cobbles, trace rootlets.	D	-	0.2m, PID=1.4ppm
							-	[FILL] Silty Sandy GRAVEL: fine to coarse, angular, brown and grey, fine to coarse grained sand, with ballast cobbles.	D	-		0.5m, PID=1.9ppm
					0.80		-	[FILL] Cobbly Silty SAND: fine to coarse grained, brown, fine to coarse, angular cobbles, with fine to coarse, angular gravel.	D	-	1.0m, PID=1.7ppm
					0.95		SM	Silty SAND: fine to coarse grained, brown, with trace fine to medium, sub-angular gravel (residual).	D	MD	
					1.10 1.15		-	SHALE: grey, inferred low strength, highly weathered (bedrock). End of borehole at 1.15 metres. Refusal on Bedrock	-	-	

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council		HOLE No. A3-LD01	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 1 OF 1	
Location : Johnson Park, Dulwich Hill, NSW		Position : 327849.11 E 6247311.22 N MGA94/ 56	Surface RL: 22.41m AHD
		Angle from Horiz. : 90°	Processed : SBO
Rig Type : XP60	Mounting: Ute	Contractor : Terratest	Driller : CD
Date Started : 10/10/2019		Date Completed : 10/10/2019	Logged by : LM
			Checked : MG
			Date: 16/01/2020

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DRILLING				MATERIAL				Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol		Description	Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES	0.20	▲▲▲▲▲	-	[TOPSOIL] Silty SAND, fine grained, dark brown, with rootlets.	M	-	0.2m, PID=6.0ppm
				B	-	■	-	[FILL] Silty SAND: fine to medium grained, brown, with fine, angular gravel.	M	-		0.5m, PID=20.3ppm
				ES	0.70	▲▲▲▲▲	-	CLAY: high plasticity, red mottled pale grey, trace fine to coarse, sub-rounded ironstone gravel (residual).	w < PL	St	1.0m, PID=8.4ppm
				D	-	■	CH		VSt-H	2.0m, PID=3.7ppm	
2				ES	2.00	▲▲▲▲▲		End of borehole at 2.00 metres. Target Depth			
3				D							
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST1726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Constitution Road, Dulwich Hill, NSW

HOLE No. A3-LD02

SHEET 1 OF 2

Position : 327838.42 E 6247108.92 N MGA94/ 56	Surface RL: 24.05m AHD	Angle from Horiz. : 90°	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 21/10/2019	Date Completed : 21/10/2019	Logged by : JS	Date: 16/01/2020

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DRILLING				MATERIAL						Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
↑ TC-bit auger	Nil	Groundwater Not Encountered	-	ES	0.10	▴ ▽	-	CONCRETE FOOTPATH	-	-	0.2m, PID=5.0ppm 0.5m, PID=8.7ppm 1.0m, PID=7.4ppm 2.5m, PID=8.3ppm 2.7m, PP=200-260kPa 3.5m, PID=9.8ppm 3.7m, PP=160kPa
				ES	0.30	▴ ▽	-	[FILL] Gravelly SAND: fine to coarse grained, dark grey and dark brown.	M	-	
				ES		▴ ▽	-	[FILL] Sandy CLAY: medium plasticity, dark brown, brown, pale grey, orange-brown mixed, fine to coarse grained sand, with fine to coarse, sub-angular to angular gravel.	w = PL	-	
				SPT 3/2/2 N=4		▴ ▽	-		-	-	
				ES		▴ ▽	-		-	-	
				SPT 4/11/6 N=17		▴ ▽	-		-	-	
				ES	2.50	▴ ▽	CH	CLAY: high plasticity, red-brown mottled pale grey, with occasional bands of fine to coarse, sub-rounded ironstone gravel (residual).	w > PL	St	
				SPT 3/4/6 N=10 B		▴ ▽	-		-	-	
ES		▴ ▽	-		-	-					
SPT 5/6/7 N=11		▴ ▽	-		-	-					
ES	4.20	▴ ▽	SC	Sandy CLAY / Clayey SAND: fine to coarse grained, pale grey mottled pale brown, medium plasticity clay, occasional red-brown, fine to medium, sub-rounded ironstone gravel (residual).	w = PL	VSt					
SPT 3/10/7 N=17		▴ ▽	-		-	-					
ES	4.70	▴ ▽	-		-	-					
SPT 3/10/7 N=17		▴ ▽	-		-	-					

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BOREHOLE LOG SHEET

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Client : Inner West Council		HOLE No. A3-LD02	
Project : The GreenWay Geotechnical and Contamination Services		SHEET 2 OF 2	
Location : Constitution Road, Dulwich Hill, NSW		Surface RL: 24.05m AHD	Angle from Horiz. : 90°
Position : 327838.42 E 6247108.92 N MGA94/ 56	Contractor : Stratacore	Driller : DM	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 21/10/2019	Date Completed : 21/10/2019	Logged by : JS	Date: 16/01/2020

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil		SPT 15 for 60mm HB N=ref	5.56	.....	-	SANDSTONE: as previous.	-	-	
7								End of borehole at 5.56 metres. Target Depth			
8											
9											
10											

Note: * indicates signatures on original issue of log or last revision of log

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Davis Street, Dulwich Hill, NSW

