


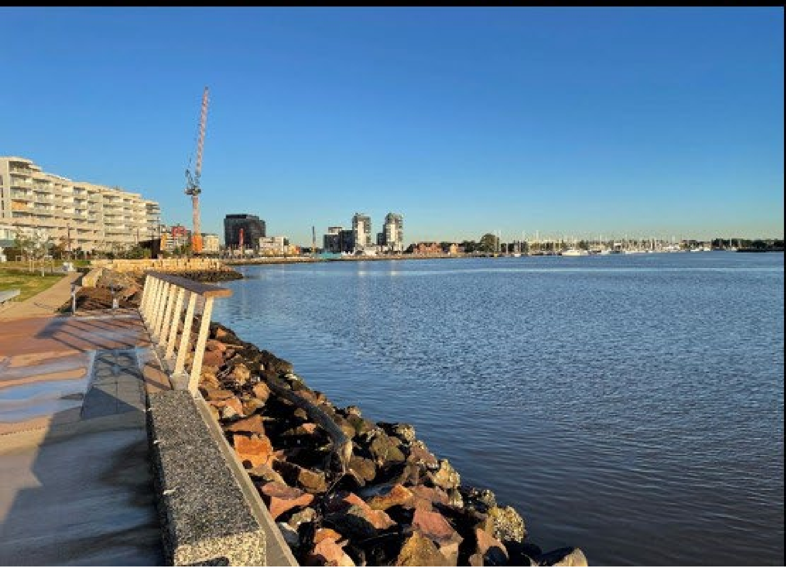


Temora Hospital redevelopment: Human health and ecological risk assessment

Prepared for: Capital Insight and NSW Health Infrastructure

17 October 2024

EnRiskS

Document History and Status

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Limitations

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It is prepared in accordance with the scope of work and for the purpose outlined in **Section 1** of this report.

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List of abbreviations

ASC NEPM	National Environmental Protection Measure – Assessment of Site Contamination
BaP	benzo(a)pyrene
bgl	below ground level
BTEX	benzene, toluene, ethylbenzene and xylenes
CCME	Canadian Council of Ministers of the Environment
CEC	cation exchange capacity
CLM Act	Contaminated Land Management Act
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	conceptual site model
DSI	detailed site investigation
EIL	ecological investigation level
enRiskS	Environmental Risk Sciences Pty Ltd
ESL	ecological screening level
FCF	fibre cement fragments
HHERA	human health and ecological risk assessment
HI	Health Infrastructure
HIL	health investigation level
HSL	health screening level
LOR	limit of Reporting
MLHD	Murrumbidgee Local Health District
NEPC	National Environment Protection Council
NL	not limiting
NSW	New South Wales
OCP	organochlorine pesticides
OPP	organophosphate pesticides
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PSI	preliminary site investigation
RAP	remedial action plan
SEPP	State Environmental Planning Policy
SQG	soil quality guideline
TCLP	toxicity characteristic leaching procedure
TEF	toxicity equivalence factor
TEQ	toxic equivalence
TRH	total recoverable hydrocarbons
TRV	toxicity reference value
USEPA	United States Environmental Protection Agency
WHO	World Health Organisation

Executive Summary

Environmental Risk Sciences Pty Ltd (enRiskS) has been engaged by Capital Insight and New South Wales (NSW) Health Infrastructure (HI) to conduct a human health and ecological risk assessment (HHERA) in relation to the presence of contamination in soil at Temora Hospital, 169-189 Loftus Street, Temora, NSW (the 'site'). The site is currently proposed for redevelopment, which is in the detailed design phase. This HHERA was undertaken to support town planning activities for the Temora Hospital and to determine if a remedial action plan (RAP) is needed for the site to address potential risk issues related to contaminants in the soil.

A range of potential sources of contamination were identified at the site as part of a preliminary site investigation (PSI) and a detailed site investigation (DSI). These investigations were conducted to inform the redevelopment work. The potential sources identified relate to current and historical activities at the site, and the use of imported fill material.

The PSI and DSI included analysis of soil samples from the site for a range of chemicals. The concentrations of most chemicals were below the limit of reporting (LOR). However, some heavy metals, polycyclic aromatic hydrocarbons (PAHs) and petroleum hydrocarbons were reported in the soils. It is likely that some of these chemicals (e.g. heavy metals) are naturally occurring in the soil. Others may be associated with the potential sources of contamination identified for the site. The purpose of the HHERA was to determine if the concentrations of chemicals reported in the soil pose an unacceptable risk to human health or ecosystems at the site.

Based on the review of available information for the site, the following groups of people were identified as potentially being present at the site:

- construction workers during the redevelopment
- intrusive maintenance workers following the redevelopment
- site gardeners and landscapers
- hospital staff during and after the redevelopment
- patients at the hospital and visitors (including volunteer workers) who may walk in the hospital grounds during and after the redevelopment
- the local community (including residents at the adjacent residential care facility) who may take walks through the hospital grounds during and after the redevelopment.

The HHERA assessed potential risks to all of the groups listed above. This focused on potential direct exposure to chemicals in the soil, as well as exposure to vapours for volatile chemicals (where relevant). The HHERA also assessed potential ecological risks for terrestrial organisms (e.g. vegetation, soil invertebrates and microorganisms).

Based on the available data for the site, and considering the uncertainties identified, the following was concluded from the HHERA:

- human health risks are low and acceptable for all groups listed above
- ecological risks are low and acceptable.

Based on the data provided and the outcomes of the HHERA, risk management actions and a RAP are not warranted for the site.

Section 1. Background

1.1 Introduction

Environmental Risk Sciences Pty Ltd (enRiskS) has been engaged by Capital Insight and New South Wales (NSW) Health Infrastructure (HI) to conduct a human health and ecological risk assessment (HHERA) in relation to the presence of contamination in soil at Temora Hospital, 169-189 Loftus Street, Temora NSW (the 'site'). Temora Hospital is part of the Murrumbidgee Local Health District (MLHD) providing a range of services, including, emergency department, maternity, palliative care, an operating theatre and staff accommodation.

The site is currently proposed for redevelopment, which is in the detailed design phase. No specific detailed plans are available for the proposed redevelopment at this stage. However, it is understood that the redevelopment will include an extension to the current buildings and additional outdoor/uncovered car parking areas. The redeveloped hospital will provide a range of new clinical and non-clinical facilities to support the capacity issues and existing infrastructure deficiencies at the site. This HHERA was undertaken to support town planning activities for the Temora Hospital and to determine if a remedial action plan (RAP) is needed for the site to address potential risk issues related to contaminants in the soil.

1.2 Objectives

The objectives of the HHERA presented in this report were to:

- review the available soil data for the site
- use the available data to undertake a site-specific HHERA based on the use of the site as a hospital, including a tier 1 (screening level assessment) and tier 2 (detailed assessment)
- where relevant, confirm if remediation is needed at the site and/or provide risk management recommendations (if required based on the outcomes of the HHERA).

The HHERA addresses potential risks from contact with soil on the site based on the available data. The potential off-site risks and risks from exposure to other environmental media were not considered. The HHERA considers the current and proposed future land use of the site as a hospital and does not consider any potential changes to land use.

1.3 Methodology

The approach taken for the HHERA was in accordance with relevant National protocols/guidelines, including:

- enHealth Environmental Health Risk Assessment, Guidelines for Assessing Human Health Risks from Environmental Hazards (enHealth 2012a)
- enHealth Australian Exposure Factor Guide (enHealth 2012b)
- National Environmental Protection Measure – Assessment of Site Contamination (ASC NEPM) including:
    - Schedule B1 Investigation Levels for Soil and Groundwater (NEPC 1999 amended 2013a)
    - Schedule B4 Guideline on Health Risk Assessment Methodology (NEPC 1999 amended 2013b)

- Schedule B5 Guideline on Ecological Risk Assessment (NEPC 1999 amended 2013c)
- Schedule B7 Guideline on Health-Based Investigation Levels (NEPC 1999 amended 2013d)
- Toolbox Note – Key principles for the remediation and management of contaminated sites

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018).

Where required, additional guidance was obtained from relevant Australian and International sources, such as that available from the United States Environmental Protection Agency (USEPA) and the Work Health Organisation (WHO) consistent with current industry best practice.

The overall approach adopted for this HHERA is outlined in **Figure 1** (adapted from enHealth 2012a), and is addressed in the following sections:

- summary of the available site information and data relevant to the development of a conceptual site model (CSM) (**Section 2**)
- screening assessment (human health and ecological) for chemicals reported in soil at the site to identify if any chemicals require more detailed assessment (**Section 3**)
- detailed assessment for key chemicals identified in the screening assessment (**Section 4**)
- conclusions in relation to risks associated with exposure to chemicals in soil, with consideration of the uncertainties (**Section 5**).

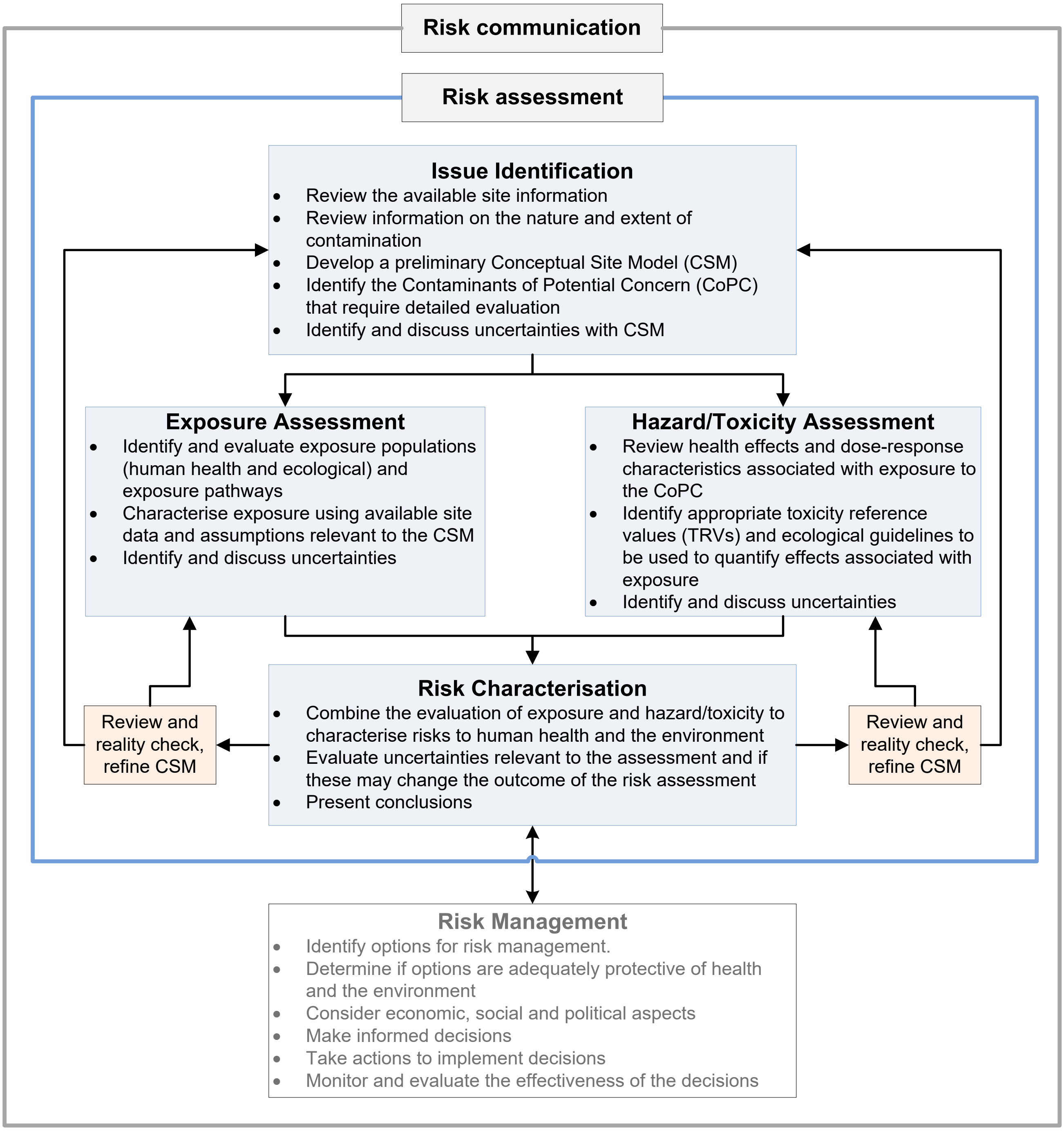

Figure 1: Risk assessment process as adapted from enHealth (2012a)

1.4 Regulatory framework

It is a requirement in NSW that, where land is to be redeveloped, an assessment be undertaken to determine if the land is contaminated due to historical activities. This assessment is used to determine if the site is suitable for the proposed use.

This process is outlined in a number of regulatory instruments including:

- Contaminated Land Management Act (1997) (the 'CLM Act') (NSW Government 1997)
- State Environmental Planning Policy (the 'SEPP') (Resilience and Hazards) (2021) (NSW Government 2021)
- Managing Land Contamination – Planning Guidelines (1998) (NSW Planning 1998).

The CLM Act covers situations where contamination is likely to be significant. Whereas the SEPP and the Planning Guidelines are relevant in other situations where redevelopment is proposed but the site history does not indicate contamination is likely to be significant.

All of these instruments require site investigation to assess the potential for contamination. National guidance is available for the process of site investigation – the National Environment Protection (Assessment of Site Contamination) Measure (the 'ASC NEPM')[1]. This guidance outlines how to undertake a site investigation and provides national conservative screening guidelines. These guidelines represent soil concentrations for common contaminants that do not require any further action or investigation (i.e. site is suitable).

There are a number of situations where further work is required including:

- not all chemicals that could be present at a site have national guidelines
- chemicals may be present in groundwater or soil vapour
- chemicals may be present in soil at concentrations above the national guidelines in the ASC NEPM.

In the situations listed above, the ASC NEPM provides guidance on how to undertake a more detailed evaluation of the site, i.e. a site-specific human health risk assessment. Such assessments look at the specifics of a site including the proposed purpose of the site, what sort of buildings will be constructed and how likely it is that people or organism may come into contact with soil, groundwater or soil vapour. This HHERA uses data from the preliminary and detailed site investigations at the Temora Hospital to undertake a site-specific risk assessment consistent with guidance in the ASC NEPM.

[1] https://www.nepc.gov.au/nepms/assessment-site-contamination

Section 2. Review of available site information

2.1 General

This section provides a summary of the available site information relevant to the characterisation of contamination at the site. This information was used to develop a conceptual site model (CSM) relevant to the HHERA.

The information in this section is based on a review of the following site investigation reports provided by Capital Insight:

- JK Environments (2023a) Preliminary (Stage 1) Site Investigation for Proposed Alterations and Additions at Temora Hospital, 169-189 Loftus Street, Temora, NSW. Report dated 8 June 2023 (the 'PSI')
- JK Environments (2023b) Sampling, Analysis and Quality Plan for Detailed (Stage 2) Site Investigations (DSI) at Temora Hospital, 169-189 Loftus Street, Temora, NSW. Report dated 17 August 2023 (the 'SAQP')
- JK Environments (2023c) Detailed Site Investigation for the Proposed Redevelopment at Temora Hospital, 169-189 Loftus Street, Temora, NSW. Report dated 30 October 2023 (the 'DSI').

2.2 Site description

2.2.1 Site details

The site is located approximately 4 km southeast of Lake Centenary (a man-made lake across Trigalong Creek) and is bound by Loftus Street to the south and Gloucester Street to the west (**Figure 2**). The site currently operates as a hospital and is in a predominately residential and rural area of Temora. The Temora Hospital currently provides the following services:

- 28 beds
- emergency department
- maternity
- palliative care
- operating theatre (1)
- staff accommodation.

The site identification details are provided in **Table 1**.

Table 1: Site identification details (adapted from JK Environments 2023c)

Attribute	Description
Current site owner	Health Administration Corporation
Site address	16-189 Loftus Street, Temora, NSW
Lot and Deposited Plan (DP)	Lot 2, DP 582392
Current land use	Hospital
Proposed land use	Hospital
Local government area	Temora Shire Council
Current zoning	SP2: Infrastructure
Site area	Approximately 31,770 m^2

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

This plan should be read in conjunction with the Environmental report.

Figure 2: Site location (sourced from JK Environments 2023c)

JKEnvironments

The site currently comprises buildings which are mainly located in the northern and central portion of the site, including (JK Environments 2023c):

- the main hospital building, which is a three-storey building of brick and fibre-cement construction
- the nurse's accommodation building, which is a two-storey building of brick and metal construction
- several single storey buildings (ancillary services, maintenance, workshop) typically of brick and metal construction.

Other current site features include paved driveways for vehicle access, on-grade car parks, footpaths, gardens and grassed areas with medium to large trees and shrubs. The DSI reported that sensitive environments such as wetlands, ponds, creeks or extensive areas of native vegetation are not located on the site or in the immediate surrounds (JK Environments 2023c).

Detailed design plans for the redevelopment of the site have not been provided. However, it is understood that redevelopment will include an extension to the current main building and new car parking areas as shown in **Figure 3**. It is also understood that there will be no on-site staff accommodation during or at the completion of the redevelopment.

The land uses in the areas surrounding the site include (JK Environments 2023c):

- north – low density residential, the Temora campus of TAFE NSW and a residential care facility (Whiddon Group)
- south – Loftus Street and low density residential
- east – utilities infrastructure (transmission tower, substation, pumping station and reservoirs) with vacant agricultural land (possibly grazing) beyond
- west – residential care facility (Whiddon Group) with Gloucester Street beyond.

The PSI included details of the site history, which indicated that the site was used for residential purposes and possibly agriculture (e.g. grazing) until the 1930s when the Temora Hospital was constructed. The site has been operating as a hospital since 1940 (JK Environments 2023a).

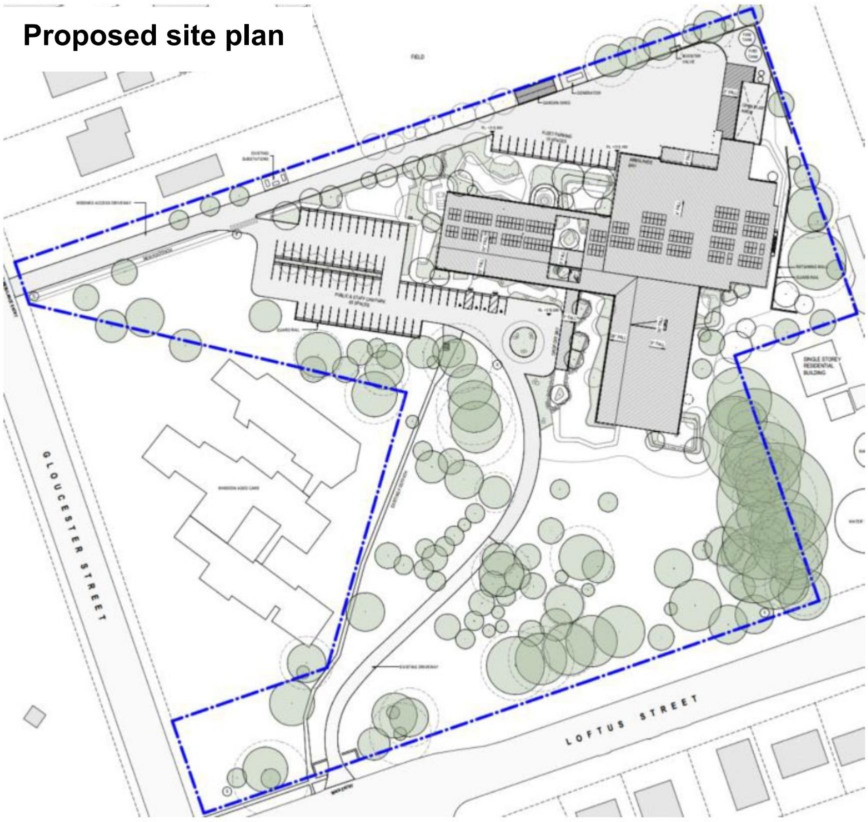

Figure 3: Existing site plan and proposed site plan (provided by Capital Insight)

2.3 Environmental setting

This section summarises the environmental setting at and around the site. The information is sourced from the DSI (JK Environments 2023c) unless otherwise stated.

2.3.1 Climate

Key meteorology data for the weather station at the Temora Airport sourced for the DSI indicated the following (JK Environments 2023c):

- the highest mean rainfall occurred in November, with a total of 58.4 mm
- the lowest mean rainfall occurred in May, with a total of 32.5 mm
- in the week leading up to the fieldwork undertaken for the DSI, less than 2 mm of rainfall was recorded.

2.3.2 Topography

The regional topography is characterised by gently undulating terrain. The site is located towards the crest of a gently undulating slope which grades down towards the southwest at approximately 5°. Parts of the site appear to have been levelled to account for the slope and accommodate the existing site features (JK Environments 2023a).

2.3.3 Regional geology

Regional geology information presented in the PSI and summarised in the DSI indicated that the site is underlain by Temora Volcanics comprising andesite, trachyandesite, latite and basaltic andesite, though may be obscured by quaternary aged alluvial soils. The alluvial soils are likely present on the lower slopes and toe of the hillside and not within the site boundaries. The PSI encountered shallow fill soils and residual silty clay overlying andesite bedrock at the site.

2.3.4 Acid sulfate soils

The PSI indicated that the site is not located in an acid sulfate soil risk area according to the risk maps prepared by the Department of Land and Water Conservation (JK Environments (2023a).

2.3.5 Hydrogeology

The DSI summarised the hydrogeology information presented in the PSI as follows:

- the subsurface conditions at the site consist of relatively low permeability (residual) soils overlying shallow bedrock. The potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low. There is also a reticulated water supply in the area and consumption of groundwater is not expected to occur
- the nearest registered bore is located 330 m west of the site and is registered for recreational purposes
- considering the local topography and surrounding land features, groundwater is anticipated to flow towards the northwest.

The depth to groundwater at the site was not reported in either the PSI or DSI. However, both investigations noted that groundwater was not encountered in the soil boreholes and test pits during the investigations (up to approximately 1.5 m below ground level (bgl) at some locations). There are no groundwater wells on the site, and it is understood that groundwater will not be used as part of the construction/redevelopment.

2.3.6 Surface water bodies

The PSI reports that there are no surface water bodies in the immediate vicinity of the site. The closest surface water body is an unnamed dam located upgradient from the site approximately 320 m to the northeast. The nearest downgradient surface water body is Trigalong Creek located approximately 3.8 km west of the site. This creek turns into Lake Centenary approximately 4 km northwest of the site. Based on the distance from the site, these water bodies are not expected to be impacted by water migrating from the site (JK Environments 2023a).

2.4 Potential sources of contamination

The DSI provided a list of potential contaminating sources and areas of environmental concern (AEC) for the site (summarised in **Table 2**).

Table 2: Potential (or known) contamination sources and areas of environmental concern (AEC) for the site (adapted from JK Environments 2023c)

Source/AEC	Potential contaminants
Fill material The site has been historically filled to achieve the existing levels and this fill material may have been imported from a range of sources. The PSI identified filling to depths of approximately 0.2 m below bgl to 1.1 m bgl. The fill contained inclusions of demolition rubble, including metal fragments, fibre cement fragments (FCF) and asbestos containing material (ACM).	Heavy metals Petroleum hydrocarbons Polycyclic aromatic hydrocarbons (PAHs) Organochlorine pesticides (OCPs) Organophosphate pesticides (OPPs) Polychlorinated biphenyl (PCBs) Asbestos
Maintenance workshop The site includes a maintenance workshop. It is possible that leaks/spills and/or releases of oil, solvents and fluids may have occurred.	Heavy metals Petroleum hydrocarbons PAHs
On-site generator A back-up generator is located to the west of the main hospital building. Minor leaks and/or spills of fuels/oils may have occurred during maintenance or use.	Petroleum hydrocarbons PAHs
Historical agricultural use Prior to 1938, the site was likely used for agricultural purposes (e.g. grazing). This may have resulted in contamination across the site via use of machinery, application of pesticides and building/demolition of various structures. Irrigation pipes made from asbestos may also be associated with this source.	Heavy metals Petroleum hydrocarbons PAHs OCPs OPPs Asbestos
Use of pesticides Pesticides have been used beneath the buildings and/or around the site.	Heavy metals OCPs
Hazardous building materials Hazardous building materials may be present as a result of former building and demolition activities. These materials have also been identified by various HAZMAT surveys within the existing buildings/structures on the site.	Asbestos Lead PCBs
On-site incinerator of hospital waste The site has been used as a hospital since at least 1940. An incinerator is located within the boiler room. Waste generated from the incinerator could have been disposed of on-site during the earlier years of operations, although there is no evidence identified to confirm this.	Heavy metals PAHs

2.5 Nature and extent of contamination

The investigations undertaken at the site to date have focused on soil. As part of the PSI (JK Environments 2023a), soil samples were collected from 12 locations at the site (BH1 to BH12 and TP13 to TP16) (**Figure 4**) between 2 and 5 May 2023. This sampling program was designed as a preliminary intrusive investigation. Soil samples were collected from the fill and natural profiles based on field observations at a range of depths up to 1.5 m bgl. Soil samples were analysed for heavy metals, total recoverable hydrocarbons (TRHs), benzene, toluene, ethylbenzene and xylenes (BTEX), PAHs and asbestos (noting that not all samples were analysed for all chemicals).

For the DSI (JK Environments 2023c), soil samples were collected from 63 locations at the site (BH/TP101 to BH/TP163) (**Figure 4**) between 6 and 13 September 2023. The sampling locations were based on a grid pattern with sampling locations judgementally selected from within each grid. Surface soil samples were collected from each sampling location, with depth samples collected from a sub-set of locations (up to 1.4 m bgl dependant on the depth of the borehole or test pit). Soil samples were analysed for heavy metals, PAHs, OCPs, OPPs, PCBs, TRHs, BTEX and asbestos (noting that not all samples were analysed for all chemicals).

The chemicals reported in soil samples above the limit of reporting (LOR) in at least one sample from the PSI or DSI are shown in **Table 3** (all data in **Appendix A**). This included heavy metals, PAHs and petroleum hydrocarbons (measured as total recoverable hydrocarbons, TRHs[2]). The depth of the maximum concentrations ranged across the site. However, in many cases, the maximum concentrations were reported at or near the soil surface. This has implications for potential exposure as people are most likely to be exposed to surface soil rather than soil at depth.

The concentrations of OCPs, OPPs, PCBs and BTEX were below the LOR in all samples that were analysed for these chemicals.

