

# Groundwater Impact Assessment

Department of Education – Geotechnical, Groundwater & Contamination  
Assessment – New High School for Jordan Springs



Prepared for:  
Department of Education

19 December 2024

Prepared by:  
Stantec Australia

Project/File:  
305001663\_DoEJordan  
Springs\_groundwater\_1.1\_rev0

## Groundwater Impact Assessment

Rev	Description	Author	Date	Quality Check	Date	Independent Review	Date
A	Draft for client review	Finn Tainsh / Michael Koerner/Mike Jorgensen	13/11/2024	Sam Levi	13/11/2024	Mitch Blencowe	13/11/2024
B	Draft for client review	Finn Tainsh / Michael Koerner/	17/12/2024	Mike Jorgensen	17/12/24	Mitch Blencowe	17/12/2024
0	Issued to client	Michael Koerner	19/12/2021	Mike Jorgensen	19/12/2021	Mitch Blencowe	19/12/2021



## Groundwater Impact Assessment

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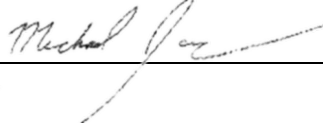
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## Executive Summary

Stantec Australia Pty Ltd (Stantec) was engaged by Department of Education (DoE) (the client) to complete a groundwater impact assessment (Assessment) at the location of the proposed New High School for Jordan Springs, located at Corner of Infantry Street and Armoury Road, Jordan Springs NSW and legally identified as Part Lots 2 & 3 Deposited Plan (DP) 1248480.

### Purpose and Objectives

The purpose of this report is to support the approval process for the proposed activities and change of land use at the site, specifically as a specialist study to inform the REF.

The objectives of this assessment and report include:

- To review site information to evaluate whether site groundwater is likely to adversely impact on the proposed activity and to evaluate whether the proposed activity is likely to adversely impact on groundwater.
- If warranted, make recommendations for management, remediation and/or further investigation.
- Assess the site groundwater factors with regard to Part 5 of the Environmental Planning and Assessment Act 1979, Section 5.5 Duty to consider environmental impact.

### Conclusions

Based on reviewed information gathered, the following is concluded:

- Adverse impact on Part 5 Environmental Factors with regard to groundwater is not anticipated.
- Potential adverse impact of the proposed activity on groundwater.
  - Construction of the new buildings and sealed areas is likely to locally reduce recharge to the water-table aquifer. However, considering the naturally low recharge rate and size of the proposed activity relative to the overall groundwater catchment, this is not anticipated to adversely affect the aquifer.
  - Piles are anticipated to encounter groundwater. Hence, interference with groundwater flow is anticipated. However, considering the small diameter of the proposed piles (between 600 mm and 900 mm) it is not anticipated that the piles would significantly alter the flow such that localised mounding would occur.
- Potential adverse impact of groundwater on the proposed activity.
  - Exceedances of ecological criteria for metals (cadmium, copper, nickel, and zinc) and PFOS were reported for site groundwater samples.
  - However, metals exceedances are inferred to reflect natural concentrations of these metals and PFAS exceedances are inferred to reflect ambient concentrations in regional groundwater.
  - Hence, adverse impact of groundwater on the proposed activity is not anticipated except for the risk of corrosion of piles due to being in contact with brackish groundwater.



## **Groundwater Impact Assessment**

### **Executive Summary**

Based on the findings of this assessment, both activities scenarios (inclusive of construction of a temporary OSD basin, Scenario 2) are considered suitable options to facilitate future site activities, noting that a separate planning pathway is required for construction of a permanent off-site basin.

### **Mitigation Measures and Recommendations**

Based on the findings of this assessment and with reference to the proposed activity, purpose and objectives, mitigation measures set out in Stantec's 2024 DSI report shall be implemented.

### **Evaluation of Groundwater Impacts**

Based on the findings of this assessment, it is anticipated that only building piles will interact with site groundwater. While some disruption of site groundwater flow is likely after pile construction, it is not anticipated to be significant. Therefore, adverse impact on groundwater by the proposed activity or adverse impact by groundwater on the proposed activity is not anticipated.



# 1 Introduction

Stantec Australia Pty Ltd (Stantec) was engaged by Department of Education (DoE) (the client) to complete a groundwater impact assessment (Assessment) at the location of the proposed New High School for Jordan Springs, at Corner of Infantry Street and Armoury Road, Jordan Springs NSW and legally identified as Part Lots 2 & 3 Deposited Plan (DP) 1248480 (herein referred to as 'the site'). The site locality and layout are shown in **Figure 1** in **Appendix A**.

## 1.1 Background

Stantec has been engaged by DoE to undertake an Assessment of groundwater risk at the site that is based on findings and conclusions presented in Stantec's 2024 detailed site investigation (DSI, file 305001663\_DoE-Jordan Springs DSI\_DFT\_Rev-B).

The Assessment was prepared to provide preliminary information on the potential adverse impacts on groundwater or from groundwater on the proposed activity at the site for the purpose of supporting the planning process for future activities. The proposed activity is for the construction and operation of the New High School at Jordan Springs. A detailed description of the proposed activities is presented in Section 2. Design plans, bulk earthworks plans, and site footing layout are provided in Appendix B. The activity broadly includes the following features:

- A capacity of 1,000 students and 80 staff to meet forecast enrolment demand associated with population growth in Jordan Springs and Ropes Crossing.
- The school will provide permanent General Learning Spaces (GLS), Support Learning Spaces (SLS), staff facilities and a library across three (3), three storey buildings, a single storey hall, half playing field, three (3) outdoor sport courts, 72 operational at grade parking spaces (including two (2) accessible spaces), 100 bicycle spaces and landscaping.

## 1.2 Planning Pathway

This Assessment has been prepared to accompany a Review of Environmental Factors (REF) for the proposed construction and operation of a New High School for Jordan Springs (the activity) under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI).

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure and examines and takes into account the relevant environmental factors in the Guidelines and Environmental Planning and Assessment Regulations 2021 under Section 170, Section 171 and Section 171A of the EP&A Regulation as outlined in Table 1-1.



**Table 1-1 Summary of Relevant Section of the Part 5 Guidelines**

Guideline Section	Requirement	Response	Report Section
<b>3. Environmental factors</b>	Consider factors set out in Table 1 of the Guidelines	Methodical evaluation of the factors are presented.	Section 7 and Section 9

## 1.3 Purpose and Objectives

The purpose of this report is to support the approval process for the proposed activities and change of land use at the site, specifically as a specialist study to inform the REF.

The objectives of this Assessment and report include:

- Provide information on groundwater levels and quality at the site.
- Evaluate whether groundwater is likely to adversely impact on the activity or the proposed activities on groundwater
- Make recommendations for management, remediation and/or further investigation (as required).

## 1.4 Scope of Work

The scope of works below was undertaken to meet the project objectives and requirements.

### 1.4.1 Desktop Review

- Compilation and review of information in Stantec's 2024 DSI report pertaining to soils, geology, hydrogeology, and hydrology at the site and vicinity.
- Develop a site-specific conceptual site model (CSM) that is a simplified representation of the site geology and hydrogeology that includes potential sources of contamination, pathways, and sensitive receptors.
- Evaluate the proposed activity with regards to interaction with groundwater.

### 1.4.2 Reporting

Upon completion of desktop review, an Assessment report was prepared (this report) to fulfil the project objectives with regards to evaluating the risk of adverse interaction between groundwater and the proposed activity. Elements presented include:

- Details of the proposed activity.
- Groundwater levels and quality.
- Potential adverse interactions between groundwater and the proposed activity.
- Recommendations for further actions and controls.

## 1.5 Applicable Guidelines and Legislation

The assessment has been developed in accordance with the following legislation and guidelines:



## Groundwater Impact Assessment

### Introduction

- NSW (2000) Water Management Act 2000.
- NSW (2000) Salinity Strategy.
- NSW (2012) Aquifer Interference Policy.
- NSW (2022) DPE Guidelines for groundwater documentation for SSD/SSI Projects.
- NSW (2022) Groundwater Impact Assessment Toolbox for Major Projects in NSW – Overview Document.
- NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999. National Environmental Protection Council (NEPC 2013).
- NSW Department of Environment and Conversation (2007) Guidelines for the Assessment and Management of Groundwater Contamination.
- NSW EPA (2020) Consultants Reporting on Contaminated Land: Contaminated Land Guidelines. New South Wales Environment Protection Authority, April 2020, Updated May 2020.



## 2 Proposed activities

### 2.1 Proposed activities

The proposed activities at the site are for the construction of the New High School for the suburb of Jordan Springs. The proposed activities plan available at the time of preparing this document (**Appendix B**) indicate the following features:

- A capacity of 1,000 students and 80 staff to meet forecast enrolment demand associated with population growth in Jordan Springs and Ropes Crossing.
- The school will provide permanent General Learning Spaces (GLS), Support Learning Spaces (SLS), staff facilities and a library across three (3), three storey buildings, a single storey hall, half playing field, three (3) outdoor sport courts, 72 operational at grade parking spaces (including two (2) accessible spaces), 100 bicycle spaces and landscaping.
- Public domain works and the construction of a permanent off-site dam basin are to be approved under separate planning pathways and constructed by others.

The proposed activities are expected to occur under two (2) possible scenarios to allow construction and operation of the school, with (Scenario 1 – preferred option) or without (Scenario 2 – Interim Solution) the public domain works and permanent off-site basin being constructed by others under a separate planning pathway. A description of each activities' scenario is provided below.

#### 2.1.1 Activities Scenario 1 – Preferred Option - Road Network completed and permanent OSD Basin Constructed

- External works undertaken by others to facilitate Scenario 1:
  - » Construction of Park Edge Road;
  - » Any adjustments to Infantry Street;
  - » Kiss and drop zone along Park Edge Road;
  - » Support kiss and drop zone located along Infantry Street; and
  - » Construction and operation of permanent onsite dam (OSD) basin off site.
- Scenario 1:
  - » Construction and Operation of the New High School for Jordan Springs, including:
    - Decommissioning of existing on-site OSD basin;
    - Earthworks;
    - Three (3) multi-storey classroom buildings;
    - One (1) school hall;
    - Three (3) outdoor sport's courts;
    - One (1) sport's field;
    - 72 at grade car parking spaces, including two (2) accessible parking spaces, and waste services, accessed via Park Edge Road;
    - 100 bicycle parking spaces across the site; and
    - Landscaping.



### **2.1.2 Scenario 2 - Interim Solution – Road network not completed, Permanent OSD Basin not constructed**

- Scenario 2 – Stage 1:
  - » Construction and operation of a temporary on-site OSD Basin;
  - » Construction and operation of the New High School for Jordan Springs, including:
    - Earthworks;
    - Three (3) multi-storey classroom buildings;
    - One (1) sport's field;
    - Temporary carpark - 72 at grade car parking spaces, including two (2) accessible parking spaces and waste services, located on the northwest corner of the site, accessed off Armoury Road;
    - 100 bicycle parking spaces across;
    - Temporary Kiss and drop facilities on Armoury Road; and
    - Associated landscaping.
- Scenario 2 – Stage 2:
  - » Decommissioning of existing on-site OSD basin, prior to the following works being undertaken:
    - 72 at grade car parking spaces, including two (2) accessible parking spaces, and waste services, located on the southeast corner of the site. This car park cannot be constructed until the decommissioning of the existing OSD basin is completed and will be non-operational with no road connection until completion of Scenario 2 – Stage 3;
    - One (1) school hall;
    - Three (3) outdoor sport's courts; and
    - Associated landscaping.
- External works undertaken by others to facilitate Stage 3:
  - » Construction of Park Edge Road;
  - » Any adjustments to Infantry Street;
  - » Kiss and drop zone along Park Edge Road;
  - » Support kiss and drop zone located along Infantry Street; and
  - » Construction and operation of OSD Basin off site.
- Scenario 2 – Stage 3:
  - » Connection of the southeast carpark to Park Edge Road;
  - » Rectification works along Armoury Road to remove temporary kiss and drop facilities and cross over for temporary carpark;
  - » Demolition of temporary carpark, once permanent car park is operational; and
  - » Decommissioning of temporary OSD basin.

## **2.2 Activity site**

The project site is located on the corner of Armoury Road and Infantry Street in Jordan Springs and is legally described as part of Lots 2 and 3 in DP 1248480.





**Figure 2-1** provides an aerial photograph of the project site, outlines the boundaries of the project site (in red) and the boundaries of Lots 2 and 3 in DP 1248480 (in blue).



*Figure 2-1 Aerial Photograph showing the proposed school boundary*

The project site is within the Central Precinct of the St Marys Release Area in the Penrith Local Government Area.

## 2.3 Other approvals

External works and construction of the permanent off-site dam basin are to be constructed by others.

## 3 Site Identification

### 3.1 Site information

Details related to the site are included in **Table 3-1** below and the site locality in the context of the local area is illustrated on **Figure 1** in **Appendix A**.

**Table 3-1 Site Information**

Details	Comments	
<b>Site address</b>	Corner of Infantry Street and Armoury Road, Jordan Springs NSW 2747	
<b>Lot and Deposited Plan</b>	Part Lots 2&3 Deposited Plan (DP) 1248480	
<b>Local Government Authority (LGA)</b>	The Minister for Education and Early Learning	
<b>Current land use</b>	Penrith City Council	
<b>Proposed land use</b>	Vacant land that includes a predominantly vegetated area with some asphalt paved streets, concrete pavement and a temporary sediment basin.	
<b>Current Zoning</b>	<p>The site is proposed to be utilised as a secondary high school (New High School for Jordan Springs) to have the capacity of 1,00 student and 80 staff. According to Appendix B, the proposed facilities associated with the site include:</p> <ul style="list-style-type: none"> <li>Decommissioning of existing on-site OSD basin;</li> <li>Earthworks;</li> <li>Landscaped areas;</li> <li>Three (3) multi-storey classroom buildings;</li> <li>One (1) school hall;</li> <li>Three (3) outdoor sport's courts;</li> <li>One (1) sport's field;</li> <li>72 at grade car parking spaces, including two (2) accessible parking spaces, and waste services, accessed via Park Edge Road;</li> <li>100 bicycle parking spaces across the site; and</li> <li>External works under other facilitate: <ul style="list-style-type: none"> <li>Construction of Park Edge Road;</li> <li>Any adjustments to Infantry Street;</li> <li>Kiss and drop zone along Park Edge Road;</li> <li>Support kiss and drop zone located along Infantry Street; and</li> <li>Construction and operation of permanent OSD Basin off site.</li> </ul> </li> </ul> <p>The design plans and bulk earthworks plans are provided in <b>Appendix B</b>, respectively.</p>	
<b>Site area (ha)</b>	4.6 ha	
<b>Site coordinates (GDA2020 MGA56)</b>	<b>Easting (m)</b>	<b>Northing (m)</b>
	292076.527	6265463.801
	292235.082	6265491.012
	292249.642	6265187.388
	292049.071	6265217.179



## 3.2 Surrounding Land Use

The land uses immediately surrounding the site were identified during the site walkover inspection and desktop study and are summarised below in **Table 3-2**. The site and surrounding land uses are shown in **Appendix A**.

**Table 3-2 Surrounding Land Use**

Direction	Land Use or Activity
<b>North</b>	Fenced in vacant lot and fenced in Lasetter Street to the immediate north, a constructed riparian canal further to the north and medium density housing developments further beyond.
<b>East</b>	Open bushland to the immediate east and South Creek further beyond.
<b>South</b>	Fenced in vacant lot to the immediate south and medium density housing developments further beyond.
<b>West</b>	Armoury Road to the immediate west, medium density residential housing adjacent east, and an anthropogenic riparian canal further beyond.

## 3.3 Regional and Site Settings

Site setting information, as listed within publicly available data sets, is summarised in **Table 3-3** below.

**Table 3-3 Site Setting Information**

Details	Comments
<b>Topography (Nearmap, 2024)</b>	A review of available topographic maps for the site indicates that the site is positioned on a relatively flat plateau at approximately 20 m Australia Height Datum (AHD), situated within a generally flat to undulating greater landscape incised by creeks and gullies. The site surface is generally level and is positioned along a minor west-east sloping plane.  Based on the general topography of the site, stormwater is likely to flow offsite in an easterly direction towards South Creek.
<b>Regional Soil Landscape (NSW Department of Planning, Industry and Environment)</b>	The NSW DPIE eSPADE v2.2 website indicates that the site overlies the South Creek (sc) alluvial soil landscape. Soils within the South Creek landscape consisted of an active floodplain of many drainage networks of the Cumberland Plain.  Where pedogenesis has occurred, Structured Plastic Clays or Structured Loams in and immediately adjacent to drainage lines comprise of Red and Yellow Podzolic Soils are most common terraces with small areas of Structured Grey Clays, leached clays and Yellow Solodic Soils.
<b>Regional Geology (Minview v. 2023.7.17, 2023)</b>	A review of data gathered by Lotsearch during preparation of the PSI (Stantec, 2024) indicates that the site is underlain by alluvial floodplain deposits (Q_af) of the Quaternary geological epoch, described as comprising silt, very fine to medium grained lithic to quartz rich sand and clay.
<b>Regional Groundwater (Department Finance, Services &amp; Innovation 2024) (Bureau of Meteorology 2024)</b>	A search on Minview 2023.10.25 and the LotSearch (LS049696) report identified twenty-three (23) groundwater wells within 2000m of the site. Twelve (12) bores were listed as 'Unknown' type and status, and the remaining eleven (11) as 'monitoring' type and 'functional' status.  Details of closest known wells are listed as below; <ul style="list-style-type: none"> <li>GW111463 constructed on 31<sup>st</sup> March 2011, situated 892m southeast, bore type listed as 'Monitoring' and the water bearing depth is 7.02-9.18m.</li> </ul>



Details	Comments
	<ul style="list-style-type: none"> <li>GW111462 constructed on 31<sup>st</sup> March 2011, situated 990m southeast, bore type listed as 'Monitoring' and the water bearing depth is 4.46-9.77m</li> <li>GW111461 constructed on 31<sup>st</sup> March 2011, situated 1029m southeast, bore type listed as 'Monitoring' and the bore depth is 11.02m.</li> </ul>
<b>Surface Water Bodies (Nearmap, 2024)</b>	<p>The site contains a temporary sediment basin located within the central portion of the site.</p> <p>Offsite towards the eastern site boundary is an ancillary and unnamed pond, understood to act as a collection point for the treated stormwater discharged from the basin mentioned above.</p> <p>A realigned riparian corridor extends parallel to the northern boundary of the site at approximately 70 m. It is understood that this channel flows towards South Creek, the largest natural water body in the local area, located approximately 200 m east of the site. It is anticipated that surface runoff from the site is likely to flow eastwards towards South Creek.</p>
<b>Acid sulfate soil / rock risk (CSIRO, 1998 and eSPADE v2.2)</b>	The NSW Government Planning Industry and Environment online mapping tool, eSPADE Version 2.2 (accessed at environment.nsw.gov.au on 07.11.23), does not indicate that the site is situated within or near an ASS risk area. Furthermore, data gathered by Lotsearch indicates that the site is located within an area of extremely low probability (1 – 5% chance) of acid sulfate soils occurrence.
<b>Salinity (Department Finance, Services &amp; Innovation 2024)</b>	No Dryland Salinity – National Assessment data on-site available.

### 3.4 Site Description

The site observations summarised below in **Table 3-4** have been recorded during completion of the DSI fieldwork activities.

**Table 3-4 Site Description Details**

Item	Information
<b>Weather Conditions</b>	<p>02/10/2024: Overcast clearing to sunny, windy, 18°C.</p> <p>08/10/2024: Overcast clearing to sunny, 14°C.</p> <p>10/10/2024: Clear to sunny, 24°C.</p> <p>11/10/2024: Sunny, 24°C.</p> <p>25/10/2024: Sunny, 24°C.</p> <p>30/10/2024: Clear to sunny, 27°C.</p> <p>08/11/2024: Clear, 30°C.</p>
<b>Site slope and drainage features</b>	<p>The site is relatively level, sloping gradually towards the east along a west-east alignment. Localised areas of land subsidence were observed primarily within sections of the vacant land areas of the site, with notable surface water accumulation observed at a subsidence point situated north-east of the sediment basin.</p> <p>The eastern site boundary is marked by a change in elevation as the site drops from its graded raised plateau across a moderate to steep angled embankment slope adjoining the site to the neighbouring open bushland.</p> <p>Stormwater is likely to flow offsite in an easterly direction towards South Creek as overland flow from unsealed vacant lots and paved roads, or as channelled water gradually discharging from the sediment basin to its ancillary treated-water pond via an underground spillway conduit.</p>



**Groundwater Impact Assessment**  
Site Identification

Item	Information
	Once the new High School for Jordan Springs is constructed, it is anticipated that the majority of stormwater will be captured by a stormwater drainage system that ultimately discharges into the local council stormwater collection network.
<b>Nearby surface water bodies</b>	The site contains a temporary sediment basin located within the central portion of the site. An ancillary and undefined pond was situated external to the eastern site boundary and 40 m east of the sediment basin, understood to act as a collection point for the treated stormwater discharged from the basin.
<b>Site surface coverings</b>	<p>Site surface coverage was variable and included:</p> <ul style="list-style-type: none"> <li>• Vacant plots with thin grass and weed cover.</li> <li>• Sealed haul road extending lengthwise along the eastern site boundary.</li> <li>• Academy street, bisecting the site longitudinally, intersected by Baralga Street, Coorabin Street and Infantry Street. The roads were observed to be unused but in good condition and featured stormwater drains and street light posts.</li> <li>• Concrete paved walkways in good condition, featuring nature strips containing landscaped grass cover and healthy young trees.</li> <li>• Sediment retention basin – observed to be at 15% capacity at the time of the inspection – at the east-central portion of the site.</li> <li>• Isolated areas of subsidence and surface water accumulation north-east of the sediment basin.</li> <li>• Lay down area containing concrete and PVC conduits, along with hardened concrete waste at the north-eastern corner of the site.</li> <li>• Stockpile comprising sandstone boulders and redundant chain wire fencing located at the eastern end of Baralga Street.</li> </ul>
<b>Surface soils</b>	<p>Observations of surface soils were limited to the haul road area to the east of the site, the exposed soil patches within the vacant land areas, and the exposed cross-sectional aspect of the embankment extending along the eastern boundary of the site.</p> <p>In general, the surface soils observed across the site appeared to comprise of compact brown gravelly clayey sand fill materials with shale fragments and sporadic patches of blue metal aggregate gravels. Anthropogenic foreign materials were also observed on the soil surfaces, and typically included concrete and ceramic fragments.</p> <p>No visual or olfactory indications of contamination were identified across any of the ground surfaces inspected, nor were any asbestos containing materials (ACM) observed.</p>
<b>Site cut and fill</b>	The entire site is understood to have been subjected to extensive earthworks and included the importation of fill materials to regrade the site, elevating it to approximately 2-3 m above historic surface level.
<b>Buildings and structures</b>	No buildings or structures were observed on site with exception to paved roads and associated stormwater infrastructure.
<b>Manufacturing, industrial, or chemical processes and infrastructure</b>	Chemical processes and infrastructure were not observed on site or within the surrounding areas.
<b>Fuel storage tanks (USTs/ASTs)</b>	No above or below ground fuel storage tanks were observed at the site.
<b>Dangerous goods</b>	No dangerous goods were observed at the site.
<b>Solid waste deposition</b>	A lay down area containing concrete and PVC conduits, along with hardened concrete waste, was observed at the north-eastern corner of the site. Further to this, a stockpile comprising sandstone boulders and redundant chain wire fencing was observed at the eastern end of Baralga Street.



## Groundwater Impact Assessment

### Site Identification

Item	Information
<b>Liquid waste disposal features</b>	Signage indicating the presence of live sewer lines traversing the eastern site boundary were observed.
<b>Evidence of previous site contamination investigations</b>	One (1) groundwater bore was observed at the south-eastern corner of the sediment basin, but it is unclear as to whether this was associated with prior contaminated land investigations.
<b>Evidence of land contamination (staining or odours)</b>	None observed.
<b>Evidence of groundwater contamination</b>	None observed.
<b>Groundwater use</b>	Based on observations, groundwater extraction at the site is unlikely to occur.
<b>Vegetation</b>	Vegetation cover at the site comprised predominantly of thin grass and weed cover across the vacant land areas. Grass covered nature strips with young trees were observed along the paved walkways.
<b>Services</b>	<ul style="list-style-type: none"><li>• Two (2) electrical units observed within the north-eastern and south-eastern portion of the site, presumably for electrical or comms infrastructure.</li><li>• Water irrigation throughout the site.</li></ul>
<b>Site fencing</b>	The western site boundary is defined by chain wire fencing, however the northern, southern and western site boundaries are arbitrary and were not fenced at the time of the inspection.



## 4 Site History

A detailed site history review was undertaken as part of the PSI (Stantec, 2024) which utilised publicly available and searchable registers and data sets to identify land uses and other information that may identify onsite or offsite sources of contamination. A summary of site history information is provided in the subsections below.

### 4.1 Previous Investigations

The following previous reports were reviewed as part of this assessment:

- JBS&G (2015) *Sampling Analysis and Quality Plan*, Central Precinct, Llandilo NSW, prepared for Maryland Development Company Pty Ltd. Report ref: 43352-57348 (Rev 4), dated 12 November 2015.
- ZOIC (2016) Site Audit Statement Report, for EW1, EW2, Riparian zones A, B, C Central Precinct Llandilo, NSW, prepared for Lendlease. Report ref: 14124\_SAR\_Final\_KJL118\_EW12ABC, dated 30 September 2016.
- ZOIC (2017) Site Audit Report for Earthworks Zones, EW6.1, EW6.2, and Riparian D1, Central Precinct Llandilo, NSW, prepared for Lendlease (Maryland Development Company). Report ref: 14124 final SAR\_KJL118\_EW6.1\_6.2, dated 13 October 2017.
- ZOIC (2018) Site Audit Report for Earthwork Zones, EW 7, 8, 9, 12, Riparian D2 and E, Central Precinct Llandilo, NSW. Report Ref: 14124 final SAR\_KJL118\_EW78912RipD2&E, dated 16 March 2018.
- JBS&G (2021) *Contamination Management Plan*, Central Precinct, Llandilo NSW, prepared for Maryland Development Company Pty Ltd. Report ref: 43352/61064 (Rev B), dated 5 March 2021.
- WSP (2023) *Geotechnical Investigation Report – Factual*, Jordan Springs East – Stage 3 to 6, prepared for Lendlease Communities Pty Ltd. Report ref: PS129457-WSP-SYD-GEO-REP-0011, dated 28 April 2023.
- GLN (2023) *Statement of Environmental Effects*, Stage 3, Central Precinct, Jordan Springs NSW, prepared for Maryland Development Pty Ltd. Report ref: GLN11850 DA1, dated 15 May 2023.
- WSP (2024) Site-wide Earthwork Specification, Jordan Springs Central Precinct, for Lendlease Communities Pty Ltd. Report ref: PS129457-WSP-SYD-GEO-REP- 00027 (Rev0), dated 22 January 2024.
- Stantec Australia Pty Ltd (2024), Preliminary Desktop Site Investigation – Contamination, Prepared for School Infrastructure NSW, dated 15 March 2024.

Stantec is aware of the following reports relating to contamination that are summarised in detail within the PDSIC (Stantec, 2023b):

- JBS&G (2015) *Sampling Analysis and Quality Plan*, Central Precinct, Llandilo NSW, prepared for Maryland Development Company Pty Ltd. Report ref: 43352-57348 (Rev 4), dated 12 November 2015.