HOLE No. A3-LDBH01

SHEET 1 OF 4

Position : 327981.39 E 6247478.61 N MGA94/ 56 **Surface RL:** 23.91m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 18/10/2019 **Date Completed :** 18/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index			
1 2 3 4 5	TC-bit auger	Nil	Groundwater Not Encountered	ES			-	[FILL] Silty SAND: fine to medium grained, dark brown and brown, trace fine to coarse, sub-angular gravel, trace rootlets.	M	-	0.2m, PID=2.7ppm			
				ES									0.5m, PID=3.5ppm	
				SPT 6/6/7 N=13										1.0m, PID=7.2ppm
				ES				1.30		-	[FILL] CLAY: medium plasticity, pale grey. pale brown, red-brown mottled, trace fine to coarse grained sand, trace fine to coarse, sub-rounded to sub-angular ironstone and sandstone gravel, trace rootlets (reworked residual).	w = PL	-	1.5m, PP-100-200kPa
				SPT 2/3/5 N=8										2.5m, PID=7.6ppm
				ES/DUP1				2.5m, with fine to coarse gravel sized fragments of ripped shale, remoulds to low plasticity clay.	w < PL		2.8m, PP test failed due to low moisture and high gravel content			
				SPT 4/6/9 N=15							3.5m, PID=4.0ppm			
				ES							3.8m, PP test failed due to low moisture and high gravel content			
				SPT 4/9/9 N=18							4.5m, PID=3.1ppm			
				B										
				ES										
				SPT 4/6/6 N=12										

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21-12515105

GEO_BOREHOLE_A31726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Davis Street, Dulwich Hill, NSW

HOLE No. A3-LDBH01

SHEET 2 OF 4

Position : 327981.39 E 6247478.61 N MGA94/ 56 **Surface RL:** 23.91m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 18/10/2019 **Date Completed :** 18/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
6	TC-bit auger	Nil					-	[FILL] CLAY: as previous. 5.3-5.7m, sandstone boulder encountered.	w = PL	-	5.3m, sandstone boulder inferred as bedrock during drilling, therefore changed to NMLC coring. All water lost downhole and still in fill profile. Switched to washboring and continued SPT. 6.7m, sampled the cored fill.
7	NMLC coring			D	7.30		CH	CLAY: high plasticity, pale grey mottled pale brown and red-brown, trace fine to coarse, sub-rounded ironstone gravel (residual).	w = PL	VSt	7.3m, PP=300kPa
8	HQ casing			SPT 4/6/10 N=16	8.00		GC	Gravelly CLAY: high plasticity, pale grey mottled pale brown, fine to coarse, sub-rounded to rounded ironstone gravel (residual).	w = PL	VSt	8.0m, SPT refusal on ironstone gravel layers.
9	Washboring			SPT 22/21 for 140mm N=ref	9.00		SC	Clayey SAND: fine to coarse grained, pale brown mottled pale grey, low plasticity clay (residual).	M	MD	
10				SPT 7/8/12 N=20							

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Davis Street, Dulwich Hill, NSW

HOLE No. A3-LDBH01

SHEET 3 OF 4

Position : 327981.39 E 6247478.61 N MGA94/ 56 **Surface RL:** 23.91m AHD **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 18/10/2019 **Date Completed :** 18/10/2019 **Logged by :** JS **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
11	Washboring ↓	HQ casing		SPT 10/ 30 for 80mm (HB) N=ref	10.40		-	Clayey SAND: as previous.	M	MD	
					10.65		-	SANDSTONE: pale brown and grey, highly to moderately weathered (bedrock).	-	-	
11								Start of coring at 10.65 metres. For cored interval, see Core Log Sheet.			
12											
13											
14											
15											

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GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

CORE LOG SHEET

GEO COREHOLE_NO VISUAL_AST726 2017 2112515105-THEGREENWAY.GPJ GHD GEO_TEMPLATE 2.00 GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Davis Street, Dulwich Hill, NSW
Position : 327981.39 E 6247478.61 N MGA94/ 56 **Surface RL:** 23.91m **AHD** **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Casing Dia. : HQ **Barrel (m) :** 3.0m **Bit :** Diamond (stepfaced) **Bit Condition :** New **Date:** 16/01/2020
Date Started : 18/10/2019 **Date Completed :** 18/10/2019 **Logged by :** JS **Date Logged :** 18/10/2019

HOLE No. A3-LDBH01

SHEET 4 OF 4

Note: * indicates signatures on original issue of log or last revision of log.

DRILLING			MATERIAL										NATURAL FRACTURES								
Progress	Drilling & Casing	Water	Drill Depth (m)	Core Loss / Run (%)	SAMPLES & TESTS	Depth / (RL) metres	Graphic Log	Description ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, moisture, durability and and [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin)	Weathering	Estimated Strength <i>I_s</i> (50) MPa						Spacing (mm)	Additional Data (joints, partings, seams, zones and veins) Fracture type, orientation, infilling or coating, shape, roughness, other.				
										VL	L	M	H	VH	EH						
						10.65		Start of coring at 10.65 metres. For Non Cored interval, see Borehole Log Sheet.													
						10.90	X	CORE LOSS 250mm.													
	NMLC coring				(14)			SANDSTONE: fine to coarse grained, pale grey stained orange-brown on defects, indistinctly bedded at 0-5°.	SW								10.97m, Pt, 0°, Rf, Pln, Fe	11.15m, Pt, 2°, Rf, St, Fe			
11										11.66m, pale grey, trace carbonaceous laminations.	Fr								11.49m, Pt, 0°, Rf, Pln, Fe	11.55m, Pt, 0°, Rf, Pln, Fe	11.64m, WSm, 10mm
12																					
				12.41				12.41		End of Borehole at 12.41 metres. Target Depth											
15																					