Asbestos was identified in fibre cement fragments (FCF) during the PSI and DSI. The asbestos results are not considered in this HHERA as it is understood that this aspect is being managed separately through a site Asbestos Management Plan.

The toxicity characteristic leaching procedure (TCLP) was undertaken on a sub-set of soil samples during the PSI and DSI. This was done to assist with the soil waste classification and involved analysis of lead and PAHs. TCLP was only undertaken on a sub-set of soils based on concentration, consistent with the Waste Classification Guidelines (NSW EPA 2014). TCLP uses acidic pH to mimic landfill leachate which will overpredict metal leaching in the natural soil environment (i.e. more metals will leach at acidic pH compared to neutral pH). Even under these leaching conditions, the maximum concentrations of lead and PAHs in the TCLP leachates were relatively low at 0.3 mg/L and 0.0086 mg/L, respectively. This indicates a low potential for these chemicals to leach from the soil.

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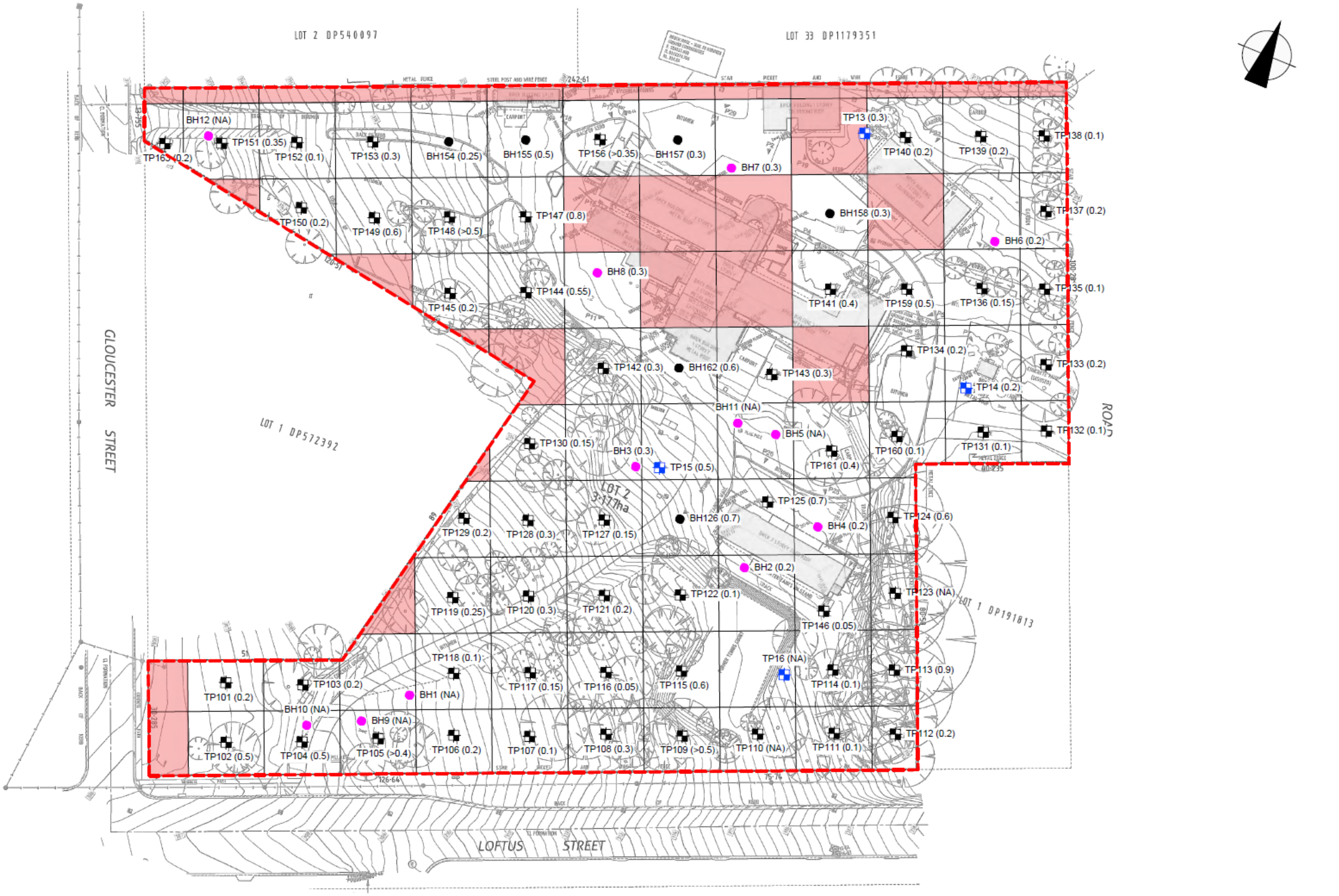
[2] TRHs are reported for four different fractions grouped by the number of carbons. The fractions are referred to as F1, F2, F3 and F4, which refer to C6-C19 (excluding BTEX), >C10-C16 (excluding naphthalene), >C16-C34 and >C34-C40, respectively. TRH F1 and TRH F2 are considered volatile. Whereas TRH F3 and TRH F4 are not volatile.



LEGEND

(red dashed line)	APPROXIMATE SITE BOUNDARY
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (PSI, 2023)
TP(Fill Depth)	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m) (PSI, 2023)
BH154	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, DSI)
TP101	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, DSI)
(pink shading)	INACCESSIBLE AREA

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Figure 4: Soil sampling locations from the PSI and DSI (sourced from JK Environments 2023c)

Table 3: Summary of chemical concentrations in soil from previous site investigations (only chemicals with at least one sample above the limit of reporting are listed)

Chemical	Preliminary site investigation [1]				Detailed site investigation [2]			
	No. of samples	Minimum conc. (mg/kg)	Maximum conc. (mg/kg)	Location (depth m) of maximum	No. of samples	Minimum conc. (mg/kg)	Maximum conc. (mg/kg)	Location (depth m) of maximum
Heavy metals								
Arsenic	30	<4	15	TP14 (0-0.1)	89	<4	23	TP115 (0-0.1)
Cadmium	30	<0.4	<0.4	na	89	<0.4	0.4	TP133 (0-0.1)
Chromium [3]	30	10	91	BH3 (0.2-0.3)	89	11	140	TP123 (0-0.1)
Copper	30	12	490	TP13 (0.5-0.6)	89	4	500	TP146 (0.3-0.4)
Lead	30	1	170	TP14 dup (0-0.1)	90	3	470	TP131 (0-0.1)
Mercury	30	<0.1	0.7	TP15 (1.3-1.5)	89	<0.1	0.5	TP115 (0-0.1)
Nickel	30	2	18	BH2 (0.3-0.5)	89	1	30	TP123 (0-0.1)
Zinc	30	7	140	TP14 dup (0-0.1)	89	3	400	TP139 (0.2-0.3)
Polycyclic aromatic hydrocarbons (PAHs)								
Total PAHs [4]	30	<0.05	85	BH3 (0.3-0.5)	89	<0.05	200	TP155 (0.2-0.5)
Carcinogenic PAHs [5]	30	<0.5	7.7	BH3 (0.3-0.5)	89	<0.5	24	TP153 (0-0.1)
Benzo(a)pyrene	30	<0.05	5.4	BH3 (0.3-0.5)	89	<0.05	15	TP153 (0-0.1)
Naphthalene	30	<1	2	BH3 (0.3-0.5)	89	<1	<1	na
Total recoverable hydrocarbons (TRHs)								
TRH F1 (C6-C10)	30	<25	<25	na	89	<25	71	TP116 dup (0-0.05)
TRH F2 (>C10-C16)	30	<50	<50	na	89	<50	210	TP144 (0-0.1)
TRH F3 (>C16-C34)	30	<100	320	BH3 (0.3-0.5)	89	<100	1,100	TP144 (0-0.1)
TRH F4 (>C34-C40)	30	<100	230	BH3 (0-0.1)	89	<100	440	TP144 (0-0.1)

Notes:
1 = JK Environments (2023a)
2 = JK Environments (2023c)
3 = total chromium concentration (CrIII+CrVI)
4 = total PAH concentration is the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998)
5 = concentration of the eight carcinogen PAHs as the benzo(a)pyrene toxic equivalence (BaP TEQ). The BaP TEQ is calculated by multiplying the concentration of each carcinogen PAH in the sample by its toxic equivalency factor (TEF)
na = not available as all concentrations were <LOR

2.6 Conceptual site model

A key aspect of a risk assessment is the development of a suitable CSM specific to the site. The CSM describes the source(s) of contamination, the pathway(s) those contaminants may migrate through different environmental media and the populations (human or ecological) that may be exposed to the contamination.

The site is currently used as a hospital and will continue to be used as a hospital following the redevelopment. This HHERA considers potential exposure to chemicals during the redevelopment and following redevelopment. The CSM described in this section is relevant to this land use and does not consider any potential changes to land use at the site.

A range of potential sources of contamination were identified at the site as part of the PSI and DSI, which are summarised in **Section 2.4**. Soil sampling investigations undertaken as part of the PSI and DSI identified a range of chemicals in soil at the site, including, heavy metals, PAHs and petroleum hydrocarbons. Some of these chemicals, particularly heavy metals, are naturally occurring in soils and all soils will contain some level of naturally occurring heavy metals. Other chemicals may be present at the site from current or historical activities at the site, or the importation and use of fill material.

Based on the proposed site plan (**Figure 3**), the redevelopment will include extensions to the current main building at the site and car parking areas. This will reduce the potential exposure that people or ecological organisms will have to the soil. However, there will still be large areas of the site that are grassed and have other vegetation (trees and shrubs). Therefore, there is still the potential for exposure. There are walking paths at the site, which will be retained, and it is likely that most people moving through the site will remain on the walking paths. It is possible that at times, some people may sit on the grassed areas, for example, hospital staff during lunch breaks.

The following groups of people may be present on the site and could be exposed to chemicals in the soil:

- construction workers during the redevelopment
- intrusive maintenance workers following the redevelopment
- site gardeners and landscapers
- hospital staff during and after the redevelopment
- patients at the hospital and visitors (including volunteer workers) who may walk in the hospital grounds during and after the redevelopment
- the local community (including residents at the residential care facility) who may take walks through the hospital grounds during and after the redevelopment.

It is understood that while the site currently provides some staff accommodation, no staff accommodation will occur on the site during or after the redevelopment.

In the outdoor areas of the site, people may have direct contact with the soil, which could lead to dermal exposure to soil contaminants and incidental ingestion of soil. There is also the possibility of inhalation of dust generated from the soil. Where volatile chemicals are present (e.g. TRH F1 and TRH F2), there is also the potential for inhalation of vapours. Where people are working in buildings at the site, there is the potential for volatile chemicals in soil (where present) to migrate into the indoor air where people could be exposed. All of these potential exposures to people at the site have been considered in this HHERA.

The ecological organisms that may be exposed to the soil contamination include vegetation, soil invertebrates (e.g. earthworms), soil microorganisms (e.g. nitrifying soil bacteria) and transient animals (e.g. birds and mammals). Exposure to these organisms will only occur in areas without buildings, carparks or driveways.

Groundwater at the site has not been encountered in any of the site soil investigations. This has included soil test pits and bore holes up to 1.5 m bgl. Exposure to groundwater is considered unlikely to be relevant for this CSM or HHERA based on the following:

- many of the chemicals reported in the soil are likely to show low mobility with water due to their chemical properties (e.g. PAHs are known to bind very strongly to soils and not migrate considerable distances with water)
- there are no groundwater wells on the site, and it is understood that groundwater will not be used as part of the construction/redevelopment
- relatively low permeability soils are present in the subsurface at the site (and likely in the broader regional area) and viable groundwater abstraction and use under these conditions is considered to be low (JK Environments 2023a)
- the nearest registered groundwater bore is located 330 m west of the site and is registered for recreational purposes (JK Environments 2023a)
- there are no surface water bodies in the vicinity of the site, which means groundwater at the site is unlikely to discharge into surface water.

Based on the list above, potential exposure to site contaminants via the groundwater is an incomplete pathway. Therefore, groundwater has not been considered in this HHERA.

Section 3. Screening level assessment

3.1 General

This section presents a screening level (tier 1) assessment of the soil data for the site. The purpose of this assessment is to identify if chemicals reported in soil at the site are present at concentrations above national guidelines. If concentrations are above national guidelines, this does not necessarily mean that there is a risk to human health or ecosystem. Exceedances of guideline values warrant further site-specific assessment (i.e. further assessment specific to the land use for the proposed redevelopment of the Temora Hospital). If chemicals are present at concentrations below national guidelines, no further assessment is required, and risks are considered acceptable based on Australian guidance.

3.2 Screening assessment for soil chemical concentrations

The maximum concentrations of chemicals reported in soil from the PSI and DSI (**Section 2.5**) were compared to risk-based screening level guidelines in national guidance documents for the protection of human health and ecosystems. The list of chemicals included in this screening assessment were those reported above the LOR in at least one sample as part of the PSI or DSI (see **Table 3**). Where guidelines were not available from Australian sources, international guidelines were adopted for the screening assessment.

3.2.1 Human health screening assessment

The human health screening level assessment is summarised in **Table 4**. The guidelines adopted for this assessment were as follows:

- **ASC NEPM health investigation levels (HILs) (NEPC 1999 amended 2013a)** – the ACS NEPM (1999) provides risk based health investigation levels (HILs) for selected organic and inorganic chemicals in soils. Different levels are provided for a variety of generic exposure settings including residential (low and high density), public open space and commercial/industrial land uses. The HILs were developed to be protective of human health and do not consider potential ecological concerns. The maximum soil concentrations at the site were compared to the commercial/industrial HILs (HIL-D). These values assume that an adult is at the site 240 days/yr (i.e. working days of the year), is outside on the site for 1 hour each of those days, where they incidentally ingest soils (25 mg/day) and get soil on their skin. These assumptions are considered to be conservative for how most people will use and have access to the site (i.e. construction/intrusive workers, gardeners, hospital staff, patients and visitors). For an additional level of conservatism, the maximum concentrations were also compared to the public open space HILs (HIL-C). These HILs are protective of children who may play in an area every day of the year and incidentally ingest soil (50 mg/day) and get soil on their skin. These assumptions are considered conservative for people who may use the hospital grounds for recreational purposes.
- **ASC NEPM health screening levels (HSLs) (NEPC 1999 amended 2013a)** – the ACS NEPM provides risk based health screening levels (HSLs) for vapour intrusion based on soil concentrations. These are available for the same land uses as discussed above for the HILs but only relate to volatile chemicals (e.g. TRH F1 and TRH F2). For residential and commercial/industrial land uses, these relate to potential risks from vapour intrusion into

buildings. For public open space, these relate to potential inhalation risks in outdoor air. Where the soil concentration cannot be high enough to generate a soil vapour concentration that would pose a risk, the HSLs are listed as 'NL', which stands for 'not limiting'. Where these HSLs are relevant (i.e. for volatile chemicals) and are not 'NL', the values for public open space (HSL-C) and commercial/industrial (HSL-D) were adopted for the screening assessment.

- **CRC CARE direct contact HSLs (CRC CARE 2011)** – the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) has derived direct contact HSLs for petroleum hydrocarbons. These have been developed for the same generic land uses as the HILs, as well as intrusive maintenance workers. For this screening assessment the CRC CARE direct contact HSLs have been used for public open space (HSL-C) and commercial/industrial (HSL-D). The HSL-D values are all lower than those developed for intrusive maintenance workers and are therefore protective of this group of people at the site.

Table 4: Human health screening assessment for soil at the Temora Hospital

Chemical	Maximum conc. (mg/kg)	Investigation	Location (depth m)	Screening guideline (mg/kg)	
				HIL-C/HSL-C	HIL-D/HSL-D
Heavy metals					
Arsenic	23	DSI	TP115 (0-0.1)	300 N1	3,000 N2
Cadmium	0.4	DSI	TP133 (0-0.1)	90 N1	900 N2
Chromium	140	DSI	TP123 (0-0.1)	300 N1 *	3,600 N2 *
Copper	500	DSI	TP146 (0.3-0.4)	17,000 N1	240,000 N2
Lead	470	DSI	TP131 (0-0.1)	600 N1	1,500 N2
Mercury	0.7	PSI	TP15 (1.3-1.5)	80 N1	730 N2
Nickel	30	DSI	TP123 (0-0.1)	1,200 N1	6,000 N2
Zinc	400	DSI	TP139 (0.2-0.3)	30,000 N1	400,000 N2
Polycyclic aromatic hydrocarbons (PAHs)					
Total PAHs	200	DSI	TP155 (0.2-0.5)	300 N1	4000 N2
Carcinogenic PAHs	24	DSI	TP153 (0-0.1)	3 N1	40 N2
Total recoverable hydrocarbons (TRHs)					
TRH F1 (C6-C10)	71	DSI	TP116 dup (0-0.05)	5,100 C1	260 N2,V
TRH F2 (>C10-C16)	210	DSI	TP144 (0-0.1)	3,800 C1	20,000 C2
TRH F3 (>C16-C34)	1,100	DSI	TP144 (0-0.1)	5,300 C1	27,000 C2
TRH F4 (>C34-C40)	440	DSI	TP144 (0-0.1)	7,400 C1	38,000 C2

Notes:
N1 = NEPM HIL C
N2 = NEPM HIL D
V = vapour intrusion
C1 = direct contact HSL-C from CRC CARE (2011)
C2 = direct contact HSL-D from CRC CARE (2011)
* = HILs for chromium are based on hexavalent chromium (CrVI)

Based on the human health screening assessment (**Table 4)**, none of the maximum concentrations of any chemicals reported in the soil at the site exceed the commercial/industrial screening criteria. This indicates that the risk posed to construction workers, intrusive maintenance workers, gardeners, hospital staff, patients and visitors are acceptable based on Australian guidance. These do not require further assessment.

The concentrations of all chemicals were also below the public open space screening criteria (HIL-C/HSL-C), with the exception of carcinogenic PAHs. It is noted that the assumptions used to derive the public open space HILs/HSLs are likely to be highly conservative for how people will use this site. However, the potential risks from carcinogenic PAHs are further assessed in this HHERA.

Where concentrations of chemicals exceed the screening level guidelines, the ASC NEPM provides a statistical test that can be used as the first step in evaluating soil contaminant concentrations. The test requires that the 95UCL concentration (i.e. the 95% upper confidence limit of the mean) be below the relevant guideline values (e.g. HIL or HSL), that the standard deviation be below half of the relevant guideline value and that the concentration in no single sample is above 250% of the relevant guideline value. For this dataset, the maximum concentration of carcinogenic PAHs is 24 mg/kg, which is above 250% of the guideline value (i.e. HIL-C, 3 mg/kg). Based on this, the potential exposure to carcinogenic PAHs for people using the site for recreational purposes is assessed in more detail in **Section 4**.

3.2.2 Ecological screening assessment

The ecological screening level assessment is summarised in **Table 5**. The guidelines adopted for this assessment were as follows:

- **ACS NEPM ecological investigation levels (EILs) (NEPC 1999 amended 2013a)** – the ASC NEPM (1999) provides risk based ecological investigation levels (EILs) for selected metals and organic chemicals in soils. These levels are applicable for assessing potential risks to terrestrial ecosystems and are provided for generic land uses, including, areas of ecological significance, urban residential/public open space and commercial/industrial. For some metals, the EILs have been derived to allow for the effects of soil type on the bioavailability. The EILs for these metals can be varied based on soil properties, including, soil pH, cation exchange capacity (CEC) and clay content. For this screening level assessment, the soil properties reported in the DSI (JK Environment 2023c) were used: pH = 7.3, CEC = 20 cmol$^+$/kg and clay content = 39%. The NEPM toolbox provides a spreadsheet to derive site-specific EILs based on these properties. The EIL derivation for this site is provided in **Appendix B**. The EILs for urban residential/public open space were adopted for this screening assessment.
- **ACS NEPM ecological screening levels (ESLs) (NEPC 1999 amended 2013a)** – the ACS NEPM provides ecological screening levels (ESLs) for selected petroleum hydrocarbons and hydrocarbon fractions. These levels are also applicable for assessing potential risks to terrestrial ecosystems and broadly apply to coarse- and fine-grained soils for the same land uses as discussed above for the EILs. The ESLs for urban residential/public open space were adopted for this screening assessment.
- **Canadian Council of Ministers of the Environment** [3] – for chemicals that do not have ecological guidelines in the ASC NEPM, values for this screening assessment were adopted from the Canadian Council of Ministers of the Environment (CCME). This source was selected as the derivation process is similar to the Australian framework for deriving EILs (NEPC 1999 amended 2013c). The CCME soil quality guidelines (SQGs) for residential and parklands were adopted. In the case of benzo(a)pyrene (BaP), the CCME SQG was adopted

[3] https://ccme.ca/en/summary-table

for this screening assessment instead of the ASC NEPM ESL. The reason for this was because the Australian ESL for BaP is based on a previous CCME SQG which used a very conservative derivation technique (see (Warne 2013) for more details). The CCME SQG for BaP has been updated using a more detailed derivation process that is more consistent with the Australian EIL derivation framework (NEPC 1999 amended 2013c).

Table 5: Ecological screening assessment for soil at the Temora Hospital

Chemical	Maximum conc. (mg/kg)	Investigation	Location (depth m)	Screening guideline (mg/kg)
				EIL/ESL (urban residential/public open space)
Heavy metals				
Arsenic	23	DSI	TP115 (0-0.1)	100 [N1]
Cadmium	0.4	DSI	TP133 (0-0.1)	10 [C]
Chromium	140	DSI	TP123 (0-0.1)	630 [N1 *]
Copper	500	DSI	TP146 (0.3-0.4)	230 [N1 *]
Lead	470	DSI	TP131 (0-0.1)	1,100 [N1]
Mercury	0.7	PSI	TP15 (1.3-1.5)	6.6 [C]
Nickel	30	DSI	TP123 (0-0.1)	270 [N1 *]
Zinc	400	DSI	TP139 (0.2-0.3)	770 [N1 *]
Polycyclic aromatic hydrocarbons (PAHs)				
Total PAHs	200	DSI	TP155 (0.2-0.5)	na
Benzo(a)pyrene	15	DSI	TP153 (0-0.1)	20 [C]
Total recoverable hydrocarbons (TRHs)				
TRH F1 (C6-C10)	71	DSI	TP116 dup (0-0.05)	180 [N1]
TRH F2 (>C10-C16)	210	DSI	TP144 (0-0.1)	120 [N1]
TRH F3 (>C16-C34)	1,100	DSI	TP144 (0-0.1)	300 [N1]
TRH F4 (>C34-C40)	440	DSI	TP144 (0-0.1)	2,800 [N1]

Notes:
N1 = NEPM EIL-C
C = CCME residential/parkland SQG
* = EIL derived using site-specific soil properties (**Appendix B**)
na = not available

Based on the ecological screening assessment (**Table 5**), none of the maximum concentrations exceed the adopted screening level guidelines, except for TRH F2 (>C10-C16). However, it is noted that across both the PSI and DSI 119 primary samples were analysed for TRHs and only two of these samples were above the adopted screening level guideline. In addition, the maximum concentration was 175% of the adopted guideline value (i.e. <250%). It is also noted that the sampling locations surrounding the location where the maximum concentration was detected (i.e. TP144) were all below the LOR indicating that the concentrations of TRHs in this area are not widespread. Based on the low frequency of exceedances, the low level of exceedances and the limited distribution of contamination, the potential ecological risks from TRH F2 (>C10-C16) do not require further investigation. Based on this screening assessment, the ecological risks at the site are acceptable based on Australian guidance.

Section 4. Detailed assessment – carcinogenic PAHs

4.1 General

This section provides a detailed (tier 2) assessment for the potential risk to human health from carcinogenic PAHs in soil at the site. It includes two components to quantitively assess the potential risk to people at the site: (i) toxicity summary for benzo(a)pyrene (BaP) and carcinogenic PAHs and (ii) calculation of a site-specific soil screening criteria based on the way people are likely to use Temora Hospital. The detailed assessment focuses on potential risks from carcinogenic PAHs for people using the site for recreational purposes as this is the only exposure that warranted further assessment based on the screening assessment (**Section 3**). The risks to all other potentially exposed populations (people and ecosystems) were concluded to be acceptable based on the outcomes of the screening level assessment.

4.2 Toxicity of benzo(a)pyrene and carcinogenic PAHs

4.2.1 General

Several comprehensive reviews of PAHs and BaP in the environment and toxicity to humans are available (ATSDR 1995; CCME 2008; USEPA 2017; WHO 1998). PAHs are a large group of organic compounds with two or more fused aromatic rings made up of carbon and hydrogen atoms. PAHs are formed from incomplete combustion of organic materials such as processing of coal, crude oil, combustion of natural gas, refuse, vehicle emissions, heating, cooking and tobacco smoking as well as natural processes including carbonisation. A natural background level is due to PAH production in plant species. Because of such widespread sources, PAHs are present almost everywhere. Food is considered to be the major source of human exposure to PAHs due to their formation during cooking or from atmospheric deposition of PAHs on grains, fruits and vegetables (WHO 1998).

There are several hundred PAHs, including derivatives of PAHs. Some of these are known or probable/possible human carcinogens. The best known (and studied) PAH is BaP. A detailed toxicity summary for BaP (and carcinogenic PAHs) is provided in **Appendix C**.

4.2.2 Toxic equivalence factor approach for carcinogenic PAHs

The major approach advocated by regulatory agencies such as the NEPC (Fitzgerald, D.J. 1991, 1998; Fitzgerald, D. James, Robinson & Pester 2004; NEPC 1999 amended 2013d), California EPA (CEPA 1999), Netherlands (Baars et al. 2001), the UK Environment Agency (UK DEFRA and EA 2002), Canada (CCME 2008, 2010) and USEPA (USEPA 2014) for assessing the human health risks of PAH-containing mixtures involves the use of 'toxicity equivalence factors' (TEFs). This approach relates the toxicity of other (potentially carcinogenic) individual PAHs to that of BaP, the most widely studied carcinogenic PAH.

It is not currently possible to develop different relative potency schemes across different exposure routes (oral, dermal, inhalation), owing to a lack of data. Hence, the TEFs adopted have been applied for all routes of exposure for the carcinogenic PAHs assessed. Application of the TEFs is relevant to the assessment of PAHs that are considered to be carcinogenic (known or probably/possible). Other PAHs that are not carcinogenic should be assessed separately on an individual basis using a threshold approach.

The TEFs that have been adopted for the assessment of carcinogenic PAHs are listed in **Table 6**. These TEFs were presented by the CCME and are consistent with the WHO recommendations, with minor modifications (CCME 2010; WHO 1998). These TEFs were also used in the derivation of the HILs in the ASC NEPM. Using the TEF approach, concentrations of carcinogenic PAHs in soil are presented as BaP toxic equivalence (TEQs).