- ZOIC (2016) Site Audit Statement Report, for EW1, EW2, Riparian zones A, B, C Central Precinct Llandilo, NSW, prepared for Lendlease. Report ref: 14124\_SAR\_Final\_KJL118\_EW12ABC, dated 30 September 2016.
- ZOIC (2017) Site Audit Report for Earthworks Zones, EW6.1, EW6.2, and Riparian D1, Central Precinct Llandilo, NSW, prepared for Lendlease (Maryland Development Company). Report ref: 14124 final SAR\_KJL118\_EW6.1\_6.2, dated 13 October 2017.
- ZOIC (2018) Site Audit Report for Earthwork Zones, EW 7, 8, 9, 12, Riparian D2 and E, Central Precinct Llandilo, NSW. Report Ref: 14124 final SAR\_KJL118\_EW78912RipD2&E, dated 16 March 2018.
- JBS&G (2021) *Contamination Management Plan*, Central Precinct, Llandilo NSW, prepared for Maryland Development Company Pty Ltd. Report ref: 43352/61064 (Rev B), dated 5 March 2021.
- WSP (2023) *Geotechnical Investigation Report – Factual*, Jordan Springs East – Stage 3 to 6, prepared for Lendlease Communities Pty Ltd. Report ref: PSI129457-WSP-SYD-GEO-REP-0011, dated 28 April 2023.
- GLN (2023) *Statement of Environmental Effects*, Stage 3, Central Precinct, Jordan Springs NSW, prepared for Maryland Development Pty Ltd. Report ref: GLN11850 DA1, dated 15 May 2023.
- WSP (2024) Site-wide Earthwork Specification, Jordan Springs Central Precinct, for Lendlease Communities Pty Ltd. Report ref: PS129457-WSP-SYD-GEO-REP- 00027 (Rev0), dated 22 January 2024.

A summary of previous reports and works associated with contamination for the site are summarised in **Table 4-1** below:

**Table 4-1 Previous Report**

Item	Description
JBS&G – Sampling Analysis and Quality Plan – Contamination Management Plan (CMP) – dated 12 November 2015.	
<b>Objectives</b>	JBS&G Australia Pty Ltd (JBS&G) was engaged by Maryland Development Company Pty Ltd to revise the Contaminant management Plan (CMP) for the Central Precinct Development and associated Regional Park site, located at Llandilo, NSW.  The objective of this CMP is to provide an Unexpected Finds Protocol (UFP) with an appropriate framework for identifying and addressing any discovery of chemical contamination.
<b>Background and scope of works</b>	Given that the property straddles the boundary between two local government areas (Blacktown and Penrith), the NSW Government decided that a regional environmental plan should be prepared covering development of the Property.
ZOIC – Site Audit Statement Report, prepared for Lendlease – dated 30 September 2016.	
<b>Objectives</b>	The Site Audit Report and Statement evaluate the suitability of the 25.18-hectare site within the larger ADI St Marys Property for residential development, adhering to the Contaminated Land Management Act (1997) guidelines and referencing specific Development Applications issued by Penrith City Council.
<b>Background and Scope of works</b>	The ADI St Marys Property, initially farmland and bushland, was acquired by the Commonwealth Government during WW2 for an explosives factory. In the early 1990s, contamination investigations were conducted for residential development, categorizing the current site in the former southern sector west with potential contaminating activities, though none were identified on the site. The site's suitability assessment occurred in two stages, pre-fill and post-fill importation, with a pre-fill assessment in 1999 confirming suitability. Additional sampling in





Item	Description
	<p>2016 confirmed no changes since the original audit, affirming the site's suitability for the proposed residential land use.</p> <p>The audit report is prepared for the auditor's review and endorsement of following validation documents.</p> <ul style="list-style-type: none"> <li>• JBS&amp;G (26 August 2016) EW1, 2, Riparian Zones A, B, C and The Jordan Springs Connector Road, Draft Validation Report (50628-104961 (Rev A)).</li> <li>• JBS&amp;G (19 September 2016) EW1, 2, Riparian Zones A, B, C and The Jordan Springs Connector Road, Final Validation Report (50628-104961 (Rev 0))</li> <li>• JBS&amp;G (29 September 2016) EW1, 2, Riparian Zones A, B, C and The Jordan Springs Connector Road, Final Validation Report (50628-104961 (Rev 1)).</li> </ul>
<b>Results</b>	<p>Fill imported onto the site between January 21 and February 24, 2016, adhered to the Imported Fill Protocol (JBS&amp;G, 2015). The materials, categorized as 'Virgin Excavated Natural Material' (VENM), including crushed sandstone, ripped shale, and silty clays, were inspected and confirmed by JBS&amp;G to meet low-density residential land use criteria.</p> <p>JBS&amp;G conducted groundwater sampling from twelve monitoring wells from January 21 to 27, 2016. Analysis of BTEX, PAH, OCPs, PCBs, VOCs, and explosives concentrations reported levels below laboratory limits and adopted criteria. Some minor exceedances of nickel and zinc were noted in heavy metal concentrations.</p>
<b>Conclusions</b>	<p>Considering the classified fill import, pre-fill soil sampling, and groundwater assessment results, the site is deemed suitable for residential land use. The investigation and fill import sampling assessment are deemed to meet NSW DEC (2006) guidelines and other relevant criteria, with any deviations discussed in the Site Audit Report (SAR).</p> <p>A Section A Site Audit Statement (SAS) will be issued, certifying that, in the Auditor's opinion, the site is suitable for residential land use with access to soils. The SAR discusses any deviations from guidelines and affirms that these omissions do not impact the overall conclusions of the Site Audit.</p>
ZOIC – Site Audit Report for Earthworks Zones, prepared for Lendlease – dated 13 October 2017.	
<b>Objectives</b>	<p>The audit report is prepared for the auditor's review and endorsement of the validation document titled <i>"JBS&amp;G (12 October 2017) EW6.1/EW6.2 Riparian D1 Validation Report, Central Precinct, Llandilo, NSW (ref: 50628-109363 (Rev 0))"</i>.</p>
<b>Background and Scope of works</b>	<p>As per JBS&amp;G (2017), the earthwork boundary has been divided into certain blocks, and the area belonging to the site (Lot 2 and Lot 3 of DP 1248480) has been marked as EW7 and EW8.</p> <p>Prior to World War 2 (WW2), the property consisted of farmland and natural bushland. During WW2, the property was acquired by the Commonwealth Government in 1941, and in 1942 established an explosives factory for ordnance and ammunition filling, tested and related procedures.</p> <p>The site, part of the former ADI St Marys Property, underwent historical assessments and recent investigations, considering environmental works and compliance with the Contaminated Land Management Act.</p> <p>This audit report has reviewed an additional audit report, conducted under statutory regulations, refers to specific development applications issued by Penrith City Council and covers a larger property initially used for explosives manufacturing during World War 2.</p> <p>Previous investigations in the early 1990s by ADI identified no historical contaminating activities in the within EW6.1, EW6.2 or Riparian D1 (residential area to the west of the site)</p>
<b>Results</b>	<p>Based on the review of JBS&amp;G(2017), this site audit report conclude the followings;</p> <p>Surface levels were modified with various materials, including imported VENM, validated stockpile materials, and in-situ cut/fill materials, following reuse confirmation procedures outlined in the JBS&amp;G SAQP and Stockpile Management Plan.</p>



Item	Description
	Reviewed concentrations of various contaminants in infill sampling and groundwater fell below laboratory reporting limits or adopted site criteria, indicating compliance with environmental standards.
<b>Conclusions and recommendations</b>	<p>The report state that the investigation and sampling assessments met the requirements of NSW DEC (2006) and other relevant guidelines, with any deviations discussed in the Site Audit Report (SAR) without affecting the overall conclusions.</p> <p>The Auditor's opinion is that the site has been appropriately characterized for residential and commercial/industrial (roadway) purposes when considering the historical assessment, infill and groundwater sampling, and VENM assessment.</p>
ZOIC – Site Audit Report for Earthwork Zones – dated 16 March 2018.	
<b>Objectives</b>	The Site Audit Report assess the site's suitability for residential land use, considering completed environmental works, historical assessments, and recent investigations.
<b>Background and Scope of works</b>	<p>Kylie Lloyd of Zoic Environmental Pty Ltd has been commissioned by Maryland Development Pty Ltd to prepare this site audit report for the earth works conducted within the subject site. The site, part of the 1535-hectare ADI St Marys Property, had a pre-WW2 history as farmland and natural bushland. During WW2, it became a Commonwealth Government explosives factory, primarily for ordnance and ammunition filling operations.</p> <p>In the early 1990s, ADI conducted contamination investigations for future development, dividing the St Marys Property into sectors. The Eastern Earthworks Zone, falling within the former Southern Sector West and Central Sector West, had Area 9 as the only historical feature, identified as a former explosives detonation area within EW9.</p>
<b>Results</b>	<p>JBS&amp;G performed an Environmental Site Assessment on previously inaccessible areas, specifically Paved Road 3 and W Series Buildings. Investigations confirmed these areas met residential criteria for proposed land use. Paved Road 3, W Series Buildings, and stockpile footprints (SP31 and SP32) underwent assessment for chemical and ordnance risks after removal.</p> <p>The Environmental Site Assessment results indicate suitability for residential use, with no significant chemical storage in the W Series Buildings.</p> <p>Chris Kidd's 1999 historical assessment of the Eastern Earthworks Zone confirmed its suitability for the proposed residential land use.</p> <p>JBS&amp;G conducted infill (validation) and groundwater sampling to assess current site conditions, verifying no change since the historical audit, and confirming the site's continued suitability for residential use. Concentrations in sampling for various pollutants fell below laboratory reporting limits (LOR) or adopted site criteria. Groundwater sampling from twelve monitoring wells, conducted by JBS&amp;G in January 2016, reported concentrations below LOR or adopted criteria for heavy metals, BTEX, PAH, OCP, PCB, explosives, and asbestos.</p> <p>Soil sampling within EW12 confirmed its suitability for residential use, following JBS&amp;G SAQP. VENM materials were imported according to the Imported Fill Protocol, and reused stockpile materials were spread at shallower depths, with JBS&amp;G providing justification for their suitability.</p> <p>JBS&amp;G's 2017 groundwater analysis assessed potential PFAS contamination across the Central Precinct Development. PFOS, PFOA, and PFHXS concentrations in current site area samples were reported below LOR and adopted criteria, with only two down-gradient wells indicating PFHXS concentrations above the limits.</p> <p>A historical site review and a site-wide PFAS screening, it was determined that PFAS impacts were absent in the Central Precinct Development area.</p>
<b>Conclusions and Recommendations</b>	The Auditor concurs with JBS&G, stating that the site has been appropriately characterized for residential purposes when considering the comprehensive results of the historical assessment, infill (validation), and evaluation of previously inaccessible audit areas. Additionally, the materials imported onto the site are confirmed to meet the Imported Fill Protocol (IFP) and are deemed suitable for the proposed residential land use.



Item	Description
	The site audit report conclude that, the site is suitable for residential land use with access to soils.
JBS&G – <i>Contamination Management Plan</i> , prepared for Maryland Development Company Pty Ltd – dated 5 March 2021.	
<b>Background and Scope of works</b>	<p>The report was commissioned by Maryland Development Company Pty Ltd (MDC) to provide a revised Contamination Management Plan (CMP) for the Central Precinct Development (CPD) and associated Regional Park Site, located at Llandilo, NSW. It is noted that the sites' (i.e., Lot 2&amp;3 DP 1248480) footprint is contained within the CPD boundary, which is situated within the greater former Australian Defence Industries (ADI) St Mary's property, as ascertained from aerial figures and information provided in the JBS&amp;G (2015) report.</p> <p>The CPD area was subject to extensive investigation and remediation works since the 1990s with the objective of: (a) assessing the nature and degree of remnant munition and chemical contamination associated with the historic use of the site by ADI; and (b) subsequent remediation of the land to a level suitable for the development of the land for a variety of land uses, including residential.</p>
<b>Conclusions and Recommendations</b>	As deduced from the CMP document, the subject site is covered by SAS No: CHK001/01, certified by NSW EPA accredited auditor Mr. Christopher H. Kidd of HLA-Envirosciences Pty Ltd on 7 June 1999. SAS (CHK001/01) stipulates that the site is suitable for the development of a secondary school.
WSP – <i>Geotechnical Investigation Report – Factual</i> , prepared for Lendlease Communities Pty Ltd – dated 28 April 2023.	
<b>Background and Scope of works</b>	<p>The report details the factual results obtained during geotechnical field and laboratory investigations carried out by WSP on behalf of Lendlease Communities Pty Ltd at part of Jordan Springs East (JSE) Stage 3, 4C, 5A, 5B1 and 6 development areas. It is understood that the combined JSE Stage 5A &amp; 5B development areas represent the investigation footprint subject to this PSI.</p> <p>The site was subject to extensive anthropogenic filling during 2016-2017. Natural surface levels were raised from 17 – 20 m AHD to an engineered 22 – 25 m AHD as part of easement works for the expansion of the residential district.</p> <p>A total of nine (9) test pits and nine (9) boreholes were advanced within the site boundary. Test pits were advanced to depths ranging from 3.40 m bgl to 5.10 m bgl and were advanced using a 14-ton excavator. Boreholes were advanced to depths ranging from 2.40 m bgl to 6.45 m bgl and are understood to have been completed using solid flight auger drilling techniques. One (1) borehole (BH-P2-28) was finished with a groundwater monitoring well and was constructed with a 3 m length screen, extending from 3 m bgl – 6 m bgl within natural materials.</p>
<b>Results and Conclusions</b>	<p>The recorded subsurface conditions within the site boundaries consisted of an upper stratum comprising variable fill assemblages of gravel, sand, silt and clay that extended from the surface to depths ranging from 2.3 m bgl to 4.9 m bgl, and an underlying stratum comprising natural alluvium soils. Traces of foreign materials were observed at most locations, including crushed concrete and brick.</p> <p>Laboratory salinity testing was undertaken for three (3) samples collected from fill materials at three (3) separate sampling locations within the site boundary, with results indicating that the fill materials are slightly saline.</p>
GLN – <i>Statement of Environmental Effects</i> , prepared for Maryland Development Pty Ltd – dated 15 May 2023.	
<b>Objectives</b>	<p>The report has been prepared for the purposes of:</p> <ul style="list-style-type: none"> <li>• Demonstrating that potential soil contamination impact at the site have been considered, and</li> <li>• Outlining steps to be undertaken to protect the environment or to mitigate against any potential harm, if necessary.</li> </ul>
<b>Background and Scope of works</b>	GLN was commissioned by Maryland Development Pty Ltd to prepare a Statement of Environmental Effects (SEE) to accompany a development application (DA) seeking development consent from Penrith City Council (Council) for the staged



Item	Description
	development of the Stage 3 Jordan Springs estate that comprise Lots 1, 2, 3 and 6 in Deposited Plan 1248480; Wianamatta Parkway, Jordan Springs NSW.
<b>Results</b>	The lands are zoned Urban and Regional Open space, for which the proposal is permissible with consent in accordance with the provisions of State Environmental Planning Policy (Precinct – Western Parkland City) 2021.
<b>Conclusions and Recommendations</b>	The report concluded the site suitable for the type of development proposed.
WSP – Site-wide Earthwork Specification, prepared for Lendlease Communities Pty Ltd – dated 22 January 2024.	
<b>Objectives</b>	
<b>Background and Scope of works</b>	<p>The report details the technical requirements and construction standards for all earthworks for Jordan Springs Central Precinct development carried out by WSP on behalf of Lendlease Communities Pty Ltd at part of Jordan Springs. This Specification has been prepared for Jordan Springs Central Precinct Stages 3, 5 &amp; 6 (previously Village Park, Stage 3B2, 3C, 4D, 5A, 5B1, 5B2, 4C and Stage 6), which are earmarked for future housing development and associated infrastructure (roads, community spaces, etc.).</p> <p>The report further discusses the general earthwork requirements such as site preparation, earthworks methodology, bulk fill material compliance, placement of bulk earthworks fill interface construction sequence, and reporting and completion of works.</p>
<b>Results</b>	<p>Earthworks specification stated in the report includes the bulk earthworks requirements for removal and replacement of existing fill material within the site.</p> <p>Existing fill thickness generally varies from 3m to 7m deep.</p>
<b>Conclusions and Recommendations</b>	The report does not indicate the fill thickness within the proposed Jordan Springs School site, with the purpose of the report more aimed towards quality control of importing soils.
Stantec Australia Pty Ltd, Preliminary Desktop Site Investigation – Contamination, Prepared for School Infrastructure NSW, dated 15 March 2024.	
<b>Objectives</b>	The objectives of the PSI were to assess whether contamination has the potential to exist on the site and whether further investigation is needed.
<b>Background and Scope of works</b>	<p>Stantec Australia Pty Ltd (Stantec) was engaged by Schools Infrastructure NSW (SINSW) (the client) to complete a Preliminary Site Investigation (PSI) at the proposed site under consideration for the development of a new High School at Jordan Springs, located at Infantry Street, Jordan Springs NSW (herein referred to as 'the site'). The site locality and layout are shown in <b>Figure 1</b> in Error! Reference source not found.. The PSI was prepared in accordance with the scope of works presented in an email proposal submitted to the client on the 17<sup>th</sup> of October 2023.</p> <p>Jordan Springs is currently planned for redevelopment into a precinct by Lendlease. The Masterplan for Jordan Springs and the draft preliminary site testing and block stack for the site is included in <b>Appendix B</b>.</p> <ul style="list-style-type: none"> <li>• A desktop study of information for the site and surrounds.</li> <li>• A site walkover by an experienced environmental scientist to identify potential sources of contamination. The inspection was primarily focused on the portions of the site that are proposed for upgrade and alteration, however, the broader site was also inspected but to a lesser extent;</li> <li>• Interviews with relevant persons, where possible;</li> <li>• Review of historical reports;</li> <li>• Development of a Preliminary Conceptual Site Model based on the information gathered during the desktop study and site inspection; and</li> <li>• Preparation of a PSI report detailing the findings, conclusions, and recommendations for the site (this report).</li> </ul>



Item	Description
<b>Conclusions and Recommendations</b>	<p>Upon completion of the PSI, the following conclusions were drawn:</p> <ul style="list-style-type: none"> <li>• Aerial images review did not indicate significant changes in the site since 1949 except imagery from 2016 showing earth works for the recent development project;</li> <li>• The historical report review, indicated part of the ADI St Marys Property, had a pre-WW2 history as farmland and natural bushland. During WW2, it became a Commonwealth Government explosives factory, primarily for ordnance and ammunition filling operations.</li> <li>• JBS&amp;G has conducted contamination assessments including infill (validation) and groundwater sampling to assess current site conditions between 2016 to 2018. The most recent audit report by ZOIC Environmental Pty Ltd (March, 2018) states that the site has been appropriately characterized for residential purposes when considering the comprehensive results of the historical assessment, infill (validation), and evaluation of previously inaccessible audit areas. Additionally, the materials imported onto the site are confirmed to meet the Imported Fill Protocol (IFP) and are deemed suitable for the proposed residential land use.</li> <li>• Geosyntec (formerly ZOIC), advised SINSW that since their company provided the statement, it appeared groundworks had been undertaken and, in their opinion, the statement is no longer valid or a new and updated statement should be provided, once Lendlease provide all information required for such statement.</li> <li>• In consideration of the desktop review, document review, and site inspection, the following potential sources of contamination were identified as potentially creating exposure pathways for the proposed land use; <ul style="list-style-type: none"> <li>○ Potentially contaminated fill material imported to the site and dam wall. This risk and likelihood are considered low to medium;</li> <li>○ Potentially contaminated dam water and dam sediments. The risk and likelihood are considered low to medium; and</li> <li>○ Potentially contaminated from VOCs due to process of ordnance cleaning is low to medium</li> </ul> </li> </ul> <p>Based on the findings of the report, the following recommendations are made:</p> <ul style="list-style-type: none"> <li>• Any additional reports prepared as part of the separate Lendlease DA should be provided and reviewed by Stantec as part of any additional works.</li> <li>• An intrusive investigation is recommended at the locations proposed for disturbance and new construction (as indicated in the preliminary site testing and stack plan). The basis for this recommendation is the observations of fill across the site that is of an unknown origin and quality.</li> <li>• The investigation should be targeted at locations where earthworks and ground disturbances are necessary for the proposed development.</li> </ul>



## 5 Conceptual Site Model

A conceptual site model (CSM) provides a representation of site geology and groundwater conditions (groundwater levels and quality) to support the Assessment. Regarding groundwater quality, the fate and transport of contaminants of potential concern within the context of site-specific subsurface conditions regarding their potential risk to human health and the environment.

Potential risk to human health and the environment is identified through complete Source – Pathway – Receptor (SPR) linkages. To identify SPR linkages, the CSM considers site specific factors including:

- Source(s) of contamination.
- Identification of contaminants of concern associated with past (and present) source(s).
- Site specific information including soil type(s), depth to groundwater, effective porosity, groundwater flow velocity and surface water bodies and interactions.
- Locations of any identified sources relative to the proposed site activity.
- Actual or potential receptors considering both current and future land use both for the site, adjacent properties, and any identified sensitive ecological receptors.

### 5.1.1 Identified potential contamination sources

Based on review of the historical reports, site history and surrounding land uses, Stantec have identified the following potential sources of contamination that may be encountered onsite which are presented in **Table 5-1** below.

**Table 5-1 Contamination Sources Summary**

Contamination Source	Description	Contaminants of Concern	On/off Site
<b>Potentially contaminated fill materials imported to the site</b>	Evidence of filling was noted during the ground preparation works for the project. Also, it is possible to import materials for filling of the dam wall.  It is unknown if the fill was site-won during historical cut or imported. Chemical properties were unknown.	Metals, TRH, BTEX, PAH, OCP/OPP, asbestos, PFAS, VOC, TCE	On site
<b>Dam sediments and dam water</b>	The water quality of the dam and the contamination status of the dam sediments remained unknown, with potential influences from imported fill.	Metals, TRH, BTEX, PAH, OCP/OPP, PFAS, VOC, TCE	On site
<b>Historical ADI's explosives factory for ordnance and ammunition filling, tested and related procedures</b>	Contamination can be transferred to soil and groundwater due to past practices and disposal methods in explosive manufacturing. Contaminants such as Trichloroethylene (TCE) may have been used for degreasing and cleaning.	VOC, TCE, PCE, TCA	On site
<b>Potentially contaminated groundwater flow from off-site sources</b>	Potentially contaminated groundwater both via seepage flows between the interface of the fill and alluvium deposits as well as within the water table could be migrating onto the site.	TRH, BTEX, PFAS, TCE, PCE, TCA	Off site



Contamination Source	Description	Contaminants of Concern	On/off Site
Notes: <b>Metals</b> (standard 8), <b>total recoverable hydrocarbons (TRH)</b> , benzene, toluene, ethylene and xylene (BTEX), <b>polycyclic aromatic hydrocarbons (PAH)</b> , organochlorine / organophosphorus pesticides (OCP/OPP), asbestos, <b>Per- and polyfluoroalkyl substances (PFAS)</b> , <b>Volatile Organic Compounds (VOCs)</b> , Trichloroethylene (TCE), Perchloroethylene (PCE), Trichloroethane (TCA)			

### 5.1.2 Identified Receptors

A high-level summary of potential receptors considered to be susceptible to site contamination include:

- Future students, staff, and visitors attending the school, post-construction.
- Teachers and school staff including groundskeepers and contractors.
- Workers during construction of the proposed activities.
- Adjacent site users.
- Ecological receptors on-site such as vegetation, waterbodies and shallow groundwater.
- Ecological receptors off-site receiving groundwater and/or surface water originating from the site.

The preliminary CSM applicable to the site is summarised in **Table 5-2** and applies to the potential future land use settings.



**Groundwater Impact Assessment**  
Conceptual Site Model

**Table 5-2 Preliminary Conceptual Site Model**

Contamination Source	Potentially Impacted Media	Contaminants of Potential Concern	Potential Exposure Pathways	Receptors	Likelihood of complete exposure pathway
Potentially contaminated fill materials imported to the site	<ul style="list-style-type: none"> <li>Soils</li> </ul>	<ul style="list-style-type: none"> <li>Metals, TRH, BTEX, PAH, OCP/OPP, asbestos, PFAS, VOC, TCE</li> </ul>	<ul style="list-style-type: none"> <li>Direct contact</li> <li>Incidental ingestion</li> <li>Incidental inhalation dust and/or fibres (asbestos)</li> <li>Vapour intrusion (volatiles only)</li> </ul>	<b>Human:</b> <ul style="list-style-type: none"> <li>Current site users.</li> <li>Future Site workers (including maintenance workers) and students / staff.</li> </ul> <b>Ecological:</b> <ul style="list-style-type: none"> <li>Receiving water bodies.</li> <li>Flora and fauna dependant on soil and waters in potentially impacted areas.</li> </ul>	<u>Low to medium likelihood:</u> filling was evident at various locations within the site, such as roads and dam wall, quality of fill is currently unknown.
Dam sediments and dam water	<ul style="list-style-type: none"> <li>Water and sediments</li> </ul>	<ul style="list-style-type: none"> <li>Metals, TRH, BTEX, PAH, OCP/OPP, PFAS, VOC, TCE</li> </ul>	<ul style="list-style-type: none"> <li>Dermal contact</li> <li>Ingestion</li> <li>Inhalation</li> <li>Direct uptake</li> </ul>		<u>Low likelihood:</u> Accumulated contaminants could potentially be present in the dam water and sediment due to leaching of contaminants from soil and receiving impacted surface water / groundwater from on-site and off-site sources, however, the likelihood is considered low.
Historical ADI's explosives factory for ordnance and ammunition filling, tested and related procedures	<ul style="list-style-type: none"> <li>Soil</li> <li>Groundwater</li> </ul>	<ul style="list-style-type: none"> <li>VOC, TCE, PCE, TCA</li> </ul>	<ul style="list-style-type: none"> <li>Vapour intrusion</li> </ul>		<u>Low likelihood:</u> Possible TCE contaminants originating from degreasing and cleaning processes, however, the likelihood is considered low.
Potentially contaminated groundwater flow from off-site sources	<ul style="list-style-type: none"> <li>Water and sediments</li> </ul>	<ul style="list-style-type: none"> <li>TRH, BTEX, PFAS, TCE, PCE, TCA</li> </ul>	<ul style="list-style-type: none"> <li>Dermal contact</li> <li>Ingestion</li> <li>Direct uptake</li> </ul>		<u>Low likelihood:</u> waters from on-site and off-site, if contaminated, have potential to impact down-gradient receptors, however, the likelihood is considered low.





## 6 Preliminary Risk Identification

The following considerations were made in relation to:

- Groundwater within the water-table aquifer developed in the fill and alluvium.
- Regional aquifer developed in the variably fractured and weathered shale.

### 6.1 Environmental and Cultural Values

The groundwater and surface water environmental values for the site and surrounding area (ecological and human) include:

- Ecological systems: such as groundwater dependent ecosystems (aquatic and terrestrial) and water ways.
- Human uses: visual amenity and aesthetics of surface waters.
- Buildings and structures: this includes protection from groundwater quality and conditions that can degrade building materials through contact; for example, the weakening of building footings resulting from chemically aggressive groundwater.

Cultural and spiritual values that are associated with the environment, including groundwater, should also be protected. Cultural and spiritual values may include spiritual relationships, sacred sites, customary uses, the plants and animals associated with the water, drinking water supplies and recreational activities. In managing groundwater contamination, it is generally considered that cultural and spiritual values will be protected where groundwater quality protects all other relevant environmental values on a site.

The groundwater and surface water environmental values that were evaluated are summarised for both onsite and offsite, and provided in **Table 6-1**.