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TEST PIT LOG SHEET

Client: Inner West Council
Project: The GreenWay Geotechnical and Contamination Services
Location: IWLR Corridor, Dulwich Hill, NSW


HOLE No. **A3-TP01**

SHEET 1 OF 1

Position: 328001.29 E 6247494.25 N MGA94/ 56 Surface RL: 18.72m AHD Processed: SBO

Method of Exploration: Hand dug Hole Size: 0.5m x 0.3m Checked: MG

Date: 14/10/19 Logged by: JS Date: 16/01/2020

Scale (m)	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Moisture Condition Consistency / Density Index	Material Description [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: Grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering / alteration, defects Comments Observations <small>Note: * indicates signatures on original issue of log or last revision of log</small>
	Groundwater Not Encountered		0.50		-	M	[TOPSOIL] Silty SAND: fine to coarse grained, dark brown, trace rootlets. End of test pit at 0.5 metres. Refusal due to dense vegetation. 0.0m, Embankment densely vegetated.
1							
2							
3							

GEO_TEST_PIT_AS1726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

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TEST PIT LOG SHEET

Client: Inner West Council
Project: The GreenWay Geotechnical and Contamination Services
Location: IWLR Corridor, Dulwich Hill, NSW

HOLE No. A3-TP02

SHEET 1 OF 1

Position: 327976.16 E 6247471.30 N MGA94/ 56 **Surface RL:** 20.16m AHD **Processed:** SBO

Method of Exploration: Hand dug **Hole Size:** 0.5m x 0.3m **Checked:** MG

Date: 14/10/19 **Logged by:** JS **Date:** 16/01/2020

Scale (m)	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Material Description [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: Grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering / alteration, defects	Moisture Condition	Consistency / Density Index	Comments Observations
	Groundwater Not Encountered	B	0.20	[Pattern: Triangles]	-	[TOPSOIL] Sandy SILT: dark brown and dark grey, fine to coarse grained sand, trace rootlets.	M	-	
			0.80	[Pattern: Cross-hatch]	-	[FILL] Gravelly Sandy CLAY: low to medium plasticity, fine to coarse grained sand, fine to coarse, sub-angular to angular gravel, trace building refuse including brick.	w < PL	-	
1						End of test pit at 0.8 metres. Target Depth.			
2									
3									

GEO_TEST PIT_AS1726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

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GEO_BOREHOLE_AST726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00 GDT 28/1/20

BOREHOLE LOG SHEET
Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Hercules Street, Dulwich Hill, NSW

HOLE No. A4-BH01
SHEET 1 OF 1
Position : 327961.89 E 6246716.63 N MGA94/ 56 **Surface RL:** 25.00m **AHD** **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 21/10/2019 **Date Completed :** 21/10/2019 **Logged by :** JS
Processed : SBO
Checked : MG
Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
<div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; height: 100%; margin-right: 5px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TC-bit auger</div> </div>	N/A	Nil	Groundwater Not Encountered	ES	0.05		-	CONCRETE FOOTPATH.	-	-	
				ES	0.15		-	[FILL] SAND: fine to coarse grained, pale grey and brown, with fine, sub-angular gravel.	M	-	0.2m, PID=4.2ppm
				SPT 2/2/2 N=4 ES	1.0		-	[FILL] SAND: fine to coarse grained, dark brown, with low plasticity clay.	M	-		0.5m, PID=3.7ppm
				ES	1.30		CH	-	CLAY: high plasticity, pale brown and red-brown, with fine to coarse grained sand, trace layers of red, fine to medium, sub-rounded ironstone gravel (residual).	w = PL	St	1.0m, PID=5.1ppm
SPT 6/6/6 N=12 ES	2.30		-	SANDSTONE: pale grey and red-brown, inferred low strength, highly weathered (bedrock).	-	-	2.2m, PID=6.0ppm				
SPT 11/ 30 for 80mm HB N=ref	2.73		-	End of borehole at 2.73 metres. Target Depth	-	-					

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BOREHOLE LOG SHEET





Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-BH02

SHEET 1 OF 1

Position : 328019.03 E 6246569.80 N MGA94/ 56 **Surface RL:** 17.91m AHD **Angle from Horiz. :** 90° **Processed :** SBO
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Date:** 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations			
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index		
1	TC-bit auger	Nil	22/10/2019	ES	0.10		-	[FILL] Silty SAND: fine to coarse grained, dark brown, trace fine to coarse, sub-angular to angular gravel, trace rootlets.	M	-	0.2m, PID=4.4ppm		
				ES						[FILL] Sandy CLAY: low plasticity, dark brown and dark grey, fine to coarse grained sand, trace fine to coarse, sub-angular to angular gravel.		w = PL	-	0.5m, PID=5.2ppm
				SPT 3/2/3 N=5 D ES	0.90		SC	Sandy CLAY: medium plasticity, brown mottled pale brown, fine to medium grained sand (alluvium).	w = LL	S-F	0.9-1.55m, perched water table 1.0m, PID=5.6ppm		
2				SPT 2/3/2 for 50mm N=ref	1.55		SC	Clayey SAND: fine to coarse grained, pale grey mottled pale brown, low plasticity clay (residual).	M	MD			
					1.70		-	SANDSTONE: pale grey mottled pale brown, inferred low strength, moderately weathered (bedrock).	-	-			
5					1.85			End of borehole at 1.85 metres. Target Depth					