Table 6: Toxicity equivalence factors (TEF) for carcinogenic polycyclic aromatic hydrocarbons (PAHs) and carcinogenic classifications

PAH	IARC classification [1]	US EPA classification [2]	TEF
Benzo(a)anthracene	2B	B2	0.1
Benzo(a)pyrene	1	B2	1
Benzo(b+j)fluoranthene	2B	B2	0.1
Benzo(k)fluoranthene	2B	B2	0.1
Benzo(g,h,i)perylene [3]	3	D	0.01
Chrysene	2B	B2	0.01
Dibenz(a,h)anthracene	2A	B2	1
Indeno(1,2,3-cd)pyrene	2B	B2	0.1

Notes:
[1] International Agency for Research on Cancer (IARC): 1 = human carcinogen, 2A = probable human carcinogen, 2B = possible human carcinogen, 3 = not classifiable
[2] United Stated Environmental Protection Agency (US EPA): A = human carcinogen, B1/2 = probable human carcinogen, C = possible human carcinogen, D = not classifiable
[3] benzo(g,h,i)perylene is included due to positive findings in genotoxicity studies (WHO 1998). Note there are insufficient data available to determine carcinogenicity

4.2.3 Background exposure

Intakes of BaP from sources other than soil have been considered to range from 0.166-1.6 µg/day with intakes derived from food identified as the most significant (Fitzgerald, D.J. 1991). In 2006, the WHO Joint Expert Committee on Food Additives (JECFA) reviewed potential intakes and health effects of PAHs in food. They found that intake of BaP was on average 0.28 µg/day with a high level intake of 0.7 µg/day (WHO 2006).

4.2.4 Toxicity reference values

A detailed review of available toxicity reference values (TRVs) for BaP is provided in **Appendix C**. Based on this review, the following TRVs have been adopted for this site:

- oral TRV (TRV_O) = 0.233 $(mg/kg/day)^{-1}$ (MfE 2011) for oral and dermal exposures
- dermal absorption factor (DAF) = 0.06 (6%) (MfE 2011)
- oral bioavailability = 100%
- inhalation TRV = 0.6 $(mg/m3)^{-1}$ (USEPA 2017).

The oral TRV listed above, 0.233 $(mg/kg/day)^{-1}$ is different to the oral TRV adopted in the derivation of the HILs in the ASC NEPM, i.e. 0.5 $(mg/kg/day)^{-1}$. The reason for this is discussed in **Appendix C** and the implications in terms of this HHERA are discussed in **Section 4.4**.

For the assessment of exposures by young children (<2 years), a 10-fold age adjustment was applied to account for higher sensitivity when exposure occurs in early life. This approach is consistent with the derivation of HILs in the ASC NEPM.

4.3 Calculation of a site-specific soil screening criteria

Considering the only exceedance of the human health screening guidelines adopted for the site which warranted further detailed assessment was for carcinogenic PAHs (**Section 3**), the detailed assessment was done by adjusting the carcinogenic PAHs HIL used in the screening level assessment. This was done by applying site-specific assumptions about how people may be exposed to soil at the site using the HIL spreadsheets available from the ASC NEPM Toolbox (https://www.nepc.gov.au/nepms/assessment-site-contamination/toolbox). This approach results in a site-specific HIL that can be compared to the measured concentrations at the site.

As discussed in **Section 3.2.1**, the public open space HILs (HIL-C) which were used in the screening level assessment are likely to be highly conservative considering how people may use the hospital grounds for recreational purposes. The HIL-C for carcinogenic PAHs was the only screening criteria that was exceeded in this HHERA and required further detailed assessment (**Table 4**). The HIL-C in the ASC NEPM are protective of children who frequently use a playground where they may be exposed to contaminants in the soil. The values were derived using the following key assumptions (NB, there are a number of assumptions used to derive the HILs and just the key ones for the purposes of this HHERA are listed below):

- a child uses a playground 365 days/year
- every day in the playground, a child incidentally ingests 50 mg of soil and gets soil adhered to 2,700 cm^2 of skin (i.e. 44% of their total skin surface area).

There is no playground at the site (existing or proposed). Therefore, the assumptions listed above will be overconservative for the site. The main type of recreational activity that is likely to occur at the site is walking, which would in most cases be contained to the walking paths. There is the possibility that people (adults and children) may sit on the grassed areas, but this would likely occur at a much lower frequency.

The HIL spreadsheets in the ASC NEPM Toolbox include all of the default calculations/assumptions for the HILs for each land use (residential, public open space and commercial/industrial). This spreadsheet is publicly available and was used in this assessment to derive a site-specific HIL for carcinogenic PAHs by adjusting some of the parameters based on how people may use this site. **Table 7** summarises the default assumptions from the HIL-C calculation for parameters that were adjusted in this HHERA. In addition, the site-specific assumptions are also provided. These calculations were done for children (early-life) only as the most sensitive age group. Site-specific HILs based on exposure to young children will also be protective of older children and adults.

Table 7: Summary of default assumptions for the HIL-C calculations and site-specific assumptions that were used for this HHERA

Parameter	NEPM HIL-C default assumption	Site-specific assumption	Rationale for adjusting the assumption
Surface area of skin (child)	2,700 cm^2/day	2,434 cm^2/day	Skin surface area of a child that is assumed to be dirty every day, based on face, hands, forearms, lower legs and feet (MDEP 2002).
Soil-to-skin adherence factor (child)	0.5 mg/cm^2/day	0.35 mg/cm^2/day	Weighted adherence factor for a child (MDEP 2002).
Soil/dust ingestion rate	50 mg/day	25 mg/day	Assumes people using the site for recreational purposes are likely to have a much lower incidental ingestion rate of soil than the default used for HIL-C
Exposure frequency	365 days/year	52 days/year	Assume people may undertake activities at the site that involve contact with soil once a week.

Using the exposure assumptions summarised in **Table 7**, and the TRVs listed in **Section 4.2.4**, the site-specific HIL for recreational use of the Temora Hospital site is 80 mg/kg. The adapted HIL spreadsheet including the site-specific assumptions is provided in **Appendix D**.

The maximum concentration of BaP TEQ reported at the site was 24 mg/kg. This is considerably lower than the site-specific HIL for recreational purposes. Based on this, the risks to people using the site for recreational purposes are acceptable based on Australian guidance. Therefore, risk management actions and a RAP are not warranted for the site.

4.4 Uncertainties

Uncertainties in any assessment refers to a lack of knowledge (that could be better refined through the collection of additional data/information) and is an important part of the risk assessment process. Assessment of uncertainty is a qualitative process that relates to the selection and rejection of specific data, estimates or scenarios in the risk assessment. In general, to compensate for uncertainty, conservative assumptions are often used that result in an overestimate rather than an underestimate of risk.

There is always some level of error in sampling and analysis of environmental samples. In addition, sampling involved collecting samples from discrete locations and inferring the level of contamination between these sampling points. The actual concentrations between these points cannot be guaranteed. This HHERA was based on the available soil data for the site. These data were collected across two sampling events (the PSI and the DSI) and provide good coverage of the site. Therefore, they are considered sufficiently representative of the contamination present in soil at the site. To account for any potential uncertainty in these concentrations, the maximum concentrations were primarily used in this HHERA. This is a very conservative way to assess the site data as it assumes that the maximum reported concentrations are present in soils across the site.

For this site, there is uncertainty around the exposure assumptions relating to how people may be exposed to soil contaminants. The detailed assessment involved adjusting several default assumptions from the ASC NEPM HILs. The site-specific assumptions adopted are likely to be conservative and therefore are likely to overestimate exposure to chemicals in soil at the site and risk.

The TRV adopted for oral and dermal exposures to BaP (and carcinogenic PAHs) in this HHERA was 0.233 $(mg/kg/day)^{-1}$ (MfE 2011). This TRV was used in **Section 4.3** to derive a site-specific HIL for BaP TEQ of 80 mg/kg. This adopted TRV is lower than the TRV used in the ASC NEPM for BaP (i.e. 0.5 $(mg/kg/day)^{-1}$) and therefore is less conservative. If the TRV used in the ASC NEPM is applied to the site-specific calculations in this HHERA, the resulting site-specific HIL is reduced to 40 mg/kg for BaP TEQ. This HIL is still above all of the reported concentrations of BaP TEQ at the site. Therefore, the different TRV for BaP has no influence on the conclusions of this HHERA.

Section 5. Conclusions and recommendations

This report presents a HHERA in relation to the presence of contamination in soil at Temora Hospital, 169-189 Loftus Street, Temora NSW (the 'site'). The site is currently proposed for redevelopment, which is in the detailed design phase. This HHERA was undertaken to support town planning activities for the Temora Hospital and to determine if a RAP is needed for the site to address potential risk issues.

A range of potential sources of contamination were identified at the site as part of a PSI and a DSI which were conducted to inform the redevelopment work. These sources relate to current and historical activities at the site, and the use of imported fill material.

Investigations done for the PSI and DSI included analysis of soil samples for a wide range of chemicals. The concentrations of most chemicals were below the limit of reporting (LOR). However, a range of heavy metals, polycyclic aromatic hydrocarbons (PAHs) and petroleum hydrocarbons were reported in the soils.

Based on the review of available information for the site, the following groups of people were identified as potentially being present at the site:

- construction workers during the redevelopment
- intrusive maintenance workers following the redevelopment
- site gardeners and landscapers
- hospital staff during and after the redevelopment
- patients at the hospital and visitors (including volunteer workers) who may walk in the hospital grounds during and after the redevelopment
- the local community (including residents at the adjacent residential care facility) who may take walks through the hospital grounds during and after the redevelopment.

The HHERA assessed potential risks to all of the groups listed above. This focused on potential direct exposure to chemicals in the soil, as well as exposure to vapours for volatile chemicals (where relevant). The HHERA also assessed potential ecological risks for terrestrial organisms (e.g. vegetation, soil invertebrates and microorganisms).

Based on the available data for the site, and considering the uncertainties identified, the following was concluded from the HHERA:

- human health risks are low and acceptable for all groups listed above
- ecological risks are low and acceptable.

Based on the data provided and the outcomes of the HHERA, risk management actions and a RAP are not warranted for the site.

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Appendix A Site soil monitoring data

DSI Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration
ACM:	Asbestos Containing Material
ADWG:	AustralianDrinking Water Guidelines
AF:	Asbestos Fines
ANZG	Australian and New Zealand Guidelines
B(a)P:	Benzo(a)pyrene
CEC:	Cation Exchange Capacity
CRC:	Cooperative Research Centre
CT:	Contaminant Threshold
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
GSW:	General Solid Waste
HILs:	Health Investigation Levels
HSLs:	Health Screening Levels
HSL-SSA:	Health Screening Level-SiteSpecific Assessment
kg/L	kilograms per litre
NA:	Not Analysed
NC:	Not Calculated
NEPM:	National Environmental Protection Measure
NHMRC:	National Health and Medical Research Council
NL:	Not Limiting
NSL:	No Set Limit
OCP:	Organochlorine Pesticides
OPP:	Organophosphorus Pesticides
PAHs:	Polycyclic Aromatic Hydrocarbons
%w/w:	weight per weight
ppm:	Parts per million
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
pH_{KCL} :	pH of filtered 1:20, 1M KCL extract, shaken overnight
pH_{ox} :	pH of filtered 1:20 1M KCl after peroxide digestion
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
RSL:	Regional Screening Levels
RSW:	Restricted Solid Waste
SAC:	Site Assessment Criteria
SCC:	Specific Contaminant Concentration
S_{Cr}:	Chromium reducible sulfur
S_{POS}:	Peroxide oxidisable Sulfur
SSA:	Site Specific Assessment
SSHSLs:	Site Specific Health Screening Levels
TAA:	Total Actual Acidity in 1M KCL extract titrated to pH6.5
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TCLP:	Toxicity Characteristics Leaching Procedure
TPA:	Total Potential Acidity, 1M KCL peroxide digest
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
TSA:	Total Sulfide Acidity (TPA-TAA)
UCL:	Upper Level Confidence Limit on Mean Valu
USEPA	United States Environmental Protection Agency
VOCC:	Volatile Organic Chlorinated Compounds
WHO:	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).
- Statistical calculations are undertaken using ProUCL (USEPA). Statistical calculation is usually undertaken using data from fill samples.

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with low traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

JKEnvironments

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-A: 'Residential with garden/accessible soils; children's day care centers; preschools; and primary schools'

All data in mg/kg unless stated otherwise			HEAVY METALS									PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)		
			Arsenic	Cadmium	Chromium (Total)	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	TOTAL PCBs	ASBESTOS FIBRES
PQL - Envirolab Services			4	0.4	1	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			100	20	NSL	100	6000	300	40	400	7400	300	3	10	270	300	6	50	240	6	160	1	Detected/Not Detected
Sample Reference	Sample Depth	Sample Description																					
TP101	0-0.1	Fill: Silty Clay	6	<0.4	40	NA	65	21	0.2	11	36	19	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP101	0.4-0.5	Silty Clay	6	<0.4	51	NA	72	13	<0.1	12	26	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP102	0-0.1	Fill: Silty Clay	6	<0.4	34	NA	58	20	<0.1	10	36	34	4.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	35	NA	60	20	<0.1	10	38	32	3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP103	0-0.1	Fill: Silty Clay	5	<0.4	37	NA	43	28	<0.1	9	32	24	3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP104	0-0.1	Fill: Silty Clay	5	<0.4	34	NA	58	21	<0.1	10	39	59	6.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP105	0-0.1	Fill: Silty Clay	4	<0.4	26	NA	52	21	<0.1	8	38	54	6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP106	0-0.1	Fill: Silty Clay	5	<0.4	33	NA	72	18	<0.1	11	43	5.3	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP106	0.4-0.5	Silty Clay	5	<0.4	44	NA	100	8	<0.1	9	24	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP107	0-0.1	Fill: Silty Clay	6	<0.4	39	NA	74	14	<0.1	10	39	2.8	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP108	0-0.1	Fill: Silty Clay	11	<0.4	46	NA	81	21	0.2	11	49	2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP108	0.4-0.5	Silty Clay	8	<0.4	46	NA	100	9	<0.1	10	30	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP109	0-0.1	Fill: Silty Clay	8	<0.4	57	NA	140	10	<0.1	13	30	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP110	0-0.1	Silty Clay	10	<0.4	59	NA	190	10	0.1	12	30	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	9	<0.4	64	NA	200	8	<0.1	12	30	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP111	0-0.1	Fill: Silty Clay	5	<0.4	25	NA	100	12	<0.1	7	33	3.6	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP112	0-0.1	Fill: Silty Clay	6	<0.4	21	NA	320	35	<0.1	10	68	1.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP113	0-0.1	Fill: Silty Clay	7	<0.4	47	NA	250	9	<0.1	13	53	2.9	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP113	0.9-1.0	Silty Clay	7	<0.4	29	NA	340	21	<0.1	11	280	14	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP114	0-0.1	Fill: Silty Clay	8	<0.4	33	NA	170	79	<0.1	15	77	6	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP115	0-0.1	Fill: Silty Sand	23	<0.4	27	NA	56	32	0.5	11	140	2.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP116	0-0.05	Fill: Silty Sand	5	<0.4	29	NA	61	19	0.1	9	44	3.1	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP116	0.4-0.5	Silty Clay	5	<0.4	40	NA	110	6	<0.1	10	27	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP117	0-0.1	Fill: Silty Clay	5	<0.4	36	NA	66	16	<0.1	10	38	2.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	38	NA	67	15	<0.1	11	39	2.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP118	0-0.1	Fill: Silty Clay	5	<0.4	36	NA	62	21	<0.1	10	42	13	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP119	0-0.1	Fill: Silty Clay	4	<0.4	44	NA	43	14	<0.1	10	37	2.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP120	0-0.1	Fill: Silty Clay	5	<0.4	37	NA	54	44	0.1	9	36	27	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP120	0.4-0.5	Silty Clay	5	<0.4	45	NA	80	11	<0.1	8	19	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP121	0-0.1	Fill: Silty Clay	5	<0.4	40	NA	64	14	<0.1	10	38	3.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP122	0-0.1	Fill: Silty Clay	6	<0.4	40	NA	86	18	<0.1	9	42	3.4	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP123	0-0.1	Silty Clay	12	<0.4	140	<1	310	6	<0.1	30	64	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP124	0-0.1	Fill: Silty Clay	10	<0.4	13	NA	120	9	<0.1	5	27	<0.05	<0.5	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	12	<0.4	26	NA	180	12	<0.1	9	42	<0.05	<0.5	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP124 - [LAB_TRIP]	0-0.1	Laboratory Triplicate	11	<0.4	17	NA	140	11	<0.1	6	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP125	0-0.1	Fill: Silty Clay	19	<0.4	31	NA	240	21	<0.1	11	54	2.8	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP125	0.7-0.8	Silty Clay	9	<0.4	61	NA	210	10	<0.1	12	22	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH126	0.02-0.2	Fill: Sandy Silty Clay	4	<0.4	11	NA	4	4	<0.1	1	3	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP127	0-0.1	Fill: Silty Clay	6	<0.4	35	NA	84	34	0.1	9	59	1.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP127	0.3-0.4	Silty Clay	6	<0.4	71	NA	120	12	<0.1	11	23	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP128	0-0.1	Fill: Silty Clay	7	<0.4	45	NA	69	11	<0.1	13	30	0.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP129	0-0.1	Fill: Silty Clay	6	<0.4	53	NA	60	18	0.1	12	35	2.9	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP130	0-0.1	Fill: Silty Clay	9	<0.4	56	NA	80	14	<0.1	15	31	3.4	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP130	0.4-0.5	Silty Clay	8	<0.4	110	<1	160	12	<0.1	19	24	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP131	0-0.1	Fill: Silty Clay	6	<0.4	18	NA	330	470	<0.1	9	190	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP131	0.2-0.3	XW Andesite	NA	NA	NA	NA	NA	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP132	0-0.1	Fill: Silty Clay	5	<0.4	16	NA	210	32	<0.1	8	68	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP133	0-0.1	Fill: Silty Clay	<4	0.4	25	NA	220	120	<0.1	9	290	3.8	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP134	0-0.1	Fill: Clayey Silt	5	<0.4	22	NA	160	44	<0.1	8	120	12	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP135	0-0.1	Fill: Silty Clay	<4	<0.4	25	NA	190	37	<0.1	9	71	7	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	31	NA	230	32	<0.1	11	90	16	2.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP136	0-0.1	Fill: Silty Clay	5	<0.4	15	NA	95	37	<0.1	7	100	0.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP136	0.4-0.5	XW Andesite	5	<0.4	26	NA	350	15	<0.1	11	93	0.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP137	0-0.1	Fill: Silty Clay	5	<0.4	20	NA	210	26	<0.1	9	67	0.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP138	0-0.1	Fill: Silty Clay	5	<0.4	26	NA	260	43	<0.1	11	100	0.2	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP139	0-0.1	Fill: Silty Clay	5	<0.4	21	NA	210	98	0.1	8	230	2.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP139	0.2-0.3	Silty Clay	9	<0.4	37	NA	390	180	0.2	15	400	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP140	0-0.1	Fill: Silty Clay	13	<0.4	21	NA	96	23	<0.1	8	76	0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP140	0.4-0.5	Silty Clay	5	<0.4	20	NA	480	6	<0.1	12	51	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP141	0-0.1	Fill: Clayey Silt	<4	<0.4	12	NA	28	32	<0.1	5	46	2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP142	0-0.1	Fill: Silty Clay	6	<0.4	31	NA	54	27	<0.1	7	29	19	2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP142	0.4-0.5	Silty Clay	7	<0.4	110	<1	150	14	<0.1	16	23	0.07	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP143	0-0.1	Fill: Clayey Silt	5	<0.4	20	NA	150	15	<0.1	7	40	6.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	23	NA	140	17	<0.1	7	41	6.8	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP143	0.2-0.3	Fill: Silty Clay	7	<0.4	37	NA	320	11	<0.1	12	32	0.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP144	0-0.1	Fill: Silty Sand	5	<0.4	27	NA	50	54	<0.1	8	32	0.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP144	0.2-0.3	Fill: Silty Clayey Sand	14	<0.4	10	NA	6	6	<0.1	3	5	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP145	0-0.1	Fill: Silty Gravelly Clay	6	<0.4	44	NA	58	18	<0.1	10	26	0.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP145	0.4-0.5	Silty Clay	6	<0.4	81	NA	94	12	<0.1	13	20	0.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP146	0-0.05	Fill: Gravelly Silty Clay	7	<0.4	53	NA	170	14	<0.1	13	51	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP146	0.3-0.4	Silty Clay	8	<0.4	21	NA	500	4	<0.1	10	25	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP147	0-0.1	Fill: Clayey Silt	<4	<0.4	19	NA	15	13	<0.1	4	26	2.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	<4	<0.4	14	NA	13	12	<0.1	4	25	1.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP147	0.6-0.7	Fill: Sandy Clay	7	<0.4	28	NA	130	48	<0.1	18	170	95	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP148	0-0.1	Fill: Clayey Silt	<4	<0.4	12	NA	14	8	<0.1	3	25	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP149	0-0.1	Fill: Silty Clay	8	<0.4	19	NA	25	48	<0.1	6	57	1	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP149	0.5-0.6	Fill: Silty Clay	12	<0.4	62	NA	120	29	<0.1	24	68	9.8	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP149	0.7-0.8	Silty Clay	9	<0.4	110	<1	180	14	<0.1	22	30	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP150	0-0.1	Fill: Silty Clay	8	<0.4	46	NA	86	17	<0.1	14	36	4.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP151	0-0.1	Fill: Silty Clay	7	<0.4	21	NA	11	15	<0.1	6	19	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP152	0-0.1	Fill: Silty Clay	14	<0.4	34	NA	57	14	<0.1	17	44	2.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP153	0-0.1	Fill: Silty Sandy Clay	5	<0.4	29	NA	39	20	<0.1	8	34	190	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP153	0.6-0.7	Silty Clay	9	<0.4	120	<1	160	11	<0.1	16	23	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP154	0-0.1	Fill: Gravelly Clayey Sand	5	<0.4	18	NA	27	11	<0.1	5	21	15	2.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	22	NA	32	13	<0.1	6	24	19	2.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH155	0.05-0.2	Fill: Silty Sand	10	<0.4	13	NA	12	5	<0.1	2	6	19	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH155	0.2-0.5	Fill: Silty Clay	7	<0.4	62	NA	140	77	0.2	19	110	200	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH155	0.5-0.8	Silty Clay	7	<0.4	110	<1	160	13	<0.1	21	25	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP156	0-0.1	Fill: Silty Clay	8	<0.4	48	NA	140	39	<0.1	14	110	9.2	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH157	0.03-0.3	Fill: Silty Clay	10	<0.4	12	NA	21	16	<0.1	8	290	4.2	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH158	0.04-0.3	Fill: Silty Sandy Clay	10	<0.4	19	NA	230	26	<0.1	9	39	3.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH158	0.3-0.6	XW Andesite	6	<0.4	15	NA	370	3	<0.1	10	33	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP159	0-0.1	Fill: Clayey Silt	<4	<0.4	11	NA	19	13	<0.1	4	37	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	<4	<0.4	14	NA	19	14	<0.1	4	35	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP160	0-0.1	Fill: Silty Clay	5	<0.4	19	NA	270	69	<0.1	8	77	2.8	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP160	0.2-0.3	Silty Clay	6	<0.4	18	NA	440	5	<0.1	10	22	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP161	0-0.1	Fill: Silty Clay	7	<0.4	21	NA	160	35	<0.1	7	57	8.6	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH162	0.04-0.2	Fill: Silty Clay	7	<0.4	17	NA	250	6	<0.1	8	26	120	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH162	1.2-1.4	Silty Clay	7	<0.4	74	NA	130	12	<0.1	11	21	2.8	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP163	0-0.1	Fill: Silty Clay	7	<0.4	61	NA	66	13	<0.1	14	22	5	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
SDUP101	0-0.1	Duplicate of TP112	6	<0.4	22	NA	290	39	<0.1	10	71	1.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
SDUP101- [LAB_DUP]	0-0.1	Laboratory Duplicate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	NA	NA
SDUP102	0-0.1	Duplicate of TP111	5	<0.4	21	NA	120	7	<0.1	8	34	3.4	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP103	0-0.1	Duplicate of TP110	16	<0.4	61	NA	260	3	<0.1	14	36	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
SDUP104	0-0.1	Duplicate of TP109	8	<0.4	63	NA	140	5	<0.1	14	33	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP105	0-0.1	Duplicate of TP107	5	<0.4	39	NA	69	15	<0.1	11	41	2.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP106	0-0.1	Duplicate of TP102	5	<0.4	32	NA	52	18	<0.1	9	31	23	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP107	0-0.05	Duplicate of TP116	6	<0.4	33	NA	80	21	0.1	10	49	3.1	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP108	0-0.1	Duplicate of TP145	8	<0.4	49	NA	65	21	<0.1	10	27	0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP109	0-0.1	Duplicate of TP143	5	<0.4	20	NA	130	16	<0.1	7	39	8.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	20	NA	140	16	<0.1	7	40	7.4	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP110	0-0.1	Duplicate of TP138	7	<0.4	40	NA	460	67	0.1	16	150	0.3	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FCF101	-	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			110	110	110	6	110	111	110	110	110	109	109	46	46	46	46	46	46	46	47	44	67
Maximum Value			23	0.4	140	<PQL	500	470	0.5	30	400	200	24	<PQL	<PQL	<PQL	0.5	<PQL	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the SAC — **VALUE** (highlighted)
Concentration above the PQL — **Bold**

TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
TP101	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.7
TP101	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.6
TP102	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.5
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP103	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	**56**	<0.2	<0.5	<1	<1	<1	1.4
TP104	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
TP105	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.4
TP106	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.3
TP106	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.9
TP107	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.4
TP108	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
TP108	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	22.5
TP109	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.4
TP110	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP111	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.2
TP112	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
TP113	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	6.4
TP113	0.9-1.0	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	7.9
TP114	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.7
TP115	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	**73**	<0.2	<0.5	<1	<1	<1	2.8
TP116	0-0.05	Fill: Silty Sand	0m to <1m	Sand	<25	**120**	<0.2	<0.5	<1	<1	<1	4.3
TP116	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	9.5
TP117	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.4
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP118	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.5
TP119	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.3
TP120	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	5.2
TP120	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	8.6
TP121	0-0.1	Fill: Silty Clay	0m to <1m	Sand	**37**	<50	<0.2	<0.5	<1	<1	<1	4.3
TP122	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.4
TP123	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.2
TP124	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP125	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.1
TP125	0.7-0.8	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.7
BH126	0.02-0.2	Fill: Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.5
TP127	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	5.9
TP127	0.3-0.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	8.7
TP128	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	6
TP129	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	7.5
TP130	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	9.8
TP130	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	6.2
TP131	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.8
TP132	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.1
TP133	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.1
TP134	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.3
TP135	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP136	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.9
TP136	0.4-0.5	XW Andesite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.2
TP137	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
TP138	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
TP139	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.2
TP139	0.2-0.3	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.9
TP140	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.4
TP140	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.5
TP141	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.7
TP142	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.2
TP142	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	7.3
TP143	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.9
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP143	0.2-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.6
TP144	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	**210**	<0.2	<0.5	<1	<1	<1	1.7
TP144	0.2-0.3	Fill: Silty Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
TP145	0-0.1	Fill: Silty Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.1
TP145	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.5
TP146	0-0.05	Fill: Gravelly Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	7.2
TP146	0.3-0.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	7.4
TP147	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.5
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP147	0.6-0.7	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.8
TP148	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.8
TP149	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
TP149	0.5-0.6	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
TP149	0.7-0.8	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
TP150	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
TP151	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.2
TP152	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.7
TP153	0-0.1	Fill: Silty Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.2
TP153	0.6-0.7	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.5
TP154	0-0.1	Fill: Gravelly Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH155	0.05-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.3
BH155	0.2-0.5	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.1
BH155	0.5-0.8	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.9
TP156	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH157	0.03-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.1
BH158	0.04-0.3	Fill: Silty Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	4.6
BH158	0.3-0.6	XW Andesite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	8.1
TP159	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.9
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP160	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.6
TP160	0.2-0.3	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	5.8
TP161	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.4
BH162	0.04-0.2	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	6
BH162	1.2-1.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.5
TP163	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.7
SDUP101	0-0.1	Duplicate of TP112	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP102	0-0.1	Duplicate of TP111	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP103	0-0.1	Duplicate of TP110	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP104	0-0.1	Duplicate of TP109	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP105	0-0.1	Duplicate of TP107	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP106	0-0.1	Duplicate of TP102	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP107	0-0.05	Duplicate of TP116	0m to <1m	Sand	**71**	**150**	<0.2	<0.5	<1	<1	<1	NA
SDUP108	0-0.1	Duplicate of TP145	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP109	0-0.1	Duplicate of TP143	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP110	0-0.1	Duplicate of TP138	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples					109	109	109	109	109	109	109	89
Maximum Value					71	210	<PQL	<PQL	<PQL	<PQL	<PQL	22.5

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Sample Description	Depth Category	Soil Category	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
TP101	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP101	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP102	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP103	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP104	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP105	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP106	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP106	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP107	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP108	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP108	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP109	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP110	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP111	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP112	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP113	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP113	0.9-1.0	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP114	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP115	0-0.1	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP116	0-0.05	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP116	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP117	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP118	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP119	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP120	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP120	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP121	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP122	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP123	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP124	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP125	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP125	0.7-0.8	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH126	0.02-0.2	Fill: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP127	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP127	0.3-0.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP128	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP129	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP130	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP130	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP131	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP132	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP133	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP134	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP135	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP136	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP136	0.4-0.5	XW Andesite	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP137	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP138	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP139	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP139	0.2-0.3	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP140	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP140	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP141	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP142	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP142	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP143	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP143	0.2-0.3	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP144	0-0.1	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP144	0.2-0.3	Fill: Silty Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP145	0-0.1	Fill: Silty Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP145	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP146	0-0.05	Fill: Gravelly Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP146	0.3-0.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP147	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP147	0.6-0.7	Fill: Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP148	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP149	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP149	0.5-0.6	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP149	0.7-0.8	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP150	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP151	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP152	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP153	0-0.1	Fill: Silty Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP153	0.6-0.7	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP154	0-0.1	Fill: Gravelly Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH155	0.05-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH155	0.2-0.5	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH155	0.5-0.8	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP156	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH157	0.03-0.3	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH158	0.04-0.3	Fill: Silty Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH158	0.3-0.6	XW Andesite	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP159	0-0.1	Fill: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP160	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP160	0.2-0.3	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP161	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH162	0.04-0.2	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH162	1.2-1.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP163	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP101	0-0.1	Duplicate of TP112	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP102	0-0.1	Duplicate of TP111	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP103	0-0.1	Duplicate of TP110	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP104	0-0.1	Duplicate of TP109	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP105	0-0.1	Duplicate of TP107	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP106	0-0.1	Duplicate of TP102	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP107	0-0.05	Duplicate of TP116	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP108	0-0.1	Duplicate of TP145	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP109	0-0.1	Duplicate of TP143	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP110	0-0.1	Duplicate of TP138	0m to <1m	Sand	45	110	0.5	160	55	40	3

JKEnvironments

TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
TP101	0-0.1	Coarse	<25	<50	<100	<100
TP101	0.4-0.5	Coarse	<25	<50	<100	<100
TP102	0-0.1	Coarse	<25	<50	**210**	<100
TP102 - [LAB_DUP]	0-0.1	Coarse	<25	<50	**210**	<100
TP103	0-0.1	Coarse	<25	**56**	**340**	**160**
TP104	0-0.1	Coarse	<25	<50	**140**	<100
TP105	0-0.1	Coarse	<25	<50	**180**	<100
TP106	0-0.1	Coarse	<25	<50	<100	<100
TP106	0.4-0.5	Coarse	<25	<50	<100	<100
TP107	0-0.1	Coarse	<25	<50	<100	<100
TP108	0-0.1	Coarse	<25	<50	<100	<100
TP108	0.4-0.5	Coarse	<25	<50	<100	<100
TP109	0-0.1	Coarse	<25	<50	<100	<100
TP110	0-0.1	Coarse	<25	<50	<100	<100
TP110 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP111	0-0.1	Coarse	<25	<50	**230**	<100
TP112	0-0.1	Coarse	<25	<50	<100	<100
TP113	0-0.1	Coarse	<25	<50	<100	<100
TP113	0.9-1.0	Coarse	<25	<50	**100**	<100
TP114	0-0.1	Coarse	<25	<50	<100	<100
TP115	0-0.1	Coarse	<25	**73**	**620**	**250**
TP116	0-0.05	Coarse	<25	**120**	**720**	**240**
TP116	0.4-0.5	Coarse	<25	<50	<100	<100
TP117	0-0.1	Coarse	<25	<50	<100	<100
TP117 - [LAB_DUP]	0-0.1	Coarse	<25	<50	**170**	<100
TP118	0-0.1	Coarse	<25	<50	**140**	<100
TP119	0-0.1	Coarse	<25	<50	<100	<100
TP120	0-0.1	Coarse	<25	<50	**130**	<100
TP120	0.4-0.5	Coarse	<25	<50	<100	<100
TP121	0-0.1	Coarse	**37**	<50	**170**	<100
TP122	0-0.1	Coarse	<25	<50	**160**	<100
TP123	0-0.1	Coarse	<25	<50	<100	<100
TP124	0-0.1	Coarse	<25	<50	<100	<100
TP124 - [LAB_DUP]	0-0.1	Coarse	<25	<50	**100**	<100
TP125	0-0.1	Coarse	<25	<50	**150**	<100
TP125	0.7-0.8	Coarse	<25	<50	<100	<100
BH126	0.02-0.2	Coarse	<25	<50	<100	<100
TP127	0-0.1	Coarse	<25	<50	<100	<100
TP127	0.3-0.4	Coarse	<25	<50	<100	<100
TP128	0-0.1	Coarse	<25	<50	<100	<100
TP129	0-0.1	Coarse	<25	<50	<100	<100
TP130	0-0.1	Coarse	<25	<50	<100	<100
TP130	0.4-0.5	Coarse	<25	<50	<100	<100
TP131	0-0.1	Coarse	<25	<50	<100	<100
TP132	0-0.1	Coarse	<25	<50	**130**	<100
TP133	0-0.1	Coarse	<25	<50	<100	<100
TP134	0-0.1	Coarse	<25	<50	**100**	<100
TP135	0-0.1	Coarse	<25	<50	<100	<100
TP135 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP136	0-0.1	Coarse	<25	<50	**230**	**240**
TP136	0.4-0.5	Coarse	<25	<50	<100	<100
TP137	0-0.1	Coarse	<25	<50	<100	<100
TP138	0-0.1	Coarse	<25	<50	<100	<100
TP139	0-0.1	Coarse	<25	<50	<100	<100
TP139	0.2-0.3	Coarse	<25	<50	<100	<100
TP140	0-0.1	Coarse	<25	<50	<100	<100
TP140	0.4-0.5	Coarse	<25	<50	<100	<100
TP141	0-0.1	Coarse	<25	<50	<100	<100
TP142	0-0.1	Coarse	<25	<50	<100	<100
TP142	0.4-0.5	Coarse	<25	<50	<100	<100
TP143	0-0.1	Coarse	<25	<50	<100	<100
TP143 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP143	0.2-0.3	Coarse	<25	<50	<100	<100
TP144	0-0.1	Coarse	<25	**210**	**1100**	**440**
TP144	0.2-0.3	Coarse	<25	<50	<100	<100
TP145	0-0.1	Coarse	<25	<50	**100**	<100
TP145	0.4-0.5	Coarse	<25	<50	<100	<100
TP146	0-0.05	Coarse	<25	<50	<100	<100
TP146	0.3-0.4	Coarse	<25	<50	<100	<100
TP147	0-0.1	Coarse	<25	<50	<100	<100
TP147 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP147	0.6-0.7	Coarse	<25	<50	**160**	<100
TP148	0-0.1	Coarse	<25	<50	<100	<100
TP149	0-0.1	Coarse	<25	<50	**160**	**260**
TP149	0.5-0.6	Coarse	<25	<50	<100	<100
TP149	0.7-0.8	Coarse	<25	<50	<100	<100
TP150	0-0.1	Coarse	<25	<50	<100	<100
TP151	0-0.1	Coarse	<25	<50	<100	<100
TP152	0-0.1	Coarse	<25	<50	<100	<100
TP153	0-0.1	Coarse	<25	<50	**400**	**160**
TP153	0.6-0.7	Coarse	<25	<50	<100	<100
TP154	0-0.1	Coarse	<25	<50	<100	<100
TP154 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
BH155	0.05-0.2	Coarse	<25	<50	<100	<100
BH155	0.2-0.5	Coarse	<25	<50	**400**	**120**
BH155	0.5-0.8	Coarse	<25	<50	<100	<100
TP156	0-0.1	Coarse	<25	<50	<100	<100
BH157	0.03-0.3	Coarse	<25	<50	<100	<100
BH158	0.04-0.3	Coarse	<25	<50	<100	<100
BH158	0.3-0.6	Coarse	<25	<50	<100	<100
TP159	0-0.1	Coarse	<25	<50	<100	<100
TP159 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP160	0-0.1	Coarse	<25	<50	<100	<100
TP160	0.2-0.3	Coarse	<25	<50	<100	<100
TP161	0-0.1	Coarse	<25	<50	**140**	<100
BH162	0.04-0.2	Coarse	<25	<50	**220**	<100
BH162	1.2-1.4	Coarse	<25	<50	<100	<100
TP163	0-0.1	Coarse	<25	<50	<100	<100
SDUP101	0-0.1	Coarse	<25	<50	<100	<100
SDUP102	0-0.1	Coarse	<25	<50	<100	<100
SDUP103	0-0.1	Coarse	<25	<50	<100	<100
SDUP104	0-0.1	Coarse	<25	<50	<100	<100
SDUP105	0-0.1	Coarse	<25	<50	<100	<100
SDUP106	0-0.1	Coarse	<25	<50	**180**	<100
SDUP107	0-0.05	Coarse	**71**	**150**	**830**	**240**
SDUP108	0-0.1	Coarse	<25	<50	<100	<100
SDUP109	0-0.1	Coarse	<25	<50	**140**	<100
SDUP109 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
SDUP110	0-0.1	Coarse	<25	<50	<100	<100
Total Number of Samples			109	109	109	109
Maximum Value			71	210	1100	440

Concentration above the SAC	**VALUE**
Concentration above the PQL	**Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Soil Texture	C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
TP101	0-0.1	Coarse	700	1000	2500	10000
TP101	0.4-0.5	Coarse	700	1000	2500	10000
TP102	0-0.1	Coarse	700	1000	2500	10000
TP102 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP103	0-0.1	Coarse	700	1000	2500	10000
TP104	0-0.1	Coarse	700	1000	2500	10000
TP105	0-0.1	Coarse	700	1000	2500	10000
TP106	0-0.1	Coarse	700	1000	2500	10000
TP106	0.4-0.5	Coarse	700	1000	2500	10000
TP107	0-0.1	Coarse	700	1000	2500	10000
TP108	0-0.1	Coarse	700	1000	2500	10000
TP108	0.4-0.5	Coarse	700	1000	2500	10000
TP109	0-0.1	Coarse	700	1000	2500	10000
TP110	0-0.1	Coarse	700	1000	2500	10000
TP110 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP111	0-0.1	Coarse	700	1000	2500	10000
TP112	0-0.1	Coarse	700	1000	2500	10000
TP113	0-0.1	Coarse	700	1000	2500	10000
TP113	0.9-1.0	Coarse	700	1000	2500	10000
TP114	0-0.1	Coarse	700	1000	2500	10000
TP115	0-0.1	Coarse	700	1000	2500	10000
TP116	0-0.05	Coarse	700	1000	2500	10000
TP116	0.4-0.5	Coarse	700	1000	2500	10000
TP117	0-0.1	Coarse	700	1000	2500	10000
TP117 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP118	0-0.1	Coarse	700	1000	2500	10000
TP119	0-0.1	Coarse	700	1000	2500	10000
TP120	0-0.1	Coarse	700	1000	2500	10000
TP120	0.4-0.5	Coarse	700	1000	2500	10000
TP121	0-0.1	Coarse	700	1000	2500	10000
TP122	0-0.1	Coarse	700	1000	2500	10000
TP123	0-0.1	Coarse	700	1000	2500	10000
TP124	0-0.1	Coarse	700	1000	2500	10000
TP124 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP125	0-0.1	Coarse	700	1000	2500	10000
TP125	0.7-0.8	Coarse	700	1000	2500	10000
BH126	0.02-0.2	Coarse	700	1000	2500	10000
TP127	0-0.1	Coarse	700	1000	2500	10000
TP127	0.3-0.4	Coarse	700	1000	2500	10000
TP128	0-0.1	Coarse	700	1000	2500	10000
TP129	0-0.1	Coarse	700	1000	2500	10000
TP130	0-0.1	Coarse	700	1000	2500	10000
TP130	0.4-0.5	Coarse	700	1000	2500	10000
TP131	0-0.1	Coarse	700	1000	2500	10000
TP132	0-0.1	Coarse	700	1000	2500	10000
TP133	0-0.1	Coarse	700	1000	2500	10000
TP134	0-0.1	Coarse	700	1000	2500	10000
TP135	0-0.1	Coarse	700	1000	2500	10000
TP135 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP136	0-0.1	Coarse	700	1000	2500	10000
TP136	0.4-0.5	Coarse	700	1000	2500	10000
TP137	0-0.1	Coarse	700	1000	2500	10000
TP138	0-0.1	Coarse	700	1000	2500	10000
TP139	0-0.1	Coarse	700	1000	2500	10000
TP139	0.2-0.3	Coarse	700	1000	2500	10000
TP140	0-0.1	Coarse	700	1000	2500	10000
TP140	0.4-0.5	Coarse	700	1000	2500	10000
TP141	0-0.1	Coarse	700	1000	2500	10000
TP142	0-0.1	Coarse	700	1000	2500	10000
TP142	0.4-0.5	Coarse	700	1000	2500	10000
TP143	0-0.1	Coarse	700	1000	2500	10000
TP143 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP143	0.2-0.3	Coarse	700	1000	2500	10000
TP144	0-0.1	Coarse	700	1000	2500	10000
TP144	0.2-0.3	Coarse	700	1000	2500	10000
TP145	0-0.1	Coarse	700	1000	2500	10000
TP145	0.4-0.5	Coarse	700	1000	2500	10000
TP146	0-0.05	Coarse	700	1000	2500	10000
TP146	0.3-0.4	Coarse	700	1000	2500	10000
TP147	0-0.1	Coarse	700	1000	2500	10000
TP147 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP147	0.6-0.7	Coarse	700	1000	2500	10000
TP148	0-0.1	Coarse	700	1000	2500	10000
TP149	0-0.1	Coarse	700	1000	2500	10000
TP149	0.5-0.6	Coarse	700	1000	2500	10000
TP149	0.7-0.8	Coarse	700	1000	2500	10000
TP150	0-0.1	Coarse	700	1000	2500	10000
TP151	0-0.1	Coarse	700	1000	2500	10000
TP152	0-0.1	Coarse	700	1000	2500	10000
TP153	0-0.1	Coarse	700	1000	2500	10000
TP153	0.6-0.7	Coarse	700	1000	2500	10000
TP154	0-0.1	Coarse	700	1000	2500	10000
TP154 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
BH155	0.05-0.2	Coarse	700	1000	2500	10000
BH155	0.2-0.5	Coarse	700	1000	2500	10000
BH155	0.5-0.8	Coarse	700	1000	2500	10000
TP156	0-0.1	Coarse	700	1000	2500	10000
BH157	0.03-0.3	Coarse	700	1000	2500	10000
BH158	0.04-0.3	Coarse	700	1000	2500	10000
BH158	0.3-0.6	Coarse	700	1000	2500	10000
TP159	0-0.1	Coarse	700	1000	2500	10000
TP159 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP160	0-0.1	Coarse	700	1000	2500	10000
TP160	0.2-0.3	Coarse	700	1000	2500	10000
TP161	0-0.1	Coarse	700	1000	2500	10000
BH162	0.04-0.2	Coarse	700	1000	2500	10000
BH162	1.2-1.4	Coarse	700	1000	2500	10000
TP163	0-0.1	Coarse	700	1000	2500	10000
SDUP101	0-0.1	Coarse	700	1000	2500	10000
SDUP102	0-0.1	Coarse	700	1000	2500	10000
SDUP103	0-0.1	Coarse	700	1000	2500	10000
SDUP104	0-0.1	Coarse	700	1000	2500	10000
SDUP105	0-0.1	Coarse	700	1000	2500	10000
SDUP106	0-0.1	Coarse	700	1000	2500	10000
SDUP107	0-0.05	Coarse	700	1000	2500	10000
SDUP108	0-0.1	Coarse	700	1000	2500	10000
SDUP109	0-0.1	Coarse	700	1000	2500	10000
SDUP109 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
SDUP110	0-0.1	Coarse	700	1000	2500	10000

TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		4,400	3,300	4,500	6,300	100	14,000	4,500	12,000	1,400	
Site Use		**RESIDENTIAL WITH ACCESSIBLE SOIL- DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
TP101	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.7**
TP101	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.6**
TP102	0-0.1	<25	<50	**210**	<100	<0.2	<0.5	<1	<1	<1	**1.5**
TP102 - [LAB_DUP]	0-0.1	<25	<50	**210**	<100	<0.2	<0.5	<1	<1	<1	NA
TP103	0-0.1	<25	**56**	**340**	**160**	<0.2	<0.5	<1	<1	<1	**1.4**
TP104	0-0.1	<25	<50	**140**	<100	<0.2	<0.5	<1	<1	<1	**2**
TP105	0-0.1	<25	<50	**180**	<100	<0.2	<0.5	<1	<1	<1	**1.4**
TP106	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.3**
TP106	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.9**
TP107	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.4**
TP108	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
TP108	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**22.5**
TP109	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.4**
TP110	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
TP110 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP111	0-0.1	<25	<50	**230**	<100	<0.2	<0.5	<1	<1	<1	**1.2**
TP112	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
TP113	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**6.4**
TP113	0.9-1.0	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	**7.9**
TP114	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.7**
TP115	0-0.1	<25	**73**	**620**	**250**	<0.2	<0.5	<1	<1	<1	**2.8**
TP116	0-0.05	<25	**120**	**720**	**240**	<0.2	<0.5	<1	<1	<1	**4.3**
TP116	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**9.5**
TP117	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.4**
TP117 - [LAB_DUP]	0-0.1	<25	<50	**120**	<100	<0.2	<0.5	<1	<1	<1	NA
TP118	0-0.1	<25	<50	**140**	<100	<0.2	<0.5	<1	<1	<1	**1.5**
TP119	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.3**
TP120	0-0.1	<25	<50	**130**	<100	<0.2	<0.5	<1	<1	<1	**5.2**
TP120	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**8.6**
TP121	0-0.1	**37**	<50	**170**	<100	<0.2	<0.5	<1	<1	<1	**4.3**
TP122	0-0.1	<25	<50	**160**	<100	<0.2	<0.5	<1	<1	<1	**2.4**
TP123	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.2**
TP124	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
TP124 - [LAB_DUP]	0-0.1	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	NA
TP125	0-0.1	<25	<50	**150**	<100	<0.2	<0.5	<1	<1	<1	**1.1**
TP125	0.7-0.8	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.7**
BH126	0.02-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.5**
TP127	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**5.9**
TP127	0.3-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**8.7**
TP128	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**6**
TP129	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**7.5**
TP130	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**9.8**
TP130	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**6.2**
TP131	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.8**
TP132	0-0.1	<25	<50	**130**	<100	<0.2	<0.5	<1	<1	<1	**1.1**
TP133	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.1**
TP134	0-0.1	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	**2.3**
TP135	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3**
TP135 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP136	0-0.1	<25	<50	**230**	**240**	<0.2	<0.5	<1	<1	<1	**1.9**
TP136	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.2**
TP137	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
TP138	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
TP139	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.2**
TP139	0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.9**
TP140	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.4**
TP140	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.5**
TP141	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.7**
TP142	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.2**
TP142	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**7.3**
TP143	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.9**
TP143 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP143	0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.6**
TP144	0-0.1	<25	**210**	**1100**	**440**	<0.2	<0.5	<1	<1	<1	**1.7**
TP144	0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
TP145	0-0.1	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	**2.1**
TP145	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.5**
TP146	0-0.05	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**7.2**
TP146	0.3-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**7.4**
TP147	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.5**
TP147 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP147	0.6-0.7	<25	<50	**160**	<100	<0.2	<0.5	<1	<1	<1	**2.8**
TP148	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.8**
TP149	0-0.1	<25	<50	**160**	**260**	<0.2	<0.5	<1	<1	<1	**0.4**
TP149	0.5-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
TP149	0.7-0.8	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
TP150	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
TP151	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.2**
TP152	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.7**
TP153	0-0.1	<25	<50	**400**	**160**	<0.2	<0.5	<1	<1	<1	**3.2**
TP153	0.6-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.5**
TP154	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4**
TP154 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH155	0.05-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.3**
BH155	0.2-0.5	<25	<50	**400**	**120**	<0.2	<0.5	<1	<1	<1	**4.1**
BH155	0.5-0.8	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.9**
TP156	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
BH157	0.03-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.1**
BH158	0.04-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**4.6**
BH158	0.3-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**8.1**
TP159	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.9**
TP159 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP160	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.6**
TP160	0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**5.8**
TP161	0-0.1	<25	<50	**140**	<100	<0.2	<0.5	<1	<1	<1	**2.4**
BH162	0.04-0.2	<25	<50	**220**	<100	<0.2	<0.5	<1	<1	<1	**6**
BH162	1.2-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.5**
TP163	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.7**
SDUP101	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP102	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP103	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP104	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP105	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP106	0-0.1	<25	<50	**180**	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP107	0-0.05	**71**	**150**	**830**	**240**	<0.2	<0.5	<1	<1	<1	NA
SDUP108	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP109	0-0.1	<25	<50	**140**	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP109 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP110	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA

TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-A: Residential with garden/accessible soils; children's day care centers; preschools; and primary schools