**Table 6-1: Assessment of Groundwater & Surface Water Environmental Values**

Environmental Value	Applicable	Comment
<b>Protection of aquatic ecosystems</b>	Yes	The potential receiving water body for the site is an unnamed ephemeral drainage line in the north-eastern corner of the site. It flows north-west into private dams or ponds before continuing into Swamp Creek. Swamp Creek is considered a freshwater system that could be impacted by shallow groundwater flow. Protection of freshwater aquatic ecosystems downgradient of the site is considered an applicable environmental value.
<b>Drinking water</b>	No	The site is in an area serviced by reticulated drinking water supply. A bore search did not identify bores downgradient of the site registered for drinking water extraction. This environmental value is not considered relevant for the site.
<b>Irrigation &amp; Stock Watering</b>	Yes	Although no onsite or offsite use of groundwater for irrigation purposes has been identified, a groundwater bore located approximately 1,260 m to the north-east of the site was identified for



**Groundwater Impact Assessment**  
Preliminary Risk Identification

Environmental Value	Applicable	Comment
		<p>stock and domestic use. Further, the onsite drainage line flows into private dams and pond, likely used for livestock watering.</p> <p>On-site use of the dam for irrigation purposes is unknown. In the event that the site dam is used for dust suppression or irrigation, this environmental value has conservatively been considered applicable as a preliminary screening value.</p>
<b>Industrial Use</b>	No	No onsite or offsite use of groundwater for industrial purposes has been identified. This environmental value is not considered relevant for the site.
<b>Aquaculture and human consumption of aquatic foods</b>	No	A review of the NSW Department of Primary Industries NSW Aquaculture Industry Directory 2019 did not list an aquaculture producer on or in close proximity to the site. As such, this environmental value is not considered relevant.
<b>Recreational Use</b>	No	<p>There is minimal possibility that whole body primary or incidental secondary contact to surface water (ephemeral drainage line) occurs either for school children or workers during construction.</p> <p>Definitions of water contact are as follows:</p> <ul style="list-style-type: none"> <li>• Whole body contact (primary contact) — activity in which the whole body or the face and trunk are frequently immersed or the face is frequently wet by spray, and where it is likely that some water will be swallowed or inhaled, or come into contact with ears, nasal passages, mucous membranes or cuts in the skin (e.g. swimming, diving, surfing or whitewater canoeing).</li> <li>• Incidental contact (secondary contact) — activity in which only the limbs are regularly wet and in which greater contact (including swallowing water) is unusual (e.g. boating, fishing, wading), and including occasional and inadvertent immersion through slipping or being swept into the water by a wave.</li> <li>• No contact (aesthetic uses) — activity in which there is normally no contact with water (e.g. angling from shore), or where water is incidental to the activity (such as sunbathing on a beach).</li> </ul> <p>The ephemeral drainage line in the northeastern portion of the site is considered aesthetic in nature with no clear usage for recreation. As such, this environmental value is not considered applicable.</p>
<b>Non-use scenarios (i.e. vapour inhalation and intrusion)</b>	Yes	<p>Groundwater health screening levels for vapour intrusion (HSLs) are published in the NEPC 2013, Schedule B1 for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways.</p> <p>Workers and future users/occupiers of the land may be exposed to vapours emanating from contaminated surface water if present. This environmental value was assessed as part of the DSI (Stantec, 2024).</p>
<b>Buildings and Structures</b>	Yes	<p>Potential interception of groundwater by building foundations could occur. Based on the geotechnical soil aggression assessment, the alluvial and residual soils were characterised as non-aggressive.</p> <p>No groundwater aggressivity has been assessed.</p>
<b>Visual amenity and aesthetics</b>	Yes	Surface waters with aesthetic or visual amenity issues may occur within the ephemeral drainage line and as such should be assessed.



## 6.2 Risk Consideration

Below are several general risk considerations for the construction and operational phase of the proposed activity.

The groundwater and surface water risk evaluations are summarised for both onsite and offsite, and provided in **Table 6-2**.

**Table 6-2: Groundwater and Surface Water Risk Evaluations**

Preliminary Risk	Consideration	Justification
Is the water source a highly productive aquifer or less productive (as defined in the AIP)?	<b>Less Productive</b>	The site sits within an area that typically contains extensive, fractured or fissured aquifers of low to moderate productivity.
What are the project activities that have the potential to <u>interact</u> groundwater?	<b>Building Piles</b>	The excavation required for ground leveling is not anticipated to intercept groundwater. No dewatering is required.  Building piles will intersect groundwater but are not anticipated to significantly disturb the flow of groundwater.
What are the project activities that have the potential to <u>affect</u> groundwater?	<b>None</b>	No activities are anticipated to affect (alter the quantity or quality) of groundwater and nearby surface water features.
Does the project have the potential to affect a highly connected alluvial aquifer?	<b>No</b>	Building piles will penetrate the alluvial aquifer but are not anticipated to affect the flow of shallow groundwater due to the small diameter (600 mm to 900 mm) and spacing (5 m to 10 m).
Does the project have the potential to affect high value GDE or culturally significant sites (defined in the water sharing plan)	<b>No</b>	No GDEs have been identified on the site.
Does the project have a basement	<b>No</b>	No basements are proposed.
Is the project a large coal mine or coal seam gas project	<b>No</b>	The project is not a large coal mine or coal seam gas project.
Does the project have the potential to affect Sydney drinking water supply	<b>No</b>	No nearby water supply features are anticipated to be intercepted or interacted with. The area is supplied with a reticulated water supply and the groundwater is unlikely to be potable.  Additionally, the site is not mapped within the Sydney Water Catchment area.
Does the project have the potential to affect town water supplies	<b>No</b>	No, see above point.
Is the project located near high density water supply works (for example, irrigation areas)	<b>No</b>	No irrigators or supply works were identified near the site.  It is noted that some irrigation likely takes place in surrounding agricultural lands, however, these areas are considered low risk due to the smaller amounts.



**Groundwater Impact Assessment**  
Preliminary Risk Identification

Preliminary Risk	Consideration	Justification
Is the project located in an area with high density of existing data (for example, government monitoring)	No	There are no known government monitoring groundwater bores nearby (within 1 km).
Is there a potential for sensitive receptors to be affected by the development	No	There are no identifiable sensitive groundwater receptors at or near the site.



## 7 Groundwater Assessment Criteria

**Table 6-1** Table 7-1 presents a summary of the environmental factors set out in the Part 5 guidelines that need to be considered and examples. These environmental factors are evaluated in **Section 11**.

**Table 7-1 Summary of Part 5 Environmental Factors and Examples**

Environmental factor	Example
a) Any environmental impact on a community	Social, economic and cultural impacts
b) Any transformation of a locality	Human and non-human environment
c) Any environmental impact on the ecosystems of the locality	Flora, fauna, ecological integrity, biological diversity, connectivity/fragmentation, air, water including hydrology, soil
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality	Visual, recreational, scientific and other
e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations	Aboriginal heritage (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and other
f) Any impact on the habitat of protected animals ( <i>within the meaning of the Biodiversity Conservation Act 2016</i> )	Listed species and habitat requirements/ critical habitat
g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	Listed species, non-listed species and key threatening processes
h) Any long-term effects on the environment	Ecological, social and economic
i) Any degradation of the quality of the environment	Ecological, social and economic
j) Any risk to the safety of the environment	Public health, contamination, bushfire, sea level rise, flood, storm surge, wind speeds, extreme heat, urban heat and climate change adaptation
k) Any reduction in the range of beneficial uses of the environment	Natural resources, community resources and existing uses



## Groundwater Impact Assessment

### Groundwater Assessment Criteria

Environmental factor	Example
l) Any pollution of the environment	Air (including odours and greenhouse gases); water (including runoff patterns, flooding/tidal regimes, water quality health); soil (including contamination, erosion, instability risks); noise and vibration (including consideration of sensitive receptors); or light pollution
m) Any environmental problems associated with the disposal of waste	Transportation, disposal and contamination
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	Land, soil, water, air, minerals and energy
o) Any cumulative environmental effect with other existing or likely future activities	Existing activities and future activities
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	Coastal processes and hazards (impacts arising from the proposed activity on coastal processes and hazards and impacts on the proposed activity from coastal processes and hazards), climate scenarios
q) Any applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act	Issues, objectives, policies and actions identified in local, district and regional plans
r) Any other relevant environmental factors	Any other factors relevant in assessing impacts on the environment to the fullest extent

The environmental properties of groundwater have been assessed against relevant environmental factors and values that are applicable to the type of water use and potential human health and ecological exposures that could occur from its use.

The water quality analytical results are compared to Tier 1 assessment criteria as made or approved under s105 of the CLM Act 1997 by NSW EPA. A Tier 1 assessment is a risk-based analysis comparing site data with generic investigation levels and screening levels for various land uses to determine the need for further assessment or development of an appropriate management strategy.

The applicable environmental values and groundwater assessment criteria are outlined in **Table 7-3** below, whereas the rationale for the criteria is provided further below.

In accordance with the Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC, 2007), groundwater acceptance criteria are based on environmental values considered



## Groundwater Impact Assessment

### Groundwater Assessment Criteria

relevant for groundwater use at the site and surrounding uses of groundwater that may be affected by the site. Environmental values include:

- Aquatic ecosystems: surface water and groundwater ecosystems;
- Human uses: these include but are not limited to potable water supply, agricultural water supply (irrigation and stock watering), industrial water use, aquaculture and human consumption of aquatic foods, recreational use (primary and secondary contact with surface waters) and visual amenity;
- Human health in non-use scenarios: this includes consideration of health risks that may arise without direct contact between humans and the groundwater, for example, exposure to volatile contaminants above groundwater contaminant plumes; and
- Buildings and structures: this includes protection from groundwater contaminants that can degrade building materials through contact; for example, the weakening of building footings resulting from chemically aggressive groundwater.

Cultural and spiritual values that are associated with the environment, including groundwater, should also be protected. Cultural and spiritual values may include spiritual relationships, sacred sites, customary uses, the plants and animals associated with the water, drinking water supplies and recreational activities. In managing groundwater contamination, it is generally considered that cultural and spiritual values will be protected where groundwater quality protects all other relevant environmental values on a site.

As identified in **Table 3-3**, a search of registered groundwater bores within a 1 km radius of the site was completed, with one well providing standing water level (SWL) information. GW111463 which is located 892 m southeast of the site reported a standing water level of 7.02 – 9.18 m BGL whilst GW111462, located 990 m southeast of the site reported a standing water level of 4.46 – 9.77 m BGL. All bore types were reported as monitoring with only information on bore depth provided. Based on this information, an assessment of the applicability of groundwater environmental values, both onsite and offsite, is provided in **Table 7-2**.

**Table 7-2 Groundwater assessment criteria**



## Groundwater Impact Assessment

### Groundwater Assessment Criteria

Environmental Value	Applicable	Rationale / Comment
Protection of aquatic ecosystems	Yes	The potential receiving water body for the site is an unnamed dam located at the eastern extent of the site. Further east is a tributary known as South Creek that discharges into the Hawkesbury River. Hawkesbury River is considered a freshwater system that could be impacted by shallow groundwater flow. Protection of freshwater aquatic ecosystems is considered an applicable environmental value.
Drinking water	No	The site is in an area serviced by reticulated drinking water supply. A bore search did not identify bores downgradient of the site registered for drinking water extraction. Based on the above, this environmental value is not considered to be directly relevant.
Irrigation	No	No onsite use of groundwater for irrigation purposes has been identified. A down-gradient bore, located approximately 980 m southeast has been identified as a monitoring bore, with no irrigation bores identified. As such, this environmental value is not considered relevant for the site.
Stock Watering	No	On-site use of groundwater for stock watering purposes is not currently practiced. A bore search did not identify domestic bores within 500 m of the site. This environmental value is not considered relevant.
Industrial Use	No	No onsite or offsite use of groundwater for industrial purposes has been identified. Specific industrial processes would require separate assessment and is not considered further in this report.
Aquaculture and human consumption of aquatic foods	No	A review of the NSW Department of Primary Industries NSW Aquaculture Industry Directory 2019 did not list an aquaculture producer on or in close proximity to the site. As such, this environmental value is not considered relevant.
Recreational Use	Yes	This environmental value may be relevant within the closest surface water bodies where groundwater migrates to the surface water body and secondary or primary exposure to the public occurs. The waterbodies located within the eastern portion of the site, and downgradient of the site to the east (particularly the South Creek) have potential to impact the future workers during construction through exposure to contaminants that have migrated in groundwater. Based on the distance to waterbodies, this environmental value is considered relevant. This environmental value may also be relevant to intrusive maintenance workers if groundwater is encountered at depths between 2 – 3 m bgl.
Non-use scenarios (i.e. vapour inhalation and intrusion)	Yes	Groundwater health screening levels for vapour intrusion (HSLs) are published in the NEPC 2013, Schedule B1 for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation pathways. Workers and future users/occupiers of the land may be exposed to vapours emanating from contaminated groundwater, if present. This environmental value should be assessed.
Buildings and Structures	Yes	Groundwater may come into contact with pilings and footings of proposed buildings and infrastructure. Corrosive waters, if present, are a cause of concern for buildings and infrastructure and so this environmental value should be assessed.
Visual amenity and aesthetics	No	Groundwater with aesthetic or visual amenity issues are unlikely based on the proposed land-use as a secondary high school campus.





## Groundwater Impact Assessment

Based on the above assessment, the relevant environmental values (REVs) for the site groundwater to be further assessed are:

- Protection of aquatic ecosystems;
- Recreational purposes;
- Non-use scenarios (vapour); and
- Buildings and structures.

Results should therefore be assessed against the assessment criteria provided in **Table 7-3**.

**Table 7-3 Groundwater Assessment Criteria**

Environmental Value	Guideline or Standard	Criteria
Aquatic ecosystems	ANZG 2018	Freshwater, 95% species protection default guideline values (DGVs). 99% species protection DGVs apply to bioaccumulative toxicants.
	For PFAS: HEPA NEMP 2020 (Ver. 2.0), Table 5	Freshwater, 95% species protection. The 95% species protection defaults to the 99% value as PFAS are bioaccumulative.
Non-use scenarios (i.e. vapour inhalation and intrusion)	NEPC 2013, Schedule B1, Table 1A(4)	HSL-A&B, NEPM 2013 GW HSL Residential setting, vapour intrusion.
Water impact on Buildings and Structures	Australian Standard 2159-2009 Piling-Design and Installation (AS2159)	Physicochemical parameters, where collected, will be compared against criteria



## 8 Results

### 8.1 Groundwater

Logs for boreholes and wells are presented in Appendix C.

#### 8.1.1 Field Observations

Each well was gauged using an oil/water interface probe to assess for the presence of light non-aqueous phase liquid (LNAPL) and to measure the standing water level. A summary of the gauging and survey data is provided below in **Table 8-1**. Key observation is that the shallowest depth to groundwater was 4.9

**Table 8-1 Groundwater Field Gauging Observations**

Well ID	Bore Depth (mTOC)	Screened Interval (mBGL)	TOC RL (mAHD)	Well stick up (m)	Surface RL (m)	Date	SWL (mTOC)	SWL (mBGL)	Elevation SWL (mAHD)
MW01	8.17	4.2 – 7.2	18.67	0.94	17.97	25/10/2024	5.78	4.84	35.05
MW02	8.96	5.5 – 8.5	19.69	0.64	19.10	25/10/2024	4.90	4.26	35.34
MW03*	10.49	1.0 – 10.0	22.04	0.80	21.24	25/10/2024	5.50	4.70	42.59
MW04*	10.80	1.0 – 10.0	19.24	0.73	23.01	25/10/2024	5.28	4.55	36.23
MW05*	15.60	3.0 – 9.0	23.04	0.80	22.24	25/10/2024	5.07	4.27	43.17

<sup>1</sup> Gatic (below ground level)

SWL: static water level

TOC: top of casing

RL: relative level

AHD: Australian height datum

\* installed predominantly for geotechnical purposes

#### 8.1.2 Water quality parameters

Groundwater wells were sampled utilising low-flow sampling techniques, in which wells were purged until groundwater field parameters were stabilised before collecting a sample. Groundwater field parameters and observations noted during the groundwater sampling event are shown below in **Table 8-2**, with the locations of groundwater wells indicated on **Figure 2, Appendix A**.



**Table 8-2 Groundwater Field Parameters**

Well ID	Date	pH	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Temp °C	Measured ORP (mV)	Observations
<b>MW01</b>	25/10/2024	5.40	357.6	0.10	19.2	107.2	Slight brown/grey, low turbidity.
<b>MW02</b>	25/10/2024	4.46	13,460	-0.03	20.0	164.6	Clear, low turbidity.
<b>MW03</b>	25/10/2024	5.70	11,824	-0.04	20.9	156.7	Light brown, medium turbidity.
<b>MW04</b>	25/10/2024	5.68	4,524	19.0	19.3	120.4	Brown, medium turbidity.
<b>MW05</b>	25/10/2024	11.72	3,760	-0.09	19.2	-371.1	Slight brown, low turbidity, low-moderate sulfur odour noted.

A brief interpretation of groundwater parameters is provided below:

- Groundwater on site was recorded as slightly acidic with the exception of MW05, which was moderately alkaline.
- Electrical conductivity varied, indicating both fresh water and brackish water conditions:
  - MW01 recorded the lowest electric conductivity, indicating fresh water;
  - MW02 and MW03 recorded the highest electrical conductivity readings, indicating brackish water conditions.
- All sample locations recorded oxidising water conditions with the exception of MW05 which recorded reducing conditions.
- No odours were noted in MW01, MW02, MW03 and MW04.
- Sulfur/organic odour noted in MW05 is potentially the result of the well being drilled into an acidic bedrock, noting that MW05 is a geotechnical well which was sampled opportunistically and was drilled significantly deeper than MW01, MW02, MW03, and MW04 (see **Table 8-1**)
- Dissolved oxygen was low in the majority of samples with MW01, MW02, MW03 and MW05 indicating an anoxic environment. Dissolved oxygen recorded at MW04 indicated oxic conditions.

### 8.1.3 Analytical results

**Table 8-3** below summarises exceedances of adopted groundwater criteria, with the remainder of samples reported below the laboratory LOR or the adopted screening criteria. Laboratory certificates are presented in Appendix D.

**Table 8-3 Groundwater Exceedance Summary**

Analyte	Adopted Criteria	Sample Location	Laboratory Result
<b>Cadmium (filtered)</b>	ANZG (2018) Freshwater 95% toxicant DGV (0.2 µg/L)	MW02	0.4 µg/L
		QC100	0.3 µg/L



## Groundwater Impact Assessment Results

Analyte	Adopted Criteria	Sample Location	Laboratory Result
<b>Copper (filtered)</b>	ANZG (2018) Freshwater 99% toxicant DGV (0.06 µg/L)	MW04	0.1 µg/L
		QA100	0.2 µg/L
	ANZG (2018) Freshwater 95% toxicant DGV (1.4 µg/L)	MW02	100 µg/L
		MW03	2 µg/L
		MW04	4 µg/L
		QA100	12 µg/L
		QC100	30 µg/L
<b>Mercury (filtered)</b>	ANZG (2018) Freshwater 95% toxicant DGV (0.6 µg/L)	MW05	1.1 µg/L
<b>Mercury (filtered)</b>	ADWG 2022 Health (1 µg/L)	MW05	1.1 µg/L
<b>Nickel (filtered)</b>	ANZG (2018) Freshwater 95% toxicant DGV (11 µg/L)	MW02	349 µg/L
		MW03	61 µg/L
		MW04	39 µg/L
		QA100	94 µg/L
		QC100	79 µg/L
	ADWG 2022 Health (20 µg/L)	MW02	349 µg/L
		MW03	61 µg/L
		MW04	39 µg/L
<b>Zinc (filtered)</b>	ANZG (2018) Freshwater 95% toxicant DGV (8 µg/L)	MW01	25 µg/L
		MW02	298 µg/L
		MW03	16 µg/L
		MW04	133 µg/L
		QA100	208 µg/L
<b>PFOS</b>	PFAS NEMP 2.0 Table 5 Freshwater 99% (0.00023 µg/L)	MW01	0.0013 µg/L
		MW02	0.0017 µg/L
		MW03	0.0006 µg/L
		MW04	0.0109 µg/L
		MW05	0.0105 µg/L
		QA100	0.0092 µg/L
<b>Sodium (filtered)</b>	ADWG 2022 Aesthetic (180,000 µg/L)	MW02	1,770,000 µg/L
		MW03	2,430,000 µg/L
		MW04	839,000 µg/L
		MW05	438,000 µg/L



## **9 Discussion**

### **9.1 Groundwater**

#### **9.1.1 Human Health Criteria**

All groundwater samples were assessed against the human health criteria applicable to the proposed future land use, considerate of the design drawings available at the time of preparing this report.

Contaminant concentrations in groundwater were reported either below the laboratory LOR or the adopted human health assessment criteria for the current and proposed future land use scenarios.

#### **9.1.2 Ecological Criteria**

The groundwater wells that were able to be sampled are targeting an aquifer in weathered shale. This has been inferred from the noted SWLs during groundwater gauging, and soil and geological assessment during drilling and well installation records.

##### **9.1.2.1 Metals**

Some dissolved and total metals including cadmium, copper, nickel and zinc were reported at concentrations above the adopted ecological screening criteria. The elevated concentrations of metals are inferred to be reflective of the natural background levels (for metals such as cadmium) within the alluvial floodplain deposits and Bringelly shale, which is within proximity to the site. This is supported by the absence of elevated metals concentrations in soil, indicating no on-site source. The mercury concentration in sampling location MW05 (1.1 µg/L) exceeded the adopted ecological screening criteria, indicating a possible anthropogenic source, likely off-site based on the absence of mercury in soil. When reviewing the site history, laboratory data and inferred groundwater flow, there is no clear on-site source or trend for the mercury exceedances. However, on-site stormwater infrastructure and/ or off-site regional residential/ industrial use may be impacting groundwater quality beneath the site.

##### **9.1.2.2 pH**

A highly alkaline pH was recorded in groundwater at MW05, differing to all other wells which recorded slightly to moderately acidic conditions onsite. pH readings within monitoring well MW05 has remained consistent throughout the development and monitoring stages of works.

Monitoring well installation at MW05 utilised a coring methodology and was installed predominantly for geotechnical purposes and was opportunistically utilised for environmental assessment of groundwater conditions. pH readings are considered to be attributed to potential grout ingress as opposed to regional groundwater conditions within the site area.



MW05 is located toward the western portion of the site, which is inferred to be upgradient. The four other wells on site, including some down-gradient of MW05, possessed a slight to moderate acidity and were relatively comparable, most likely to represent local groundwater conditions. Based on this the conditions at MW05 are considered localised.

#### **9.1.2.3 PFOS**

PFOS exceedances of the 99% protection criteria were reported for all analysed groundwater samples across the site. PFAS was not identified in any soil samples collected and analysed from within the site, and as such the contaminant is unlikely to be originating from an on-site source.

The greatest concentrations of PFOS were reported in samples MW04, MW05 and QA100 (duplicate of MW04), where concentrations were one order of magnitude greater than the concentrations reported in MW01 and MW02. Monitoring wells MW04 and MW05 are situated toward the higher elevations of the western site boundary, indicating that an off-site source may exist to the west (off-site).

PFOS concentrations were also compared against the draft NEMP 3.0 PFAS 99% protection criteria, revealing three (3) exceedances (MW04, MW05 and QA100). Based on Stantec's understanding of the proposed land use, the exceedances are not considered to pose a significant risk to on-site ecological receptors. If regionally present in groundwater, it is likely that the downgradient receiving environment would also be impacted by low levels of PFOS.

Under a scenario where groundwater is used for irrigation, extracted during construction, utilised during operation and/or dewatering, a complete source receptor pathway linkage may exist to ecological receivers depending on the management and fate of such waters. In this instance, further assessment would be necessary. Based on Stantec's understanding of the proposed land use, interactions with groundwater would be unlikely except for building piles.

#### **9.1.2.4 Construction Consideration**

Based on the latest footing layout, piles will intersect groundwater. Several measurements of groundwater EC indicated that the groundwater was brackish. Therefore, design of the piles that will be in contact with groundwater will need to take this into account with regards to corrosion.

If other groundwater interactions occur during construction, such as encountering ephemeral perched groundwater, appropriate mitigations and controls are required under the contractors Construction Environmental Management Plan (CEMP) so that potential impacts to ecological receptors does not occur.



## 10 Revised Conceptual Site Model

With the additional information collected as part of this Assessment, the preliminary CSM summarised in **Section 4.1** has been revised and updated to focus on groundwater (**Table 10-1**).



**Groundwater Impact Assessment**  
Revised Conceptual Site Model

**Table 10-1 Revised Conceptual Site Model**

Contamination Source	Potential Impacted Media	Contaminants of Potential Concern	Potential Exposure Pathways	Receptors	Likelihood of complete exposure pathway
Impacted groundwater onsite	<ul style="list-style-type: none"> <li>Groundwater</li> </ul>	<ul style="list-style-type: none"> <li>PFAS</li> <li>Metals</li> </ul>	<ul style="list-style-type: none"> <li>Direct contact</li> <li>Incidental contact</li> <li>Incidental inhalation</li> </ul>	School occupants South Creek ecosystem Building Piles	<p><u>Low to moderate</u>: contaminated groundwater has the potential to come into contact with human receptors during construction and/ or excavation works. Although the contamination status of the groundwater is considered low, if groundwater seepage is encountered at any stage during excavation or piling activities, a Stantec representative is to be notified and assess the site before works are to commence.</p> <p>For building piles, which are anticipated to interact with site groundwater: piles must be designed to be compatible with potentially aggressive site groundwater and soil.</p>





## 11 Groundwater Impact Assessment

Based on our desktop review, no groundwater or seepage was encountered shallower than 4 mBGL. This indicates that the activity will not intersect the water table or regional aquifer except where piles are constructed. Perched groundwater may occur locally and seasonally at the fill and alluvium interface.

### 11.1 Aquifer Interference Assessment

As set out in the 2012 NSW Aquifer Interference Policy (AIP), an aquifer is considered a material that is or has the potential to be saturated with water. The AIP defines aquifer interference activities relevant to the proposed works at the site area includes:

- Penetration of an aquifer.
- Interference with groundwater in an aquifer.
- Obstruction of the flow of groundwater in an aquifer.
- Disposal of groundwater extracted from an aquifer while carrying out mining or any other activity prescribed by the regulations.

Other activities set out in the AIP, such as mining activities, are not relevant to the proposed works at the site and are not considered further.

The aquifer interference assessment framework initially considers two questions to determine the level of assessment that is required (Department of Primary Industries 2013). Based on the framework construction and use of the activity was not defined as an aquifer interference activity except for piles to support buildings, which will penetrate the aquifer developed in the fill, alluvium and shallow bedrock. These piles, which will range in diameter between 600 mm and 900 mm with pile spacings ranging between 5 and 10 m, will interfere with the flow of groundwater. However, this interference is anticipated to be negligible.

### 11.2 Potential Impact on Current Groundwater Environmental Values

Given groundwater in the site wells was encountered at deeper than 4 mBGL, groundwater at the site is unlikely to be impacted by the proposed activity except for piles proposed as part of building footings. Results of sampling of groundwater indicated no exceedances for human health criteria. Exceedances of ecological groundwater criteria were noted for metals (cadmium, copper, nickel, and zinc), pH, and PFOS (**Section 9.1.2**).

Metals exceedances are inferred to reflect natural concentrations in the aquifer, which reflects site geology (alluvium and shale). Hence, it is considered that there is currently a low risk of impact on the future groundwater environmental values.



Elevated pH reported for MW05 is inferred to reflect interaction with grout used as part of well construction rather than reflecting ambient groundwater pH. Hence, it is considered that there is currently a low risk of impact on the future groundwater environmental values.

PFOS exceedances of the 99% protection criteria were reported for all groundwater samples. PFAS was not identified in any soil samples analysed from within the site, and as such the contaminant is unlikely to be originating from an on-site source. Hence, it is considered that PFAS is a regional contaminant that is unrelated to the proposed activity. Hence, it is considered that PFAS poses an acceptable risk of impact on the future groundwater environmental values.

### 11.3 Potential Impact of the Proposed Activity on Groundwater Environmental Values

Considerations of impact of the proposed development on groundwater quality was:

- Proposed building/structure foundations are unlikely to intercept the underlying aquifer except for piles. However, this would unlikely alter or impact groundwater quality and environmental values on- or off-site.
- The new building footprints may result in localised decrease in recharge potential. As the current recharge is a small contribution to recharge of the water table and the size of the proposed development is small compared to the groundwater catchment that recharges the aquifers, this decrease in recharge is not anticipated to adversely affect the water balance of the water-table aquifer.
- Storage and spill or loss of containment mitigation design features of hazardous material (such as fuels, paints, or oils) is assumed to be incorporated into the current design. Therefore, this does not pose a risk to environmental values.

In summary, the proposed development is considered a low risk of impact on groundwater environmental values.

### 11.4 Potential Impact of Site Groundwater on the proposed Activity

Groundwater can have deleterious effects on the uses of developed land in the following ways:

- Shallow groundwater can cause waterlogging and/or salinisation of the soil, leading to impacts on landscape and plants.
- Shallow groundwater can cause corrosion of concrete and metal components of infrastructure, particularly when the water is saline or corrosive.
- Shallow water table or mounding conditions can impact road/footpath pavements due to uplift pressures, erosion, differential moisture conditions and corrosive effects.

Considerations of impact of groundwater on the proposed activity was:

- Groundwater was measured to be at 4 mBGL in site wells. As such, shallow groundwater is not anticipated to be intercepted except by building piles. Hence, the materials used for the piles need to be compatible with the site brackish groundwater.