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GEO_BOREHOLE_AST1726 2017 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE 2.00.GDT 28/1/20

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-BH03

SHEET 1 OF 1

Position : 328011.01 E 6246525.23 N MGA94/ 56	Surface RL: 17.57m AHD	Angle from Horiz. : 90°	Processed : SBO
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 22/10/2019	Date Completed : 22/10/2019	Logged by : JS	Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	∇ 22/10/19	ES	0.2	[Cross-hatch pattern]	-	[FILL] Gravelly Silty SAND: fine to coarse grained, dark brown and dark grey, fine to coarse, sub-angular to angular gravel, with ballast cobbles.	M	-	0.2m, PID=2.8ppm
ES				0.5	[Cross-hatch pattern]	-	[FILL] SAND: fine to coarse grained, dark brown and brown, trace fine to medium, sub-angular gravel.	M	-	0.5m, PID=2.3ppm	
SPT 8/4/3 N=7				1.0	[Cross-hatch pattern]	-	[FILL] SAND: fine to coarse grained, dark brown and brown, trace fine to medium, sub-angular gravel.	M	-	1.0m, PID=1.6ppm	
ES				1.5	[Cross-hatch pattern]	-	[FILL] SAND: fine to coarse grained, dark brown and brown, trace fine to medium, sub-angular gravel.	M	-	2.5m, PID=2.1ppm	
2				SPT 7/3/3 N=6	2.0	[Cross-hatch pattern]	-	[FILL] SAND: fine to coarse grained, dark brown and brown, trace fine to medium, sub-angular gravel.	M	-	2.5m, PID=2.1ppm
3				ES	3.00	[Diagonal hatch pattern]	SC	Sandy CLAY: medium plasticity, pale brown mottled red-brown, fine to coarse grained sand (alluvium).	w > PL	F	3.5m, PID=2.9ppm
4				SPT 1/1/6 for 30mm (HB) N=ref	3.80	[Dotted pattern]	-	SANDSTONE: orange-brown, inferred low strength, highly weathered (bedrock).	-	-	
4					4.00	[Dotted pattern]	-	End of borehole at 4.00 metres. Target Depth			

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GEO_BOREHOLE_A51726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-BH04

SHEET 2 OF 2

Position : 328020.28 E 6246484.55 N MGA94/ 56 **Surface RL:** 19.88m AHD **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS

Processed : SBO
Checked : MG
Date: 16/01/2020

DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
	TC-bit auger	Nil			5.10		SC	[COBBLES/BOULDERS/FILL/TOPSOIL] then SOIL NAME: plasticity / primary particle characteristics, colour, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric / texture, inclusions or minor components, durability, strength, weathering / alteration, defects	W	MD	
					5.40		-	SANDSTONE: pale grey, low to medium strength, inferred moderately weathered (bedrock).	-	-	
								End of borehole at 5.40 metres. Target Depth			
6											
7											
8											
9											
10											

GEO_BOREHOLE_A51726_2017_2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE_2.00.GDT 28/1/20

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Job No.

21-12515105

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-BH05

SHEET 1 OF 1


Position : 328006.58 E 6246455.22 N MGA94/ 56 **Surface RL:** 19.34m **AHD** **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Date:** 16/01/2020

DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES	1.00	[Cross-hatched pattern]	-	[FILL] Gravelly Silty SAND: fine to coarse grained, dark brown and dark grey, fine to coarse, sub-angular to angular gravel, with ballast cobbles. 0.3m, with medium plasticity clay, orange. 0.5m, without clay.	M	-	0.2m, PID=5.2ppm 0.5m, PID=4.7ppm
				SPT 5/23/20 N=43 ES				[FILL] GRAVEL: fine to coarse, sub-angular to angular, grey and dark grey, with fine to coarse grained sand, with ballast cobbles.	D	-	1.0m, PID=3.6ppm
2	TC-bit auger	Nil	Groundwater Not Encountered	SPT 23/26/22 N=48	3.00	[Cross-hatched pattern]	-	End of borehole at 3.00 metres. Refusal on highly compacted fill			2.0-3.0m, very slow drilling progress - 30minutes to drill with TC-bit.
3											
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_A51726_2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council	HOLE No. A4-BH06	
Project : The GreenWay Geotechnical and Contamination Services	SHEET 1 OF 1	
Location : IWLR Corridor, Dulwich Hill, NSW	Position : 327984.32 E 6246424.18 N MGA94/ 56	Surface RL: 18.63m AHD
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore
Date Started : 22/10/2019	Date Completed : 22/10/2019	Logged by : JS
		Driller : DM
		Processed : HAL
		Checked : MG
		Date: 16/01/2020

DRILLING					MATERIAL						Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition	Consistency / Density Index		
1 ↑ TC-bit auger ↓	None	None	Groundwater Not Encountered	ES ES SPT 10/ 30 for 100mm HB N _{ref} ES	0.50 1.00		-	[COBBLES/BOULDERS/FILL/TOPSOIL] then SOIL NAME: plasticity / primary particle characteristics, colour, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric / texture, inclusions or minor components, durability, strength, weathering / alteration, defects	M	-	[FILL] Gravelly Silty SAND: fine to coarse grained, dark brown and dark grey, fine to coarse, sub-angular to angular gravel, with cobble-sized ballast.	0.2m, PID=4.2ppm
								[FILL] GRAVEL: fine to coarse, sub-angular to angular, grey and dark grey, with fine to coarse grained sand, with ballast cobbles.	D	-	0.5m, PID=3.8ppm 0.5m, SPT refusal on ballast 0.7-1.0m, very slow drilling progress - 30minutes to drill with TC-bit.	
								End of borehole at 1.00 metres. Refusal on highly compacted fill				

BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-BH07

SHEET 2 OF 2

Position : 327937.64 E 6246389.22 N MGA94/ 56 **Surface RL:** 14.19m AHD **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Date:** 16/01/2020

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DRILLING					MATERIAL						
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition	Consistency / Density Index	Comments/ Observations
6	▼ TC-bit auger	Nil			5.30		SP	SAND: as previous.	M	MD	
					5.50		-	SANDSTONE: pale grey, inferred low strength, moderately to highly weathered (bedrock).	-	-	
								End of borehole at 5.50 metres. Target Depth			
7											
8											
9											
10											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-BH09**SHEET 1 OF 1**

Position : 327984.37 E 6246710.26 N MGA94/ 56 **Surface RL:** 23.05m **AHD** **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Date:** 16/01/2020

DRILLING					MATERIAL						
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition	Consistency / Density Index	Comments / Observations
								[COBBLES/BOULDERS/FILL/TOPSOIL] then SOIL NAME: plasticity / primary particle characteristics, colour, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric / texture, inclusions or minor components, durability, strength, weathering / alteration, defects			
0	TC-bit auger	Nil		ES	0.20	[diagonal hatching]	-	[FILL] Gravelly SAND: fine to coarse grained, dark grey and brown, fine to coarse, sub-angular to angular gravel, trace rootlets.	M	-	0.2m, PID=1.8ppm
0.60				ES/DUP 22/10/19 SPT 3/3/4 N=7	0.60	[diagonal hatching]	SC	Sandy CLAY: medium plasticity, pale brown and orange brown, fine to coarse grained sand (residual). 1.2m: pale grey mottled pale brown.	w > PL	St	0.5m, PID=1.4ppm
1.80				ES SPT 2/4/13 N=17	1.80	[diagonal hatching]	-	SANDSTONE: red-brown and pale grey, inferred low strength, highly weathered (bedrock).			1.0m, PID=1.4ppm 1.7m, PP=360kPa
2.60				SPT 25 for 100mm N=ref	2.60	[diagonal hatching]		End of borehole at 2.60 metres. Target Depth			
3											
4											
5											

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BOREHOLE LOG SHEET

Client : Inner West Council
 Project : The GreenWay Geotechnical and Contamination Services
 Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-BH10

SHEET 1 OF 1

Position : 327995.05 E 6246698.42 N MGA94/ 56 Surface RL: 22.86m AHD Angle from Horiz. : 90° Processed : HAL
 Rig Type : SD05 Mounting: Ute Contractor : Stratacore Driller : DM Checked : MG
 Date Started : 22/10/2019 Date Completed : 22/10/2019 Logged by : JS Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations					
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index			
1	TC-bit auger	Nil		ES ES SPT 2/8/4 N=12 ES	0.50	[diagonal hatching pattern]	-	[FILL] Gravelly SAND: fine to coarse grained, brown and pale brown, fine to coarse, sub-angular to sub-rounded gravel, with ballast cobbles.	M	-	0.2m, PID=1.9ppm			
1								2.10	[diagonal hatching pattern]	-	[FILL] Clayey Gravelly SAND: fine to coarse grained, pale brown, fine to coarse, sub-angular gravel, low plasticity clay, trace ballast cobbles.	M	-	0.5m, PID=1.4ppm
2							SPT 5/5/4 N=9	2.10	[diagonal hatching pattern]	-	SANDSTONE: fine to coarse grained, pale grey, inferred low to medium strength, moderately weathered (bedrock).	-	-	1.0m, PID=1.9ppm
3							SPT 20 for 70mm HB N=ref	2.67	[diagonal hatching pattern]	-	End of borehole at 2.67 metres. Target Depth			
5														

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-BH11

SHEET 1 OF 1

Position : 328016.20 E 6246647.11 N MGA94/ 56 **Surface RL:** 20.80m **AHD** **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS

Processed : HAL
Checked : MG
Date: 16/01/2020

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SCALE (m)	DRILLING				Depth / (RL) metres	MATERIAL				Comments/ Observations	
	Drilling Method	Hole Support \ Casing	Water	Samples & Tests		Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1	↑ TC-bit auger ↓	Nil	Groundwater Not Encountered	ES	[Cross-hatch pattern]	-	[FILL] Silty SAND: fine to coarse grained, dark brown, with fine to coarse, sub-angular to angular gravel.	M	-	0.2m, PID=2.7ppm	
0.45				[Dotted pattern]	SC	Clayey SAND: fine to coarse grained, pale grey and pale brown, low plasticity clay (residual).	M	MD-D	0.5m, PID=2.0ppm		
0.90				[Dotted pattern]	-	SANDSTONE: pale grey and pale brown, inferred low strength, highly to moderately weathered (bedrock).	-	-	1.0m, PID=2.9ppm		
1.22				[Dotted pattern]	-	End of borehole at 1.22 metres. Target Depth	-	-			

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-BH12

SHEET 1 OF 1

Position : 328025.67 E 6246607.96 N MGA94/ 56 **Surface RL:** 18.98m AHD **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Date:** 16/01/2020