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.01**			**0.001**			**0.001**											**0.01**	**0.001**
6/09/2023	TP101	0-0.1	No	10	11,360	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP101	0-0.1	715.87	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP101	0.1-0.2	NA	10	10,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP102	0-0.1	No	10	10,230	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP102	0-0.1	677.2	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP102	0.1-0.5	NA	10	10,060	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP103	0-0.1	No	10	10,510	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP103	0-0.1	616.35	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP103	0.1-0.1	NA	10	10,780	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP104	0-0.1	No	10	10,740	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP104	0-0.1	855.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP104	0.1-0.5	NA	10	11,920	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP105	0-0.1	No	10	11,340	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP105	0-0.1	620.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP105	0.1-0.4	NA	10	10,820	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP106	0-0.1	No	10	11,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP106	0-0.1	636.54	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP106	0.1-0.2	NA	10	10,110	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP107	0-0.1	No	10	11,360	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP107	0-0.1	670.01	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP108	0-0.1	No	10	11,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP108	0-0.1	771.96	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP108	0.1-0.3	NA	10	10,050	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP109	0-0.1	No	10	11,270	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP109	0-0.1	647.93	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP109	0.1-0.5	NA	10	10,340	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/09/2023	TP111	0-0.1	No	10	10,230	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP111	0-0.1	567.65	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP112	0-0.1	No	10	10,230	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP112	0-0.1	741.87	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP112	0.1-0.2	NA	10	10,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP113	0-0.1	No	10	11,670	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP113	0-0.1	896.09	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP113	0.1-0.9	NA	10	12,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP114	0-0.1	No	10	13,330	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP114	0-0.1	649.12	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP115	0-0.1	No	10	10,060	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP115	0-0.1	332.35	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP115	0.1-0.6	NA	10	11,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP116	0-0.05	No	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP116	0-0.05	615.67	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP117	0-0.15	No	10	10,720	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP117	0-0.1	723.37	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
6/09/2023	TP118	0-0.1	No	10	11,120	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP118	0-0.1	744.22	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP119	0-0.1	No	10	12,770	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP119	0-0.1	764.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP119	0.1-0.25	NA	10	11,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP120	0-0.1	No	10	11,570	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP120	0-0.1	764.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP120	0.1-0.3	NA	10	11,820	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP121	0-0.1	No	10	11,280	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP121	0-0.1	715.84	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP121	0.1-0.2	NA	10	10,560	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP122	0-0.1	696.58	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP122	0-0.1	No	10	11,830	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP124	0-0.1	No	10	10,580	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP124	0-0.1	975.25	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP124	0.1-0.3	NA	10	10,930	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP125	0-0.1	No	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP125	0-0.1	614.93	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP125	0.1-0.6	NA	10	10,760	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13/09/2023	BH126	0.02-0.2	No	2	1,940	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH126	0.02-0.2	1081.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
13/09/2023	BH126	0.2-0.7	NA	7	7,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP127	0-0.15	No	10	10,250	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP127	0-0.1	704	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP128	0-0.1	No	10	11,920	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP128	0-0.1	635.01	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP128	0.1-0.3	NA	10	11,310	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP129	0-0.1	No	10	12,260	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP129	0-0.1	607.03	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP129	0.1-0.2	NA	10	12,370	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP130	0-0.15	No	10	12,120	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP130	0-0.1	791.73	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP131	0-0.1	No	10	10,430	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP131	0-0.1	685.76	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP132	0-0.1	No	10	10,810	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP132	0-0.1	914.66	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP133	0-0.1	No	10	10,290	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP133	0-0.1	546.94	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP133	0.1-0.2	NA	10	10,080	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP134	0-0.1	No	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP134	0-0.1	554.32	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP134	0.1-0.2	NA	10	10,110	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP135	0-0.1	No	10	10,320	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP135	0-0.1	733.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP136	0-0.15	No	10	10,540	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP136	0-0.1	826.25	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP137	0-0.1	No	10	10,370	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP137	0-0.1	700.59	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP137	0.1-0.2	NA	10	10,060	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP138	0-0.1	No	10	10,190	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP138	0-0.1	668.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP139	0-0.1	No	10	10,310	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP139	0-0.1	668.93	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP139	0.1-0.2	NA	10	10,970	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP140	0-0.1	No	10	10,070	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP140	0-0.1	644.86	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP140	0.1-0.2	NA	10	10,250	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/09/2023	TP141	0-0.1	No	10	10,960	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP141	0-0.1	546.29	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
12/09/2023	TP141	0.1-0.4	NA	10	10,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP142	0-0.1	No	10	12,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP142	0-0.1	732.78	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
7/09/2023	TP142	0.1-0.3	NA	10	11,780	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP143	0-0.1	No	10	10,260	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP143	0-0.1	514.9	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP143	0.1-0.3	NA	10	10,810	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP143	0.2-0.3	754.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP144	0-0.05	No	10	10,230	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP144	0-0.1	580.86	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP144	0.05-0.55	No	10	12,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP144	0.2-0.3	1000.43	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP145	0-0.1	No	10	11,260	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP145	0-0.1	638.36	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP145	0.1-0.2	NA	10	11,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/09/2023	TP146	0-0.05	No	10	10,270	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP146	0-0.05	1040.96	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP147	0-0.1	No	10	10,830	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP147	0-0.1	627.24	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP147	0.1-0.4	NA	10	10,390	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP147	0.4-0.8	NA	10	12,170	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP147	0.6-0.7	549.41	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP148	0-0.1	No	10	10,060	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP148	0-0.1	739.81	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP148	0.1-0.4	NA	10	10,350	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP148	0.4-0.5	NA	10	10,490	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP149	0-0.1	No	10	11,210	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP149	0-0.1	721.53	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP149	0.1-0.3	NA	10	11,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP149	0.3-0.6	NA	10	10,810	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP149	0.5-0.6	694.43	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP150	0-0.1	No	10	11,720	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP150	0-0.1	771.92	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP150	0.1-0.2	NA	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP151	0-0.1	No	10	11,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP151	0-0.1	700.91	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP151	0.1-0.35	NA	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP152	0-0.1	No	10	10,760	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP152	0-0.1	826.89	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
12/09/2023	TP153	0-0.1	No	10	10,770	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP153	0-0.1	739	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
12/09/2023	TP153	0.1-0.3	NA	10	10,110	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/09/2023	TP154	0-0.1	No	10	10,670	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP154	0-0.1	941.02	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
12/09/2023	TP154	0.1-0.25	NA	10	10,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13/09/2023	BH155	0.05-0.2	No	2	1,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH155	0.05-0.2	861.6	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
13/09/2023	BH155	0.2-0.5	NA	3	3,720	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH155	0.2-0.5	736.86	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP156	0-0.1	No	10	11,280	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP156	0-0.1	645.52	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP156	0.1-0.15	NA	10	10,290	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13/09/2023	BH157	0.03-0.3	No	2	1,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH157	0.03-0.3	963.6	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
13/09/2023	BH158	0.04-0.3	No	1	1,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH158	0.04-0.3	932.77	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP159	0-0.15	No	10	10,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP159	0-0.1	817.12	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP159	0.15-0.3	NA	10	10,720	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP159	0.3-0.5	NA	10	10,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/09/2023	TP160	0-0.1	No	10	10,410	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP160	0-0.1	804.28	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP161	0-0.1	No	10	10,720	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP161	0-0.1	732.73	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/09/2023	TP161	0.1-0.4	NA	10	10,320	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13/09/2023	BH162	0.04-0.2	No	1	1,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	BH162	0.04-0.2	973.2	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
13/09/2023	BH162	0.2-0.6	NA	5	5,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/09/2023	TP163	0-0.1	No	10	11,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	333165	TP163	0-0.1	759.72	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/09/2023	TP163	0.1-0.2	NA	10	10,290	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Concentration above the SAC **VALUE**

TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium (Total)	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	Sample Depth	Sample Description	Soil Texture																				
TP101	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	40	65	21	11	36	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	1.8
TP101	0.4-0.5	Silty Clay	Fine	7.3	20	39	6	51	72	13	12	26	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP102	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	34	58	20	10	36	<1	<0.1	<25	<50	210	<100	<0.2	<0.5	<1	<1	2.9
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	6	35	60	20	10	38	<1	<0.1	<25	<50	210	<100	<0.2	<0.5	<1	<1	2.7
TP103	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	37	43	28	9	32	<1	NA	<25	56	340	160	<0.2	<0.5	<1	<1	2.3
TP104	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	34	58	21	10	39	<1	<0.1	<25	<50	140	<100	<0.2	<0.5	<1	<1	4.6
TP105	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	4	26	52	21	8	38	<1	NA	<25	<50	180	<100	<0.2	<0.5	<1	<1	4.5
TP106	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	33	72	18	11	43	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.5
TP106	0.4-0.5	Silty Clay	Fine	7.3	20	39	5	44	100	8	9	24	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP107	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	39	74	14	10	39	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP108	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	11	46	81	21	11	49	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP108	0.4-0.5	Silty Clay	Fine	7.3	20	39	8	46	100	9	10	30	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP109	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	8	57	140	10	13	30	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP110	0-0.1	Silty Clay	Fine	7.3	20	39	10	59	190	10	12	30	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	9	64	200	8	12	30	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP111	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	25	100	12	7	33	<1	NA	<25	<50	230	<100	<0.2	<0.5	<1	<1	0.4
TP112	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	21	320	35	10	68	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP113	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	7	47	250	9	13	53	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP113	0.9-1.0	Silty Clay	Fine	7.3	20	39	7	29	340	21	11	280	<1	NA	<25	<50	100	<100	<0.2	<0.5	<1	<1	0.93
TP114	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	8	33	170	79	15	77	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.53
TP115	0-0.1	Fill: Silty Sand	Coarse	7.3	20	39	23	27	56	32	11	140	<1	<0.1	<25	73	620	250	<0.2	<0.5	<1	<1	0.2
TP116	0-0.05	Fill: Silty Sand	Coarse	7.3	20	39	5	29	61	19	9	44	<1	NA	<25	120	720	240	<0.2	<0.5	<1	<1	0.3
TP116	0.4-0.5	Silty Clay	Fine	7.3	20	39	5	40	110	6	10	27	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP117	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	36	66	16	10	38	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	5	38	67	15	11	39	<1	<0.1	<25	<50	120	<100	<0.2	<0.5	<1	<1	0.2
TP118	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	36	62	21	10	42	<1	NA	<25	<50	140	<100	<0.2	<0.5	<1	<1	1.3
TP119	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	4	44	43	14	10	37	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP120	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	37	54	44	9	36	<1	NA	<25	<50	130	<100	<0.2	<0.5	<1	<1	2.8
TP120	0.4-0.5	Silty Clay	Fine	7.3	20	39	5	45	80	11	8	19	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP121	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	40	64	14	10	38	<1	<0.1	37	<50	170	<100	<0.2	<0.5	<1	<1	0.3
TP122	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	40	86	18	9	42	<1	NA	<25	<50	160	<100	<0.2	<0.5	<1	<1	0.4
TP123	0-0.1	Silty Clay	Fine	7.3	20	39	12	140	310	6	30	64	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP124	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	10	13	120	9	5	27	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	12	26	180	12	9	42	<1	<0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	<0.05
TP124 - [LAB_TRIP]	0-0.1	Laboratory Triplicate	Fine	7.3	20	39	11	17	140	11	6	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP125	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	19	31	240	21	11	54	<1	NA	<25	<50	150	<100	<0.2	<0.5	<1	<1	0.3
TP125	0.7-0.8	Silty Clay	Fine	7.3	20	39	9	61	210	10	12	22	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH126	0.02-0.2	Fill: Sandy Silty Clay	Fine	7.3	20	39	4	11	4	4	1	3	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP127	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	35	84	34	9	59	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP127	0.3-0.4	Silty Clay	Fine	7.3	20	39	6	71	120	12	11	23	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP128	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	7	45	69	11	13	30	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.06
TP129	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	53	60	18	12	35	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP130	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	9	56	80	14	15	31	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP130	0.4-0.5	Silty Clay	Fine	7.3	20	39	8	110	160	12	19	24	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP131	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	18	330	470	9	190	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP131	0.2-0.3	XW Andesite	Fine	7.3	20	39	NA	NA	NA	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP132	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	16	210	32	8	68	<1	<0.1	<25	<50	130	<100	<0.2	<0.5	<1	<1	<0.05
TP133	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	<4	25	220	120	9	290	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP134	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	5	22	160	44	8	120	<1	NA	<25	<50	100	<100	<0.2	<0.5	<1	<1	1.2
TP135	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	<4	25	190	37	9	71	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.71
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	5	31	230	32	11	90	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	1.7
TP136	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	15	95	37	7	100	<1	NA	<25	<50	230	240	<0.2	<0.5	<1	<1	0.08
TP136	0.4-0.5	XW Andesite	Coarse	7.3	20	39	5	26	350	15	11	93	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.07
TP137	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	20	210	26	9	67	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.08
TP138	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	26	260	43	11	100	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP139	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	21	210	98	8	230	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP139	0.2-0.3	Silty Clay	Fine	7.3	20	39	9	37	390	180	15	400	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP140	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	13	21	96	23	8	76	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.05
TP140	0.4-0.5	Silty Clay	Fine	7.3	20	39	5	20	480	6	12	51	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP141	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	<4	12	28	32	5	46	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP142	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	6	31	54	27	7	29	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	2
TP142	0.4-0.5	Silty Clay	Fine	7.3	20	39	7	110	150	14	16	23	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.07
TP143	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	5	20	150	15	7	40	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.56
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	6	23	140	17	7	41	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.67
TP143	0.2-0.3	Fill: Silty Clay	Fine	7.3	20	39	7	37	320	11	12	32	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.06
TP144	0-0.1	Fill: Silty Sand	Coarse	7.3	20	39	5	27	50	54	8	32	<1	NA	<25	210	1100	440	<0.2	<0.5	<1	<1	0.07
TP144	0.2-0.3	Fill: Silty Clayey Sand	Coarse	7.3	20	39	14	10	6	6	3	5	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP145	0-0.1	Fill: Silty Gravelly Clay	Fine	7.3	20	39	6	44	58	18	10	26	<1	<0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	0.06
TP145	0.4-0.5	Silty Clay	Fine	7.3	20	39	6	81	94	12	13	20	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP146	0-0.05	Fill: Gravelly Silty Clay	Fine	7.3	20	39	7	53	170	14	13	51	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP146	0.3-0.4	Silty Clay	Fine	7.3	20	39	8	21	500	4	10	25	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP147	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	<4	19	15	13	4	26	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	<4	14	13	12	4	25	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.1
TP147	0.6-0.7	Fill: Sandy Clay	Fine	7.3	20	39	7	28	130	48	18	170	<1	NA	<25	<50	160	<100	<0.2	<0.5	<1	<1	6.8
TP148	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	<4	12	14	8	3	25	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP149	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	8	19	25	48	6	57	<1	<0.1	<25	<50	160	260	<0.2	<0.5	<1	<1	0.1
TP149	0.5-0.6	Fill: Silty Clay	Fine	7.3	20	39	12	62	120	29	24	68	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.87
TP149	0.7-0.8	Silty Clay	Fine	7.3	20	39	9	110	180	14	22	30	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP150	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	8	46	86	17	14	36	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.4
TP151	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	7	21	11	15	6	19	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP152	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	14	34	57	14	17	44	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP153	0-0.1	Fill: Silty Sandy Clay	Fine	7.3	20	39	5	29	39	20	8	34	<1	NA	<25	<50	400	160	<0.2	<0.5	<1	<1	15
TP153	0.6-0.7	Silty Clay	Fine	7.3	20	39	9	120	160	11	16	23	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP154	0-0.1	Fill: Gravelly Clayey Sand	Coarse	7.3	20	39	5	18	27	11	5	21	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	1.5
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Coarse	7.3	20	39	6	22	32	13	6	24	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	1.8
BH155	0.05-0.2	Fill: Silty Sand	Coarse	7.3	20	39	10	13	12	5	2	6	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	2.1
BH155	0.2-0.5	Fill: Silty Clay	Fine	7.3	20	39	7	62	140	77	19	110	<1	NA	<25	<50	400	120	<0.2	<0.5	<1	<1	12
BH155	0.5-0.8	Silty Clay	Fine	7.3	20	39	7	110	160	13	21	25	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP156	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	8	48	140	39	14	110	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.81
BH157	0.03-0.3	Fill: Silty Clay	Fine	7.3	20	39	10	12	21	16	8	290	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
BH158	0.04-0.3	Fill: Silty Sandy Clay	Fine	7.3	20	39	10	19	230	26	9	39	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
BH158	0.3-0.6	XW Andesite	Coarse	7.3	20	39	6	15	370	3	10	33	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP159	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	<4	11	19	13	4	37	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	<4	14	19	14	4	35	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP160	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	5	19	270	69	8	77	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.3
TP160	0.2-0.3	Silty Clay	Fine	7.3	20	39	6	18	440	5	10	22	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP161	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	7	21	160	35	7	57	<1	<0.1	<25	<50	140	<100	<0.2	<0.5	<1	<1	0.87
BH162	0.04-0.2	Fill: Silty Clay	Fine	7.3	20	39	7	17	250	6	8	26	<1	NA	<25	<50	220	<100	<0.2	<0.5	<1	<1	11
BH162	1.2-1.4	Silty Clay	Fine	7.3	20	39	7	74	130	12	11	21	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.2
TP163	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	7	61	66	13	14	22	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.5
SDUP101	0-0.1	Duplicate of TP112	Fine	7.3	20	39	6	22	290	39	10	71	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.15
SDUP102	0-0.1	Duplicate of TP111	Fine	7.3	20	39	5	21	120	7	8	34	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.38
SDUP103	0-0.1	Duplicate of TP110	Fine	7.3	20	39	16	61	260	3	14	36	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP104	0-0.1	Duplicate of TP109	Fine	7.3	20	39	8	63	140	5	14	33	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP105	0-0.1	Duplicate of TP107	Fine	7.3	20	39	5	39	69	15	11	41	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.21
SDUP106	0-0.1	Duplicate of TP102	Fine	7.3	20	39	5	32	52	18	9	31	<1	NA	<25	<50	180	<100	<0.2	<0.5	<1	<1	2.1
SDUP107	0-0.05	Duplicate of TP116	Coarse	7.3	20	39	6	33	80	21	10	49	<1	NA	71	150	830	240	<0.2	<0.5	<1	<1	0.3
SDUP108	0-0.1	Duplicate of TP145	Fine	7.3	20	39	8	49	65	21	10	27	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.09
SDUP109	0-0.1	Duplicate of TP143	Fine	7.3	20	39	5	20	130	16	7	39	<1	<0.1	<25	<50	140	<100	<0.2	<0.5	<1	<1	0.76
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	5	20	140	16	7	40	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.71
SDUP110	0-0.1	Duplicate of TP138	Fine	7.3	20	39	7	40	460	67	16	150	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	0.08
Total Number of Samples				111	111	111	110	110	110	111	110	110	109	46	109	109	109	109	109	109	109	109	109
Maximum Value				7.3	20	39	23	140	500	470	30	400	<PQL	<PQL	71	210	1100	440	<PQL	<PQL	<PQL	<PQL	15

Concentration above the SAC — VALUE
Concentration above the PQL — **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Sample Description	Soil Texture	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
TP101	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP101	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP102	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP103	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP104	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP105	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP106	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP106	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP107	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP108	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP108	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP109	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP110	0-0.1	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP111	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP112	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP113	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP113	0.9-1.0	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP114	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP115	0-0.1	Fill: Silty Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	300	2800	50	85	70	105	20
TP116	0-0.05	Fill: Silty Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
TP116	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP117	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP118	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP119	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP120	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP120	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP121	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP122	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP123	0-0.1	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP124	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP124 - [LAB_TRIP]	0-0.1	Laboratory Triplicate	Fine	7.3	20	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP125	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP125	0.7-0.8	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
BH126	0.02-0.2	Fill: Sandy Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP127	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP127	0.3-0.4	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP128	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP129	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP130	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP130	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP131	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP131	0.2-0.3	XW Andesite	Fine	7.3	20	39	-	-	-	1200	-	-	-	-	-	-	-	-	-	-	-	-	-
TP132	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP133	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP134	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP135	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP136	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP136	0.4-0.5	XW Andesite	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
TP137	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP138	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP139	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP139	0.2-0.3	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP140	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP140	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP141	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP142	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP142	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP143	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP143	0.2-0.3	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP144	0-0.1	Fill: Silty Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
TP144	0.2-0.3	Fill: Silty Clayey Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
TP145	0-0.1	Fill: Silty Gravelly Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP145	0.4-0.5	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP146	0-0.05	Fill: Gravelly Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP146	0.3-0.4	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP147	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP147	0.6-0.7	Fill: Sandy Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP148	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP149	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP149	0.5-0.6	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP149	0.7-0.8	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP150	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP151	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP152	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP153	0-0.1	Fill: Silty Sandy Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP153	0.6-0.7	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP154	0-0.1	Fill: Gravelly Clayey Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	300	2800	50	85	70	105	20
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Coarse	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	300	2800	50	85	70	105	20
BH155	0.05-0.2	Fill: Silty Sand	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
BH155	0.2-0.5	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
BH155	0.5-0.8	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP156	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
BH157	0.03-0.3	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
BH158	0.04-0.3	Fill: Silty Sandy Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
BH158	0.3-0.6	XW Andesite	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
TP159	0-0.1	Fill: Clayey Silt	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
TP160	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP160	0.2-0.3	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP161	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
BH162	0.04-0.2	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
BH162	1.2-1.4	Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
TP163	0-0.1	Fill: Silty Clay	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP101	0-0.1	Duplicate of TP112	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP102	0-0.1	Duplicate of TP111	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
SDUP103	0-0.1	Duplicate of TP110	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP104	0-0.1	Duplicate of TP109	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
SDUP105	0-0.1	Duplicate of TP107	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
SDUP106	0-0.1	Duplicate of TP102	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20
SDUP107	0-0.05	Duplicate of TP116	Coarse	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	300	2800	50	85	70	105	20
SDUP108	0-0.1	Duplicate of TP145	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP109	0-0.1	Duplicate of TP143	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	7.3	20	39	100	410	230	1200	280	780	170	180	180	120	1300	5600	65	105	125	45	20
SDUP110	0-0.1	Duplicate of TP138	Fine	7.3	20	39	100	410	230	1200	280	780	170	-	180	120	1300	5600	65	105	125	45	20