In summary, the potential impact of groundwater on the proposed activity is considered a low risk, assuming appropriate mitigation and design measures are implemented, such as taking into account brackish groundwater that may contact the building piles.

### 11.5 Part 5 Groundwater Impact Assessment

**Table 11-1 Evaluation of Part 5 Environmental Factors with Regards to Groundwater**

Environmental factor	Groundwater Impact Assessment
<b>a) Any environmental impact on a community</b>	Groundwater is deeper than 4 mBGL. Groundwater is inferred to be naturally elevated in some metals, which reflects the shale geology of the region, and PFAS, which is inferred to reflect regional impact.
<b>b) Any transformation of a locality</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater.
<b>c) Any environmental impact on the ecosystems of the locality</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater. No groundwater dependent ecosystems were identified at the site.
<b>d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater. Hence, with regards to groundwater, these elements are not relevant.
<b>e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater. Hence, with regards to groundwater, these elements are not relevant.
<b>f) Any impact on the habitat of protected animals (<i>within the meaning of the Biodiversity Conservation Act 2016</i>)</b>	Habitat of protected animals has not been identified at the site. Therefore, impact by groundwater is not anticipated.
<b>g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air</b>	The site had been cleared previously. Therefore, endangerment by groundwater is not anticipated.
<b>h) Any long-term effects on the environment</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater. Hence, with regards to groundwater, no long-term effects on the environment are anticipated.
<b>i) Any degradation of the quality of the environment</b>	Except for building piles, the proposed activity is not anticipated to encounter groundwater. Hence, with regards to groundwater, no degradation of the quality of the environment is anticipated.
<b>j) Any risk to the safety of the environment</b>	Groundwater is inferred to be naturally elevated in some metals, which reflects the shale geology of the region, and PFAS, which is inferred to reflect regional impact. Hence, with regards to groundwater, no risk to the safety of the environment is anticipated due to the proposed activity.
<b>k) Any reduction in the range of beneficial uses of the environment</b>	Groundwater will not be extracted at the site. Therefore, no reduction in groundwater resources



Environmental factor	Groundwater Impact Assessment
	is anticipated.
<b>l) Any pollution of the environment</b>	Groundwater is inferred to be naturally elevated in some metals, which reflects the shale geology of the region, and PFAS, which is inferred to reflect regional impact. Hence, with regards to groundwater, pollution of the environment is not occurring.
<b>m) Any environmental problems associated with the disposal of waste</b>	Not directly relevant to groundwater.
<b>n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply</b>	Groundwater will not be extracted at the site. Therefore, no reduction in groundwater resources is anticipated.
<b>o) Any cumulative environmental effect with other existing or likely future activities</b>	Except for building piles, the proposed <b>activity</b> is not anticipated to encounter groundwater. Hence, with regards to groundwater, these elements are not relevant. Groundwater will not be extracted at the site.
<b>p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions</b>	Site is not in a coastal setting.
<b>q) Any applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act</b>	None identified
<b>r) Any other relevant environmental factors</b>	Except for building piles, the proposed <b>activity</b> is not anticipated to encounter groundwater. Hence, with regards to groundwater, adverse impact on groundwater not anticipated assuming that controls set out in the site environmental management plan are implemented, such as bunding and containment of hazardous materials and maintenance of stormwater systems.



## 12 Data Gaps and Uncertainties

Based on the findings of this investigation, the following data gaps are noted:

- The source of PFAS in groundwater and surface water is unknown but is not considered to be from on-site impacts.
- Corrosion risk to piles from brackish site groundwater needs to be considered when designing piles that will be in contact with groundwater.



## 13 Conclusions and Recommendations

### 13.1 Conclusions

Stantec has completed this Assessment to support the proposed activities associated with the new High School for Jordan Springs under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI). The site is located at Corner of Infantry Street and Armoury Road, Jordan Springs NSW and legally identified as Part Lots 2 & 3 Lots Deposited Plan (DP) 1248480.

The proposed activities broadly consist of the following:

- A capacity of 1,000 students and 80 staff to meet forecast enrolment demand associated with population growth in Jordan Springs and Ropes Crossing.

The school will provide permanent General Learning Spaces (GLS), Support Learning Spaces (SLS), staff facilities and a library across three (3), three storey buildings, a single storey hall, half playing field, three (3) outdoor sport courts, 72 operational at grade parking spaces (including two (2) accessible spaces), 100 bicycle spaces and landscaping

The objective of the Assessment was to:

- Evaluate whether site groundwater is likely to adversely impact on the activity or the proposed activities on site groundwater.

Based on reviewed information gathered, the following is concluded that only building piles will interact with site groundwater. While some disruption of site groundwater flow is likely after pile construction, it is not anticipated to be significant. Therefore, adverse impact on groundwater by the proposed activity or adverse impact by groundwater on the proposed activity is not anticipated. Specifically:

- Adverse impact on Part 5 Environmental Factors with regard to groundwater is not anticipated.
- Potential adverse impact of the proposed activity on groundwater.
  - Construction of the new buildings and sealed areas is likely to locally reduce recharge to the water-table aquifer. However, considering the naturally low recharge rate and size of the proposed activity relative to the overall groundwater catchment, this is not anticipated to adversely affect the aquifer.
  - Piles are anticipated to encounter groundwater. Hence, interference with groundwater flow is anticipated. However, considering the small diameter of the proposed piles (between 600 mm and 900 mm) it is not anticipated that the piles would significantly alter the flow such that localised mounding would occur.
- Potential adverse impact of groundwater on the proposed activity.
  - Exceedances of ecological criteria for metals (cadmium, copper, nickel, and zinc) and PFOS were reported for site groundwater samples.
  - However, metals exceedances are inferred to reflect natural concentrations of these metals and PFAS exceedances are inferred to reflect ambient concentrations in regional groundwater.



- Hence, adverse impact of groundwater on the proposed activity is not anticipated except for the risk of corrosion of piles due to being in contact with brackish groundwater.

Based on the findings of this assessment, both activities scenarios (inclusive of construction of a temporary OSD basin, Scenario 2) are considered suitable options to facilitate future site activities, noting that a separate planning pathway is required for construction of a permanent off-site basin.

### **13.2 Mitigation measures and recommendations**

Based on the findings of this assessment and with reference to the proposed activity, purpose and objectives, mitigation measures set out in Stantec's 2024 DSI report shall be implemented.



## 14 Limitations

The agreed scope of this assessment has been limited for the current purposes of the client and based on access limitations identified herein. The assessment may not identify contamination occurring in all areas of the site or occurring after sampling was conducted. Subsurface conditions may vary considerably away from the sample locations where information has been obtained.

This Document has been provided by Stantec subject to the following limitations:

- This Document has been prepared for the particular purpose outlined in Stantec's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.
- The scope and the period of Stantec's services are as described in Stantec's proposal and are subject to restrictions and limitations. Stantec did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Document. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regard to it.
- Conditions may exist which were undetectable given the limited nature of the enquiry Stantec was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been considered in the Document. Accordingly, additional studies and actions may be required.
- In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Stantec's opinions are based upon information that existed at the time of the production of the Document. It is understood that the services provided allowed Stantec to form no more than an opinion of the actual conditions of the site at the time this Document was prepared and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.
- Any assessments made in this Document are based on the conditions indicated from published sources and the investigation described. No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this Document.
- Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Stantec for incomplete or inaccurate data supplied by others.
- Stantec may have retained sub consultants affiliated with Stantec to provide services for the benefit of Stantec. To the maximum extent allowed by law, the Client acknowledges and agrees it will not have any direct legal recourse to, and waives any claim, demand, or cause of action against, Stantec's affiliated companies, and their employees, officers and directors.

This assessment report is not any of the following:

- A geotechnical report and the bore logs/test pit logs may not be sufficient for geotechnical advice.
- A site audit report or site audit statement as defined under the Contaminated Land Management Act 1997.





## Groundwater Impact Assessment

- An assessment of groundwater contaminants potentially arising from other sites or sources nearby.
- A total assessment of the study area to determine suitability of the entire parcel of land at the study area for one or more beneficial uses of land.
- A ground gas risk assessment.



## Appendix A Figure







## Site Locality Plan

Infantry Street, Jordan Springs NSW

Project Code: 305001663  
Drawn By: CM, Checked By: FT  
Figure No: 01 | Rev: 01  
Date: 2024-11-07



### Legend

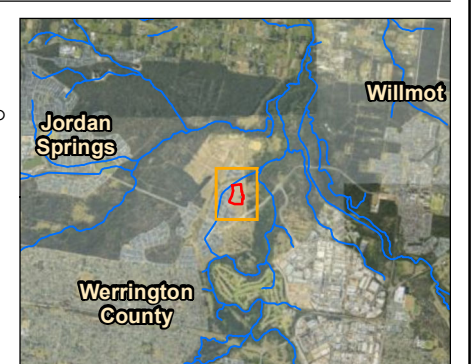
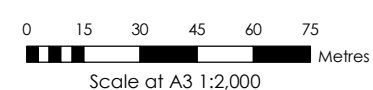
- Site Boundary
- Map Extent
- Cadastre (NSW SS, 2023)
- Watercourse (NSW SS, 2023)
- Contour (NSW SS, 2022)

### Notes:

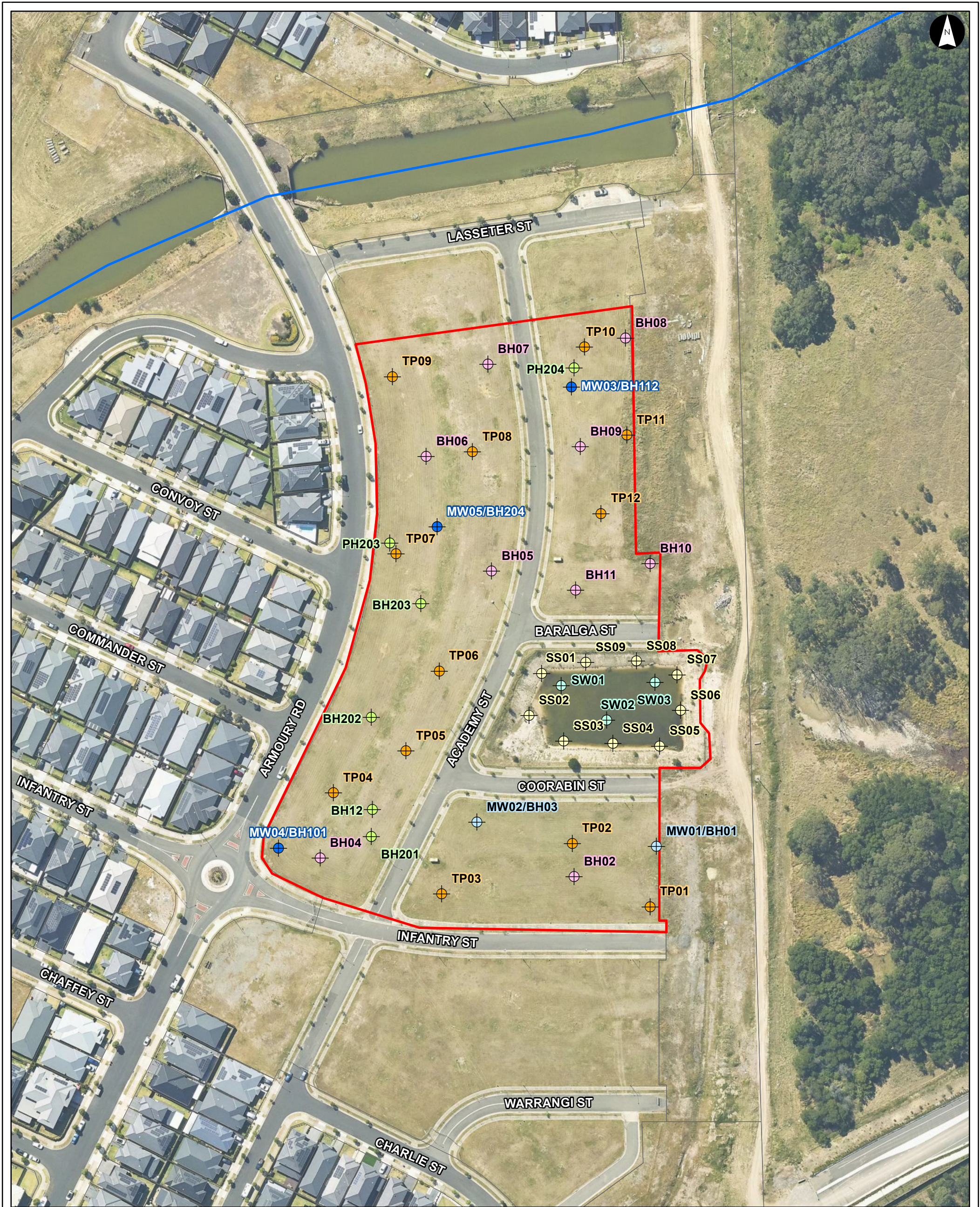
1. Coordinate System: GDA 1994 MGA Zone 56

### References:

1. Aerial imagery supplied by Metromap (September, 2024)







## Sample Plan

Infantry Street, Jordan Springs NSW

Project Code: 305001663  
Drawn By: CM, Checked By: FT  
Figure No: 02 | Rev: 01  
Date: 2024-11-07



### Legend

- |                         |                            |
|-------------------------|----------------------------|
| Site Boundary           | Sediment Sample            |
| <b>Test Locations</b>   | Surface Water              |
| Environmental Boreholes | Test Pits                  |
| Environmental Wells     | Cadastre (NSW SS, 2023)    |
| Geotech Borehole        | Watercourse (NSW SS, 2023) |
| Geotech Wells           | Map Extent                 |

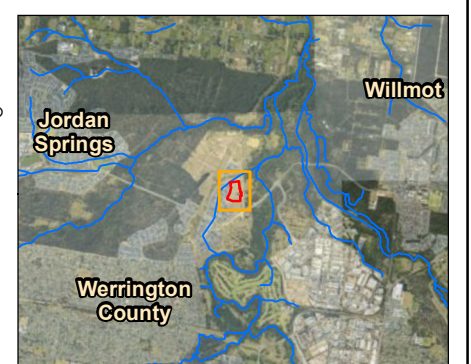
### Notes:

1. Coordinate System: GDA 1994 MGA Zone 56

### References:

1. Aerial imagery supplied by Metromap (September, 2024)

0 10 20 30 40 50  
Metres  
Scale at A3 1:1,500





## Appendix B Concept Design





## 6.0 PROPOSED DESIGN

### 6.1 Site Plan (Stage 2)

A 3 storey high school for up to 1000 students that provides a strong, articulated street presence. The school building sits outside bushfire zones and maximises the available open space allowing for a full size playing field, 4x playing courts and an open landscape setting.

The stage 2 master plan adds additional general learning teaching spaces (11) and support learning teaching spaces (3).

The design supports up to approximately 14m<sup>2</sup> of open play space / student

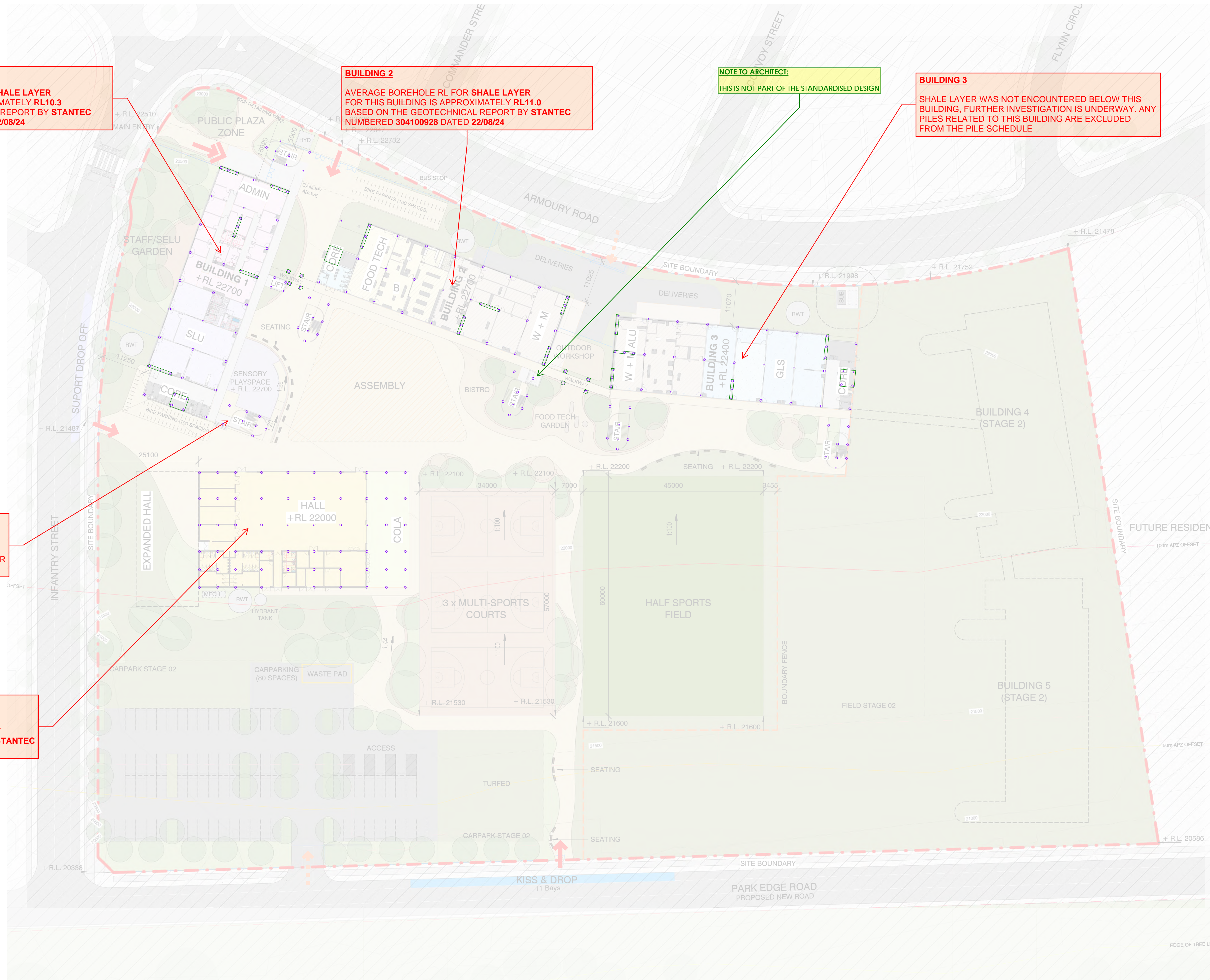
Notes:

- The final design and layout is subject to the selection of learning units and required staging
- Road reserves, building setbacks and transport infrastructure are indicative and subject to finalisation of precinct infrastructure and school transport planning
- Minor conversion of existing learning spaces may be required to facilitate an efficient stage 2 master plan
- Open play space calculation is a possible maximum. Actual area is subject to final site details, landscape design and building layout

#### Legend

- Site boundary
- Site setbacks (10m nom.)
- Stage 2 expansion
- Future expansion zone (if applicable)
- School entry point









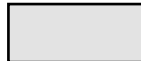
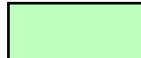
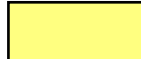

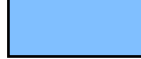





PILE SCHEDULE		
TYP. PILE BELOW	DIAMETER [mm]	ESTIMATED SOCKET LENGTH [m]
COLUMN	750	3.0
SHEAR/CORE WALL	900	14.0
STAIR/LIFT WALL	750	4.0
HALL	600	2.0

1. ESTIMATED PILE SOCKET LENGTH HAS BEEN CALCULATED FOR SOCKETING INTO SHALE LAYER

2. VERIFICATION OF THE PILE SOCKET LENGTH TO BE CONFIRMED WITH THE GEOTECHNICAL ENGINEERS

**PRELIMINARY**  
**NOT TO BE USED FOR CONSTRUCTION**

PLAN LEGEND	
	PILE
	CONCRETE SHEAR/CORE WALL
	CAPPING BEAM
	RETAINING WALL
	COLUMN
	PILE CAP
	GF ON-GRADE SLAB
	GF SUSPENDED SLAB
	L1/L2 SUSPENDED SLAB
	L1/L2 LINK SLAB
	ROOF STEELWORK
	LINK STEELWORK
	DOWELLED EXPANSION JOINT
	PERMANENT MOVEMENT JOINT
<b>NOTES:</b>	
1. ST-1000 SERIES DRAWINGS PROVIDE SITE SPECIFIC DESIGN INFORMATION. STANDARDISED STRUCTURE HAS BEEN ALTERED TO SUIT SITE SPECIFIC CONDITIONS AND DRAWN INDICATIVELY.	
2. ST-2000 SERIES DRAWINGS PROVIDE STANDARDISED DESIGN INFORMATION.	

CAPPING BEAMS AT SHEAR WALLS TO BE  
LOCATED AT NATURAL GROUND LEVEL.  
APPROXIMATELY, SHEAR WALLS TO EXTEND  
DOWN BELOW GROUND FLOOR TO TOP OF  
CAPPING BEAMS

PILE CAPS AT COLUMNS TO BE LOCATED AT  
NATURAL GROUND LEVEL APPROXIMATELY,  
COLUMNS TO EXTEND DOWN BELOW GROUND  
FLOOR TO TOP OF PILE CAPS

P1	100% CONCEPT	AS	AS	20.09.24
Rev	Description	Eng	Draft	Date
Project				

Jordan Springs High School

Sheet Subject

# SITE FOOTING PLAN

Client



NSW  
GOVERNMENT

Education

Architect

**djrd**  
architects

Structural Engineer



**TTW**  
www.ttwengineers.com

Scale at A1	Drawn	Designed	Approved
	AS	AS	GB

Project Number	Drawing Number	Revision
----------------	----------------	----------

232024 TTW-SK-ST-1010 P1





**PLAN LEGEND**

- PILE
- ▬ CONCRETE SHEAR/CORE WALL
- ▬ CAPPING BEAM
- ▬ RETAINING WALL
- COLUMN
- ▬ PILE CAP
- ▬ GF ON-GRADE SLAB
- ▬ GF SUSPENDED SLAB
- ▬ L1/L2 SUSPENDED SLAB
- ▬ L1/L2 LINK SLAB
- ▬ ROOF STEELWORK
- ▬ LINK STEELWORK
- ⋯ DEL DOWELLED EXPANSION JOINT
- ⋯ PMU PERMANENT MOVEMENT JOINT

**NOTES:**

1. ST-1000 SERIES DRAWINGS PROVIDE SITE SPECIFIC DESIGN INFORMATION. STANDARDISED STRUCTURE HAS BEEN ALTERED TO SUIT SITE SPECIFIC CONDITIONS AND DRAWN INDICATIVELY.

2. ST-2000 SERIES DRAWINGS PROVIDE STANDARDISED DESIGN INFORMATION.

P1	100% CONCEPT	AS	AS	20.09.24
Rev	Description	Eng	Draft	Date

Project  
Jordan Springs High School

Sheet Subject  
SITE GROUND FLOOR PLAN

Client

Architect

Structural Engineer

Scale at A1	Drawn	Designed	Approved
	AS	AS	GB

Project Number	Drawing Number	Revision
232024	TTW-SK-ST-1050	P1

**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION



## Appendix C Borehole and Well Logs







## Borehole Record: SED02

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)


**Inclination:**

**Date Drilled:** 08/10/2024

### Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey to silty SAND SC: low plasticity clay, lighr grey, loose, medium grained, trace medium sized gravel, wet, slight compost odour, no staining, no observed asbestos containing material.	W				
					SED02 Terminated at 0.5m (target depth)					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: SED03

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)


**Inclination:**

**Date Drilled:** 08/10/2024

Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey to silty SAND SC: low plasticity clay, light grey/yellow, very loose, medium grained, trace medium sized gravel, wet, slight compost odour, no staining, no observed asbestos containing material.	W				
					SED03 Terminated at 0.5m					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: SED04

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)


**Inclination:**

**Date Drilled:** 08/10/2024

Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey to silty SAND SC: low plasticity clay, grey, very loose, medium grained, with medium sized gravel, wet, light yellow inclusion @ 0.2mbgl. slight compost odour, no staining, no observed asbestos containing material.	W				
					SED04 Terminated at 0.5m					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: SED05

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

**Job No:** 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

Date Drilled: 08/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Michael Korner

[illegible]

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: SED06

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

**Date Drilled:** 08/10/2024

### Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

[illegible]

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: SED07

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

**Date Drilled:** 08/10/2024

### Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

[illegible]

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.





## Borehole Record: SED08

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

**Date Drilled:** 08/10/2024

### Drill Rig

Drill Supplier

**Logged/Checked:** Michael Korner

[illegible]

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## Test Pit Record: TP01

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** Not Surveyed  
**Inclination:**

**Date Drilled:** 09/10/2024  
**Excavator** 14 T  
**Excavator Supplier**  
**Logged/Checked:** Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.4		Fill		Sandy GRAVEL GW: pale grey, fine to coarse sized, trace cobbles. .					
	1				Gravelly CLAY CL: non-plastic to low, pale grey, fine to coarse sized gravel, inorganic, slightly moist to dry, angular gravels, pvc plastic encountered at 0.7m bgl, brick/cloth encountered at 1.0m bgl. brick to fabric to plastic pieces, no odour , no staining, no observed asbestos containing material.	SLM-D				
	1.3				Gravelly to sandy CLAY CH: high plasticity, red mottled grey, fine to coarse sized gravel, fine to coarse grained sand, inorganic, slightly moist, no odour , no staining, no observed asbestos containing material.	SLM				
	1.6				Gravelly to sandy CLAY CI: medium plasticity, brown mottled grey, coarse sized gravel, fine to coarse grained sand, inorganic, slightly moist, cobble boulders observed. metal post encountered at 2.6m bgl. . no odour , no staining.					
	2									
	3				Gravelly to clayey SAND SC: grey, coarse grained, fine to coarse sized gravel, moist, angular gravels.. no odour .	M				
	3.2				Gravelly to sandy CLAY CI: medium plasticity, grey pale, medium to coarse sized gravel, fine to coarse grained sand, inorganic, cobble boulders encountered..					
	4				TP01 Terminated at 3.6m (Achieved target depth)					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

**Date Drilled:** 09/10/2024  
**Excavator** 14 T  
**Excavator Supplier**  
**Logged/Checked:** Brock Collinson

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.