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DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
1	TC-bit auger	Nil	Groundwater Not Encountered	ES ES SPT 2/2/6 N=8 ES SPT 17 for 40mm HB N=ref	1.00 1.14		-	[FILL] Silty SAND: fine to coarse grained, dark brown, trace fine to coarse, sub-angular to angular gravel, trace rootlets. SANDSTONE: pale grey, inferred low to medium strength, moderately to slightly weathered (bedrock).	M	-	0.2m, PID=3.4ppm 0.5m, PID=4.3ppm
2								End of borehole at 1.14 metres. Target Depth			
3											
4											
5											

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BOREHOLE LOG SHEET

GEO_BOREHOLE_AST726 2017_2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW
HOLE No. A4-HAC01

SHEET 1 OF 1

Position : 328005.29 E 6246672.66 N MGA94/ 56	Surface RL: 21.68m AHD	Angle from Horiz. : 90°	Processed : HAL
Rig Type : SD05	Mounting: Ute	Contractor : Stratacore	Checked : MG
Date Started : 22/10/2019		Date Completed : 22/10/2019	Logged by : JS
			Date: 16/01/2020

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DRILLING					MATERIAL				Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index
0.0	TC-bit auger	Nil		ES			-	[FILL] Silty SAND: fine to coarse grained, dark grey, with fine to coarse, sub-angular gravel, trace glass and brick. 0.2m, with ballast cobbles.	M	-	0.2m, PID=2.2ppm
0.5				ES							0.5m, PID=2.4ppm 0.5m, SPT attempted but refused on ballast.
1.0				ES							1.0m, PID=2.3ppm
1.35				SPT 3/2/7 N=9	1.35		SC	Sandy CLAY: low plasticity, pale grey mottled red-brown, fine to coarse grained sand (residual).	w > PL	St	
2.0				ES					W		2.0m, PID=2.6ppm
22/10/19											
3.0				ES	3.00			SANDSTONE: pale grey and red-brown, inferred low to medium strength, moderately weathered.	-	-	3.0m, PID=2.2ppm
3.10				SPT 30 for 30mm HB N=ref	3.10		-	End of borehole at 3.10 metres. Target Depth			

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Bushcare Area, Dulwich Hill, NSW

HOLE No. A4-HAC02

SHEET 1 OF 1

Position : 328024.34 E 6246620.55 N MGA94/ 56 **Surface RL:** 19.72m **AHD** **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JS **Processed :** HAL
Checked : MG
Date: 16/01/2020

DRILLING				MATERIAL					Comments/ Observations				
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description		Moisture Condition	Consistency / Density Index		
1 ↑ TC-bit auger ↓	Nil		Groundwater Not Encountered	ES	0.30	[Hatched]	-	[FILL] Silty SAND: fine to coarse grained, dark brown, trace fine to coarse, sub-angular to angular gravel, trace rootlets.	M	-	0.2m, PID=1.9ppm		
				ES		[Hatched]	-	[FILL] Clayey SAND: fine to coarse grained, dark brown, low plasticity, trace fine to coarse, sub-angular gravel.	M	-	0.5m, PID=2.3ppm		
				SPT 2/2/2 N=4		[Hatched]							1.0m, PID=2.0ppm
				ES		[Hatched]							
				ES	1.30	[Dotted]	SC	Clayey SAND: fine to coarse grained, pale grey, low plasticity clay (residual).	M	MD			
				SPT 30 for 100mm N=ref	1.50	[Dotted]	-	SANDSTONE: pale grey and pale brown, inferred low strength, moderately weathered (bedrock).	-	-	1.5m, PID=2.4ppm		
					1.60	[Dotted]	-	End of borehole at 1.60 metres. Target Depth					

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BOREHOLE LOG SHEET

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Client : Inner West Council

Project : The GreenWay Geotechnical and Contamination Services

Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-HAC03

SHEET 1 OF 1

Position : 328048.75 E 6246572.48 N MGA94/ 56

Surface RL: 21.54m AHD

Angle from Horiz. : 90°

Processed : HAL

Rig Type : Hand auger

Mounting: NA

Contractor : NA

Driller : NA

Checked : MG

Date Started : 22/10/2019

Date Completed : 22/10/2019

Logged by : JW

Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
1	Hand Auger	Nil	Groundwater Not Encountered	ES	0.20	[Hatched]	-	[FILL] GRAVEL: pale brown, with ballast cobbles, with fine to coarse grained sand.	D	-	0.0m, No odour, no staining.	
					ES	0.20	[Hatched]	-	[FILL] Gravelly SAND: medium to coarse grained, dark brown, with ballast and sandstone cobbles.	M	-	0.2m, PID=0.7ppm No odour, no staining.
					ES/QA13	0.60	[Diagonal Lines]	CH	CLAY: high plasticity, orange with brown and red mottles, trace gravel (residual).	w = PL	-	0.5m, PID=1.0ppm 0.6m, No odour, no staining.
					ES	1.00	[Diagonal Lines]					1.0m, PID=1.5ppm
				ES	1.50	[Diagonal Lines]		End of borehole at 1.50 metres. Target Depth			1.5m, PID=1.7ppm	

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BOREHOLE LOG SHEET

Client : Inner West Council
 Project : The GreenWay Geotechnical and Contamination Services
 Location : IWLR Corridor, Dulwich Hill, NSW

HOLE No. A4-HAC04**SHEET 1 OF 1**

Position : 328046.37 E 6246546.94 N MGA94/ 56 Surface RL: 21.62m AHD Angle from Horiz. : 90° Processed : HAL
 Rig Type : Hand auger Mounting: NA Contractor : NA Driller : NA Checked : MG
 Date Started : 22/10/2019 Date Completed : 22/10/2019 Logged by : JW Date: 16/01/2020