TABLE S7
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS									PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium (Total)	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chlorpyrifos	Total Moderately Harmful	Total Scheduled		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	NSL	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	NSL	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	NSL	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	NSL	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																										
TP101	0-0.1	Fill: Silty Clay	6	<0.4	40	NA	65	21	0.2	11	36	19	1.8	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP101	0.4-0.5	Silty Clay	6	<0.4	51	NA	72	13	<0.1	12	26	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP102	0-0.1	Fill: Silty Clay	6	<0.4	34	NA	58	20	<0.1	10	36	34	2.9	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	110	150	260	<0.2	<0.5	<1	<1	Not Detected
TP102 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	35	NA	60	20	<0.1	10	38	32	2.7	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	110	160	270	<0.2	<0.5	<1	<1	NA
TP103	0-0.1	Fill: Silty Clay	5	<0.4	37	NA	43	28	<0.1	9	32	24	2.3	NA	NA	NA	NA	NA	<25	<50	190	240	430	<0.2	<0.5	<1	<1	Not Detected
TP104	0-0.1	Fill: Silty Clay	5	<0.4	34	NA	58	21	<0.1	10	39	59	4.6	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP105	0-0.1	Fill: Silty Clay	4	<0.4	26	NA	52	21	<0.1	8	38	54	4.5	NA	NA	NA	NA	NA	<25	<50	<100	120	120	<0.2	<0.5	<1	<1	Not Detected
TP106	0-0.1	Fill: Silty Clay	5	<0.4	33	NA	72	18	<0.1	11	43	5.3	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP106	0.4-0.5	Silty Clay	5	<0.4	44	NA	100	8	<0.1	9	24	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP107	0-0.1	Fill: Silty Clay	6	<0.4	39	NA	74	14	<0.1	10	39	2.8	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP108	0-0.1	Fill: Silty Clay	11	<0.4	46	NA	81	21	0.2	11	49	2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP108	0.4-0.5	Silty Clay	8	<0.4	46	NA	100	9	<0.1	10	30	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP109	0-0.1	Fill: Silty Clay	8	<0.4	57	NA	140	10	<0.1	13	30	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP110	0-0.1	Silty Clay	10	<0.4	59	NA	190	10	0.1	12	30	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP110 - [LAB_DUP]	0-0.1	Laboratory Duplicate	9	<0.4	64	NA	200	8	<0.1	12	30	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP111	0-0.1	Fill: Silty Clay	5	<0.4	25	NA	100	12	<0.1	7	33	3.6	0.4	NA	NA	NA	NA	NA	<25	<50	150	130	280	<0.2	<0.5	<1	<1	Not Detected
TP112	0-0.1	Fill: Silty Clay	6	<0.4	21	NA	320	35	<0.1	10	68	1.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP113	0-0.1	Fill: Silty Clay	7	<0.4	47	NA	250	9	<0.1	13	53	2.9	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP113	0.9-1.0	Silty Clay	7	<0.4	29	NA	340	21	<0.1	11	280	14	0.93	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP114	0-0.1	Fill: Silty Clay	8	<0.4	33	NA	170	79	<0.1	15	77	6	0.53	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP115	0-0.1	Fill: Silty Sand	23	<0.4	27	NA	56	32	0.5	11	140	2.5	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	340	450	790	<0.2	<0.5	<1	<1	Not Detected
TP116	0-0.05	Fill: Silty Sand	5	<0.4	29	NA	61	19	0.1	9	44	3.1	0.3	NA	NA	NA	NA	NA	<25	77	450	440	967	<0.2	<0.5	<1	<1	Not Detected
TP116	0.4-0.5	Silty Clay	5	<0.4	40	NA	110	6	<0.1	10	27	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP117	0-0.1	Fill: Silty Clay	5	<0.4	36	NA	66	16	<0.1	10	38	2.4	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP117 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	38	NA	67	15	<0.1	11	39	2.9	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP118	0-0.1	Fill: Silty Clay	5	<0.4	36	NA	62	21	<0.1	10	42	13	1.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP119	0-0.1	Fill: Silty Clay	4	<0.4	44	NA	43	14	<0.1	10	37	2.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP120	0-0.1	Fill: Silty Clay	5	<0.4	37	NA	54	44	0.1	9	36	27	2.8	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP120	0.4-0.5	Silty Clay	5	<0.4	45	NA	80	11	<0.1	8	19	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP121	0-0.1	Fill: Silty Clay	5	<0.4	40	NA	64	14	<0.1	10	38	3.5	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	100	110	210	<0.2	<0.5	<1	<1	Not Detected
TP122	0-0.1	Fill: Silty Clay	6	<0.4	40	NA	86	18	<0.1	9	42	3.4	0.4	NA	NA	NA	NA	NA	<25	<50	<100	140	140	<0.2	<0.5	<1	<1	Not Detected
TP123	0-0.1	Silty Clay	12	<0.4	140	<1	310	6	<0.1	30	64	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP124	0-0.1	Fill: Silty Clay	10	<0.4	13	NA	120	9	<0.1	5	27	<0.05	<0.05	<0.1	<0.1	<0.1	0.4	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP124 - [LAB_DUP]	0-0.1	Laboratory Duplicate	12	<0.4	26	NA	180	12	<0.1	9	42	<0.05	<0.05	<0.1	<0.1	<0.1	0.5	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP124 - [LAB_TRIP]	0-0.1	Laboratory Triplicate	11	<0.4	17	NA	140	11	<0.1	6	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP125	0-0.1	Fill: Silty Clay	19	<0.4	31	NA	240	21	<0.1	11	54	2.8	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP125	0.7-0.8	Silty Clay	9	<0.4	61	NA	210	10	<0.1	12	22	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH126	0.02-0.2	Fill: Sandy Silty Clay	4	<0.4	11	NA	4	4	<0.1	1	3	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP127	0-0.1	Fill: Silty Clay	6	<0.4	35	NA	84	34	0.1	9	59	1.5	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP127	0.3-0.4	Silty Clay	6	<0.4	71	NA	120	12	<0.1	11	23	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP128	0-0.1	Fill: Silty Clay	7	<0.4	45	NA	69	11	<0.1	13	30	0.4	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP129	0-0.1	Fill: Silty Clay	6	<0.4	53	NA	60	18	0.1	12	35	2.9	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP130	0-0.1	Fill: Silty Clay	9	<0.4	56	NA	80	14	<0.1	15	31	3.4	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP130	0.4-0.5	Silty Clay	8	<0.4	110	<1	160	12	<0.1	19	24	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP131	0-0.1	Fill: Silty Clay	6	<0.4	18	NA	330	470	<0.1	9	190	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP131	0.2-0.3	XW Andesite	NA	NA	NA	NA	NA	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP132	0-0.1	Fill: Silty Clay	5	<0.4	16	NA	210	32	<0.1	8	68	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	120	120	<0.2	<0.5	<1	<1	Not Detected
TP133	0-0.1	Fill: Silty Clay	<4	0.4	25	NA	220	120	<0.1	9	290	3.8	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP134	0-0.1	Fill: Clayey Silt	5	<0.4	22	NA	160	44	<0.1	8	120	12	1.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP135	0-0.1	Fill: Silty Clay	<4	<0.4	25	NA	190	37	<0.1	9	71	7	0.71	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP135 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	31	NA	230	32	<0.1	11	90	16	1.7	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP136	0-0.1	Fill: Silty Clay	5	<0.4	15	NA	95	37	<0.1	7	100	0.4	0.08	NA	NA	NA	NA	NA	<25	<50	110	200	310	<0.2	<0.5	<1	<1	Not Detected
TP136	0.4-0.5	XW Andesite	5	<0.4	26	NA	350	15	<0.1	11	93	0.4	0.07	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP137	0-0.1	Fill: Silty Clay	5	<0.4	20	NA	210	26	<0.1	9	67	0.4	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP138	0-0.1	Fill: Silty Clay	5	<0.4	26	NA	260	43	<0.1	11	100	0.2	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP139	0-0.1	Fill: Silty Clay	5	<0.4	21	NA	210	98	0.1	8	230	2.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP139	0.2-0.3	Silty Clay	9	<0.4	37	NA	390	180	0.2	15	400	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP140	0-0.1	Fill: Silty Clay	13	<0.4	21	NA	96	23	<0.1	8	76	0.05	0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP140	0.4-0.5	Silty Clay	5	<0.4	20	NA	480	6	<0.1	12	51	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP141	0-0.1	Fill: Clayey Silt	<4	<0.4	12	NA	28	32	<0.1	5	46	2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP142	0-0.1	Fill: Silty Clay	6	<0.4	31	NA	54	27	<0.1	7	29	19	2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP142	0.4-0.5	Silty Clay	7	<0.4	110	<1	150	14	<0.1	16	23	0.07	0.07	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP143	0-0.1	Fill: Clayey Silt	5	<0.4	20	NA	150	15	<0.1	7	40	6.1	0.56	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP143 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	23	NA	140	17	<0.1	7	41	6.8	0.67	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP143	0.2-0.3	Fill: Silty Clay	7	<0.4	37	NA	320	11	<0.1	12	32	0.4	0.06	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP144	0-0.1	Fill: Silty Sand	5	<0.4	27	NA	50	54	<0.1	8	32	0.4	0.07	NA	NA	NA	NA	NA	<25	120	660	770	1550	<0.2	<0.5	<1	<1	Not Detected
TP144	0.2-0.3	Fill: Silty Clayey Sand	14	<0.4	10	NA	6	6	<0.1	3	5	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP145	0-0.1	Fill: Silty Gravelly Clay	6	<0.4	44	NA	58	18	<0.1	10	26	0.3	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP145	0.4-0.5	Silty Clay	6	<0.4	81	NA	94	12	<0.1	13	20	0.4	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP146	0-0.05	Fill: Gravelly Silty Clay	7	<0.4	53	NA	170	14	<0.1	13	51	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP146	0.3-0.4	Silty Clay	8	<0.4	21	NA	500	4	<0.1	10	25	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP147	0-0.1	Fill: Clayey Silt	<4	<0.4	19	NA	15	13	<0.1	4	26	2.9	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP147 - [LAB_DUP]	0-0.1	Laboratory Duplicate	<4	<0.4	14	NA	13	12	<0.1	4	25	1.5	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP147	0.6-0.7	Fill: Sandy Clay	7	<0.4	28	NA	130	48	<0.1	18	170	95	6.8	NA	NA	NA	NA	NA	<25	<50	110	<100	110	<0.2	<0.5	<1	<1	NA
TP148	0-0.1	Fill: Clayey Silt	<4	<0.4	12	NA	14	8	<0.1	3	25	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP149	0-0.1	Fill: Silty Clay	8	<0.4	19	NA	25	48	<0.1	6	57	1	0.1	NA	NA	NA	NA	NA	<25	<50	<100	150	150	<0.2	<0.5	<1	<1	Not Detected
TP149	0.5-0.6	Fill: Silty Clay	12	<0.4	62	NA	120	29	<0.1	24	68	9.8	0.87	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP149	0.7-0.8	Silty Clay	9	<0.4	110	<1	180	14	<0.1	22	30	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP150	0-0.1	Fill: Silty Clay	8	<0.4	46	NA	86	17	<0.1	14	36	4.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP151	0-0.1	Fill: Silty Clay	7	<0.4	21	NA	11	15	<0.1	6	19	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP152	0-0.1	Fill: Silty Clay	14	<0.4	34	NA	57	14	<0.1	17	44	2.9	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP153	0-0.1	Fill: Silty Sandy Clay	5	<0.4	29	NA	39	20	<0.1	8	34	190	15	NA	NA	NA	NA	NA	<25	<50	270	210	480	<0.2	<0.5	<1	<1	Not Detected
TP153	0.6-0.7	Silty Clay	9	<0.4	120	<1	160	11	<0.1	16	23	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP154	0-0.1	Fill: Gravelly Clayey Sand	5	<0.4	18	NA	27	11	<0.1	5	21	15	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP154 - [LAB_DUP]	0-0.1	Laboratory Duplicate	6	<0.4	22	NA	32	13	<0.1	6	24	19	1.8	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH155	0.05-0.2	Fill: Silty Sand	10	<0.4	13	NA	12	5	<0.1	2	6	19	2.1	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH155	0.2-0.5	Fill: Silty Clay	7	<0.4	62	NA	140	77	0.2	19	110	200	12	NA	NA	NA	NA	NA	<25	<50	310	170	480	<0.2	<0.5	<1	<1	Not Detected
BH155	0.5-0.8	Silty Clay	7	<0.4	110	<1	160	13	<0.1	21	25	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP156	0-0.1	Fill: Silty Clay	8	<0.4	48	NA	140	39	<0.1	14	110	9.2	0.81	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH157	0.03-0.3	Fill: Silty Clay	10	<0.4	12	NA	21	16	<0.1	8	290	4.2	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH158	0.04-0.3	Fill: Silty Sandy Clay	10	<0.4	19	NA	230	26	<0.1	9	39	3.5	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH158	0.3-0.6	XW Andesite	6	<0.4	15	NA	370	3	<0.1	10	33	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP159	0-0.1	Fill: Clayey Silt	<4	<0.4	11	NA	19	13	<0.1	4	37	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP159 - [LAB_DUP]	0-0.1	Laboratory Duplicate	<4	<0.4	14	NA	19	14	<0.1	4	35	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP160	0-0.1	Fill: Silty Clay	5	<0.4	19	NA	270	69	<0.1	8	77	2.8	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP160	0.2-0.3	Silty Clay	6	<0.4	18	NA	440	5	<0.1	10	22	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP161	0-0.1	Fill: Silty Clay	7	<0.4	21	NA	160	35	<0.1	7	57	8.6	0.87	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	150	150	<0.2	<0.5	<1	<1	Not Detected
BH162	0.04-0.2	Fill: Silty Clay	7	<0.4	17	NA	250	6	<0.1	8	26	120	11	NA	NA	NA	NA	NA	<25	<50	140	130	270	<0.2	<0.5	<1	<1	Not Detected
BH162	1.2-1.4	Silty Clay	7	<0.4	74	NA	130	12	<0.1	11	21	2.8	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP163	0-0.1	Fill: Silty Clay	7	<0.4	61	NA	66	13	<0.1	14	22	5	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
SDUP101	0-0.1	Duplicate of TP112	6	<0.4	22	NA	290	39	<0.1	10	71	1.6	0.15	<0.1	<0.1	<0.1	<0.1	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP101- [LAB_DUP]	0-0.1	Laboratory Duplicate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP102	0-0.1	Duplicate of TP111	5	<0.4	21	NA	120	7	<0.1	8	34	3.4	0.38	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP103	0-0.1	Duplicate of TP110	16	<0.4	61	NA	260	3	<0.1	14	36	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP104	0-0.1	Duplicate of TP109	8	<0.4	63	NA	140	5	<0.1	14	33	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP105	0-0.1	Duplicate of TP107	5	<0.4	39	NA	69	15	<0.1	11	41	2.5	0.21	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP106	0-0.1	Duplicate of TP102	5	<0.4	32	NA	52	18	<0.1	9	31	23	2.1	NA	NA	NA	NA	NA	<25	<50	<100	140	140	<0.2	<0.5	<1	<1	NA
SDUP107	0-0.05	Duplicate of TP116	6	<0.4	33	NA	80	21	0.1	10	49	3.1	0.3	NA	NA	NA	NA	NA	<25	120	530	490	1140	<0.2	<0.5	<1	<1	NA
SDUP108	0-0.1	Duplicate of TP145	8	<0.4	49	NA	65	21	<0.1	10	27	0.5	0.09	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP109	0-0.1	Duplicate of TP143	5	<0.4	20	NA	130	16	<0.1	7	39	8.1	0.76	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	100	100	<0.2	<0.5	<1	<1	NA
SDUP109 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	20	NA	140	16	<0.1	7	40	7.4	0.71	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP110	0-0.1	Duplicate of TP138	7	<0.4	40	NA	460	67	0.1	16	150	0.3	0.08	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
FCF101	-	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			110	110	110	6	110	111	110	110	110	109	109	46	47	47	47	44	109	109	109	109	109	109	109	109	109	67
Maximum Value			23	0.4	140	<PQL	500	470	0.5	30	400	200	15	<PQL	<PQL	<PQL	0.5	<PQL	<PQL	120	660	770	1550	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the CT1	VALUE
Concentration above SCC1	VALUE
Concentration above the SCC2	VALUE
Concentration above PQL	**Bold**

TABLE S8
SOIL LABORATORY TCLP RESULTS
All data in mg/L unless stated otherwise

			Arsenic	Cadmium	Chromium	Lead	Mercury	Nickel	B(a)P
PQL - Envirolab Services			0.05	0.01	0.01	0.03	0.0005	0.02	0.001
TCLP1 - General Solid Waste			5	1	5	5	0.2	2	0.04
TCLP2 - Restricted Solid Waste			20	4	20	20	0.8	8	0.16
TCLP3 - Hazardous Waste			>20	>4	>20	>20	>0.8	>8	>0.16
Sample Reference	**Sample Depth**	**Sample Description**							
TP101	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP102	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP103	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP104	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP105	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP113	0.9-1.0	Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP118	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP120	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP131	0-0.1	Fill: Silty Clay	NA	NA	NA	**0.2**	NA	NA	NA
TP133	0-0.1	Fill: Silty Clay	NA	NA	NA	**0.04**	NA	NA	NA
TP134	0-0.1	F: Clayey Silt	NA	NA	NA	NA	NA	NA	<0.001
TP139	0-0.1	Fill: Silty Clay	NA	NA	NA	<0.03	NA	NA	NA
TP142	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP142 - [LAB_DUP]	0-0.1	Laboratory Duplicate	NA	NA	NA	NA	NA	NA	<0.001
TP147	0.6-0.7	F: Sandy Clay	NA	NA	NA	NA	NA	NA	<0.001
TP149	0.5-0.6	F: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP153	0-0.1	F: Silty Sandy Clay	NA	NA	NA	NA	NA	NA	<0.001
TP154	0-0.1	F: Gravelly Clayey Sand	NA	NA	NA	NA	NA	NA	<0.001
BH155	0.05-0.2	F: Silty Sand	NA	NA	NA	NA	NA	NA	<0.001
BH155	0.2-0.5	F: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP156	0-0.1	F: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
TP161	0-0.1	F: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
BH162	0.04-0.2	F: Silty Clay	NA	NA	NA	NA	NA	NA	<0.001
Total Number of samples			0	0	0	3	0	0	20
Maximum Value			NA	NA	NA	0.20	NA	NA	<PQL

General Solid Waste	**VALUE**
Restricted Solid Waste	**VALUE**
Hazardous Waste	**VALUE**
Concentration above PQL	**Bold**

Detailed Site Investigation
Temora Hospital, 169-189 Loftus Street, Temora, NSW
E35822PR

JKEnvironments

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cene	Benzo(g,h,i)perylene
	PQL Envirolab SYD		25	50	100	100	0.2	0.5	1	2	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.05	0.1	0.1	0.1
	PQL Envirolab VIC		25	50	100	100	0.2	0.5	1	2	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.05	0.1	0.1	0.1
Intra	TP102	0-0.1	<25	<50	210	<100	<0.2	<0.5	<1	<2	<1	<0.1	0.2	0.2	0.1	3.2	0.3	7	6.8	2.1	2.1	4.8	2.9	1.9	0.3	2.6
laboratory	SDUP106	0-0.1	<25	<50	180	<100	<0.2	<0.5	<1	<2	<1	<0.1	0.1	<0.1	<0.1	1.7	0.4	4.5	4.4	1.4	1.5	3.3	2.1	1.4	0.2	1.9
duplicate	MEAN		nc	nc	195	nc	nc	nc	nc	nc	nc	nc	0.15	0.125	0.075	2.45	0.35	5.75	5.6	1.75	1.8	4.05	2.5	1.65	0.25	2.25
	RPD %		nc	nc	15%	nc	nc	nc	nc	nc	nc	nc	67%	120%	67%	61%	29%	43%	43%	40%	33%	37%	32%	30%	40%	31%
Intra	TP116	0-0.05	<25	120	720	240	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.6	0.6	0.2	0.2	0.5	0.3	0.2	<0.1	0.2
laboratory	SDUP107	0-0.05	71	150	830	240	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	0.6	0.5	0.2	0.2	0.5	0.3	0.2	<0.1	0.2
duplicate	MEAN		41.75	135	775	240	nc	nc	nc	nc	nc	nc	nc	nc	0.125	0.25	nc	0.6	0.55	0.2	0.2	0.5	0.3	0.2	nc	0.2
	RPD %		140%	22%	14%	0%	nc	nc	nc	nc	nc	nc	nc	nc	120%	40%	nc	0%	18%	0%	0%	0%	0%	0%	nc	0%
Intra	TP145	0-0.1	<25	<50	100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.06	<0.1	<0.1	<0.1
laboratory	SDUP108	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.09	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	75	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.15	0.15	nc	nc	nc	0.075	nc	nc	nc
	RPD %		nc	nc	67%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	67%	67%	nc	nc	nc	40%	nc	nc	nc
Intra	TP143	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	1.2	1.2	0.4	0.4	0.9	0.56	0.4	<0.1	0.5
laboratory	SDUP109	0-0.1	<25	<50	140	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.6	0.1	1.6	1.6	0.5	0.6	1	0.76	0.5	<0.1	0.7
duplicate	MEAN		nc	nc	95	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.55	0.075	1.4	1.4	0.45	0.5	0.95	0.66	0.45	nc	0.6
	RPD %		nc	nc	95%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	18%	67%	29%	29%	22%	40%	11%	30%	22%	nc	33%
Intra	TP138	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP110	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.08	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	0.1	nc	nc	nc	0.0525	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	0%	nc	nc	nc	105%	nc	nc	nc
Inter	TP112	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.3	0.3	<0.1	0.1	0.2	0.2	<0.1	<0.1	0.1
laboratory	SDUP101	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.4	0.3	<0.1	0.1	0.2	0.15	0.2	<0.1	0.2
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	nc	0.35	0.3	nc	0.1	0.2	0.175	0.125	nc	0.15
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	29%	0%	nc	0%	0%	29%	120%	nc	67%
Inter	TP111	0-0.1	<25	<50	230	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.7	0.7	0.2	0.3	0.6	0.4	0.2	<0.1	0.3
laboratory	SDUP102	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.6	0.6	0.2	0.3	0.6	0.38	0.3	<0.1	0.3
duplicate	MEAN		nc	nc	140	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.25	nc	0.65	0.65	0.2	0.3	0.6	0.39	0.25	nc	0.3
	RPD %		nc	nc	129%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	40%	nc	15%	15%	0%	0%	0%	5%	40%	nc	0%
Inter	TP110	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP103	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP109	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP104	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP107	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.6	0.6	0.1	0.2	0.4	0.3	0.2	<0.1	0.2
laboratory	SDUP105	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.5	0.5	0.1	0.1	0.4	0.21	0.2	<0.1	0.2
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.2	nc	0.55	0.55	0.1	0.15	0.4	0.255	0.2	nc	0.2
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	18%	18%	0%	67%	0%	35%	0%	nc	0%
Field	TB-S101	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Blank	6-8/09/2023																									
Field	TB-S102	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Blank	11-13/09/2023																									
Field	FR-101	µg/L	<10	<50	<100	<100	<1	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Rinsate	7/09/23																									
Field	FR-102	µg/L	<10	<50	<100	<100	<1	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Rinsate	13/09/23																									
Trip	TS-S101		-	-	-	-	86%	86%	87%	86%	86%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	6-8/09/2023																									
Trip	TS-S102		-	-	-	-	99%	99%	99%	99%	98%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	11-13/09/2023																									

			HCB	alpha- BHC	gamma- BHC	beta- BHC	Heptachlor	delta- BHC	Aldrin	Heptachlor Epoxide	Gamma- Chlordane	alpha- chlordane	Endosulfan I	pp- DDE	Dieldrin	Endrin	pp- DDD	Endosulfan II	pp- DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor	Azinphos-methyl (Guthion)	Bromophos-ethyl	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Total PCBS
	PQL Envirolab SYD		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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
	PQL Envirolab VIC		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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
Intra	TP102	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP106	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	TP116	0-0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
laboratory	SDUP107	0-0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	TP145	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP108	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	TP143	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP109	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	TP138	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
laboratory	SDUP110	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP112	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP101	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP111	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
laboratory	SDUP102	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP110	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP103	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP109	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
laboratory	SDUP104	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	TP107	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
laboratory	SDUP105	0-0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field	TB-S101	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Blank	6-8/09/2023																																		
Field	TB-S102	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Blank	11-13/09/2023																																		
Field	FR-101	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rinsate	7/09/23																																		
Field	FR-102	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rinsate	13/09/23																																		
Trip	TS-S101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	6-8/09/2023																																		
Trip	TS-S102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	11-13/09/2023																																		

			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD		4	0.4	1	1	1	0.1	1	1
	PQL Envirolab VIC		4	0.4	1	1	1	0.1	1	1
Intra	TP102	0-0.1	6	<0.4	34	58	20	<0.1	10	36
laboratory	SDUP106	0-0.1	5	<0.4	32	52	18	<0.1	9	31
duplicate	MEAN		5.5	nc	33	55	19	nc	9.5	33.5
	RPD %		18%	nc	6%	11%	11%	nc	11%	15%
Intra	TP116	0-0.05	5	<0.4	29	61	19	0.1	9	44
laboratory	SDUP107	0-0.05	6	<0.4	33	80	21	0.1	10	49
duplicate	MEAN		5.5	nc	31	70.5	20	0.1	9.5	46.5
	RPD %		18%	nc	13%	27%	10%	0%	11%	11%
Intra	TP145	0-0.1	6	<0.4	44	58	18	<0.1	10	26
laboratory	SDUP108	0-0.1	8	<0.4	49	65	21	<0.1	10	27
duplicate	MEAN		7	nc	46.5	61.5	19.5	nc	10	26.5
	RPD %		29%	nc	11%	11%	15%	nc	0%	4%
Intra	TP143	0-0.1	5	<0.4	20	150	15	<0.1	7	40
laboratory	SDUP109	0-0.1	5	<0.4	20	130	16	<0.1	7	39
duplicate	MEAN		5	nc	20	140	15.5	nc	7	39.5
	RPD %		0%	nc	0%	14%	6%	nc	0%	3%
Intra	TP138	0-0.1	5	<0.4	26	260	43	<0.1	11	100
laboratory	SDUP110	0-0.1	7	<0.4	40	460	67	0.1	16	150
duplicate	MEAN		6	nc	33	360	55	0.075	13.5	125
	RPD %		33%	nc	42%	56%	44%	67%	37%	40%
Inter	TP112	0-0.1	6	<0.4	21	320	35	<0.1	10	68
laboratory	SDUP101	0-0.1	6	<0.4	22	290	39	<0.1	10	71
duplicate	MEAN		6	nc	21.5	305	37	nc	10	69.5
	RPD %		0%	nc	5%	10%	11%	nc	0%	4%
Inter	TP111	0-0.1	5	<0.4	25	100	12	<0.1	7	33
laboratory	SDUP102	0-0.1	5	<0.4	21	120	7	<0.1	8	34
duplicate	MEAN		5	nc	23	110	9.5	nc	7.5	33.5
	RPD %		0%	nc	17%	18%	53%	nc	13%	3%
Inter	TP110	0-0.1	10	<0.4	59	190	10	0.1	12	30
laboratory	SDUP103	0-0.1	16	<0.4	61	260	3	<0.1	14	36
duplicate	MEAN		13	nc	60	225	6.5	0.075	13	33
	RPD %		46%	nc	3%	31%	108%	67%	15%	18%
Inter	TP109	0-0.1	8	<0.4	57	140	10	<0.1	13	30
laboratory	SDUP104	0-0.1	8	<0.4	63	140	5	<0.1	14	33
duplicate	MEAN		8	nc	60	140	7.5	nc	13.5	31.5
	RPD %		0%	nc	10%	0%	67%	nc	7%	10%
Inter	TP107	0-0.1	6	<0.4	39	74	14	<0.1	10	39
laboratory	SDUP105	0-0.1	5	<0.4	39	69	15	<0.1	11	41
duplicate	MEAN		5.5	nc	39	71.5	14.5	nc	10.5	40
	RPD %		18%	nc	0%	7%	7%	nc	10%	5%
Field	TB-S101	-	<4	<0.4	3	1	2	<0.1	<1	1
Blank	6-8/09/2023									
Field	TB-S102	-	<4	<0.4	3	<1	3	<0.1	<1	1
Blank	11-13/09/2023									
Field	FR-101	µg/L	<0.05	<0.01	<0.01	0.07	<0.03	<0.0005	<0.02	<0.02
Rinsate	7/09/23									
Field	FR-102	µg/L	<0.05	<0.01	<0.01	0.07	<0.03	<0.0005	<0.02	<0.02
Rinsate	13/09/23									
Trip	TS-S101		-	-	-	-	-	-	-	-
Spike	6-8/09/2023									
Trip	TS-S102		-	-	-	-	-	-	-	-
Spike	11-13/09/2023									

Result outside of QA/QC acceptance criteria (highlighted)

Rinsate metals results in mg/L

PSI Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration
ACM:	Asbestos Containing Material
ADWG:	AustralianDrinking Water Guidelines
AF:	Asbestos Fines
ANZG	Australian and New Zealand Guidelines
B(a)P:	Benzo(a)pyrene
CEC:	Cation Exchange Capacity
CRC:	Cooperative Research Centre
CT:	Contaminant Threshold
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
GSW:	General Solid Waste
HILs:	Health Investigation Levels
HSLs:	Health Screening Levels
HSL-SSA:	Health Screening Level-SiteSpecific Assessment
kg/L	kilograms per litre
NA:	Not Analysed
NC:	Not Calculated
NEPM:	National Environmental Protection Measure
NHMRC:	National Health and Medical Research Council
NL:	Not Limiting
NSL:	No Set Limit
OCP:	Organochlorine Pesticides
OPP:	Organophosphorus Pesticides
PAHs:	Polycyclic Aromatic Hydrocarbons
%w/w:	weight per weight
ppm:	Parts per million
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
pH_{KCL} :	pH of filtered 1:20, 1M KCL extract, shaken overnight
pH_{ox} :	pH of filtered 1:20 1M KCl after peroxide digestion
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
RSL:	Regional Screening Levels
RSW:	Restricted Solid Waste
SAC:	Site Assessment Criteria
SCC:	Specific Contaminant Concentration
S_{Cr}:	Chromium reducible sulfur
S_{POS}:	Peroxide oxidisable Sulfur
SSA:	Site Specific Assessment
SSHSLs:	Site Specific Health Screening Levels
TAA:	Total Actual Acidity in 1M KCL extract titrated to pH6.5
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TCLP:	Toxicity Characteristics Leaching Procedure
TPA:	Total Potential Acidity, 1M KCL peroxide digest
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
TSA:	Total Sulfide Acidity (TPA-TAA)
UCL:	Upper Level Confidence Limit on Mean Value
USEPA	United States Environmental Protection Agency
VOCC:	Volatile Organic Chlorinated Compounds
WHO:	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with low traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenthion, Fenitrothion, Ethion, Malathion, Methidathion and Parathion Methyl.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-A: 'Residential with garden/accessible soils; children's day care centers; preschools; and primary schools'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)		
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	TOTAL PCBs	ASBESTOS FIBRES
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			100	20	100	6000	300	40	400	7400	300	3	10	270	300	6	50	240	6	160	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH1	0-0.3	Silty Clay	<4	<0.4	37	70	7	<0.1	10	22	0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	<4	<0.4	38	70	9	<0.1	10	25	0.55	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH1	0.8-1.0	XW Andersite	<4	<0.4	62	130	9	<0.1	14	31	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2	0-0.2	F: Gravelly Sandy Clay	6	<0.4	38	200	8	<0.1	11	36	6.9	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH2	0.3-0.5	Sandy Silty Clay	6	<0.4	91	280	5	<0.1	18	37	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2	0.8-1.0	Silty Clay	6	<0.4	63	200	6	<0.1	13	30	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3	0-0.1	F: Silty Clay	7	<0.4	23	57	12	<0.1	9	24	0.64	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0.3-0.5	F: Sandy Silty Clay	8	<0.4	47	86	15	0.2	11	33	85	7.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	1.3-1.5	Sandy Silty Clay	4	<0.4	72	120	9	<0.1	12	22	3.3	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0-0.1	F: Silty Clay	5	<0.4	30	82	28	<0.1	7	53	0.66	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	28	80	26	<0.1	6	53	0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH4	0.3-0.5	Sandy Silty Clay	7	<0.4	18	300	3	<0.1	11	31	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0.8-1.0	XW Andersite	6	<0.4	16	210	2	<0.1	9	24	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH5	0-0.1	Silty Clay	9	<0.4	26	230	13	<0.1	9	30	2.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH5	0.8-1.0	Silty Clay	4	<0.4	52	180	7	<0.1	12	20	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH6	0-0.1	F: Silty Clay	<4	<0.4	22	220	17	<0.1	9	54	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH6	0.3-0.5	Sandy Silty Clay	<4	<0.4	19	440	3	<0.1	10	51	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH6	0.8-1.0	XW Andersite	<4	<0.4	16	400	1	<0.1	9	55	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH7	0.02-0.3	F: Gravelly Silty Sand	7	<0.4	36	94	24	<0.1	9	36	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	6	<0.4	51	100	20	<0.1	11	34	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH7	0.3-0.5	F: Silty Sand	7	<0.4	66	120	10	0.6	13	29	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH8	0.02-0.2	F: Silty Sand	<4	<0.4	13	12	7	<0.1	2	7	27	3.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH8	0.3-0.5	Sandy Silty Clay	<4	<0.4	53	170	7	<0.1	15	42	3.3	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP13	0-0.1	F: Silty Clay	5	<0.4	20	210	22	0.1	8	59	0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP13	0.5-0.6	Silty Clay	7	<0.4	24	490	4	<0.1	11	28	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP14	0-0.1	F: Silty Clay	15	<0.4	31	99	120	0.1	3	88	1.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP14	0.4-0.5	Silty Clay	<4	<0.4	17	420	6	<0.1	10	57	0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP14	0.9-1.0	XW Andersite	<4	<0.4	10	470	2	<0.1	10	47	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP15	0-0.1	F: Silty Clay	6	<0.4	21	34	12	<0.1	7	30	0.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	19	29	12	<0.1	7	30	0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	7	<0.4	24	32	14	<0.1	5	11	43	4.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP15	1.3-1.5	Silty Clay	<4	<0.4	52	110	7	0.7	9	18	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP16	0-0.1	Silty Clay	10	<0.4	56	190	25	<0.1	14	61	1.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP16	0.4-0.5	Silty Clay	5	<0.4	74	180	4	<0.1	15	27	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP1	0-0.1	Duplicate of TP16	10	<0.4	55	190	25	<0.1	14	66	1.7	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP2	0-0.1	Duplicate of TP15	6	<0.4	20	31	12	<0.1	7	29	0.1	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP3	0-0.1	Duplicate of TP14	11	<0.4	22	130	170	<0.1	6	140	0.86	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP4	0-0.1	Duplicate of TP13	5	<0.4	16	160	24	<0.1	7	67	0.3	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	15	170	19	<0.1	7	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4-FCF1	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH4-FCF2	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			39	39	39	39	39	39	39	39	38	38	20	20	20	20	20	20	20	20	20	16
Maximum Value			15	<PQL	91	490	170	0.7	18	140	85	7.7	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the SAC	VALUE
Concentration above the PQL	**Bold**

TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH1	0-0.3	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH1	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH2	0-0.2	F: Gravelly Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.3
BH2	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.9
BH2	0.8-1.0	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.8
BH3	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH3	0.3-0.5	F: Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	**2**	0.7
BH3	1.3-1.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.5
BH4	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.2
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH4	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH4	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.8
BH5	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH5	0.8-1.0	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH6	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH6	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH6	0.8-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH7	0.02-0.3	F: Gravelly Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH7	0.3-0.5	F: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH8	0.02-0.2	F: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH8	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
TP13	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
TP13	0.5-0.6	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.3
TP14	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
TP14	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
TP14	0.9-1.0	XW Andersite	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.1
TP15	0-0.1	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
TP15	1.3-1.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
TP16	0-0.1	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
TP16	0.4-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.2
SDUP1	0-0.1	Duplicate of TP16	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.1	Duplicate of TP15	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.1	Duplicate of TP14	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.1	Duplicate of TP13	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples					38	38	38	38	38	38	38	30
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	2	3.8

Concentration above the SAC — VALUE
Concentration above the PQL — **Bold**
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH1	0-0.3	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0-0.2	F: Gravelly Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0.8-1.0	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0.3-0.5	F: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	1.3-1.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0.8-1.0	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0.8-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0.02-0.3	F: Gravelly Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0.3-0.5	F: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0.02-0.2	F: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0.3-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP13	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP13	0.5-0.6	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP14	0.9-1.0	XW Andersite	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	0-0.1	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	0.9-1.0	F: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP15	1.3-1.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP16	0-0.1	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP16	0.4-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP1	0-0.1	Duplicate of TP16	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP2	0-0.1	Duplicate of TP15	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP3	0-0.1	Duplicate of TP14	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP4	0-0.1	Duplicate of TP13	0m to <1m	Sand	45	110	0.5	160	55	40	3

TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH1	0-0.3	Coarse	<25	<50	<100	<100
BH1 - [LAB_DUP]	0-0.3	Coarse	<25	<50	<100	<100
BH1	0.8-1.0	Coarse	<25	<50	<100	<100
BH2	0-0.2	Coarse	<25	<50	<100	<100
BH2	0.3-0.5	Coarse	<25	<50	<100	<100
BH2	0.8-1.0	Coarse	<25	<50	<100	<100
BH3	0-0.1	Coarse	<25	<50	**130**	**230**
BH3	0.3-0.5	Coarse	<25	<50	**320**	**120**
BH3	1.3-1.5	Coarse	<25	<50	<100	<100
BH4	0-0.1	Coarse	<25	<50	<100	<100
BH4 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
BH4	0.3-0.5	Coarse	<25	<50	<100	<100
BH4	0.8-1.0	Coarse	<25	<50	<100	<100
BH5	0-0.1	Coarse	<25	<50	<100	<100
BH5	0.8-1.0	Coarse	<25	<50	<100	<100
BH6	0-0.1	Coarse	<25	<50	<100	<100
BH6	0.3-0.5	Coarse	<25	<50	<100	<100
BH6	0.8-1.0	Coarse	<25	<50	<100	<100
BH7	0.02-0.3	Coarse	<25	<50	<100	<100
BH7 - [LAB_DUP]	0.02-0.3	Coarse	<25	<50	<100	<100
BH7	0.3-0.5	Coarse	<25	<50	<100	<100
BH8	0.02-0.2	Coarse	<25	<50	<100	<100
BH8	0.3-0.5	Coarse	<25	<50	<100	<100
TP13	0-0.1	Coarse	<25	<50	<100	<100
TP13	0.5-0.6	Coarse	<25	<50	<100	<100
TP14	0-0.1	Coarse	<25	<50	<100	<100
TP14	0.4-0.5	Coarse	<25	<50	<100	<100
TP14	0.9-1.0	Coarse	<25	<50	<100	<100
TP15	0-0.1	Coarse	<25	<50	<100	<100
TP15 - [LAB_DUP]	0-0.1	Coarse	<25	<50	<100	<100
TP15	0.9-1.0	Coarse	<25	<50	<100	<100
TP15	1.3-1.5	Coarse	<25	<50	<100	<100
TP16	0-0.1	Coarse	<25	<50	<100	<100
TP16	0.4-0.5	Coarse	<25	<50	<100	<100
SDUP1	0-0.1	Coarse	<25	<50	<100	<100
SDUP2	0-0.1	Coarse	<25	<50	<100	<100
SDUP3	0-0.1	Coarse	<25	<50	<100	<100
SDUP4	0-0.1	Coarse	<25	<50	<100	<100
Total Number of Samples			38	38	38	38
Maximum Value			<PQL	<PQL	320	230

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Soil Texture	C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
BH1	0-0.3	Coarse	700	1000	2500	10000
BH1 - [LAB_DUP]	0-0.3	Coarse	700	1000	2500	10000
BH1	0.8-1.0	Coarse	700	1000	2500	10000
BH2	0-0.2	Coarse	700	1000	2500	10000
BH2	0.3-0.5	Coarse	700	1000	2500	10000
BH2	0.8-1.0	Coarse	700	1000	2500	10000
BH3	0-0.1	Coarse	700	1000	2500	10000
BH3	0.3-0.5	Coarse	700	1000	2500	10000
BH3	1.3-1.5	Coarse	700	1000	2500	10000
BH4	0-0.1	Coarse	700	1000	2500	10000
BH4 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
BH4	0.3-0.5	Coarse	700	1000	2500	10000
BH4	0.8-1.0	Coarse	700	1000	2500	10000
BH5	0-0.1	Coarse	700	1000	2500	10000
BH5	0.8-1.0	Coarse	700	1000	2500	10000
BH6	0-0.1	Coarse	700	1000	2500	10000
BH6	0.3-0.5	Coarse	700	1000	2500	10000
BH6	0.8-1.0	Coarse	700	1000	2500	10000
BH7	0.02-0.3	Coarse	700	1000	2500	10000
BH7 - [LAB_DUP]	0.02-0.3	Coarse	700	1000	2500	10000
BH7	0.3-0.5	Coarse	700	1000	2500	10000
BH8	0.02-0.2	Coarse	700	1000	2500	10000
BH8	0.3-0.5	Coarse	700	1000	2500	10000
TP13	0-0.1	Coarse	700	1000	2500	10000
TP13	0.5-0.6	Coarse	700	1000	2500	10000
TP14	0-0.1	Coarse	700	1000	2500	10000
TP14	0.4-0.5	Coarse	700	1000	2500	10000
TP14	0.9-1.0	Coarse	700	1000	2500	10000
TP15	0-0.1	Coarse	700	1000	2500	10000
TP15 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
TP15	0.9-1.0	Coarse	700	1000	2500	10000
TP15	1.3-1.5	Coarse	700	1000	2500	10000
TP16	0-0.1	Coarse	700	1000	2500	10000
TP16	0.4-0.5	Coarse	700	1000	2500	10000
SDUP1	0-0.1	Coarse	700	1000	2500	10000
SDUP2	0-0.1	Coarse	700	1000	2500	10000
SDUP3	0-0.1	Coarse	700	1000	2500	10000
SDUP4	0-0.1	Coarse	700	1000	2500	10000

TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		4,400	3,300	4,500	6,300	100	14,000	4,500	12,000	1,400	
Site Use		**RESIDENTIAL WITH ACCESSIBLE SOIL- DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH1	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH1 - [LAB_DUP]	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH1	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.3**
BH2	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.9**
BH2	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.8**
BH3	0-0.1	<25	<50	**130**	**230**	<0.2	<0.5	<1	<1	<1	**0.6**
BH3	0.3-0.5	<25	<50	**320**	**120**	<0.2	<0.5	<1	<1	**2**	**0.7**
BH3	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.5**
BH4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.2**
BH4 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH4	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
BH4	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.8**
BH5	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH5	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH6	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
BH6	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH6	0.8-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH7	0.02-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
BH7 - [LAB_DUP]	0.02-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH7	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2**
BH8	0.02-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH8	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
TP13	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
TP13	0.5-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.3**
TP14	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
TP14	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
TP14	0.9-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.1**
TP15	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
TP15 - [LAB_DUP]	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP15	0.9-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
TP15	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
TP16	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
TP16	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.2**
SDUP1	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples		38	38	38	38	38	38	38	38	38	30
Maximum Value		<PQL	<PQL	320	230	<PQL	<PQL	<PQL	<PQL	2	3.8

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**

Preliminary (Stage 1) Site Investigation
Temora Hospital, 169-189 Loftus Street, Temora, NSW
E35822PR

TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-A: Residential with garden/accessible soils; children's day care centers; preschools; and primary schools

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.01**			**0.001**			**0.001**											**0.01**	**0.001**
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH1	0-0.3		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
3/05/2023	BH2	0-0.2	No	10	12,490	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH2	0-0.2		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	BH3	0-0.1	No	10	10,180	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH3	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	BH3	0.1-0.3	NA	2	2,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	BH3	0.3-1.1	NA	8	8,960	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH3	0.3-0.5		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	BH4	0-0.2	Yes	10	10,670	48.3	7.2495	0.0679	No ACM <7mm observed	--	--	No FA observed	--	--		BH4	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH5	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
2/05/2023	BH6	0-0.2	No	10	10,440	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH6	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
2/05/2023	BH7	0.02-0.3	NA	1.7	1,880	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		BH7	0.02-0.3		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		BH8	0.02-0.2		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	TP13	0-0.1	No	10	10,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP13	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	TP13	0.1-0.3	NA	10	10,220	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	TP14	0-0.2	No	10	12,310	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP14	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	TP15	0-0.1	No	10	10,290	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP15	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
4/05/2023	TP15	0.1-0.5	NA	10	10,340	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/05/2023	TP15	0.5-1.1	NA	10	12,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--		TP15	0.9-1.0		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		TP16	0-0.1		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	--	--	<0.01	<0.001

Concentration above the SAC **VALUE**

TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH1	0-0.3	Silty Clay	Fine	NA	NA	NA	<4	**37**	**70**	**7**	**10**	**22**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	Fine	NA	NA	NA	<4	**38**	**70**	**9**	**10**	**25**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
BH1	0.8-1.0	XW Andersite	Fine	NA	NA	NA	<4	**62**	**130**	**9**	**14**	**31**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0-0.2	F: Gravelly Sandy Clay	Fine	NA	NA	NA	**6**	**38**	**200**	**8**	**11**	**36**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.69**
BH2	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	**6**	**91**	**280**	**5**	**18**	**37**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0.8-1.0	Silty Clay	Fine	NA	NA	NA	**6**	**63**	**200**	**6**	**13**	**30**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**7**	**23**	**57**	**12**	**9**	**24**	<1	<0.1	<25	<50	**130**	**230**	<0.2	<0.5	<1	<1	**0.09**
BH3	0.3-0.5	F: Sandy Silty Clay	Fine	NA	NA	NA	**8**	**47**	**86**	**15**	**11**	**33**	**2**	<0.1	<25	<50	**320**	**120**	<0.2	<0.5	<1	<1	**5.4**
BH3	1.3-1.5	Sandy Silty Clay	Fine	NA	NA	NA	**4**	**72**	**120**	**9**	**12**	**22**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.2**
BH4	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**5**	**30**	**82**	**28**	**7**	**53**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**28**	80	**26**	**6**	**53**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.09**
BH4	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	**7**	**18**	**300**	**3**	**11**	**31**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0.8-1.0	XW Andersite	Coarse	NA	NA	NA	**6**	**16**	**210**	**2**	**9**	**24**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0-0.1	Silty Clay	Fine	NA	NA	NA	**9**	**26**	**230**	**13**	**9**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.3**
BH5	0.8-1.0	Silty Clay	Fine	NA	NA	NA	**4**	**52**	**180**	**7**	**12**	**20**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0-0.1	F: Silty Clay	Fine	NA	NA	NA	<4	**22**	**220**	**17**	**9**	**54**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	<4	**19**	**440**	**3**	**10**	**51**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0.8-1.0	XW Andersite	Fine	NA	NA	NA	<4	**16**	**400**	**1**	**9**	**55**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0.02-0.3	F: Gravelly Silty Sand	Coarse	NA	NA	NA	**7**	**36**	**94**	**24**	**9**	**36**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	Coarse	NA	NA	NA	**6**	**51**	**100**	**20**	**11**	**34**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0.3-0.5	F: Silty Sand	Coarse	NA	NA	NA	**7**	**66**	**120**	**10**	**13**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0.02-0.2	F: Silty Sand	Coarse	NA	NA	NA	<4	**13**	**12**	**7**	**2**	**7**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**2.6**
BH8	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	<4	**53**	**170**	**7**	**15**	**42**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.3**
TP13	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**5**	**20**	**210**	**22**	**8**	**59**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP13	0.5-0.6	Silty Clay	Fine	NA	NA	NA	**7**	**24**	**490**	**4**	**11**	**28**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP14	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**15**	**31**	**99**	**120**	**3**	**88**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
TP14	0.4-0.5	Silty Clay	Fine	NA	NA	NA	<4	**17**	**420**	**6**	**10**	**57**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.06**
TP14	0.9-1.0	XW Andersite	Coarse	NA	NA	NA	<4	**10**	**470**	**2**	**10**	**47**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP15	0-0.1	F: Silty Clay	Fine	NA	NA	NA	**6**	**21**	**34**	**12**	**7**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**19**	**29**	**12**	**7**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
TP15	0.9-1.0	F: Sandy Silty Clay	Fine	NA	NA	NA	**7**	**24**	**32**	**14**	**5**	**11**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**3.4**
TP15	1.3-1.5	Silty Clay	Fine	NA	NA	NA	<4	**52**	**110**	**7**	**9**	**18**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP16	0-0.1	Silty Clay	Fine	NA	NA	NA	**10**	**56**	**190**	**25**	**14**	**61**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
TP16	0.4-0.5	Silty Clay	Fine	NA	NA	NA	**5**	**74**	**180**	**4**	**15**	**27**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP1	0-0.1	Duplicate of TP16	Fine	NA	NA	NA	**10**	**55**	**190**	**25**	**14**	**66**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.2**
SDUP2	0-0.1	Duplicate of TP15	Fine	NA	NA	NA	**6**	**20**	**31**	**12**	**7**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP3	0-0.1	Duplicate of TP14	Fine	NA	NA	NA	**11**	**22**	**130**	**170**	**6**	**140**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.08**
SDUP4	0-0.1	Duplicate of TP13	Fine	NA	NA	NA	**5**	**16**	**160**	**24**	**7**	**67**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.05**
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**15**	**170**	**19**	**7**	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples				0	0	0	39	39	39	39	39	39	38	20	38	38	38	38	38	38	38	38	38
Maximum Value				NA	NA	NA	15	91	490	170	18	140	2	<PQL	<PQL	<PQL	320	230	<PQL	<PQL	<PQL	<PQL	5.4

Concentration above the SAC — VALUE (highlighted)
Concentration above the PQL — **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Sample Description	Soil Texture	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH1	0-0.3	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1	0.8-1.0	XW Andersite	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH2	0-0.2	F: Gravelly Sandy Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH2	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH2	0.8-1.0	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH3	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	0.3-0.5	F: Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	1.3-1.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0.8-1.0	XW Andersite	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
BH5	0-0.1	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH5	0.8-1.0	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH6	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH6	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH6	0.8-1.0	XW Andersite	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH7	0.02-0.3	F: Gravelly Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH7	0.3-0.5	F: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
BH8	0.02-0.2	F: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH8	0.3-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP13	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP13	0.5-0.6	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP14	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP14	0.4-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP14	0.9-1.0	XW Andersite	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	300	2800	50	85	70	105	20
TP15	0-0.1	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15	0.9-1.0	F: Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP15	1.3-1.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP16	0-0.1	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP16	0.4-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP1	0-0.1	Duplicate of TP16	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP2	0-0.1	Duplicate of TP15	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP3	0-0.1	Duplicate of TP14	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP4	0-0.1	Duplicate of TP13	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	--	--	--	--	--	--	--	--	--	--	--

TABLE S7
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH1	0-0.3	Silty Clay	<4	<0.4	37	70	7	<0.1	10	22	0.2	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH1 - [LAB_DUP]	0-0.3	Laboratory Duplicate	<4	<0.4	38	70	9	<0.1	10	25	0.55	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH1	0.8-1.0	XW Andersite	<4	<0.4	62	130	9	<0.1	14	31	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0-0.2	F: Gravelly Sandy Clay	6	<0.4	38	200	8	<0.1	11	36	6.9	0.69	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH2	0.3-0.5	Sandy Silty Clay	6	<0.4	91	280	5	<0.1	18	37	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0.8-1.0	Silty Clay	6	<0.4	63	200	6	<0.1	13	30	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH3	0-0.1	F: Silty Clay	7	<0.4	23	57	12	<0.1	9	24	0.64	0.09	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	180	180	<0.2	<0.5	<1	<1	Not Detected
BH3	0.3-0.5	F: Sandy Silty Clay	8	<0.4	47	86	15	0.2	11	33	85	5.4	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	170	200	370	<0.2	<0.5	<1	<1	Not Detected
BH3	1.3-1.5	Sandy Silty Clay	4	<0.4	72	120	9	<0.1	12	22	3.3	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0-0.1	F: Silty Clay	5	<0.4	30	82	28	<0.1	7	53	0.66	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	28	80	26	<0.1	6	53	0.5	0.09	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0.3-0.5	Sandy Silty Clay	7	<0.4	18	300	3	<0.1	11	31	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0.8-1.0	XW Andersite	6	<0.4	16	210	2	<0.1	9	24	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH5	0-0.1	Silty Clay	9	<0.4	26	230	13	<0.1	9	30	2.9	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH5	0.8-1.0	Silty Clay	4	<0.4	52	180	7	<0.1	12	20	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH6	0-0.1	F: Silty Clay	<4	<0.4	22	220	17	<0.1	9	54	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH6	0.3-0.5	Sandy Silty Clay	<4	<0.4	19	440	3	<0.1	10	51	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH6	0.8-1.0	XW Andersite	<4	<0.4	16	400	1	<0.1	9	55	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH7	0.02-0.3	F: Gravelly Silty Sand	7	<0.4	36	94	24	<0.1	9	36	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH7 - [LAB_DUP]	0.02-0.3	Laboratory Duplicate	6	<0.4	51	100	20	<0.1	11	34	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH7	0.3-0.5	F: Silty Sand	7	<0.4	66	120	10	0.6	13	29	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH8	0.02-0.2	F: Silty Sand	<4	<0.4	13	12	7	<0.1	2	7	27	2.6	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH8	0.3-0.5	Sandy Silty Clay	<4	<0.4	53	170	7	<0.1	15	42	3.3	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP13	0-0.1	F: Silty Clay	5	<0.4	20	210	22	0.1	8	59	0.2	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP13	0.5-0.6	Silty Clay	7	<0.4	24	490	4	<0.1	11	28	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP14	0-0.1	F: Silty Clay	15	<0.4	31	99	120	0.1	3	88	1.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP14	0.4-0.5	Silty Clay	<4	<0.4	17	420	6	<0.1	10	57	0.5	0.06	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP14	0.9-1.0	XW Andersite	<4	<0.4	10	470	2	<0.1	10	47	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP15	0-0.1	F: Silty Clay	6	<0.4	21	34	12	<0.1	7	30	0.3	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP15 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	19	29	12	<0.1	7	30	0.2	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP15	0.9-1.0	F: Sandy Silty Clay	7	<0.4	24	32	14	<0.1	5	11	43	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP15	1.3-1.5	Silty Clay	<4	<0.4	52	110	7	0.7	9	18	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP16	0-0.1	Silty Clay	10	<0.4	56	190	25	<0.1	14	61	1.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP16	0.4-0.5	Silty Clay	5	<0.4	74	180	4	<0.1	15	27	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP1	0-0.1	Duplicate of TP16	10	<0.4	55	190	25	<0.1	14	66	1.7	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP2	0-0.1	Duplicate of TP15	6	<0.4	20	31	12	<0.1	7	29	0.1	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP3	0-0.1	Duplicate of TP14	11	<0.4	22	130	170	<0.1	6	140	0.86	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4	0-0.1	Duplicate of TP13	5	<0.4	16	160	24	<0.1	7	67	0.3	0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4 - [LAB_DUP]	0-0.1	Laboratory Duplicate	5	<0.4	15	170	19	<0.1	7	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4-FCF1	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH4-FCF2	0-0.2	Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			39	39	39	39	39	39	39	39	38	38	20	20	20	20	20	38	38	38	38	38	38	38	38	38	16
Maximum Value			15	<PQL	91	490	170	0.7	18	140	85	5.4	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	170	200	370	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the CT1	VALUE
Concentration above SCC1	VALUE
Concentration above the SCC2	VALUE
Concentration above PQL	**Bold**

TABLE S8
SOIL LABORATORY TCLP RESULTS
All data in mg/L unless stated otherwise

			Lead	B(a)P
PQL - Envirolab Services			0.03	0.001
TCLP1 - General Solid Waste			5	0.04
TCLP2 - Restricted Solid Waste			20	0.16
TCLP3 - Hazardous Waste			>20	>0.16
Sample Reference	**Sample Depth**	**Sample Description**		
BH3	0.3-0.5	F: Sandy Silty Clay	NA	**0.0086**
BH8	0.02-0.2	F: Silty Sand	NA	<0.001
TP14	0-0.1	F: Silty Clay	**0.07**	NA
TP15	0.9-1.0	F: Sandy Silty Clay	NA	<0.001
SDUP3	0-0.1	Duplicate of TP14	**0.3**	NA
Total Number of samples			2	3
Maximum Value			0.30	0.0086

General Solid Waste	**VALUE**
Restricted Solid Waste	**VALUE**
Hazardous Waste	**VALUE**
Concentration above PQL	**Bold**

JKEnvironments

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cene	Benzo(g,h,i)perylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	TP16	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	<0.1	0.1	0.2	0.1	0.1	<0.1	0.1
	SDUP1	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	0.4	0.1	0.1	0.3	0.2	0.1	<0.1	0.2
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.35	0.35	0.075	0.1	0.25	0.15	0.1	nc	0.15
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	29%	29%	67%	0%	40%	67%	0%	nc	67%
Intra laboratory duplicate	TP15	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	SDUP2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	0.075	nc	nc	nc	0.0375	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	67%	nc	nc	nc	67%	nc	nc	nc
Inter laboratory duplicate	TP14	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.3	0.3	0.1	0.1	<0.2	0.1	<0.1	<0.1	0.1
	SDUP3	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.08	0.1	<0.1	0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.1	nc	0.25	0.25	0.075	0.075	nc	0.09	0.075	nc	0.1
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	40%	40%	67%	67%	nc	22%	67%	nc	0%
Inter laboratory duplicate	TP13	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	SDUP4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.075	0.1	nc	nc	nc	0.05	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	67%	0%	nc	nc	nc	0%	nc	nc	nc
Field Blank	TB-S1 2/05/23	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Field Rinsate	FR-SPT 3/05/23	μg/L [1]	26	<50	<100	<100	<1	<1	<1	<2	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1
Trip Spike	TS-S1 2/05/23		-	-	-	-	97%	97%	97%	97%	98%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			HCB	alpha- BHC	gamma- BHC	beta- BHC	Heptachlor	delta- BHC	Aldrin	Heptachlor Epoxide	Gamma- Chlordane	alpha- chlordane	Endosulfan I	pp- DDE	Dieldrin	Endrin	pp- DDD	Endosulfan II	pp- DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	TP16	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP1	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra laboratory duplicate	TP15	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP2	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	TP14	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP3	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	TP13	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP4	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TB-S1 2/05/23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Rinsate	FR-SPT 3/05/23	μg/L [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Spike	TS-S1 2/05/23		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			Azinphos-methyl (Guthion)	Bromophos-ethyl	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Total PCBS	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD		*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*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*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*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
Intra laboratory duplicate	TP16	0-0.1	<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	<0.4	56	190	25	<0.1	14	61
	SDUP1	0-0.1	<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	<0.4	55	190	25	<0.1	14	66
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	10	nc	55.5	190	25	nc	14	63.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	2%	0%	0%	nc	0%	8%
Intra laboratory duplicate	TP15	0-0.1	<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	6	<0.4	21	34	12	<0.1	7	30
	SDUP2	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	20	31	12	<0.1	7	29
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	6	nc	20.5	32.5	12	nc	7	29.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	5%	9%	0%	nc	0%	3%
Inter laboratory duplicate	TP14	0-0.1	<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	15	<0.4	31	99	120	0.1	3	88
	SDUP3	0-0.1	<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	11	<0.4	22	130	170	<0.1	6	140
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	13	nc	26.5	114.5	145	0.075	4.5	114
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	31%	nc	34%	27%	34%	67%	67%	46%
Inter laboratory duplicate	TP13	0-0.1	<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	5	<0.4	20	210	22	0.1	8	59
	SDUP4	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<0.4	16	160	24	<0.1	7	67
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	5	nc	18	185	23	0.075	7.5	63
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	22%	27%	9%	67%	13%	13%
Field Blank	TB-S1 2/05/23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<0.4	7	1	3	<0.1	5	12
Field Rinsate	FR-SPT 3/05/23	μg/L [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.01	<0.01	0.3	<0.03	<0.0005	<0.02	0.2
Trip Spike	TS-S1 2/05/23		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Result outside of QA/QC acceptance criteria (highlighted)
1. Heavy metal concentrations reported in mg/L

Appendix B Site-specific ecological investigation levels

Chromium

Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
39
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cr III soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	210
Urban residential and open public spaces	#NUM!	630
Commercial and industrial	#NUM!	1000

Copper

Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
20
Enter soil pH (calcium chloride method) (values from 1 to 14)
7.3
Enter organic carbon content (%OC) (values from 0 to 50%)
1
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	85
Urban residential and open public spaces	#NUM!	230
Commercial and industrial	#NUM!	320

Nickel

Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
20
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	50
Urban residential and open public spaces	#NUM!	270
Commercial and industrial	#NUM!	460

Zinc

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
20
Enter soil pH (calcium chloride method) (values from 1 to 14)
7.3
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	230
Urban residential and open public spaces	#NUM!	770
Commercial and industrial	#NUM!	1200

Appendix C Toxicity summary for benzo(a)pyrene

C1 Benzo(a)pyrene

General

Several comprehensive reviews of polycyclic aromatic hydrocarbons (PAHs) and benzo(a)pyrene (BaP) in the environment and toxicity to humans are available (ATSDR 1995; CCME 2008; USEPA 2017; WHO 1998).