## Test Pit Record: TP03

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** Not Surveyed  
**Inclination:**

**Date Drilled:** 09/10/2024  
**Excavator** 14 T  
**Excavator Supplier**  
**Logged/Checked:** Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.2		Fill		Silty SAND SM: brown, fine to medium grained, trace fine to coarse sized gravel, dry, brick to glass dust.	D				
					As above, but pale grey, fine to coarse grained, with fine to coarse sized gravel.					
	0.5				Silty CLAY Cl: medium plasticity, brown mottled grey and orange, organic, slightly moist to dry, trace glass .	SLM-D				
	0.7				Silty CLAY pale grey mottled orange, inorganic, slightly moist.	SLM				
	1				Silty CLAY Cl: medium plasticity, brown mottled red and orange, trace fine to coarse sized gravel, inorganic, slightly moist, slate boulders (400mm diameter).					
	1.4				Gravelly to silty CLAY CL: low plasticity, grey and brown, fine to coarse sized gravel, inorganic, slightly moist, ceramic , no odour , no staining, no observed asbestos containing material.					
	2									
	2.4									
					As above, but Silty SAND SM: pale brown mottled grey and red, fine to medium grained, trace fine to coarse sized gravel, slightly moist to dry, brick to glass dust, no observed asbestos containing material.	SLM-D				
	3									
					TP03 Terminated at 3.7m (Target depth achieved)					
	4									

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## Test Pit Record: TP04

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed









Inclination:

Date Drilled: 09/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.2		Fill		Sandy SILT ML: low plasticity, brown with orange, dry, with organics (rootlets). no observed asbestos containing material.	D				
	0.6				Silty CLAY CL-Cl: low to medium plasticity, pale brown and grey, inorganic, slightly moist.	SLM				
	0.7				GRAVEL GW: grey and black, fine to coarse sized, slightly moist.					
	1				Gravelly CLAY Cl: medium plasticity, grey, fine to coarse sized gravel, inorganic, slightly moist.					
	1.6				Clayey SAND SC: pale grey, fine to coarse grained, with fine to coarse sized gravel, dry.	D				
	2				As above, but moist, increased clay as above. .	M				
	2.3				Clayey GRAVEL GC: low to medium plasticity clay, pale grey, fine to coarse sized, moist.					
	2.5				Silty CLAY Cl: medium plasticity, brown with orange and grey, inorganic, slightly moist.	SLM				
	3									
	4				TP04 Terminated at 3.7m (Achieved target depth)					

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## Test Pit Record: TP05

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed

Inclination:

Date Drilled: 09/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.2		Fill		Silty CLAY Cl: medium plasticity, pale brown, trace fine to coarse sized gravel, trace fine to medium grained sand, inorganic, slightly moist to dry.	SLM-D				
	0.5				Gravelly CLAY CL: low plasticity, brown, medium to coarse sized gravel, inorganic, slightly moist to dry, trace fine to coarse grained sands. no odour , no staining.					
	1				Gravelly SAND SP: pale brown and grey, medium grained, fine to coarse sized gravel, dry, no odour , no staining.	D				
	1.7				Gravelly CLAY ML: non-plastic, grey, medium to coarse sized gravel, inorganic, slightly moist, no odour , no staining, no observed asbestos containing material.	SLM				
	2				Gravelly to sandy CLAY Cl: medium plasticity, red mottled brown, fine to coarse sized gravel, with low to high plasticity silt, inorganic, slightly moist.					
	2.9				Sandy CLAY CL: low plasticity, grey, fine to coarse grained sand, inorganic, moist.	M				
	3				Gravelly to silty CLAY Cl: medium plasticity, red brown grey and white, fine to coarse sized gravel, inorganic, moist.					
	4				TP05 Terminated at 3.5m (Achieved target depth)					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Test Pit Record: TP06

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed


Inclination:

Date Drilled: 09/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.15		Fill		Sandy to silty GRAVEL GM: grey brown, medium to coarse sized, fine grained sand, dry. ----- As above, but organics (rootlets).	D				
	0.5				Silty CLAY CI: medium plasticity, pale brown, inorganic, slightly moist.	SLM				
1	1.1				Clayey GRAVEL GC: grey, medium to coarse sized, with fine grained sand, moist.	M				
	1.7				Gravelly to silty CLAY CI: medium plasticity, brown orange mottled red, fine to coarse sized gravel, inorganic, slightly moist.	SLM				
2	2.5				Gravelly to sandy CLAY CH: high plasticity, brown grey red pink mottled, medium to coarse sized gravel, fine to coarse grained sand, inorganic, slightly moist.					
	3									
	4				TP06 Terminated at 3.8m (Achieved target depth)					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Test Pit Record: TP07

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed






Inclination:

Date Drilled: 09/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.1		Top Soil		Clayey SILT ML: low plasticity, brown dark, trace fine sized gravel, dry, with organics (grass and rootlets).	D				
			Fill		Gravelly to silty CLAY CL: low plasticity, brown, coarse sized gravel, inorganic, dry, no odour, no staining.					
	1									
	1.8									
	2				Gravelly to silty CLAY CL-CI: low to medium plasticity, fine to coarse sized gravel, inorganic, moist, cobble size shale fragments. no odour, no staining, no observed asbestos containing material.	M				
	2				Silty CLAY CL-CI: low to medium plasticity, grey and brown, with fine to coarse sized gravel, trace fine grained sand, inorganic, moist, shale cobble and boulders encountered. no odour, no staining, no observed asbestos containing material.					
	3				Sandy GRAVEL GW: pale white grey, fine to coarse sized, fine grained sand, trace low to high plasticity clay, sandstone cobbles and boulders, pacm (potential asbestos containing materials) observed at 3.0m bgl, anthropogenics at 3.5m bgl. brick to metal to concrete to ceramic fragments, no odour, no staining, acm observed.					
	3									
	4				TP07 Terminated at 3.5m (Achieved target depth)					

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## Test Pit Record: TP08

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** Not Surveyed  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Excavator:** 14 T  
**Excavator Supplier:**  
**Logged/Checked:** Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.5		Fill		Sandy SILT ML: low plasticity, pale brown, fine grained sand, trace fine to medium sized gravel, slightly moist, no odour, no staining, no observed asbestos containing material.	SLM				
	1				Silty CLAY CI: medium plasticity, pale brown, with fine to coarse sized gravel, inorganic, slightly moist.					
	1.9				Silty CLAY CI: medium plasticity, grey, trace coarse sized gravel, inorganic, slightly moist.					
	2				Silty CLAY CH: high plasticity, brown, soft, with fine to coarse sized gravel, trace fine grained sand, inorganic, slightly moist.	M				
	2.2				Silty CLAY CI: medium plasticity, brown, soft to firm, with fine to coarse sized gravel, trace fine grained sand, inorganic, moist, shale boulders (~500mm) encountered at 2.2m bgl. . no odour, no staining, no observed asbestos containing material.					
	2.6				Gravelly CLAY CH: high plasticity, brown grey, fine to coarse sized gravel, inorganic, slightly moist, no odour, no staining, no observed asbestos containing material.					
	3				Silty CLAY CI: medium plasticity, pale brown and grey, soft to firm, with fine to coarse sized gravel, inorganic, slightly moist, with some metal to plastic, no odour, no staining, no observed asbestos containing material.	SLM				
	4				TP08 refusal at 3.2m (Encountered gravelly cement)					

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## Test Pit Record: TP09

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** Not Surveyed  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Excavator** 14 T  
**Excavator Supplier**  
**Logged/Checked:** Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.5		Fill		Clayey SILT ML: low plasticity clay, low plasticity, pale brown, with medium to coarse sized gravel, slightly moist, no odour, no staining, no observed asbestos containing material.	SLM				
	1				Silty CLAY CL: low plasticity, light brown and grey, with fine to coarse sized gravel, inorganic, slightly moist, no odour, no staining, no observed asbestos containing material.					
	1.4									
	1.5				Clayey GRAVEL GC: grey, loose to medium dense, coarse sized, moist, slate boulders encountered at 1.5m bgl. no odour, no staining, no observed asbestos containing material.	M				
	1.9				Silty CLAY CL: low plasticity, pale brown and grey, with fine to coarse sized gravel, inorganic, slightly moist.	SLM				
	2				Gravelly to silty CLAY CH: high plasticity, brown mottled pale grey, fine to medium sized gravel, inorganic, slightly moist, no odour, no staining, no observed asbestos containing material.					
	2.6				Clayey GRAVEL GC: pale brown and grey, fine to coarse sized, trace fine to coarse grained sand, slightly moist, anthropogenics encountered from 2.8m to 3.1m bgl. brick to concrete to ash to metal fragments, strong compost odour, no staining, no observed asbestos containing material.					
	3									
	4				TP09 Terminated at 3.7m (Achieved target depth)					

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## Test Pit Record: TP10

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** Not Surveyed  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Excavator:** 14 T  
**Excavator Supplier:**  
**Logged/Checked:** Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.2		Top Soil		Gravelly to clayey SILT ML: low plasticity, pale brown and grey, fine to coarse sized gravel, slightly moist, no odour, no staining, no observed asbestos containing material. As above, but organics (rootlets), no odour, no staining, no observed asbestos containing material.	SLM				
	1.1		Fill		Clayey GRAVEL GC: grey, fine to coarse sized, moist, slate boulders. no odour, no staining, no observed asbestos containing material.	M				
	2.7				Gravelly CLAY CL: low plasticity, yellow brown, fine to medium sized gravel, inorganic, slightly moist, no odour, no staining, no observed asbestos containing material.	SLM				
	2.9				Silty CLAY CL: low plasticity, orange brown, inorganic, slightly moist.					
	4				TP10 Terminated at 3.8m (Achieved target depth)					

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## Test Pit Record: TP11

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed

Inclination:

Date Drilled: 10/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.2		Fill		Gravelly to silty CLAY CL: low plasticity, brown grey, fine to coarse sized gravel, inorganic, slightly moist, no odour , no staining, no observed asbestos containing material.	SLM				
	0.4				Gravelly to silty CLAY CL: low plasticity, brown and grey, fine to coarse sized gravel, organic, slightly moist, no odour , no staining, no observed asbestos containing material.					
					Gravelly to sandy CLAY CL: medium plasticity, yellow and brown grey, fine to coarse sized gravel, inorganic, slightly moist, no odour , no staining, no observed asbestos containing material.					
1	1				Gravelly to silty CLAY CL: medium plasticity, grey, fine sized gravel, inorganic, slightly moist, no odour , no staining, no observed asbestos containing material.					
2										
	2.2				Clayey SILT ML: medium plasticity, pale brown mottled orange brown, slightly moist, no odour , no staining, no observed asbestos containing material.					
	2.6				Silty CLAY CH: high plasticity, reddish brown, organic, slightly moist, no odour , no staining, no observed asbestos containing material.					
3										
					TP11 Terminated at 3.4m (Achieved target depth)					
	4									

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## Test Pit Record: TP12

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: Not Surveyed







Inclination:

Date Drilled: 10/10/2024

Excavator 14 T

Excavator Supplier

Logged/Checked: Brock Collinson

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
	0.1		Fill		Gravelly to silty CLAY CH: high plasticity, grey brown, fine to coarse sized gravel, organic, slightly moist, no odour, no staining, no observed asbestos containing material. ----- As above, but inorganic, no odour, no staining, no observed asbestos containing material.	SLM				
	1				Gravelly to silty SAND SM: yellow and grey brown, fine to medium grained, fine to medium sized gravel, dry, encountered sandstone cobbles and boulders. no odour, no staining, no observed asbestos containing material.	D				
	1.25				Clayey to silty GRAVEL GC: grey, fine to coarse sized, trace fine to coarse grained sand, moist, no odour, no staining, no observed asbestos containing material.	M				
	1.8				Gravelly to silty CLAY CH: high plasticity, brown mottled grey orange, fine to coarse sized gravel, inorganic, slightly moist, observed potential colluvial/residual clay.. no staining, no observed asbestos containing material.	SLM				
	2				Gravelly CLAY CH: high plasticity, grey, fine to coarse sized gravel, inorganic, moist, no odour, no staining, no observed asbestos containing material.	M				
	2.3				As above, but wet, no odour, no staining, no observed asbestos containing material.	W				
	3				TP12 refusal at 3.3m					
	3.1									
	4									

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## Borehole Record: BH01

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)

Inclination:

Date Drilled: 10/10/2024

Drill Rig: Geoprobe

Drill Supplier: Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: low plasticity clay, non-plastic, light brown light brown, soft, with coarse sized gravel, dry, gravel inclusions throughout. no staining, no observed asbestos containing material.	D				
41										
40										
39.6	1.6				Silty CLAY CI: medium plasticity, brown, soft, with medium sized gravel, organic, dry, timber fragments, no odour, no staining, no observed asbestos containing material.					
39										
38.8										
38.5	3.5				Clayey to silty GRAVEL GC: medium plasticity clay, light brown, medium dense, coarse sized, dry, with trace rootlets. no odour, no staining, no observed asbestos containing material.					
38										
38.5	3.8		Alluvial		Clayey to silty SAND SC: medium dense, (low to medium plasticity clay), (light grey), (fine grained), moist, darker yellow @ 4.5 mbgl. no odour, no staining, no observed asbestos containing material.	M				
38										

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## Borehole Record: BH01

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)


**Inclination:**

**Date Drilled:** 10/10/2024

Drill Rig    Geoprobe

Drill Supplier Stratacore

**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37     6  36     7			Alluvial		Clayey to silty SAND SC: medium dense, (low to medium plasticity clay), (light grey), (fine grained), moist, darker yellow @ 4.5 mbgl. no odour , no staining, no observed asbestos containing material.	M				
35    8  34     9  33					BH01 Terminated at 7.2m (Monitoring well installed. )					

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## Borehole Record: BH02

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)

Inclination:

Date Drilled: 10/10/2024

Drill Rig: Geoprobe

Drill Supplier: Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Gravelly to clayey SILT ML: low plasticity clay, low plasticity, light brown, soft, medium to coarse sized gravel, trace fine grained sand, dry, w rootlets. increase in gravels (30%) @ 1.0mbgl. timber pieces, no odour, no staining, no observed asbestos containing material.	D				
1										
41										
40.8	1.5				Silty CLAY CI-CH: medium to high plasticity, brown w iron staining, soft, with medium to coarse sized gravel, organic, slightly moist, w rootlets. no odour, no staining, no observed asbestos containing material.	SLM				
2										
40										
3										
39										
38.5	3.8				Gravelly SILT GM: non-plastic, light grey, very soft, fine sized gravel, dry, no staining, no observed asbestos containing material.	D				
38.3	4				Silty CLAY CI: medium plasticity, grey/brown, soft, with medium sized gravel, inorganic, slightly moist, no staining, no observed asbestos containing material.	SLM				
38										
37.8	4.5		Natural		Silty CLAY CI: soft, medium plasticity, light brown/yellow, organic, slightly moist, no odour, no staining, no observed asbestos containing material.					

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## Borehole Record: BH02

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

**Date Drilled:** 10/10/2024

Drill Rig   Geoprobe

**Drill Supplier**    Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37           6  36			Natural		Silty CLAY Cl: soft, medium plasticity, light brown/yellow, organic, slightly moist, no odour , no staining, no observed asbestos containing material.					
7  35           8  34           9  33					BH02 Terminated at 6.5m (Terminated (target depth). )					

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## Borehole Record: BH03

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)

Inclination:

Date Drilled: 10/10/2024

Drill Rig Geoprobe

Drill Supplier Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Gravelly to silty CLAY ML: non-plastic, light brown/brown, very soft, medium sized gravel, organic, dry, no odour, no staining, no observed asbestos containing material.	D				
41.5	0.8				As above, but light brown/grey, no odour, no staining, no observed asbestos containing material.					
41.3	1				Silty CLAY CI: medium plasticity, firm to stiff, organic, slightly moist, dark brown/orange. no staining, no observed asbestos containing material.	SLM				
41										
40.3	2									
40										
39										
38										
37.8	4.5		Natural		As above, but Gravelly to silty ML: very soft, non-plastic, dark yellow grey, medium sized gravel, dry, no odour, no staining, no observed asbestos containing material.	D				

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## Borehole Record: BH03

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)

**Inclination:**

**Date Drilled:** 10/10/2024

Drill Rig    Geoprobe

**Drill Supplier** Stratacore

**Logged/Checked:** Michael Korner

[illegible]

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: BH04

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Drill Rig:** Geoprobe  
**Drill Supplier:** Stratacore  
**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: low plasticity clay, low plasticity, light brown, soft, with fine to coarse sized gravel, dry, trace fabric pieces, no odour, no staining, no observed asbestos containing material.	D				
1										
41										
40.3	2	2			Silty GRAVEL GM: grey, loose, fine to coarse sized, dry, no odour, no staining, no observed asbestos containing material.					
40										
39.8	2.5				Gravelly to silty CLAY CI: medium plasticity, grey/brown w red mottlings, soft, fine to coarse sized gravel, organic, moist, no odour, no staining, no observed asbestos containing material.	M				
3										
39										
38.5	3.8				Silty CLAY CI-CH: medium to high plasticity, brown, soft, with fine to medium sized gravel, organic, slightly moist, no odour, no staining, no observed asbestos containing material.	SLM				
4										
38	4.3				Clayey to silty SAND SC: medium to high plasticity clay, grey, medium dense, fine grained, wet, no odour, no staining, no observed asbestos containing material.	W				
37.5	4.8									
			Alluvial		Silty CLAY CH: firm, high plasticity, dark green/yellow, organic, wet, no odour, no staining, no observed asbestos containing material.					

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## Borehole Record: BH04

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Drill Rig:** Geoprobe  
**Drill Supplier:** Stratacore  
**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Alluvial		Silty CLAY CH: firm, high plasticity, dark green/yellow, organic, wet, no odour, no staining, no observed asbestos containing material.					
36					BH04 Terminated at 6m (Target depth (Natural))					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH05

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Drill Rig:** Geoprobe  
**Drill Supplier:** Stratacore  
**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Gravelly to clayey SILT ML: non-plastic, dark brown/grey, very soft, coarse sized gravel, dry, no odour, no staining, no observed asbestos containing material.	D				
41										
40.5	1.8				Gravelly to silty CLAY CL-CL: low to medium plasticity, grey, soft, fine to coarse sized gravel, organic, dry, w rootlets. firm @2.0mbgl - 2.2mbgl.. no odour, no staining, no observed asbestos containing material.					
40	2									
39	3									
38.5	3.8				Silty CLAY CI-CH: medium to high plasticity, dark brown, firm, with fine to coarse sized gravel, organic, moist, no odour, no staining, no observed asbestos containing material.	M				
38	4.3		Alluvial		Sandy to silty CLAY CI-CH: very soft, medium to high plasticity, brown/yellow, fine grained sand, organic, wet, no odour, no staining, no observed asbestos containing material.	W				

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## Borehole Record: BH05

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 10/10/2024

Drill Rig Geoprobe

Drill Supplier Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Alluvial		Sandy to silty CLAY CI-CH: very soft, medium to high plasticity, brown/yellow, fine grained sand, organic, wet, no odour, no staining, no observed asbestos containing material.	W				
36					BH05 Terminated at 6m (Target Depth )					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH06

**Project:** Jordan Springs HS (DSI)

**Location:** Jordan Springs NSW

**Loc Comment:**

Job No: 305001663

**Position:** Easting: 289,461.19

Northing: 6,266,244.75

**Elevation:** 42.30(m)



**Inclination:**

**Date Drilled:** 10/10/2024

### Drill Rig

Drill Supplier

**Logged/Checked:** Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks		
							Primary	QA	PID			
42			Fill		Clayey SILT ML: low plasticity clay, non-plastic to low, dark brown, soft, with medium to coarse sized gravel, trace medium grained sand, dry, no staining, no observed asbestos containing material.	D						
41	1.3					As above, but slightly moist, no staining, no observed asbestos containing material.	SLM					
40.8	1.5		Natural		Silty CLAY CL-Cl: soft, low to medium plasticity, brown, trace fine to medium sized gravel, organic, slightly moist, no observed asbestos containing material.							
40												
39												
38.8	3.5				As above, but brown dark, with medium to coarse sized gravel, slightly moist to dry, no observed asbestos containing material.							
38						SLM-D						

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## Borehole Record: BH06

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)

Inclination:

Date Drilled: 10/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37					As above, but brown dark, with medium to coarse sized gravel, slightly moist to dry, no observed asbestos containing material.	SLM-D				
36					BH06 Terminated at 6m (Achieved target depth. )					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH07

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Drill Rig:** Geoprobe  
**Drill Supplier:** Stratacore  
**Logged/Checked:** Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: low plasticity clay, non-plastic to low, light brown, very soft, with fine to coarse sized gravel, dry, w rootlets . no odour , no staining, no observed asbestos containing material.	D				
36	1.1				Silty CLAY Cl: medium plasticity, light brown/brown, firm, with fine to coarse sized gravel, organic, dry, w rootlets . no odour , no staining, no observed asbestos containing material.					
41					Gravelly to silty CLAY Cl: medium plasticity, grey/brown, soft, fine to coarse sized gravel, trace fine grained sand, inorganic, wet to moist, moist/wet @ 2.7mbgl. with some plastic pieces, no odour , no staining, no observed asbestos containing material.	W-M				
40	2									
39.8	2.5									
39			Alluvial		Sandy to silty CLAY Cl-CH: soft, medium to high plasticity, orange/d.orange, fine grained sand, organic, moist, no odour , no staining, no observed asbestos containing material.	M				
37.5	4.8									

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## Borehole Record: BH07

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 10/10/2024

Drill Rig Geoprobe

Drill Supplier Stratacore

Logged/Checked: Michael Korner

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Alluvial		Sandy to silty CLAY CI-CH: soft, medium to high plasticity, orange/d.orange, fine grained sand, organic, moist, no odour , no staining, no observed asbestos containing material.	M				
36					BH07 Terminated at 6m (Achieved target depth)					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH09

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 10/10/2024  
**Drill Rig**  
**Drill Supplier**  
**Logged/Checked:** Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: non-plastic to low, brown & light brown, soft to firm, with fine to medium sized gravel, dry, no observed asbestos containing material.	D				
41.3	1	1			As above, but brown grey, no observed asbestos containing material.					
41										
40.9	1.4				As above, but slightly moist, no observed asbestos containing material.	SLM				
40.6	1.6				As above, but wet to moist, no observed asbestos containing material.					
40										
39										
38.5	3.8									
38			Natural		Silty CLAY CI-CH: firm, medium to high plasticity, brown, trace fine grained sand, organic, moist.	M				

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## Borehole Record: BH09

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 10/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Natural		Silty CLAY CI-CH: firm, medium to high plasticity, brown, trace fine grained sand, organic, moist.	M				
36					BH09 Terminated at 6m (Achieved target depth)					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH08

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 11/10/2024  
**Drill Rig**  
**Drill Supplier**  
**Logged/Checked:** Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42	0.4		Fill		Clayey SILT ML: non-plastic to low, brown grey, soft, with medium to coarse sized gravel, trace fine grained sand, dry, no observed asbestos containing material.	D				
41.9					As above, but slightly moist to dry, no observed asbestos containing material.					
41	1					SLM-D				
40.3	2	2			Clayey SILT ML: low plasticity clay, non-plastic to low, grey, very soft to soft, trace fine sized gravel, dry, shale noted from 2.5 to 2.8.	D				
40										
39.5	2.8									
39	3		Natural		Silty CLAY CI-CH: soft, medium to high plasticity, brown, trace fine sized gravel, inorganic, moist to slightly moist.	M-SLM				
38	4									

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## Borehole Record: BH08

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 11/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Natural		Silty CLAY CI-CH: soft, medium to high plasticity, brown, trace fine sized gravel, inorganic, moist to slightly moist.	M-SLM				
36					BH08 Terminated at 6m (Achieved target depth)					
7										
35										
8										
34										
9										
33										

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## Borehole Record: BH10

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 11/10/2024  
**Drill Rig**  
**Drill Supplier**  
**Logged/Checked:** Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Gravelly to clayey to silty SILT ML: low to medium plasticity, brown to dark brown., soft to firm, medium to coarse sized gravel, trace fine to medium grained sand, slightly moist to dry.	SLM-D				
41.4	0.9				Silty CLAY CL-CI: low to medium plasticity, brown, soft to firm, with fine to medium sized gravel, trace fine grained sand, inorganic, slightly moist to dry.					
41					As above, but dark grey brown, with medium to coarse sized gravel, organic.					
40.5	1.8				As above, but Gravelly to clayey to silty SILT ML: brown., medium to coarse sized gravel.					
40			Natural		Silty to clayey CLAY CI: firm, medium plasticity, brown, trace fine sized gravel, inorganic, slightly moist to dry.					
39										
38										
					<b>BH10 Terminated at 4.5m (Achieved target depth)</b>					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.





## Borehole Record: BH11

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)

Inclination:

Date Drilled: 11/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: non-plastic to low, grey light brown, soft, with medium to coarse sized gravel, dry.	D				
1										
41										
40.5	1.8									
2					Silty CLAY CL: low plasticity, brown, very soft to soft, with fine to coarse sized gravel, trace fine grained sand, organic, slightly moist.	SLM				
40										
3										
39										
38.8	3.5				Gravelly to sandy CLAY CL-CI: low to medium plasticity, light grey to pale brown., soft, medium to coarse sized gravel, fine to medium grained sand, with medium plasticity silt, inorganic, moist to slightly moist, digger notes - gravelly at 3.5.	M-SLM				
38.3	4	4								
38					Gravelly to sandy CLAY CL: low plasticity, grey brown, coarse sized gravel, medium to coarse grained sand, inorganic, wet, saturated at 4.2-4.4..	W				

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: BH11

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 11/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37.3	5									
37			Natural		Silty CLAY CI-CH: soft, medium to high plasticity, brown, with medium to coarse sized gravel, trace fine to medium grained sand, inorganic, wet.					
36					BH11 Terminated at 6m (Achieved target depth)					
7										
35										
8										
34										
9										
33										

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: BH12

**Project:** Jordan Springs HS (DSI)  
**Location:** Jordan Springs NSW  
**Loc Comment:**  
**Job No:** 305001663

**Position:** Easting: 289,461.19  
Northing: 6,266,244.75  
**Elevation:** 42.30(m)  
**Inclination:**

**Date Drilled:** 11/10/2024  
**Drill Rig**  
**Drill Supplier**  
**Logged/Checked:** Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
42			Fill		Clayey SILT ML: non-plastic to low, grey, light brown, soft, trace fine to medium sized gravel, dry.	D				
1										
41										
40.3	2	2								
40					Silty CLAY CL: non-plastic to low, grey brown, very soft to soft, trace medium sized gravel, organic, slightly moist.	SLM				
39.4	2.7				As above, but reddish brown, with fine sized gravel.					
39	3.2				Gravelly to clayey SILT ML: low plasticity clay, non-plastic to low, grey, soft, fine to medium sized gravel, dry.	D				
38	4.2				As above, but Clayey medium to high plasticity clay, low to medium plasticity, grey, with medium to coarse sized gravel.					
37.5	4.8		Natural		Clayey to silty CLAY CI-CH: soft to firm, medium to high plasticity, mustard-yellow brown, trace fine sized gravel, inorganic, slightly moist.	SLM				

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.