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DRILLING					MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1 Hand Auger Nil Groundwater Not Encountered				ES	0.20		-	[FILL] Sandy GRAVEL: fine to coarse, sub-angular to angular, grey, medium to coarse grained sand, with ballast cobbles.	D	-	0.0m, No odour, no staining.
				ES	0.50		-	[FILL] GRAVEL: fine to coarse, sub-angular to angular, grey, with ballast cobbles, trace fine to coarse grained sand.	D	-	0.2m, PID=4.2ppm No odour, no staining.
				ES			CL	CLAY: low plasticity, mottled red and grey (residual).	w < PL	-	0.5m, PID=3.2ppm
				ES							0.8m, No odour, no staining. 1.0m, PID=1.8ppm
				ES	1.50			End of borehole at 1.50 metres. Target Depth			1.5m, PID=1.4ppm

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BOREHOLE LOG SHEET

Client : Inner West Council
 Project : The GreenWay Geotechnical and Contamination Services
 Location : Hercules Street, Dulwich Hill, NSW

HOLE No. A4-HAC05

SHEET 1 OF 1

Position : 327911.84 E 6246375.37 N MGA94/ 56 Surface RL: 14.69m AHD Angle from Horiz. : 90° Processed : HAL
 Rig Type : Hand auger Mounting: NA Contractor : NA Driller : NA Checked : MG
 Date Started : 22/10/2019 Date Completed : 22/10/2019 Logged by : JW Date: 16/01/2020

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DRILLING				MATERIAL					Comments/ Observations	
SCALE (m)	Drilling Method	Hole Support \ Casing Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index
1 2 3	Hand Auger	Nil Groundwater Not Encountered	ES ES ES	1.00	[Cross-hatch pattern]	-	[FILL] SAND: fine grained, brown, with ballast cobbles, trace gravel and clay.	D	-	0.0m, No odour, no staining. 0.2m, PID=1.5ppm 0.5m, PID=1.1ppm
End of borehole at 1.00 metres. Target Depth										1.0m, PID=1.7ppm

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Hercules Street, Dulwich Hill, NSW

HOLE No. A4-HAC06**SHEET 1 OF 1**

Position : 327878.58 E 6246363.07 N MGA94/ 56 **Surface RL:** 14.93m **AHD** **Angle from Horiz. :** 90° **Processed :** HAL
Rig Type : Hand auger **Mounting:** NA **Contractor :** NA **Driller :** NA **Checked :** MG
Date Started : 22/10/2019 **Date Completed :** 22/10/2019 **Logged by :** JW **Date:** 16/01/2020

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DRILLING					MATERIAL						
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition	Consistency / Density Index	Comments/ Observations
1	Hand Auger	Nil	Groundwater Not Encountered	ES QA14/QA15 ES	0.60 1.00		-	[FILL] SAND: fine grained, brown, with clay, trace gravel, trace rootlets.	-	-	0.0m, No odour, no staining. 0.2m, PID=1.0ppm 0.5m, PID=2.2ppm
								[FILL] Silty SAND: fine grained, brown.	-	-	0.6m, No odour, no staining, brick fragments.
								End of borehole at 1.00 metres. Target Depth			1.0m, PID=1.9ppm
2											
3											

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BOREHOLE LOG SHEET

Client : Inner West Council
Project : The GreenWay Geotechnical and Contamination Services
Location : Terrace Road, Dulwich Hill, NSW

HOLE No. A4-LD01

SHEET 1 OF 1

Position : 327864.05 E 6246315.59 N MGA94/ 56 **Surface RL:** 13.75m **AHD** **Angle from Horiz. :** 90°
Rig Type : SD05 **Mounting:** Ute **Contractor :** Stratacore **Driller :** DM
Date Started : 21/10/2019 **Date Completed :** 21/10/2019 **Logged by :** JS **Date:** 16/01/2020

Note: * indicates signatures on original issue of log or last revision of log

DRILLING					MATERIAL					Comments/ Observations		
SCALE (m)	Drilling Method	Hole Support \ Casing	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Description	Moisture Condition		Consistency / Density Index	
1	TC-bit auger	Nil		ES/DUP	22/10/19	0.10	-	[TOPSOIL] Sandy SILT: dark grey and dark brown, fine to coarse grained sand, trace fine to medium, sub-angular gravel, trace rootlets.	M	-	0.2m, PID=5.5ppm 0.5m, PID=4.9ppm 1.0m, PID=3.1ppm	
				ES		1.50	-	[FILL] SAND: fine to coarse grained, pale brown and brown, trace silt, trace fine gravel.	M	-		
				SPT 8/6/3 N=9		2.00	SC	Clayey SAND: fine to coarse grained, pale brown and red-brown mottled, medium plasticity clay (residual).	M	MD		2.0m, PID=6.6ppm
				ES		3.20	-	SANDSTONE: pale grey, moderately weathered, inferred low strength (bedrock).	-	-		3.0m, PID=7.0ppm
4				ES	21/10/19	3.30	-	SANDSTONE: pale grey, moderately weathered, inferred low strength (bedrock). End of borehole at 3.30 metres. Target Depth				
				SPT 2/12 for 150mm HB N=ref								