PAHs are a large group of organic compounds with two or more fused aromatic rings made up of carbon and hydrogen atoms. PAHs are formed from incomplete combustion of organic materials such as processing of coal, crude oil, combustion of natural gas, refuse, vehicle emissions, heating, cooking and tobacco smoking as well as natural processes including carbonisation. A natural background level is due to PAH production in plant species. Because of such widespread sources, PAHs are present almost everywhere. Food is considered to be the major source of human exposure to PAH due to the formation of PAH during cooking or from atmospheric deposition of PAHs on grains, fruits and vegetables (WHO 1998).

There are several hundred PAHs, including derivatives of PAHs. The best known (and studied) is BaP. While there are hundreds of PAHs, typically only 16 individual PAHs are analysed in site contamination investigations. These individual PAHs address a broad range of the equivalent carbon spectrum and are therefore more commonly reported and assessed (WHO 1998).

The major sources of PAHs in soil at any given location invariably contribute a mixture of PAHs, not just single compounds. Various PAH source types can be distinguished based on the characteristic compositions of PAH mixtures and information on the site history, but the contaminated soil matrix is nonetheless challenging from an environmental risk assessment perspective, since in a PAH contaminated soil there is likely to be a diverse compositional range of non-carcinogenic, and carcinogenic PAHs of varying potency (WHO 1998).

The major approach advocated by regulatory agencies such as the NEPC (Fitzgerald, D.J. 1991, 1998; Fitzgerald, D. James, Robinson & Pester 2004; NEPC 1999 amended 2013d), California EPA (CEPA 1999), Netherlands (Baars et al. 2001), the UK Environment Agency (UK DEFRA and EA 2002), Canada (CCME 2008, 2010) and USEPA (USEPA 2014) for assessing the human health risks of PAH-containing mixtures involves the use of 'toxicity equivalence factors' (TEFs). This approach relates the toxicity of other (potentially carcinogenic) individual PAHs to that of BaP, the most widely studied carcinogenic PAH.

There are more than a dozen sets of equivalency numbers that have been proposed over the last two decades. The most recent (published final) review of TEFs and their basis, presented by CCME suggests the use of TEFs recommended by the World Health Organization, with minor modifications (CCME 2008, 2010; WHO 1998). This is a scheme based on order of magnitude cancer potency.

Any finer-scale assertions about relative potency for more generic application are hard to justify given the current state of knowledge and confounding influences such as the route of exposure, or non-additive effects in complex PAH mixtures. It is not currently possible to develop different relative potency schemes across different exposure routes (oral, dermal, inhalation), owing to a lack of data. Hence, the TEFs adopted have been applied for all routes of exposure for the carcinogenic PAHs assessed. The application of the TEFs is relevant to the assessment of PAHs that are considered to be carcinogenic. Other PAHs that are not carcinogenic should be assessed separately on an individual basis using a threshold approach.

Table C1 table presents a summary of the TEFs adopted for the assessment of carcinogenic PAHs:

Table C1: TEFs for PAHs (CCME 2010)

PAH	IARC Classification	US EPA Classification	TEF
Benzo(a)anthracene	2B	B2	0.1
Benzo(a)pyrene	1	B2	1
Benzo(b+j)fluoranthene	2B	B2	0.1
Benzo(k)fluoranthene	2B	B2	0.1
Benzo(g,h,i)perylene*	3	D	0.01
Chrysene	2B	B2	0.01
Dibenz(a,h)anthracene	2A	B2	1
Indeno(1,2,3-cd)pyrene	2B	B2	0.1

Notes: 1/A= Human Carcinogen, 2A/B2= Probable Human Carcinogen, 2B/C=Possible Human Carcinogen, 3/D= Not classifiable.

* Benzo(g,h,i)perylene included due to positive findings in genotoxicity studies (WHO 1998). Note there are insufficient data available to determine carcinogenicity.

The toxic effects of different PAH compounds in a mixture are additive. Experimental evidence suggests that this is a fair assumption (CCME 2008, 2010; Fitzgerald, D.J. 1991, 1998).

The following relates to the approach used to assess BaP (which can be used for the assessment of BaP alone or for carcinogenic PAHs using the above TEFs).

Dermal Exposures

BaP is suggested to act largely as a point-of-contact carcinogen (Knafla et al. 2006) when dermal exposure occurs rather than via systemic mechanisms. Therefore, it is more appropriate to derive soil guideline values for the dermal route of exposure using a route-specific slope factor (i.e. a slope factor based on studies using dermal exposure only), as opposed to considering it on the basis that BaP is absorbed through skin into the circulatory system and the internal dose can be assessed using the oral slope factor.

For most compounds such data are not available, however, for BaP Knafla et al. (2011) from Health Canada derived a dermal slope factor, normalised to a per unit skin surface area basis, that is relevant to the assessment of BaP in soil in skin (Knafla et al. 2011). The dermal slope factor derived by Knafla et al. was 3.5 $(\mu g/cm^2/day)^{-1}$ and appropriate methods and parameters have been suggested by Knafla et al. (2011) for the use of this factor in the assessment of soil exposures. The dermal slope factor is an extension of previous work published by these researchers where a dermal slope factor was derived on the basis of skin carcinogenicity from skin painting studies with mice (Knafla et al. 2006). The revised dermal slope factor (Knafla et al. 2011) considered various factors for interspecies extrapolation, particularly in relation to sensitivity (to tumour development) and differences in epidermal (target tissue) thickness. This dermal slope factor has not yet been adopted for use by other international agencies, however, CCME (CCME 2010) indicate that Health Canada may consider the revised dermal slope factor once published (as occurred in 2011).

USEPA 2017 notes the following in their discussion of the risk of cancer via dermal exposure.

Skin cancer in humans has been documented to result from occupational exposure to complex mixtures of PAHs including benzo[a]pyrene, such as coal tar, coal tar pitches, unrefined mineral oils, shale oils, and soot. In animal models, numerous dermal bioassays have demonstrated an increased incidence of skin tumors with increasing dermal exposure of benzo[a]pyrene in all species tested, although most benzo[a]pyrene bioassays have been conducted in mice.

Carcinogenicity studies in animals by the dermal route of exposure are available for benzo[a]pyrene and are supportive of the overall cancer hazard. A quantitative estimate of skin cancer risk from dermal exposure is not included in this assessment, as methodology for interspecies extrapolation of dermal toxicokinetics and carcinogenicity are still under development.

The USEPA review did not include consideration of the Knafla studies from Health Canada.

Background

Intakes of BaP from sources other than soil have been considered to range from 0.166-1.6 µg/day with intakes derived from food identified as the most significant (Fitzgerald, D.J. 1991). In 2006 the WHO Joint Expert Committee on Food Additives (JECFA) reviewed potential intakes and health effects of PAHs in food. They found that intake of BaP was on average 0.28 µg/day with a high level intake of 0.7 µg/day (WHO 2006).

Classification

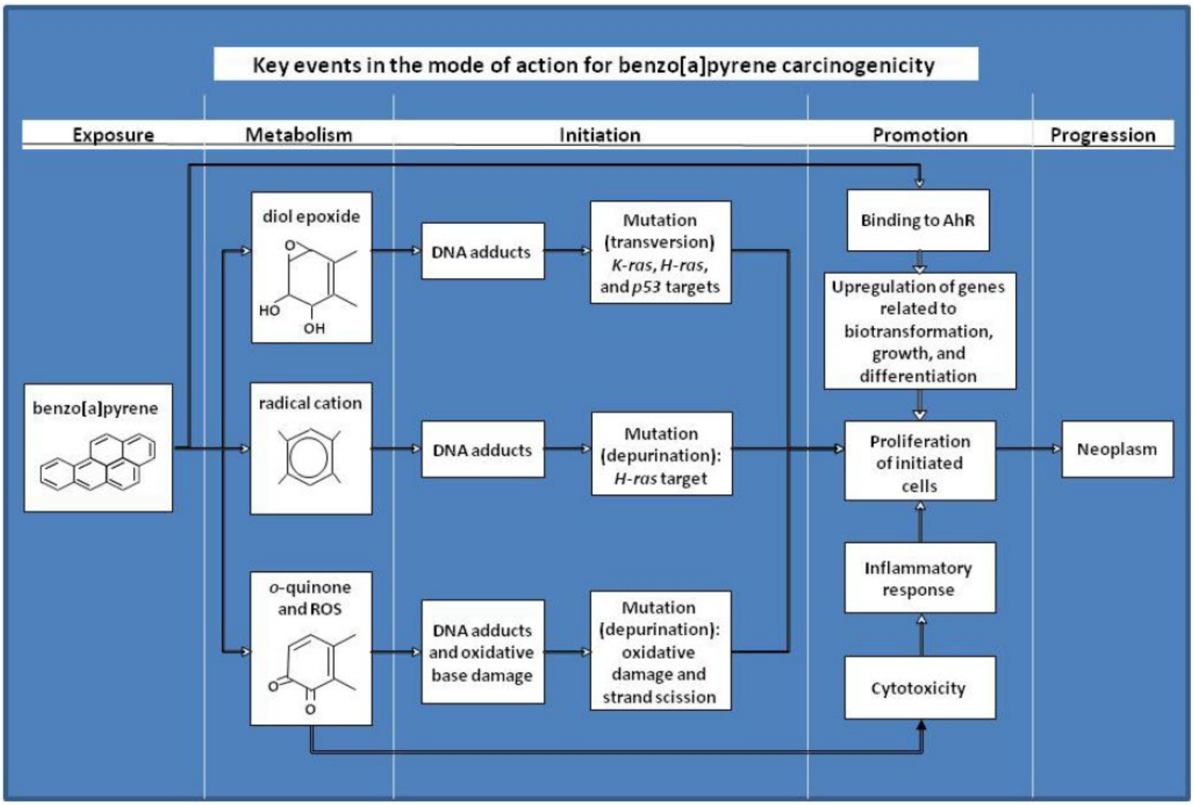
The International Agency for Research on Cancer has classified BaP as 1: human carcinogen (IARC 2010). The USEPA has classified BaP as B2: probable human carcinogen (USEPA 2014).

Toxicity reference values

The most recent USEPA toxicological review notes that exposure to BaP is associated with developmental (including developmental neurotoxicity), reproductive, and immunological effects in animal studies. Epidemiology studies (i.e. studies in people) have shown exposure to BaP is associated with adverse birth outcomes (including reduced birth weight, postnatal body weight, and head circumference), neurobehavioral effects, and decreased fertility (USEPA 2017).

In regard to cancer, studies have shown that BaP is carcinogenic at multiple tumour sites (alimentary tract, liver, kidney, respiratory tract, pharynx, and skin) by all routes of exposure in animals. In addition, occupational studies where people are exposed to PAH mixtures such as aluminium production, chimney sweeping, coal gasification, coal-tar distillation, coke production, iron and steel founding, and paving and roofing with coal tar pitch there is strong evidence of carcinogenicity, particularly lung cancer (USEPA 2017).

BaP is an indirect carcinogen, that is, its carcinogenicity results from its metabolites, primarily various epoxides, as opposed to BaP itself. These metabolites can attach to DNA forming adducts which cause disruption when DNA replicates. Several different types of tumours have been observed as a result of exposure to BaP, although tumour development is closely related to route of administration, i.e., dermal application induces skin tumours and oral administration induces gastric tumours. BaP is considered to be a genotoxic carcinogen (USEPA 2017; WHO 1998).



Proposed metabolic activation pathways and key events in the carcinogenic mode of action for benzo(a)pyrene (USEPA 2017)

In addition, BaP has been demonstrated to be a skin irritant and dermal sensitiser (WHO 1998).

The USEPA has concluded that BaP (and carcinogenic PAHs assessed on the basis of TEFs) acts via a mutagenic mode of action and recommends that susceptibility associated with early lifetime exposures be addressed. No non-threshold values available for BaP have been derived to specifically address early lifetime susceptibility and hence this issue needs to be addressed when characterising exposure to BaP at a particular site depending on the age of people who may be users of the site (USEPA 2005, 2017).

On this basis, a peer-reviewed non-threshold reference value is recommended for BaP. **Table C2** summarises non-threshold values that are available from Level 1 Australian and International sources:

Table C2: Published toxicity reference values for PAHs/benzo(a)pyrene

Source	Value	Basis/Comments
ADWG (NHMRC 2011 updated 2022)	Not available	Current guideline of 0.00001 mg/L is based on the consideration of health effects in relation to the limit of determination for analysis. The assessment provided by the WHO is noted.
OCS	No evaluation available	
WHO (WHO 2017) (WHO 2000) (WHO 2010)	SF = 0.5 $(mg/kg/day)^{-1}$ **UR =8.7x10^{-5} $(ng/m^3)^{-1}$**	A drinking water guideline of 0.0007 mg/L was derived on the basis of an excess lifetime cancer risk of10^{-5} from an oral carcinogenicity study and a two-stage birth-death mutation model. Slope factor has been calculated on the basis of a 70kg adult and consumption of 2 L water per day. Inhalation unit risk derived based on observations in coke oven workers to mixtures of PAHs. It is noted that the composition of PAHs to which coke oven workers are exposed may differ from that present in ambient air or derived from soil contamination. It is noted that an inhalation UR is in the same order of magnitude as that derived using a linear multistage model associated with lung tumours in a rat inhalation study of coal tar/pitch condensation aerosols.
MfE (MfE 2011)	**SF = 0.233 $(mg/kg/day)^{-1}$**	Review of the carcinogenic reference values available for oral intakes by MfE considered the range of values available and differences in approaches adopted for low dose extrapolation. The application of cross-species scaling appeared to be the most significant factor affecting the cancer potency estimates. While not applying cross-species scaling is consistent with the approach outlined in NHMRC, the MfE review recommended that it is appropriate for BaP (NHMRC 1999). Review of available studies (14 risk estimates using 4 databases) resulted in the calculation of a slope factor based on the geometric mean and scaled allometrically.
MfE (MfE 2002)	Air GV = 0.0003 $\mu g/m^3$	Air guideline value (based on annual average) is based on the WHO unit risk value (noted above) and adopting a target risk of 1 in 10,000 to 1 in 100,000.
UK (UK DEFRA and EA 2002)	Derived index doses from WHO evaluations	Oral index dose derived on the basis of WHO approach and a lifetime cancer risk of 10^{-5}. Inhalation index dose based on WHO approach and adopting an air guideline of 0.25 ng/m^3. The air guideline is equivalent to a lifetime cancer risk of $4x10^{-5}$.
RIVM (Baars et al. 2001)	SF = 0.2 $(mg/kg/day)^{-1}$	Oral SF derived by RIVM based on a chronic oral carcinogenic rat study and linear multistage model. The study considered was more recent than that considered by the WHO. No inhalation assessment is provided by RIVM.
CCME (CCME 2010)	SF = 2.3 $(mg/kg/day)^{-1}$	Oral SF derived from a less than lifetime diet study on inbred CFW-Swiss mice associated with incidence of papillomas and squamous cell carcinomas and linear extrapolation. This is the same study as used by the USEPA in the derivation of their oral slope factor. The CCME review also noted that dermal exposures and primary oral exposures result in different kinds of cancers. Health Canada is currently reviewing data with respect to the derivation of a dermal cancer slope factor, which may require consideration when peer-reviewed and published. The oral slope factor has been used to derive a soil guideline associated with exposures via oral, dermal and inhalation exposures.

Source	Value	Basis/Comments
OEHHA (CEPA 1999)	SF = 11.5 $(mg/kg/day)^{-1}$ UR =0.0011 to0.0033 $(ug/m^3)^{-1}$	Oral SF derived using the same model and study as reported by the USEPA (IRIS 2010) and CCME (2008), with the upper end of the range of values adopted by OEHHA. Inhalation UR derived on the basis of respiratory tract tumours in an inhalation study in hamsters and a linearised multistage model.
USEPA (USEPA 2014)	SF = 7.3 $(mg/kg/day)^{-1}$	Oral SF (last reviewed in 1994) derived on the basis of the same study considered by CCME (above) where a range of slope factors were derived (4.5 to 11.7 $(mg/kg/day)^{-1}$). The geometric mean was adopted as the recommended slope factor for derivation of a drinking water guideline. No assessment of inhalation toxicity is available.
USEPA (USEPA 2017)	SF = 1 $(mg/kg/day)^{-1}$ IUR = $6x10^{-4}$ $(\mu g/m^3)^{-1}$	Oral SF was derived using two studies from 1998 and 2001. The study from 2001 was conducted on male and female Wistar rats which showed forestomach, liver, oral cavity, jejunum, kidney, auditory canal (Zymbal gland) tumours, and skin or mammary gland tumours. The 1998 study reported forestomach, oesophageal, tongue, and larynx tumours in female B6C3F1 mice. Slope factors were calculated using body weight scaling to determine a human equivalent dose. The slope factors for the study in rats ranged from 0.04 to 0.3 $(mg/kg/day)^{-1}$. For the mice study the slope factor was 1.4 $(mg/kg/day)^{-1}$. There are no data to support any one result as most relevant for extrapolating to humans. If it is assumed all slope factors are equally relevant for extrapolating to humans, then statistical evaluation of the data gives slope factors of 0.5, 0.6 and 0.7 per mg/kg-day depending on the statistic. The mice study found tumours in forestomach, an organ not found in people and which may increase how long the stomach lining is exposed to BaP. The rat study used exposure via gavage rather than in food. So, while the studies were robust there are some aspects that create uncertainty. For the inhalation unit risk (IUR), the single lifetime inhalation study available for BaP was used. This study was undertaken in 1981 and used hamsters. Other studies since have used instillation to dose animals and these supported the findings but are not able to be used to develop the IUR.

The review conducted by MfE provided a discussion of the impact of differences in methodology used by various agencies for low dose extrapolation (MfE 2011).

There is a wide range of non-threshold reference values available for oral intakes of BaP (and the other carcinogenic PAHs).

The MfE (MfE 2011) discussion notes that the following:

- the WHO slope factor based on a study from 1990 used unrealistic exposure conditions (rejected by USEPA)
- the WHO determined a slope factor of 0.5 per mg/kg/day using this study and their approach for genotoxic carcinogens but USEPA determined a slope factor of 5.9 per mg/kg/day using the same study and their approach for genotoxic carcinogens which included allometric scaling
- other organisations (California, UK, Canada) have used a much older study (from 1967) which did not cover exposure over a whole lifetime

- the major difference between all the various slope factors for BaP was the different approaches to extrapolate from the point of departure dose (usually 5 or 10% effect) to the slope factor, including allometric scaling rather than the toxicological data
- the US agencies use allometric scaling while some European agencies and the NHMRC in Australia recommend against use of such scaling when calculating slope factors
- a number of assessments covered in this review have used the same more recent studies as used by the USEPA in their most recent assessment from 2017
- the most recent studies used by the USEPA (and other reviews) are ones where the animals were exposed to coal tar.

As a result, the geometric mean value for the slope factors without scaling was chosen for use in contaminated land investigations in Australia.

As noted in Appendix A2 of Schedule B7 of the ASC NEPM, a number of variations were considered in the HIL calculations. The calculations of the HILs considered the use of a range of different values for some of the assumptions required for these calculations. The different values were presented to the Australian regulators overseeing the ASC NEPM process for their consideration.

The variations included using:

- the standard USEPA approach to assess exposure via dermal contact
- the Knafla et al. approach for dermal contact
- the slope factor derived from the WHO drinking water guidelines (0.5 per mg/kg bw/d)
- the slope factor from the NZ Ministry for the Environment guidance (0.233 per mg/kg bw/d)
- an age dependent adjustment factor for cancer or not (NEPC 1999 amended 2013d).

A choice was made by Australian regulators as to which set of these variables were to be included in the calculations for the HILs. HILs for low density residential land uses were calculated using 5 different sets of values for the relevant assumptions:

- use of oral TRV from NZ MfE (for both ingestion and dermal contact) and no age dependent adjustment factor
- use of oral TRV from WHO (for both ingestion and dermal contact) and no age dependent adjustment factor
- use of oral TRV from NZ MfE (for both ingestion and dermal contact) with age dependent adjustment factors
- use of oral TRV from WHO (for both ingestion and dermal contact) with age dependent adjustment factors
- use of oral TRV from NZ MfE for ingestion and Knalfa approach for dermal contact) and no age dependent adjustment factor.

The resultant guidance values (HIL-A) ranged from 0.3 to 20 mg/kg. The Australian regulators chose 3 mg/kg for use as the conservative, widely applicable guideline. This was on the basis that while some sites requiring evaluation are former gasworks or other sites with highly bioavailable PAHs, many sites have PAHs present from less bioavailable sources including asphalt and ash.

The ASC NEPM review recommends the use of the MfE slope factor for site-specific risk assessments especially where the source of PAHs is one of these less bioavailable forms (MfE 2011; NEPC 1999 amended 2013d). It also recommends that consideration of whether to adjust for early life stage exposure and dermal exposure be undertaken on a site-specific basis depending on the source of PAHs at the site and the proposed use of the site. For this site, which is a hospital, early life stage exposures are potentially relevant. In addition, there is no evidence of coal tars and hence the Knafla approach to the assessment of dermal toxicity is not relevant.

The data available on inhalation exposures are dominated by occupational studies associated with exposure to coke oven emissions or coal tar pitch aerosols. BaP is not volatile and hence the relevance of these studies to the assessment of dust issues derived from contaminated sites is not clear.

On the basis of the discussion above, the following toxicity reference values (TRVs) have been adopted for BaP for this site:

- oral TRV (TRV_O) = 0.233 $(mg/kg/day)^{-1}$ (MfE 2011) for oral and dermal exposures.
- dermal absorption factor (DAF) = 0.06 (6%) (MfE 2011) unless site-specific dermal bioavailability data is available
- oral bioavailability = 100% unless site-specific oral bioavailability is available.
- inhalation TRV = 0.6 $(mg/m^3)^{-1}$ from the more recent review from the USEPA (USEPA 2017).

For the assessment of exposures by children, age dependent adjustment factors have been adopted as follows (USEPA 2005):

- exposures before 2 years of age – 10 fold adjustment
- exposures between 2 and <16 years – 3 fold adjustment
- for exposures after 16 years – no adjustment.

Appendix D Site-specific health investigation level calculations

Site-specific recreation health investigation level for the Temora Hospital

Summary of Exposure Parameters		Abbreviation	units	Parameter	References/Notes
Soil and Dust Ingestion Rate	- Young children (0-5 years)	IR_{SC}	mg/day	25	site specific assumption
Surface Area of Skin	- Young children (0-5 years)	SA_C	cm^2/day	2434	skin surface are assumed to be dirty each day, based on face, hands, forearms, lower legs and feet, as per MDEP 2002
Soil-to-Skin Adherence Factor		AF	mg/cm^2/day	0.35	weighted adherence factor as per MDEP 2002
Time Spent Outdoors		ETo	hours	2	Schedule B7, Table 5
Time Spent Indoors		ETi	hours	0	Schedule B7, Table 5
Lung Retention Factor		RF	-	0.375	Schedule B7, Table 5
Particulate Emission Factor		PEFo	(m^3/kg)	2.6E+07	As per Equation 21 based assumptions presented in Schedule B7
Outdoor Air-to-Soil Gas Attenuation Factor		α	-	0.05	Value adopted as discussed in Section 5.5 of Schedule B7
Body weight	- Young children (0-5 years)	BW_C	kg	15	Schedule B7, Table 5
	- Adults	BW_A	kg	70	Schedule B7, Table 5
Exposure Frequency		EF	days/year	52	site-specific assumption
Exposure Duration	- Young children (0-5 years)	ED_C	years	6	Schedule B7, Table 5
	- Adults	ED_A	years	29	Schedule B7, Table 5
Averaging Time (non-carcinogenic)		AT_T	days	ED*365	Calculated based on ED for each relevant age group, multiplied by 24 hours for the assessment of inhalation exposures
Averaging Time (carcinogenic)		AT_{NT}	days	25550	Based on lifetime of 70 years, multiplied by 24 hours for the assessment of inhalation exposures

Non-Threshold Effects - Lifetime Exposures [young child and adult]

Compound	Toxicity Reference Value Oral (TRV_O) $(mg/kg/day)^{-1}$	GI Absorption (GAF) (unitless)	Non-Threshold Slope Factor Dermal (SFd) $(mg/kg/day)^{-1}$	Oral Bioavailability BA_O (%)	Dermal Absorption Factor (DAF) (unitless)		Toxicity Reference Value Inhalation (TRV_I) $(mg/m^3)^{-1}$		Target Risk (TR)	Pathway Specific HILs (mg/kg)			Derived Soil HIL (not rounded) (mg/kg) (eqn 2 for relevant pathways)	Derived Soil HIL (to 1 or 2 s.f.) (mg/kg)
										Soil Ingestion (eqns 4 and 5)	Dermal (eqns 7 and 8)	Dust (eqns 10 and 11)		
benzo(a)pyrene (Early-Life)	0.233	1	0.233	100%	0.06		6.66E-02		1E-05	3.5E+02	1.0E+02	6.4E+05	80.5	**80**