## Borehole Record: BH12

Project: Jordan Springs HS (DSI)

Location: Jordan Springs NSW

Loc Comment:

Job No: 305001663

Position: Easting: 289,461.19

Northing: 6,266,244.75

Elevation: 42.30(m)


Inclination:

Date Drilled: 11/10/2024

Drill Rig

Drill Supplier

Logged/Checked: Finn Tainsh

Elevation (mAHD)	Depth (m)	Water	Soil Origin	Graphic Log	Material Description	Moisture	Sample		Testing	Remarks
							Primary	QA	PID	
37			Natural		Clayey to silty CLAY CI-CH: soft to firm, medium to high plasticity, mustard-yellow brown, trace fine sized gravel, inorganic, slightly moist.	SLM				
36					BH12 Terminated at 6m (Achieved target depth. )					
7										
35										
8										
34										
9										
33										


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## Appendix D Results Table



Table 1: Soil Analytical Results



	CRC Care TPH Fractions							BTEX								MAH						
	C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less NAPHTHALENE	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
LOR	10	50	100	100	50	10	50	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
NEPM 2013 HIL, Recreational C																						
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																						
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																						
>=0m, <1m																						
>=1m, <2m																						
>=2m, <4m																						
>=4m																						
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																						
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																						
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																						
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																						
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																						
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m		120	300	2,800		180		50	85	70			105									
PFAS NEMP 2018 Table 2 Health Public open space																						
PFAS NEMP 2018 Table 3 Interim EDE Public open space																						

Site ID	Field ID	Location Code	Date	C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less NAPHTHALENE	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene
305001663	TP01_3.0-3.1		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP01_3.5-3.6		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP02_0-0.1		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP02_3.5-3.6		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP03_0.7-0.8		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP03_1.9-2.0		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP04_0-0.1		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP04_3.4-3.5		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP05_0.9-1.0		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP05_2.4-2.5		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP06_0.5-0.6		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP06_3.4-3.5		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP07_0-0.1		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP07_2.9-3.0		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP07_3.4-3.5		09 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP08_0.5-0.6		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP08_3.0-3.1		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP09_1.4-1.5		10 Oct 2024	16	<50	<100	<100	<50	16	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP09_3.5-3.6		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP10_2.7-2.8		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP11_0-0.1		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP11_2.2-2.3		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP11_2.6-2.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP12_1.0-1.1		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	TP12_3.1-3.2		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH01_0.5		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH01_1.8		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH01_3.8		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH01_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH02_2		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH02_4		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH02_4.7		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH03_0.1		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH03_4		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH03_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_6		10 Oct 2024	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH04_0.1		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH04_5		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_0.5		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH05_2		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	-	-	-	-	-
305001663	BH05_4.3		10 Oct 2024	<10	<50	<100	<100	<50	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

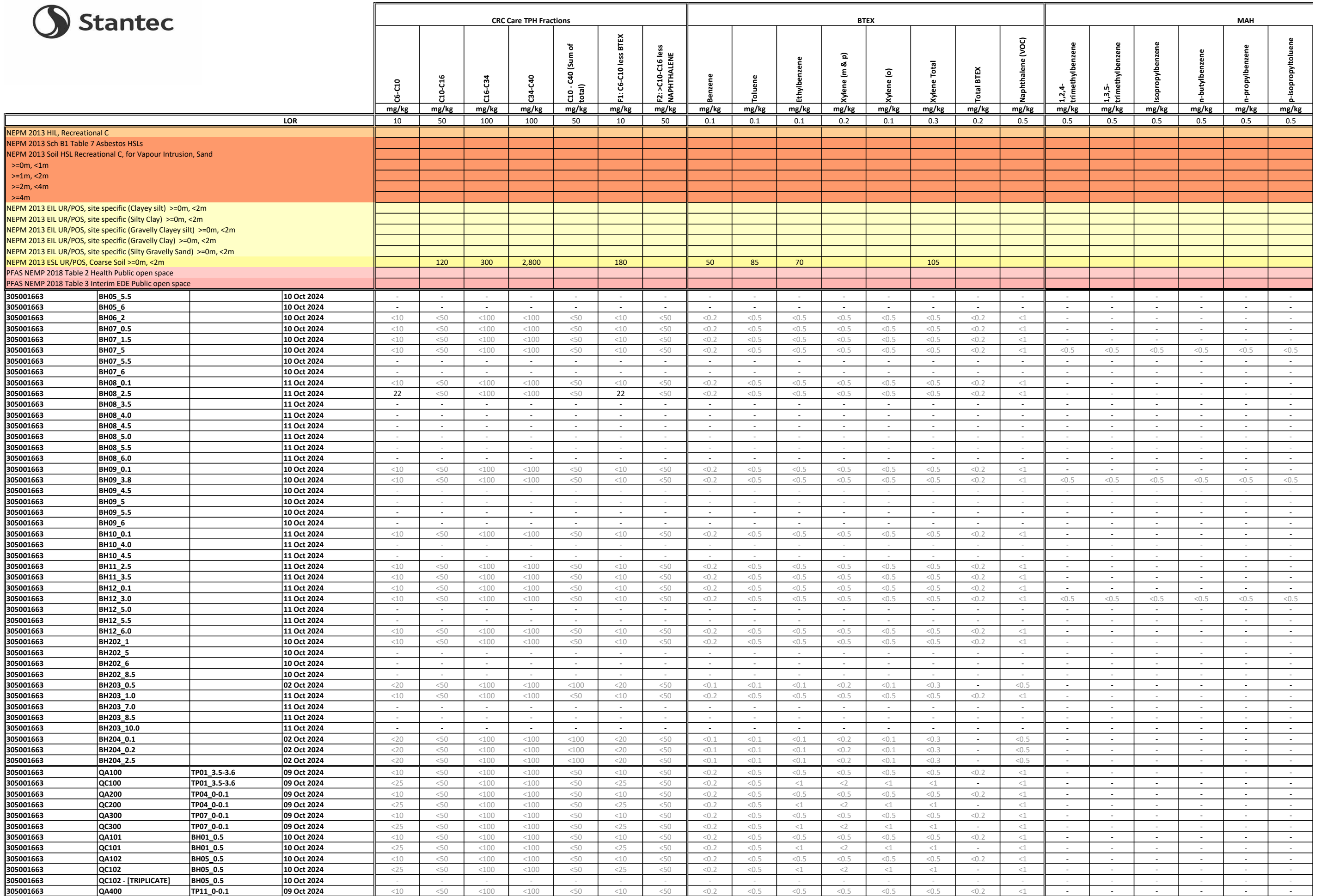


Table 1: Soil Analytical Results



				CRC Care TPH Fractions							BTEX							MAH						
				C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less NAPHTHALENE	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				10	50	100	100	50	10	50	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 HIL, Recreational C																								
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																								
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																								
>=0m, <1m																								
>=1m, <2m																								
>=2m, <4m																								
>=4m																								
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																								
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m					120	300	2,800		180		50	85	70			105								
PFAS NEMP 2018 Table 2 Health Public open space																								
PFAS NEMP 2018 Table 3 Interim EDE Public open space																								
305001663	QC400	TP11_0-0.1	10 Oct 2024	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<2	<1	<1	-	<1	-	-	-	-	-	-



Table 1: Soil Analytical Results



				Metals							pH			Asbestos							
	sec-butylbenzene	Styrene	tert-butylbenzene	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Nickel	Zinc	pH (Fox)	pH (F)	Reaction Rate_	Asbestos Detected (D) / not Detected (ND)	Reported result	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Unit	pH Unit	Reaction Unit	Comment	%w/w	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.5	0.5	0.5	5	2	0.4	1	1	1	1	0.1	0.1	1			0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 HIL, Recreational C					300	90		17,000	1,200	30,000											
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																					
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																					
>=0m, <1m																					
>=1m, <2m																					
>=2m, <4m																					
>=4m																					
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m					100		570	150	70	370						170					
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m							620	85	140	220											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m							600	190	130	440											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m							500	220	200	550											
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m							490	110	40	310											
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m																					
PFAS NEMP 2018 Table 2 Health Public open space																					
PFAS NEMP 2018 Table 3 Interim EDE Public open space																					

Site ID	Field ID	Location Code	Date																				
305001663	TP01_3.0-3.1		09 Oct 2024	-	-	-	-	<5	<1	8	15	5	22	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP01_3.5-3.6		09 Oct 2024	-	-	-	-	5	<1	8	25	13	58	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP02_0-0.1		09 Oct 2024	-	-	-	-	8	<1	18	23	11	45	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP02_3.5-3.6		09 Oct 2024	-	-	-	-	<5	<1	20	10	4	18	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-	<5	<1	6	20	6	29	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP03_1.9-2.0		09 Oct 2024	-	-	-	-	7	<1	11	28	13	72	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP04_0-0.1		09 Oct 2024	-	-	-	-	10	<1	21	17	9	34	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP04_3.4-3.5		09 Oct 2024	-	-	-	-	8	<1	7	38	20	91	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP05_0.9-1.0		09 Oct 2024	-	-	-	-	9	<1	17	40	30	64	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP05_2.4-2.5		09 Oct 2024	-	-	-	-	12	<1	16	32	14	61	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP06_0.5-0.6		09 Oct 2024	-	-	-	-	7	<1	15	32	16	64	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP06_3.4-3.5		09 Oct 2024	-	-	-	-	<5	<1	9	21	3	24	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP07_0-0.1		09 Oct 2024	-	-	-	-	9	<1	21	16	10	34	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP07_2.9-3.0		09 Oct 2024	-	-	-	-	8	<1	31	22	14	46	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP07_3.4-3.5		09 Oct 2024	-	-	-	-	8	<1	12	17	20	70	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP08_0.5-0.6		10 Oct 2024	-	-	-	-	<5	<1	7	38	4	77	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP08_3.0-3.1		10 Oct 2024	-	-	-	-	6	<1	21	25	19	46	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP09_1.4-1.5		10 Oct 2024	-	-	-	-	<5	<1	8	42	30	116	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP09_3.5-3.6		10 Oct 2024	-	-	-	-	<5	<1	16	20	24	45	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	1.8
305001663	TP10_2.7-2.8		10 Oct 2024	-	-	-	-	<5	<1	10	15	10	23	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP11_0-0.1		10 Oct 2024	-	-	-	-	<5	<1	9	17	9	39	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP11_2.2-2.3		10 Oct 2024	-	-	-	-	5	<1	16	17	7	19	5	7.6	2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP11_2.6-2.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.5	7.2	4	-	-	-	-	-	-	
305001663	TP12_1.0-1.1		10 Oct 2024	-	-	-	-	<5	<1	7	39	8	76	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	TP12_3.1-3.2		10 Oct 2024	<0.5	<0.5	<0.5	-	6	<1	14	23	16	71	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH01_0.5		10 Oct 2024	-	-	-	-	6	<1	24	26	17	89	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH01_1.8		10 Oct 2024	-	-	-	-	9	<1	17	26	16	60	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH01_3.8		10 Oct 2024	-	-	-	-	13	<1	12	29	22	101	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH01_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.4	6.3	2	-	-	-	-	-	-	
305001663	BH01_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.4	6.4	3	-	-	-	-	-	-	
305001663	BH01_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.4	6.6	3	-	-	-	-	-	-	
305001663	BH01_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.4	6.1	2	-	-	-	-	-	-	
305001663	BH01_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7	6.1	4	-	-	-	-	-	-	
305001663	BH01_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	5.2	5.9	2	-	-	-	-	-	-	
305001663	BH02_2		10 Oct 2024	-	-	-	-	<5	<1	21	8	6	20	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH02_4		10 Oct 2024	-	-	-	-	8	<1	5	31	16	61	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH02_4.7		10 Oct 2024	-	-	-	-	5	<1	11	19	12	30	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH03_0.1		10 Oct 2024	-	-	-	-	7	<1	16	27	12	45	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH03_4		10 Oct 2024	-	-	-	-	7	<1	28	17	12	37	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH03_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	3.5	4.8	2	-	-	-	-	-	-	
305001663	BH03_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	3.8	4.9	2	-	-	-	-	-	-	
305001663	BH03_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.1	4.7	2	-	-	-	-	-	-	
305001663	BH03_6		10 Oct 2024	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	4.8	4.9	2	-	-	-	-	-	-	
305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	6.7	5.3	2	-	-	-	-	-	-	
305001663	BH03_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	6.9	5.1	4	-	-	-	-	-	-	
305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	6.8	5.3	4	-	-	-	-	-	-	
305001663	BH04_0.1		10 Oct 2024	-	-	-	-	7	<1	13	23	13	53	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH04_5		10 Oct 2024	<0.5	<0.5	<0.5	-	6	<1	17	13	7	20	4.7	7.1	2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	5	6.9	2	-	-	-	-	-	-	
305001663	BH05_0.5		10 Oct 2024	-	-	-	-	10	<1	14	28	13	61	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH05_2		10 Oct 2024	-	-	-	-	8	<1	14	37	24	104	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH05_4.3		10 Oct 2024	<0.5	<0.5	<0.5	-	6	<1	21	19	12	59	8.8	9.5	4	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	9.2	9.2	4	-	-	-	-	-	-	
305001663	BH05_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.2	8.2	4	-	-	-	-	-	-	

Table 1: Soil Analytical Results




<div></div>							Metals					pH			Asbestos									
				sec-butylbenzene	Styrene	tert-butylbenzene	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Nickel	Zinc	pH (Fox)	pH (F)	Reaction Rate_	Asbestos Detected (D) / not Detected (ND)	Reported result	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Unit	pH Unit	Reaction Unit	Comment	%w/w	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
LOR				0.5	0.5	0.5	5	2	0.4	1	1	1	1	0.1	0.1	1			0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 HIL, Recreational C								300	90		17,000	1,200	30,000											
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																								
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																								
>=0m, <1m																								
>=1m, <2m																								
>=2m, <4m																								
>=4m																								
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m								100		570	150	70	370					170						
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m										620	85	140	220											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m										600	190	130	440											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m										500	220	200	550											
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m										490	110	40	310											
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m																								
PFAS NEMP 2018 Table 2 Health Public open space																								
PFAS NEMP 2018 Table 3 Interim EDE Public open space																								
305001663	BH05_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.6	8.1	4	-	-	-	-	-	-	-	
305001663	BH05_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	6.4	9.2	2	-	-	-	-	-	-	-	
305001663	BH06_2		10 Oct 2024	-	-	-	-	6	<1	8	39	23	122	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH07_0.5		10 Oct 2024	-	-	-	-	8	<1	15	32	17	72	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH07_1.5		10 Oct 2024	-	-	-	-	6	<1	12	25	15	51	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH07_5		10 Oct 2024	<0.5	<0.5	<0.5	-	6	<1	11	14	8	25	7.6	8.3	4	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH07_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.4	7.9	4	-	-	-	-	-	-	-	
305001663	BH07_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.9	8.1	4	-	-	-	-	-	-	-	
305001663	BH08_0.1		11 Oct 2024	-	-	-	-	9	<1	19	20	15	61	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH08_2.5		11 Oct 2024	-	-	-	-	<5	<1	8	38	23	92	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH08_3.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.2	6.9	4	-	-	-	-	-	-	-	
305001663	BH08_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.6	6.7	4	-	-	-	-	-	-	-	
305001663	BH08_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.5	7	4	-	-	-	-	-	-	-	
305001663	BH08_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.3	7.9	4	-	-	-	-	-	-	-	
305001663	BH08_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.2	7.8	4	-	-	-	-	-	-	-	
305001663	BH08_6.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.6	8.2	4	-	-	-	-	-	-	-	
305001663	BH09_0.1		10 Oct 2024	-	-	-	-	8	<1	12	31	18	88	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH09_3.8		10 Oct 2024	<0.5	<0.5	<0.5	-	6	<1	21	18	11	27	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH09_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.8	8.2	4	-	-	-	-	-	-	-	
305001663	BH09_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.9	8.8	4	-	-	-	-	-	-	-	
305001663	BH09_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.9	8.4	4	-	-	-	-	-	-	-	
305001663	BH09_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	8.8	8.6	4	-	-	-	-	-	-	-	
305001663	BH10_0.1		11 Oct 2024	-	-	-	-	6	<1	13	26	20	83	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH10_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.4	6.2	4	-	-	-	-	-	-	-	
305001663	BH10_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	7.2	7.6	4	-	-	-	-	-	-	-	
305001663	BH11_2.5		11 Oct 2024	-	-	-	-	8	<1	20	25	16	55	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH11_3.5		11 Oct 2024	-	-	-	-	7	<1	16	19	16	57	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH12_0.1		11 Oct 2024	-	-	-	-	<5	<1	10	22	14	61	-	-	-	ND	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH12_3.0		11 Oct 2024	<0.5	<0.5	<0.5	-	13	<1	11	35	19	70	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH12_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.3	6.8	2	-	-	-	-	-	-	-	
305001663	BH12_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	3.1	6	2	-	-	-	-	-	-	-	
305001663	BH12_6.0		11 Oct 2024	-	-	-	-	<5	<1	14	17	7	19	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH202_1		10 Oct 2024	-	-	-	-	7	<1	13	32	11	50	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
305001663	BH202_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	4.6	7.1									

Table 1: Soil Analytical Results




<div></div>												pH			Asbestos									
				sec-butylbenzene	Styrene	tert-butylbenzene	Metals						pH (Fox)	pH (F)	Reaction Rate_	Asbestos Detected (D) / not Detected (ND)	Reported result	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	
							Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Nickel												Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Unit	pH Unit	Reaction Unit	Comment	%w/w	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
LOR				0.5	0.5	0.5	5	2	0.4	1	1	1	1	0.1	0.1	1			0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 HIL, Recreational C								300	90		17,000	1,200	30,000											
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																								
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																								
>=0m, <1m																								
>=1m, <2m																								
>=2m, <4m																								
>=4m																								
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m								100		570	150	70	370					170						
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m										620	85	140	220											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m										600	190	130	440											
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m										500	220	200	550											
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m										490	110	40	310											
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m																								
PFAS NEMP 2018 Table 2 Health Public open space																								
PFAS NEMP 2018 Table 3 Interim EDE Public open space																								
305001663	QC400	TP11_0-0.1	10 Oct 2024	-	-	-	-	7	<0.4	9	32	21	110	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table 1: Soil Analytical Results



	PAH																				
	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ (Zero LOR)	Benzo(a)pyrene TEQ (Half LOR)_1	Benzo(a)pyrene TEQ (Full LOR)	PAHs (Sum of total)	Organochlorine pesticides IWRG621	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane
LOR	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 2013 HIL, Recreational C	0.1	0.1	0.1	0.1	0.5	0.5	0.05	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 Sch B1 Table 7 Asbestos HSLs											3	3	3	300					10		70
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																					
>=0m, <1m																					
>=1m, <2m																					
>=2m, <4m																					
>=4m																					
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																					
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																					
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																					
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																					
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																					
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m							0.7														
PFAS NEMP 2018 Table 2 Health Public open space																					
PFAS NEMP 2018 Table 3 Interim EDE Public open space																					

Site ID	Field ID	Location Code	Date																					
305001663	TP01_3.0-3.1		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP01_3.5-3.6		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP02_0-0.1		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP02_3.5-3.6		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP03_0.7-0.8		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP03_1.9-2.0		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP04_0-0.1		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP04_3.4-3.5		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP05_0.9-1.0		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP05_2.4-2.5		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP06_0.5-0.6		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP06_3.4-3.5		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP07_0-0.1		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP07_2.9-3.0		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP07_3.4-3.5		09 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP08_0.5-0.6		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP08_3.0-3.1		10 Oct 2024	0.6	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	1.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP09_1.4-1.5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP09_3.5-3.6		10 Oct 2024	2.5	2.4	0.7	0.7	<0.5	0.8	0.7	<0.5	<0.5	0.6	0.9	1.2	1.5	10.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP10_2.7-2.8		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP11_0-0.1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	TP11_2.2-2.3		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP11_2.6-2.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP12_1.0-1.1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	TP12_3.1-3.2		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH01_0.5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH01_1.8		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH01_3.8		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH01_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH01_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH02_2		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH02_4		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH02_4.7		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH03_0.1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH03_4		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH03_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH04_0.1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH04_5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_0.5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH05_2		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH05_4.3		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-


Table 1: Soil Analytical Results



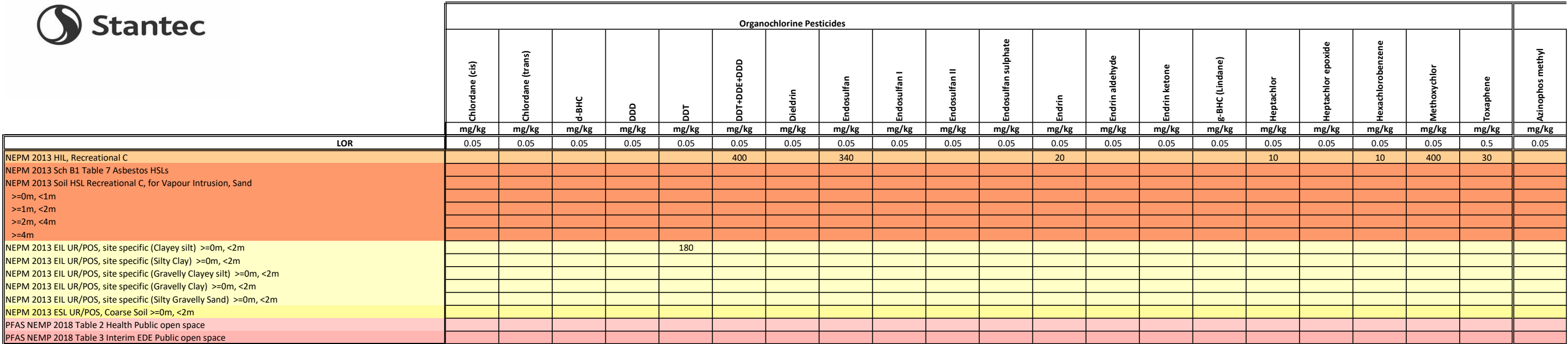
				PAH																			
				Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ (Zero LOR)	Benzo(a)pyrene TEQ (Half LOR)_1	Benzo(a)pyrene TEQ (Full LOR)	PAHs (Sum of total)	Organochlorine pesticides IWRG621	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC
LOR				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				0.1	0.1	0.1	0.1	0.5	0.5	0.05	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 HIL, Recreational C													3	3	3	300					10		70
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																							
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																							
>=0m, <1m																							
>=1m, <2m																							
>=2m, <4m																							
>=4m																							
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																							
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																							
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																							
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m									0.7														
PFAS NEMP 2018 Table 2 Health Public open space																							
PFAS NEMP 2018 Table 3 Interim EDE Public open space																							
305001663	BH05_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH06_2		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH07_0.5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH07_1.5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH07_5		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH07_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_0.1		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH08_2.5		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH08_3.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_6.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_0.1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH09_3.8		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH09_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH10_0.1		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH10_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH10_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH11_2.5		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH11_3.5		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH12_0.1		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH12_3.0		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
305001663	BH12_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_6.0		11 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-
305001663	BH202_1		10 Oct 2024	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2								

Table 1: Soil Analytical Results



<div></div>				PAH																				
				Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ (Zero LOR)	Benzo(a)pyrene TEQ (Half LOR)_1	Benzo(a)pyrene TEQ (Full LOR)	PAHs (Sum of total)	Organochlorine pesticides IWRG621	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.1	0.1	0.1	0.1	0.5	0.5	0.05	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 HIL, Recreational C													3	3	3	300					10		70	
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																								
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																								
>=0m, <1m																								
>=1m, <2m																								
>=2m, <4m																								
>=4m																								
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																								
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m										0.7														
PFAS NEMP 2018 Table 2 Health Public open space																								
PFAS NEMP 2018 Table 3 Interim EDE Public open space																								
305001663	QC400	TP11_0-0.1	10 Oct 2024	<0.1	<0.1	<0.1	<0.1	-	-	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	

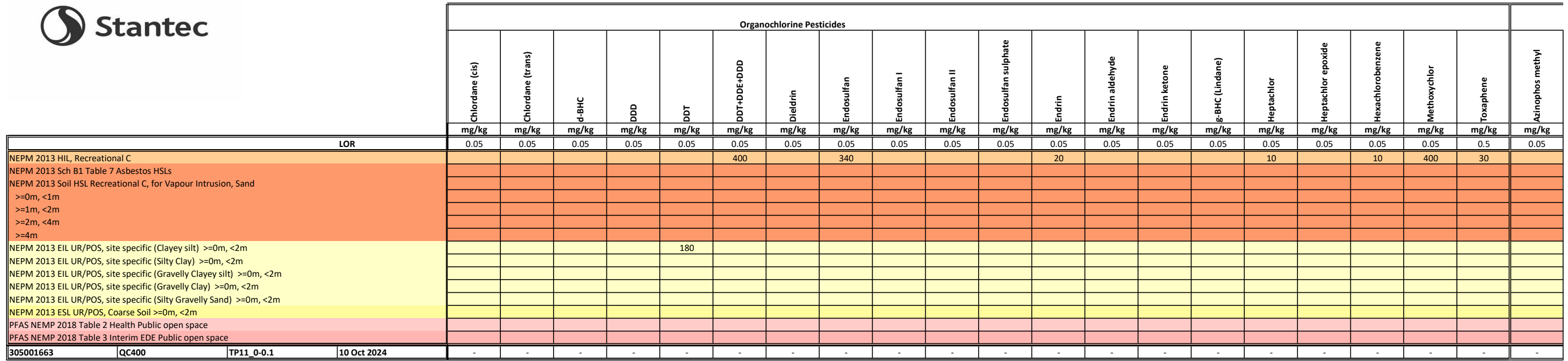


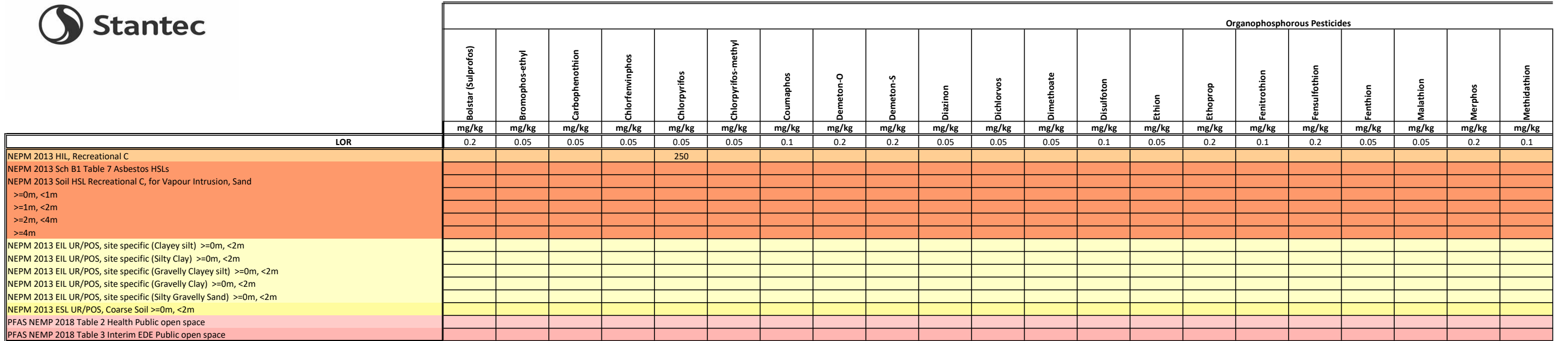


Site ID	Field ID	Location Code	Date																					
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305001663	TP01_3.5-3.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP02_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP02_3.5-3.6		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP03_1.9-2.0		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
305001663	TP04_0-0.1		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
305001663	TP04_3.4-3.5		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
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305001663	TP05_2.4-2.5		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
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305001663	TP06_3.4-3.5		09 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
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305001663	TP07_3.4-3.5		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	TP08_3.0-3.1		10 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
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305001663	TP09_3.5-3.6		10 Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05
305001663	TP10_2.7-2.8		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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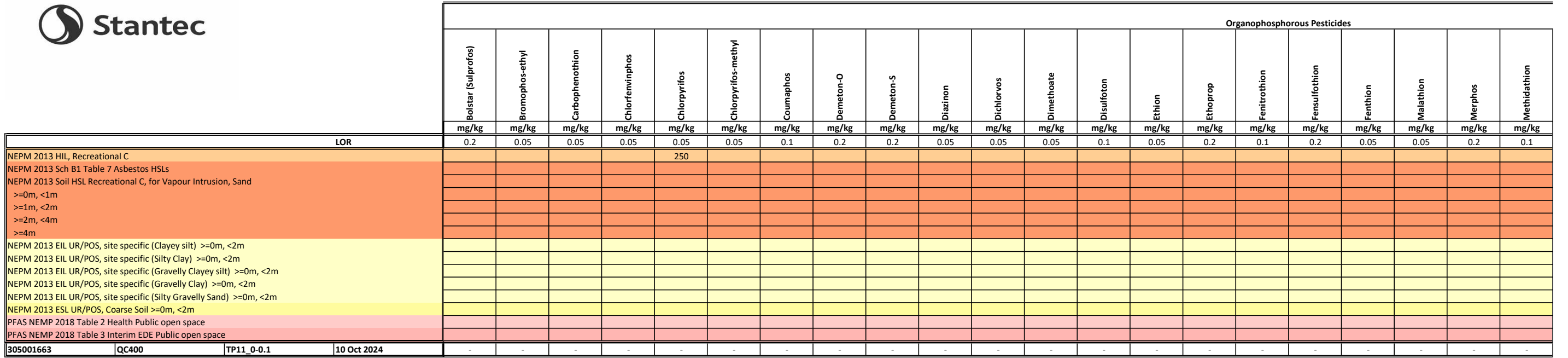


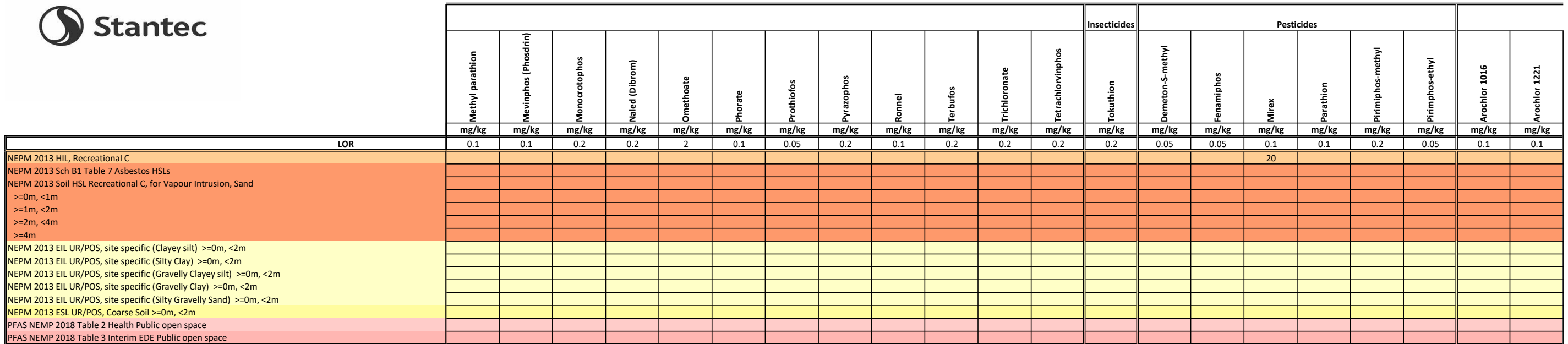
Site ID	Field ID	Location Code	Date																					
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305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	TP04_0-0.1		09 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	-
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305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH04_0.1		10 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	-
305001663	BH04_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_0.5		10 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	<0.05	-	-
305001663	BH05_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 1: Soil Analytical Results