GEO_BOREHOLE_AST726 2017 2112515105-THEGREENWAY.GPJ_GHD_TEMPLATE 2.00.GDT 28/1/20

See standard sheets for
 details of abbreviations
 & basis of descriptions



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 CONSULTING GEOTECHNICAL ENGINEERS AND GEOLOGISTS

Job No.
21-12515105

TEST PIT LOG SHEET

Client: Inner West Council
Project: The GreenWay Geotechnical and Contamination Services
Location: Sydney Trains Corridor, Dulwich Hill, NSW

HOLE No. A4-TP01

SHEET 1 OF 1

Position: 327849.80 E 6246287.30 N MGA94/ 56

Surface RL: 13.62m AHD

Processed: HAL

Method of Exploration: 3t Excavator

Hole Size: 1.0m x 0.3m

Checked: MG

Date: 29/11/19

Logged by: LM

Date: 16/01/2020

Scale (m)	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Material Description [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: Grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering / alteration, defects	Moisture Condition	Consistency / Density Index	Comments Observations
0 1 2 3	Groundwater Not Encountered	ES/QA50	0.30		-	[FILL] Silty SAND: fine to coarse grained, brown, with boulders and cobbles, trace fine to coarse, sub-angular gravel.	-	-	0.2m, PID=3.3ppm
		ES (ACM)			-	[FILL] Sandy GRAVEL: fine to coarse, sub-angular to sub-rounded, brown, grey and pale brown, fine to coarse grained sand, with sandstone cobbles and boulders, with clay.	-	-	0.3m, possible ACM
		ES			-		-	-	0.5m, PID=3.7ppm
		ES			-		-	-	1.0m, PID=3.7ppm
		B							
			1.70		CI	CLAY: medium plasticity, yellow mottled orange, with fine to coarse grained sand (residual).	w > PL	(F)	1.7m, consistency inferred from tactile assessment.
			2.70		SC	Sandy CLAY: medium plasticity, yellow mottled orange, fine to medium grained sand, trace fine to medium, rounded gravel (residual).	w > PL	(St)	2.0m, PID=4.2ppm
		B ES	3.00						2.9m, hard digging.
						End of test pit at 3 metres. Target Depth.			3.0m, PID=5.0ppm

Note: * indicates signatures on original issue of log or last revision of log

GEO. TEST PIT. AS1726.2017. 2112515105-THEGREENWAY.GPJ_GHD_GEO_TEMPLATE.200.GDT 28/1/20

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CONSULTING GEOTECHNICAL ENGINEERS AND GEOLOGISTS

Job No.

21-12515105

TEST PIT LOG SHEET

Client: Inner West Council
Project: The GreenWay Geotechnical and Contamination Services
Location: Sydney Trains Corridor, Dulwich Hill, NSW

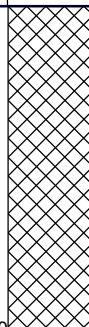
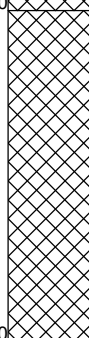
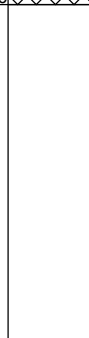
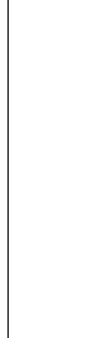
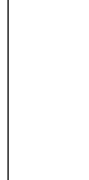
HOLE No. A4-TP02

SHEET 1 OF 1

Position: 327850.50 E 6246290.00 N MGA94/ 56 **Surface RL:** 13.99m AHD **Processed:** HAL

Method of Exploration: 3t Excavator **Hole Size:** 1.0m x 0.3m **Checked:** MG

Date: 29/11/19 **Logged by:** LM **Date:** 16/01/2020

Scale (m)	Water	Samples & Tests	Depth / (RL) metres	Graphic Log	USC Symbol	Material Description [COBBLES / BOULDERS / FILL / TOPSOIL] then SOIL NAME: colour, plasticity / primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: Grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering / alteration, defects	Moisture Condition	Consistency / Density Index	Comments Observations <small>Note: * indicates signatures on original issue of log or last revision of log</small>
0.2		ES			-	[FILL] Silty SAND: fine to coarse grained, brown, with sandstone cobbles and boulders, trace fine to coarse, sub-angular gravel, trace glass and brick.	M	-	0.2m, PID=2.7ppm
0.5		B ES			-	[FILL] Silty SAND: fine to coarse grained, brown, with sandstone cobbles and boulders, trace fine to coarse, sub-angular gravel, trace glass and brick.			0.5m, PID=3.1ppm
0.7			0.70		-	[FILL] Sandy GRAVEL: fine to coarse, sub-angular to sub-rounded, brown, grey and pale brown, fine to coarse grained sand, with sandstone cobbles and boulders, with clay.			0.8m, voids between boulders
1.0		ES B							1.0m, PID=2.8ppm
1.4			1.40						
1.4						End of test pit at 1.4 metres. Target Depth.			

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GEO_TEST_PIT_AS1726_2017_2112515105-THEGREENWAY_GPJ_GHD_GEO_TEMPLATE_2.00.GDT_28/1/20

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12515105-43226-64/https://projectsportal.ghd.com/sites/pp15_03/thegreenwaygeotechni/ProjectDocs/12515105-REP-0_The GreenWay Contamination Report_Final_GHD_EH_edits.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	E. Harrison	H. Milne		M. George		26 Mar 2020
1	E. Harrison	H. Milne		M. George		6 May 2020

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