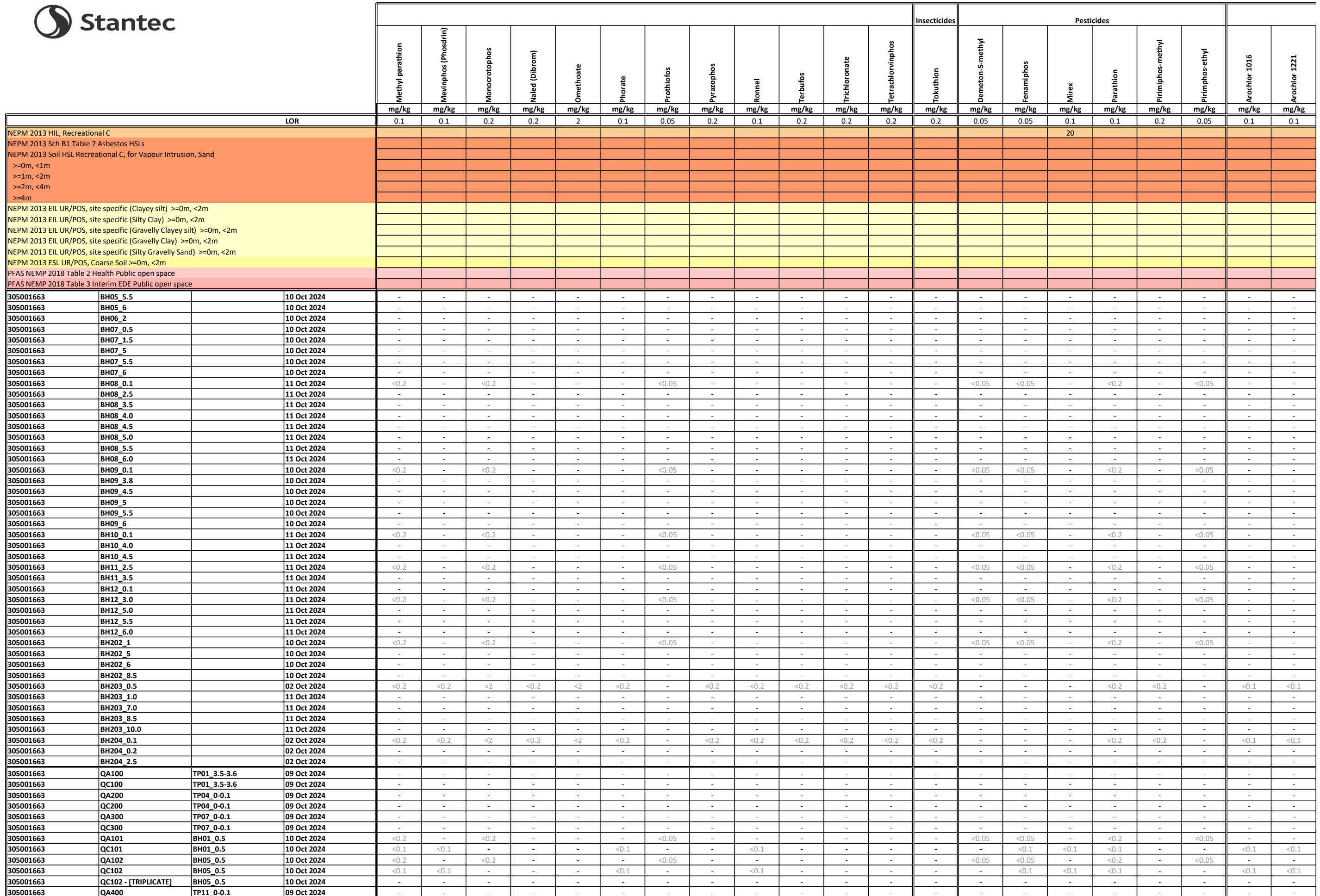


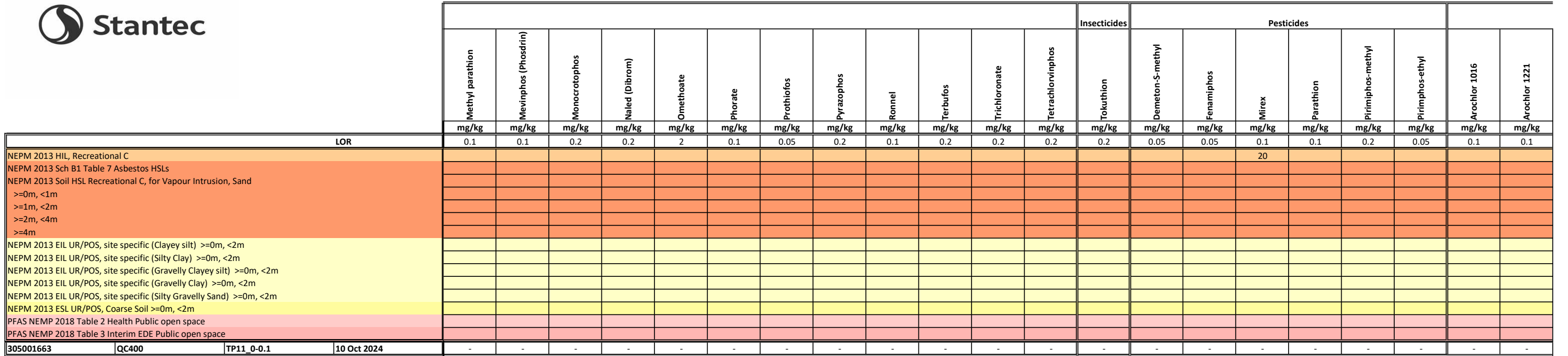
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				Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenwinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfotion	Fenthion	Malathion	Merphos	Methidathion
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.2	0.05	0.05	0.05	0.05	0.05	0.1	0.2	0.2	0.05	0.05	0.05	0.1	0.05	0.2	0.1	0.2	0.05	0.05	0.2	0.1
NEPM 2013 HIL, Recreational C								250																
NEPM 2013 Sch B1 Table 7 Asbestos HSLs																								
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																								
>=0m, <1m																								
>=1m, <2m																								
>=2m, <4m																								
>=4m																								
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m																								
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m																								
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m																								
PFAS NEMP 2018 Table 2 Health Public open space																								
PFAS NEMP 2018 Table 3 Interim EDE Public open space																								
305001663	BH05_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH06_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_0.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_1.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH07_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_0.1		11 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.05	<0.05	-	-	-
305001663	BH08_2.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_3.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH08_6.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH09_3.8		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH09_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH10_0.1		11 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.05	<0.05	-	-	-
305001663	BH10_4.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH10_4.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH11_2.5		11 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.05	<0.05	-	-	-
305001663	BH11_3.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_0.1		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_3.0		11 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.05	<0.05	-	-	-
305001663	BH12_5.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_5.5		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH12_6.0		11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH202_1		10 Oct 2024	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.05	<0.05	-	-	-
305001663	BH202_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH202_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH202_8.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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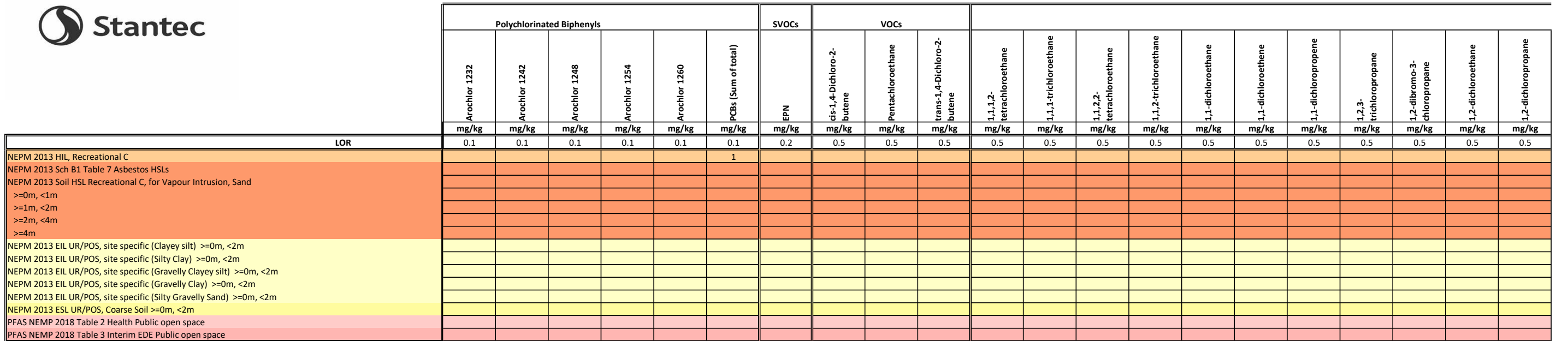




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305001663	TP02_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	TP02_3.5-3.6		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	TP03_1.9-2.0		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP04_0-0.1		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP04_3.4-3.5		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP05_0.9-1.0		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	TP05_2.4-2.5		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP06_0.5-0.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	TP06_3.4-3.5		09 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP07_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	TP08_3.0-3.1		10 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	TP09_1.4-1.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	TP09_3.5-3.6		10 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
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305001663	TP11_0-0.1		10 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
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305001663	BH01_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH01_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH01_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	BH01_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH02_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH02_4		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH02_4.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	BH03_4		10 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	BH03_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	BH03_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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305001663	BH04_5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_0.5		10 Oct 2024	<0.2	-	<0.2	-	-	-	-	<0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.05	-	-
305001663	BH05_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
305001663	BH05_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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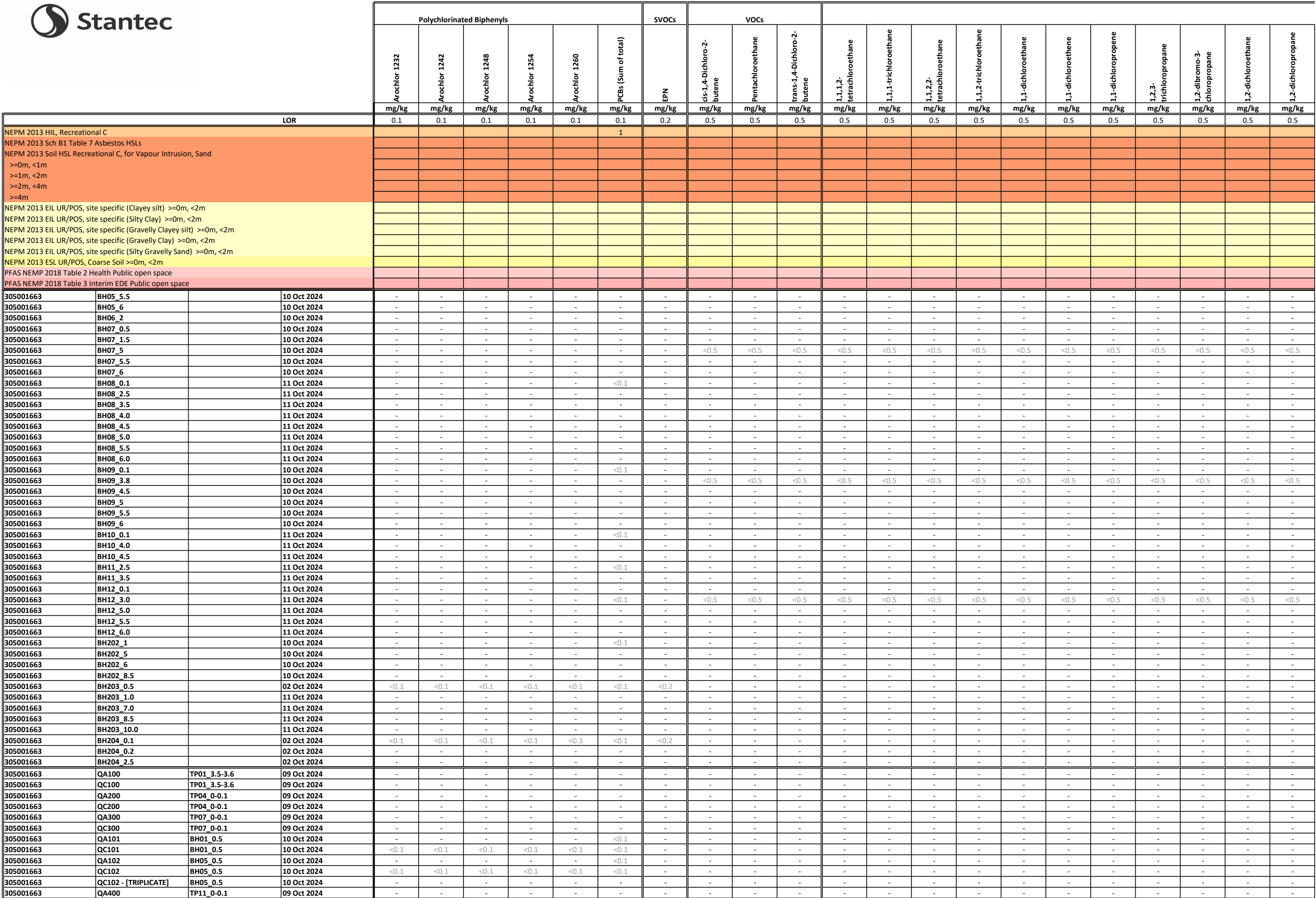


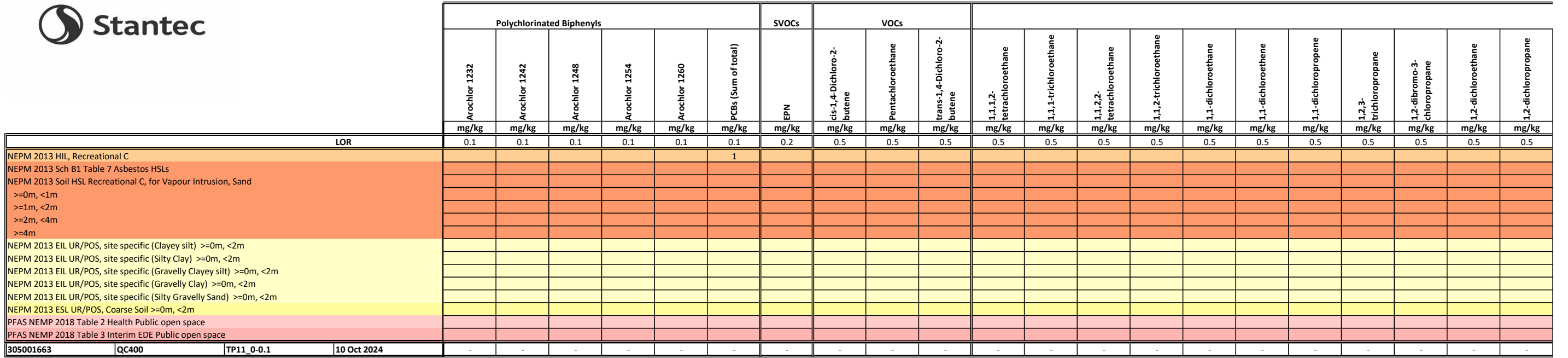




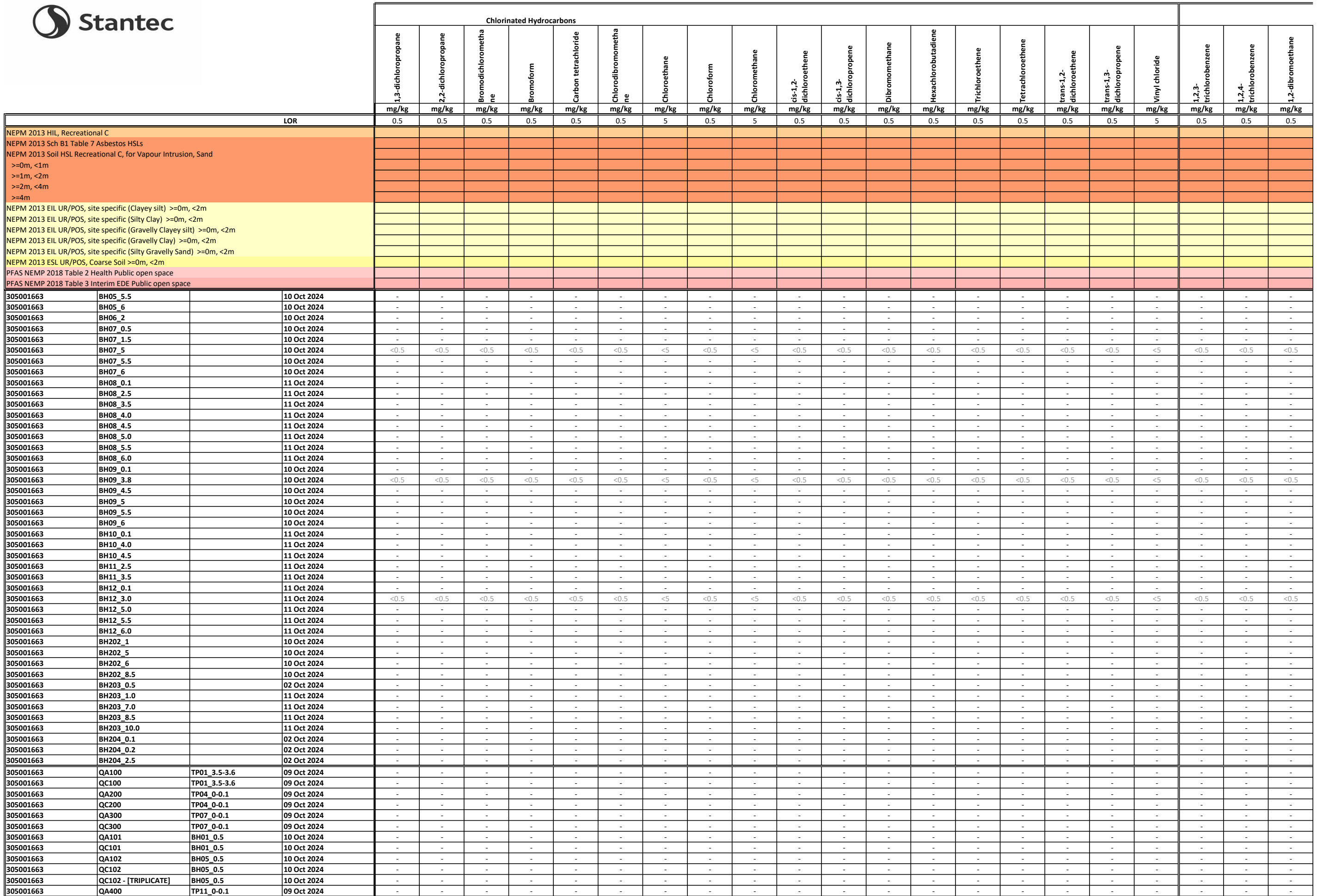
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305001663	TP01_3.5-3.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	TP02_3.5-3.6		09 Oct 2024	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	TP03_1.9-2.0		09 Oct 2024	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	TP06_0.5-0.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH01_0.5		10 Oct 2024	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH01_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH02_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH02_4		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH03_6.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH05_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_4.3		10 Oct 2024	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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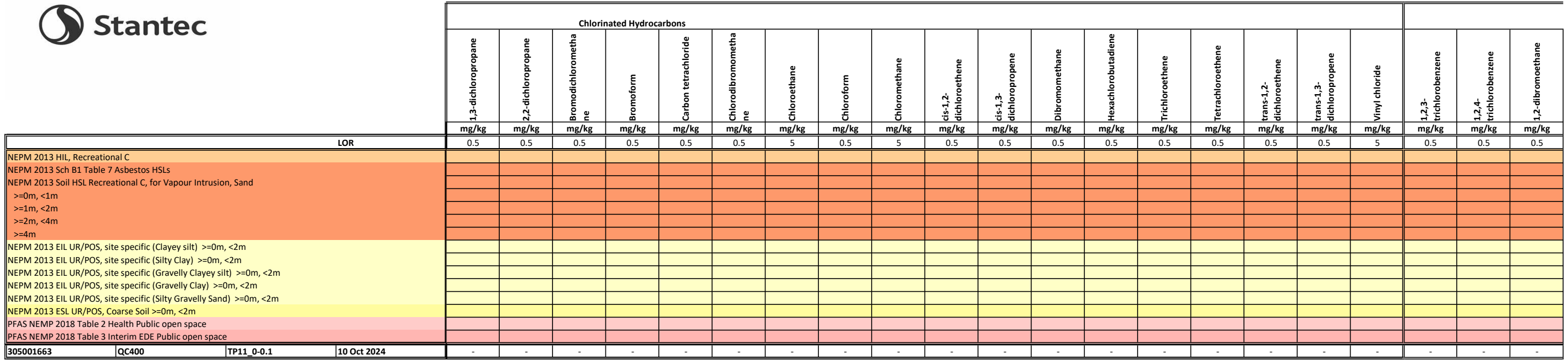


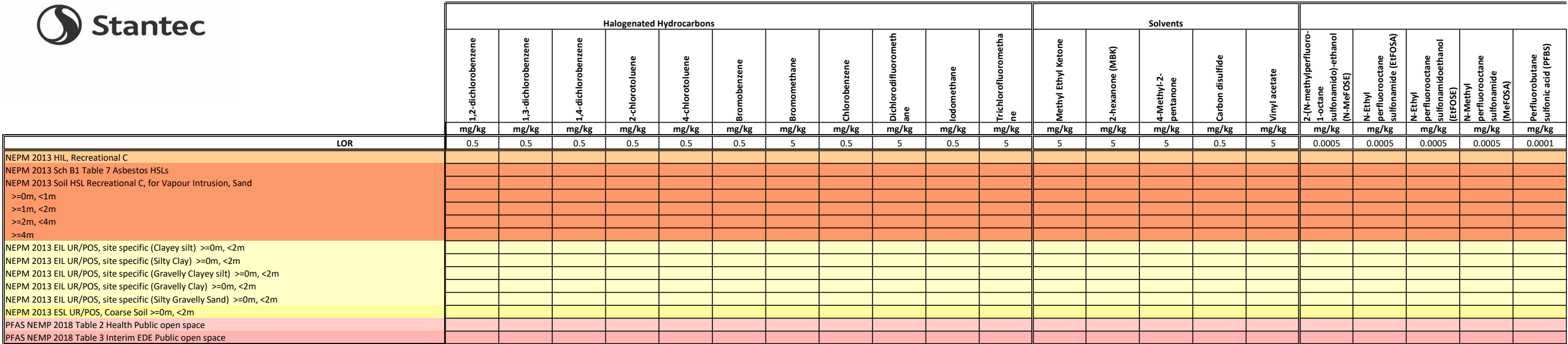


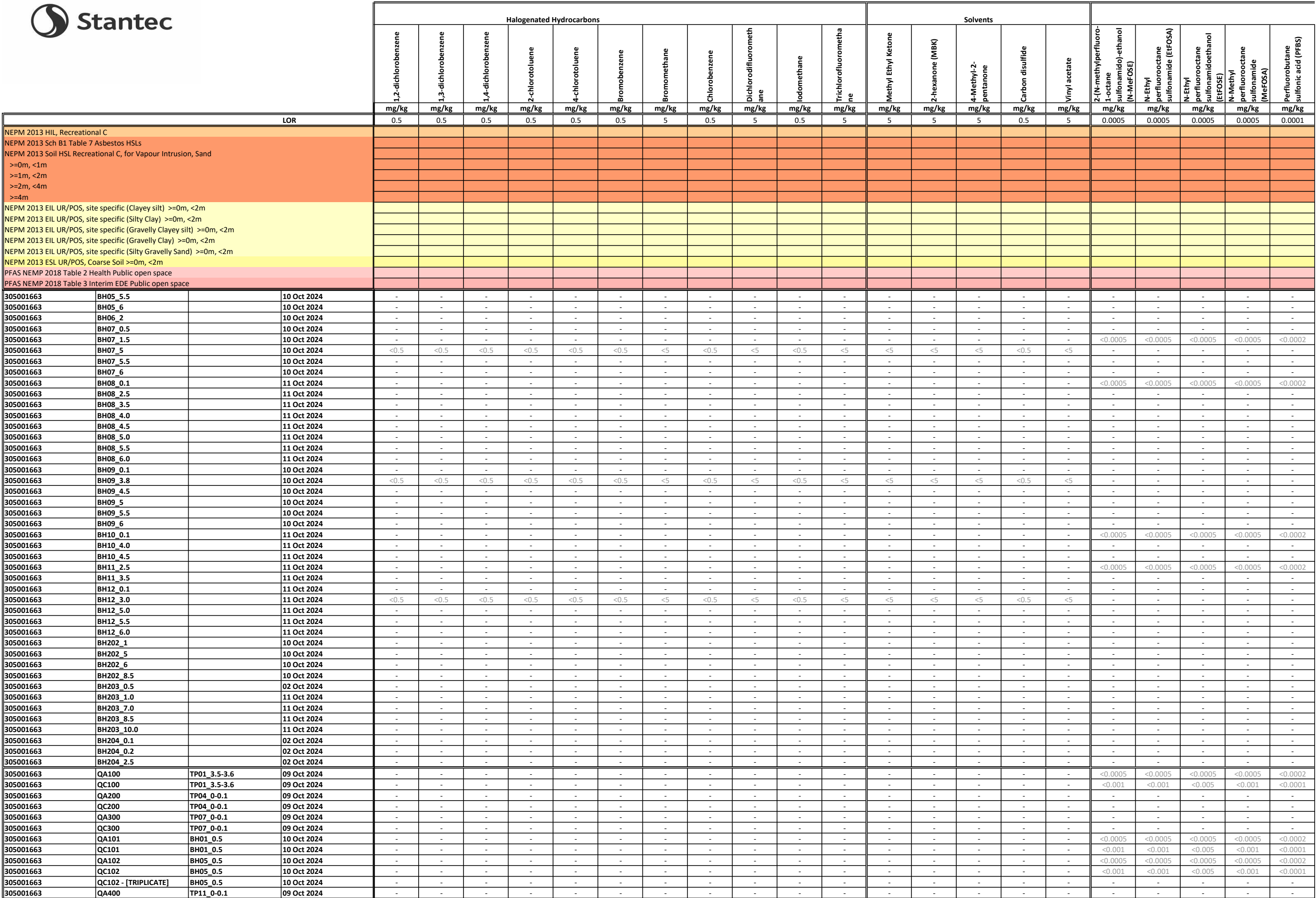


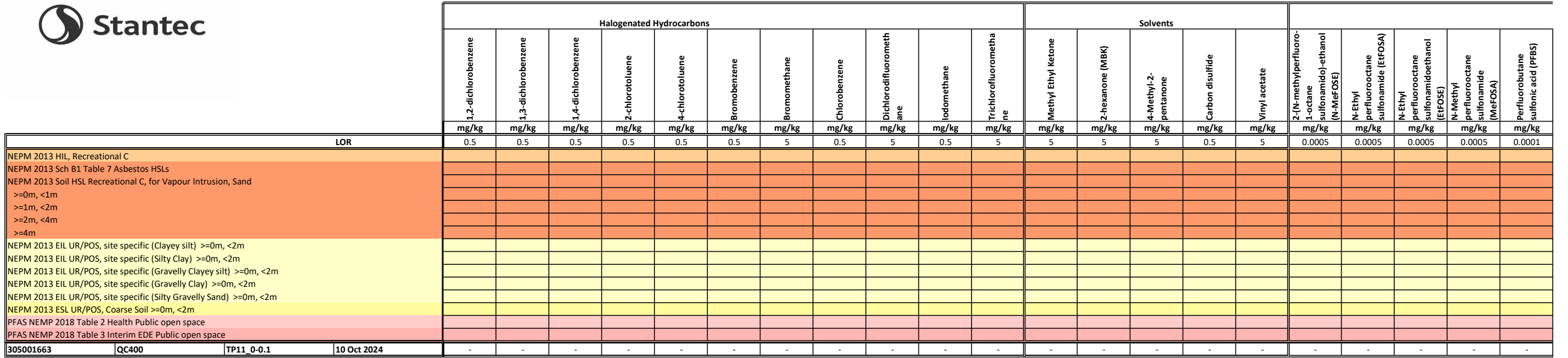
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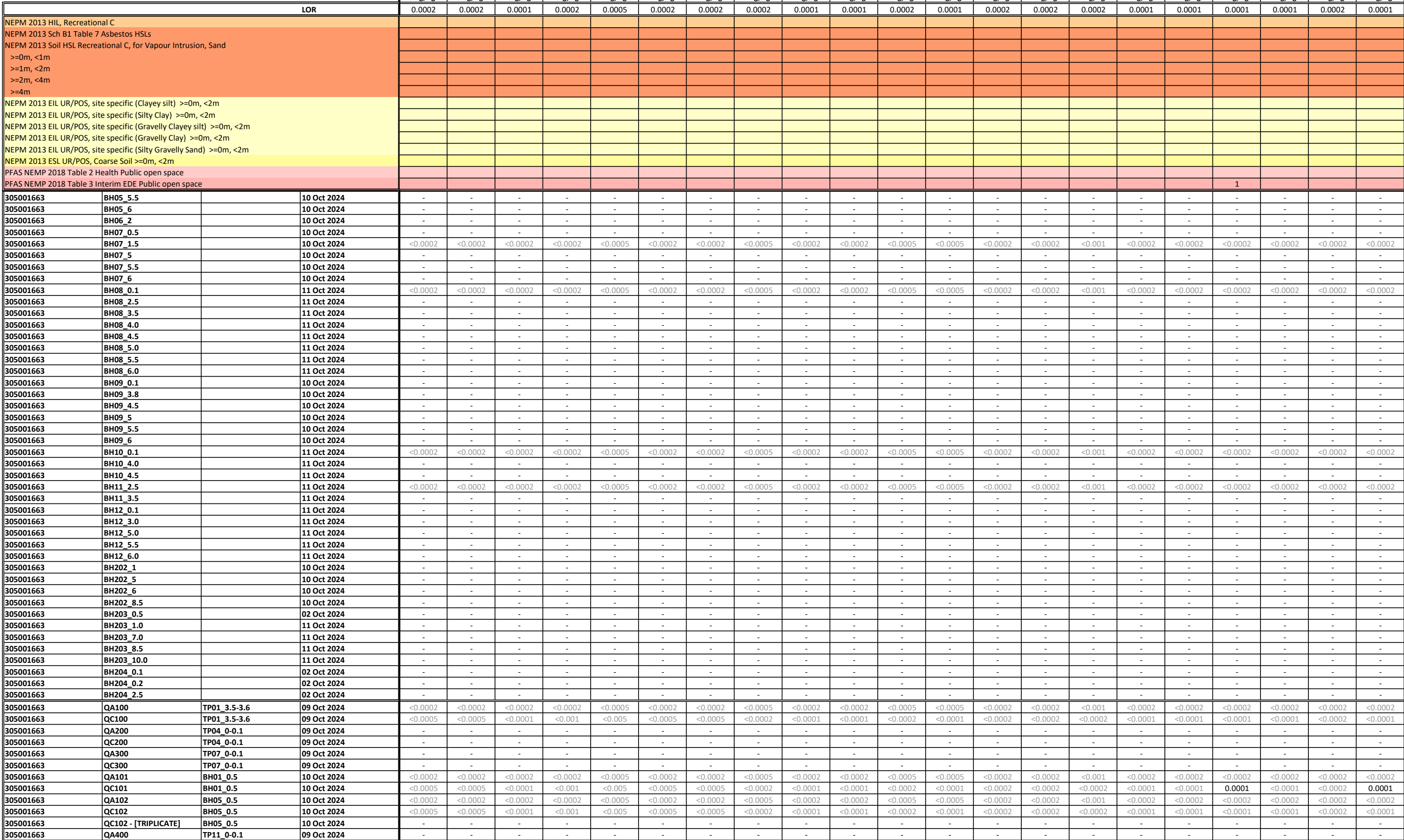








Site ID	Field ID	Location Code	Date																					
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305001663	TP01_3.5-3.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP02_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP02_3.5-3.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP03_1.9-2.0		09 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	TP04_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP04_3.4-3.5		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP05_0.9-1.0		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP05_2.4-2.5		09 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	TP06_0.5-0.6		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP06_3.4-3.5		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP07_0-0.1		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP07_2.9-3.0		09 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	TP07_3.4-3.5		09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	TP09_1.4-1.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP09_3.5-3.6		10 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	TP10_2.7-2.8		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP11_0-0.1		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP11_2.2-2.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP11_2.6-2.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP12_1.0-1.1		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	TP12_3.1-3.2		10 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	BH01_0.5		10 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
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305001663	BH02_4.7		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_0.1		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH03_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH03_6		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH03_7.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH04_0.1		10 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	BH04_5		10 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
305001663	BH04_5.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305001663	BH05_2		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_4.3		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
305001663	BH05_4.5		10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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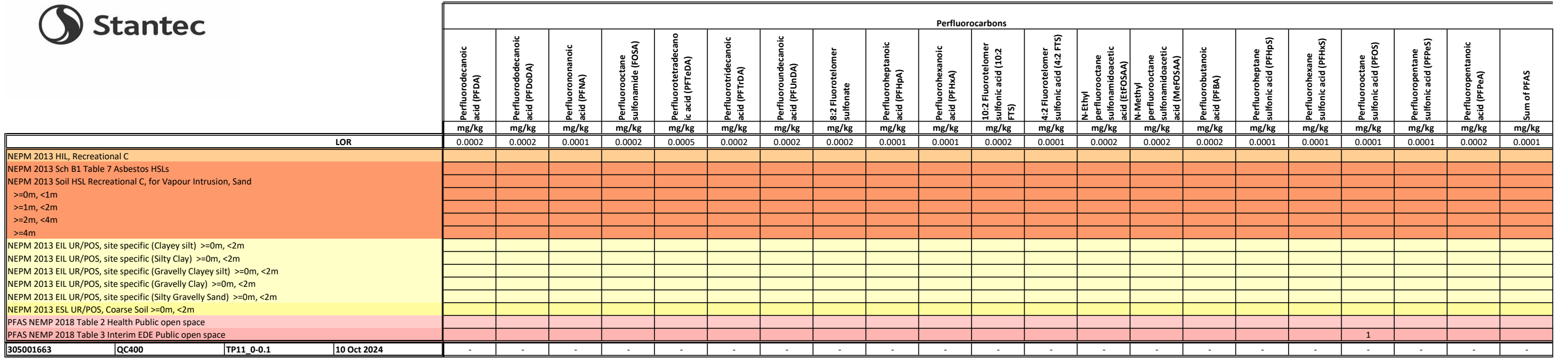



Table 1: Soil Analytical Results

				
	Perfluorodecane sulfonic acid (PFDS)	Sum of PFHxS and PFOS	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluorooctanoate (PFOA)
	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0002	0.0001	0.0001	0.0001
NEPM 2013 HIL, Recreational C				
NEPM 2013 Sch B1 Table 7 Asbestos HSLs				
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand				
>=0m, <1m				
>=1m, <2m				
>=2m, <4m				
>=4m				
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m				
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m				
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m				
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m				
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m				
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m				
PFAS NEMP 2018 Table 2 Health Public open space		1		10
PFAS NEMP 2018 Table 3 Interim EDE Public open space				10

Site ID	Field ID	Location Code	Date				
305001663	TP01_3.0-3.1		09 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	TP01_3.5-3.6		09 Oct 2024	-	-	-	-
305001663	TP02_0-0.1		09 Oct 2024	-	-	-	-
305001663	TP02_3.5-3.6		09 Oct 2024	-	-	-	-
305001663	TP03_0.7-0.8		09 Oct 2024	-	-	-	-
305001663	TP03_1.9-2.0		09 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	TP04_0-0.1		09 Oct 2024	-	-	-	-
305001663	TP04_3.4-3.5		09 Oct 2024	-	-	-	-
305001663	TP05_0.9-1.0		09 Oct 2024	-	-	-	-
305001663	TP05_2.4-2.5		09 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	TP06_0.5-0.6		09 Oct 2024	-	-	-	-
305001663	TP06_3.4-3.5		09 Oct 2024	-	-	-	-
305001663	TP07_0-0.1		09 Oct 2024	-	-	-	-
305001663	TP07_2.9-3.0		09 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	TP07_3.4-3.5		09 Oct 2024	-	-	-	-
305001663	TP08_0.5-0.6		10 Oct 2024	-	-	-	-
305001663	TP08_3.0-3.1		10 Oct 2024	-	-	-	-
305001663	TP09_1.4-1.5		10 Oct 2024	-	-	-	-
305001663	TP09_3.5-3.6		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	TP10_2.7-2.8		10 Oct 2024	-	-	-	-
305001663	TP11_0-0.1		10 Oct 2024	-	-	-	-
305001663	TP11_2.2-2.3		10 Oct 2024	-	-	-	-
305001663	TP11_2.6-2.7		10 Oct 2024	-	-	-	-
305001663	TP12_1.0-1.1		10 Oct 2024	-	-	-	-
305001663	TP12_3.1-3.2		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH01_0.5		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH01_1.8		10 Oct 2024	-	-	-	-
305001663	BH01_3.8		10 Oct 2024	-	-	-	-
305001663	BH01_4.3		10 Oct 2024	-	-	-	-
305001663	BH01_5		10 Oct 2024	-	-	-	-
305001663	BH01_5.5		10 Oct 2024	-	-	-	-
305001663	BH01_6		10 Oct 2024	-	-	-	-
305001663	BH01_6.5		10 Oct 2024	-	-	-	-
305001663	BH01_7		10 Oct 2024	-	-	-	-
305001663	BH02_2		10 Oct 2024	-	-	-	-
305001663	BH02_4		10 Oct 2024	-	-	-	-
305001663	BH02_4.7		10 Oct 2024	-	-	-	-
305001663	BH03_0.1		10 Oct 2024	-	-	-	-
305001663	BH03_4		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH03_4.5		10 Oct 2024	-	-	-	-
305001663	BH03_5		10 Oct 2024	-	-	-	-
305001663	BH03_5.5		10 Oct 2024	-	-	-	-
305001663	BH03_6		10 Oct 2024	-	-	-	-
305001663	BH03_6.5		10 Oct 2024	-	-	-	-
305001663	BH03_7		10 Oct 2024	-	-	-	-
305001663	BH03_7.5		10 Oct 2024	-	-	-	-
305001663	BH04_0.1		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH04_5		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH04_5.5		10 Oct 2024	-	-	-	-
305001663	BH05_0.5		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH05_2		10 Oct 2024	-	-	-	-
305001663	BH05_4.3		10 Oct 2024	-	-	-	-
305001663	BH05_4.5		10 Oct 2024	-	-	-	-
305001663	BH05_5		10 Oct 2024	-	-	-	-

Table 1: Soil Analytical Results

				Perfluorodecane sulfonic acid (PFDS)	Sum of PFHxS and PFOS	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluorooctanoate (PFOA)
				mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0002	0.0001	0.0001	0.0001
NEPM 2013 HIL, Recreational C							
NEPM 2013 Sch B1 Table 7 Asbestos HSLs							
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand							
>=0m, <1m							
>=1m, <2m							
>=2m, <4m							
>=4m							
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m							
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m							
PFAS NEMP 2018 Table 2 Health Public open space					1		10
PFAS NEMP 2018 Table 3 Interim EDE Public open space							10
305001663	BH05_5.5		10 Oct 2024	-	-	-	-
305001663	BH05_6		10 Oct 2024	-	-	-	-
305001663	BH06_2		10 Oct 2024	-	-	-	-
305001663	BH07_0.5		10 Oct 2024	-	-	-	-
305001663	BH07_1.5		10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH07_5		10 Oct 2024	-	-	-	-
305001663	BH07_5.5		10 Oct 2024	-	-	-	-
305001663	BH07_6		10 Oct 2024	-	-	-	-
305001663	BH08_0.1		11 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH08_2.5		11 Oct 2024	-	-	-	-
305001663	BH08_3.5		11 Oct 2024	-	-	-	-
305001663	BH08_4.0		11 Oct 2024	-	-	-	-
305001663	BH08_4.5		11 Oct 2024	-	-	-	-
305001663	BH08_5.0		11 Oct 2024	-	-	-	-
305001663	BH08_5.5		11 Oct 2024	-	-	-	-
305001663	BH08_6.0		11 Oct 2024	-	-	-	-
305001663	BH09_0.1		10 Oct 2024	-	-	-	-
305001663	BH09_3.8		10 Oct 2024	-	-	-	-
305001663	BH09_4.5		10 Oct 2024	-	-	-	-
305001663	BH09_5		10 Oct 2024	-	-	-	-
305001663	BH09_5.5		10 Oct 2024	-	-	-	-
305001663	BH09_6		10 Oct 2024	-	-	-	-
305001663	BH10_0.1		11 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH10_4.0		11 Oct 2024	-	-	-	-
305001663	BH10_4.5		11 Oct 2024	-	-	-	-
305001663	BH11_2.5		11 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	BH11_3.5		11 Oct 2024	-	-	-	-
305001663	BH12_0.1		11 Oct 2024	-	-	-	-
305001663	BH12_3.0		11 Oct 2024	-	-	-	-
305001663	BH12_5.0		11 Oct 2024	-	-	-	-
305001663	BH12_5.5		11 Oct 2024	-	-	-	-
305001663	BH12_6.0		11 Oct 2024	-	-	-	-
305001663	BH202_1		10 Oct 2024	-	-	-	-
305001663	BH202_5		10 Oct 2024	-	-	-	-
305001663	BH202_6		10 Oct 2024	-	-	-	-
305001663	BH202_8.5		10 Oct 2024	-	-	-	-
305001663	BH203_0.5		02 Oct 2024	-	-	-	-
305001663	BH203_1.0		11 Oct 2024	-	-	-	-
305001663	BH203_7.0		11 Oct 2024	-	-	-	-
305001663	BH203_8.5		11 Oct 2024	-	-	-	-
305001663	BH203_10.0		11 Oct 2024	-	-	-	-
305001663	BH204_0.1		02 Oct 2024	-	-	-	-
305001663	BH204_0.2		02 Oct 2024	-	-	-	-
305001663	BH204_2.5		02 Oct 2024	-	-	-	-
305001663	QA100	TP01_3.5-3.6	09 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	QC100	TP01_3.5-3.6	09 Oct 2024	<0.0002	<0.0001	<0.0001	<0.0001
305001663	QA200	TP04_0-0.1	09 Oct 2024	-	-	-	-
305001663	QC200	TP04_0-0.1	09 Oct 2024	-	-	-	-
305001663	QA300	TP07_0-0.1	09 Oct 2024	-	-	-	-
305001663	QC300	TP07_0-0.1	09 Oct 2024	-	-	-	-
305001663	QA101	BH01_0.5	10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	QC101	BH01_0.5	10 Oct 2024	<0.0002	0.0001	<0.0001	<0.0001
305001663	QA102	BH05_0.5	10 Oct 2024	<0.0002	<0.0002	<0.0005	<0.0002
305001663	QC102	BH05_0.5	10 Oct 2024	<0.0002	<0.0001	<0.0001	<0.0001
305001663	QC102 - [TRIPLICATE]	BH05_0.5	10 Oct 2024	-	-	-	-
305001663	QA400	TP11_0-0.1	09 Oct 2024	-	-	-	-



Table 1: Soil Analytical Results

				Perfluorodecane sulfonic acid (PFDS)	Sum of PFHxS and PFOS	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluorooctanoate (PFOA)
				mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0002	0.0001	0.0001	0.0001
NEPM 2013 HIL, Recreational C							
NEPM 2013 Sch B1 Table 7 Asbestos HSLs							
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand							
>=0m, <1m							
>=1m, <2m							
>=2m, <4m							
>=4m							
NEPM 2013 EIL UR/POS, site specific (Clayey silt) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Silty Clay) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clayey silt) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Gravelly Clay) >=0m, <2m							
NEPM 2013 EIL UR/POS, site specific (Silty Gravelly Sand) >=0m, <2m							
NEPM 2013 ESL UR/POS, Coarse Soil >=0m, <2m							
PFAS NEMP 2018 Table 2 Health Public open space					1		10
PFAS NEMP 2018 Table 3 Interim EDE Public open space							10
305001663	QC400	TP11_0-0.1	10 Oct 2024	-	-	-	-

Table 2: Sediment Analytical Results



	PAH			Metals										Inorganics	Organochlorine Pesticides				Polychlorinated Biphenyls
	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (upper bound) *	PAHs (Sum of total)	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Silver	Zinc	Moisture Content	Chlordane	DDD	Dieldrin	Endrin	PCBs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.5	0.5	0.5	5	5	1	2	5	5	0.1	2	2	5	1	0.05	0.05	0.05	0.05	0.1
ANZG (2018) Sediment Quality Guidelines (DGV)			10	2	20	1.5	80	65	50	0.15	21	1	200		0.0045	0.0014	0.0028	0.0027	0.034
ANZG (2018) Sediment Quality Guidelines (GV-high)			50	25	70	10	370	270	220	1	52	4	410		0.009	0.007	0.007	0.06	0.28

Field ID	Date	Lab Report Number																			
SED01_0.1	08 Oct 2024	ES2432838	0.6	1.2	<0.5	<5	<5	<1	8	<5	8	<0.1	4	<2	15	21.5	<0.05	<0.05	<0.05	<0.05	<0.1
SED03_0.1	08 Oct 2024	ES2432838	0.6	1.2	<0.5		<5	<1	9	<5	7	<0.1	5		15	16.7	<0.05	<0.05	<0.05	<0.05	<0.1
SED05_0.1	08 Oct 2024	ES2432838	0.6	1.2	<0.5		<5	<1	8	<5	8	<0.1	5		16	14.8	<0.05	<0.05	<0.05	<0.05	<0.1
SED07_0.15	08 Oct 2024	ES2432838	0.6	1.2	<0.5		<5	<1	8	10	9	<0.1	6		38	24.8	<0.05	<0.05	<0.05	<0.05	<0.1
SED09_0.1	08 Oct 2024	ES2432838	0.6	1.2	<0.5		<5	<1	8	<5	6	<0.1	4		15	16.8	<0.05	<0.05	<0.05	<0.05	<0.1

Statistics																			
Maximum Concentration	0.6	1.2	<0.5	<5	<5	<1	9	10	9	<0.1	6	<2	38	24.8	<0.05	<0.05	<0.05	<0.05	<0.1
Average Concentration *	0.6	1.2	0.25		2.5	0.5	8.2	4	7.6	0.05	4.8		20	19	0.025	0.025	0.025	0.025	0.05
Standard Deviation *	0	0	0		0	0	0.45	3.4	1.1	0	0.84		10	4.1	0	0	0	0	0
95% UCL (Student's-t) *	0.6	1.2	0.25		2.5	0.5	8.626	7.198	8.687	0.05	5.598		29.51	22.84	0.025	0.025	0.025	0.025	0.05
% of Detects	100	100	0	0	0	0	100	20	100	0	100	0	100	100	0	0	0	0	0
% of Non-Detects	0	0	100	100	100	100	0	80	0	100	0	100	0	0	100	100	100	100	100

\* A Non Detect Multiplier of 0.5 has been applied.

Table 3: Groundwater Analytical Results



	CRC Care TPH Fractions		Metals											Inorganics				
	F1: C6-C10 less BTEX	F2: >C10-C16 less Naphthalene	Arsenic (filtered)	Cadmium (filtered)	Calcium (filtered)	Copper (filtered)	Lead (filtered)	Magnesium (filtered)	Mercury (filtered)	Nickel (filtered)	Potassium (filtered)	Sodium (filtered)	Zinc (filtered)	Alkalinity (Bicarbonate as CaCO3)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total
	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L
LOR	20	100	0.001	0.0001	1	0.001	0.001	1	0.0001	0.001	1	1	0.005	1	1	1	1	0.01
ANZG (2018) Freshwater 95% toxicant DGVs				0.0002		0.0014	0.0034		0.0006	0.011			0.008					
ANZG (2018) Freshwater 99% LOSP Toxicant DGVs				0.00006		0.001	0.001		0.00006	0.008			0.0024					
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
Buildings & Structures (AS2159-2009)																		
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand	1,000   1,000   1,000	1,000   1,000   1,000																

Field ID	Date	Lab Report Number																			
MW01	25 Oct 2024	ES2434893	<20	<100	<0.001	<0.0001	11	<0.001	<0.001	6	<0.0001	0.008	5	48	0.025	42	<1	<1	42	2.95	
MW02	25 Oct 2024	ES2434893	<20	<100	<0.001	0.0004	190	0.100	0.001	643	<0.0001	0.349	8	1,770	0.298	7	<1	<1	7	132	
MW03	25 Oct 2024	ES2434893	<20	<100	<0.001	<0.0001	35	0.002	<0.001	110	<0.0001	0.061	3	2,430	0.016	482	<1	<1	482	116	
MW04	25 Oct 2024	ES2434893	<20	<100	<0.001	0.0001	121	0.004	<0.001	122	<0.0001	0.039	7	839	0.133	402	<1	<1	402	53.3	
MW05	25 Oct 2024	ES2434893	<20	<100	0.002	<0.0001	73	<0.001	<0.001	<1	0.0011	0.005	64	438	<0.005	<1	108	234	342	24.4	
QA100	25 Oct 2024	ES2434893	<20	<100	<0.001	0.0002		0.012	<0.001		<0.0001	0.094			0.208						

Statistics																			
Maximum Concentration	<20	<100	0.002	0.0004	190	0.1	0.001	643	0.0011	0.349	64	2,430	0.298	482	108	234	482	132	
Average Concentration *	10	50	0.00075	0.00014	86	0.02	0.00058	176	0.00023	0.093	17	1,105	0.11	187	22	47	255	66	
Standard Deviation *	0	0	0.00061	0.00014	71	0.04	0.0002	267	0.00043	0.13	26	979	0.12	235	48	104	217	56	
95% UCL (Student's-t) *	10	50	0.00125	0.0002563	154.1	0.0523	0.00075125	430.8	0.00057763	0.2	42.3	2,038	0.213	411	67.83	146.8	461.5	119.5	
% of Detects	0	0	17	50	100	67	17	80	17	100	100	100	83	80	20	20	100	100	
% of Non-Detects	100	100	83	50	0	33	83	20	83	0	0	0	17	20	80	80	0	0	


\* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

ANZG, March 2021, ANZG (2018) Freshwater 99% LOSP Toxicant DGVs



Table 3: Groundwater Analytical Results

					Perfluorocarbons												
	Cations Total	Chloride	Ionic Balance	Sulfate as SO4 - Turbidimetric (filtered)	Sum of WA DWER PFAS (n=10)*	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Sum of PFAS	Sum of PFHxS and PFOS
	meq/L	mg/L	%	mg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR	0.01	1	0.01	1	0.0002	0.0005	0.0005	0.0005	0.0002	0.002	0.0005	0.0005	0.0005	0.0005	0.001	0.0002	0.0002
ANZG (2018) Freshwater 95% toxicant DGVs																	
ANZG (2018) Freshwater 99% LOSP Toxicant DGVs																	
PFAS NEMP 2.0 Table 5 Freshwater 95%									0.13					220			
PFAS NEMP 2.0 Table 5 Freshwater 99%									0.00023					19			
Buildings & Structures (AS2159-2009)		6,000															
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand	1																

Field ID	Date	Lab Report Number																	
MW01	25 Oct 2024	ES2434893	3.26	69	4.93	8	0.0296	0.0019	0.0006	0.0030	0.0013	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	0.020	0.0302	0.0043
MW02	25 Oct 2024	ES2434893	140	4,670	2.82	3	0.0522	0.0017	0.0006	0.0038	0.0017	0.0070	<0.0005	0.0010	<0.0005	<0.0005	0.037	0.0528	0.0055
MW03	25 Oct 2024	ES2434893	116	3,670	0.20	142	0.0166	<0.0005	<0.0005	<0.0005	0.0006	<0.0020	<0.0005	<0.0005	<0.0005	<0.0005	0.016	0.0166	0.0006
MW04	25 Oct 2024	ES2434893	52.8	1,130	0.55	645	0.302	0.0020	<0.0005	0.0035	0.0109	0.0112	0.0057	0.0027	0.0008	0.0028	0.262	0.302	0.0144
MW05	25 Oct 2024	ES2434893	24.3	519	0.24	143	0.0595	<0.0005	<0.0005	0.0133	0.0105	<0.0020	<0.0005	0.0185	0.0014	0.0058	0.010	0.0595	0.0238
QA100	25 Oct 2024	ES2434893					0.222	0.0017	<0.0005	0.0033	0.0092	0.0102	0.0057	0.0022	0.0007	0.0026	0.186	0.222	0.0125

Statistics																		
Maximum Concentration	140	4,670	4.93	645	0.302	0.002	0.0006	0.0133	0.0109	0.0112	0.0057	0.0185	0.0014	0.0058	0.262	0.302	0.0238	
Average Concentration *	67	2,012	1.7	188	0.11	0.0013	0.00037	0.0045	0.0057	0.0056	0.0021	0.0042	0.00061	0.002	0.089	0.11	0.01	
Standard Deviation *	59	2,037	2.1	264	0.12	0.00082	0.00018	0.0045	0.005	0.0045	0.0028	0.0071	0.00046	0.0022	0.11	0.12	0.0084	
95% UCL (Student's-t) *	123.3	3,954	3.735	440.3	0.211	0.00198	0.00051535	0.00822	0.00979	0.00934	0.00438	0.00999	0.00098658	0.00382	0.177	0.211	0.0171	
% of Detects	100	100	100	100	100	67	33	83	100	67	33	67	50	50	100	100	100	
% of Non-Detects	0	0	0	0	0	33	67	17	0	33	67	33	50	50	0	0	0	

\* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

ANZG, March 2021, ANZG (2018) Freshwater 99% LOSP Toxicant DGVs

Table 4: Surface Water Analytical Results



	CRC Care TPH Fractions		Metals															
	F1: C6-C10 less BTEX	F2: >C10-C16 less Naphthalene	Arsenic (filtered)	Cadmium (filtered)	Calcium (filtered)	Copper (filtered)	Lead (filtered)	Magnesium (filtered)	Mercury (filtered)	Nickel (filtered)	Potassium (filtered)	Sodium (filtered)	Zinc (filtered)	Alkalinity (Bicarbonate as CaCO3)	Carbonate Alkalinity (as CaCO3)	Phosphate total (as P)	Alkalinity (total) as CaCO3	Ammonia as N
	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	MG/L	mg/L	mg/L
LOR	20	100	0.001	0.0001	1	0.001	0.001	1	0.0001	0.001	1	1	0.005	1	1	0.01	1	0.01
ANZG (2018) Freshwater 95% toxicant DGVs				0.0002		0.0014	0.0034		0.0006	0.011			0.008					0.9
ANZG (2018) Freshwater 99% LOSP Toxicant DGVs				0.00006		0.001	0.001		0.00006	0.008			0.0024					0.32
PFAS NEMP 2.0 Table 5 Freshwater 95%																		
PFAS NEMP 2.0 Table 5 Freshwater 99%																		
ANZECC 2000 Irrigation - Short-term trigger value			2	0.05		5	5		0.002	2			5					
ANZECC 2000 Irrigation - Long-term trigger value			0.1	0.01		0.2	2		0.002	0.2			2					
Buildings & Structures (AS2159-2009)																		
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand	1,000   1,000   1,000	1,000   1,000   1,000																

Field ID	Date	Lab Report Number																		
QA100	08 Oct 2024	ES2432838	<20	<100	<0.001	<0.0001		0.005	<0.001		<0.0001	0.001			<0.005			0.06	0.02	
SW01	08 Oct 2024	ES2432838	<20	<100	<0.001	<0.0001	15	0.001	<0.001	7	<0.0001	<0.001	3	34	<0.005	48	20	0.04	68	0.04
SW02	08 Oct 2024	ES2432838	<20	<100	<0.001	<0.0001	15	0.002	<0.001	7	<0.0001	<0.001	3	34	<0.005	48	22	0.04	70	0.02
SW03	08 Oct 2024	ES2432838	<20	<100	<0.001	<0.0001	13	0.006	<0.001	6	<0.0001	0.001	3	34	<0.005	46	24	0.05	70	0.02


Statistics																			
Maximum Concentration	<20	<100	<0.001	<0.0001	15	0.006	<0.001	7	<0.0001	0.001	3	34	<0.005	48	24	0.06	70	0.04	
Average Concentration *	10	50	0.0005	0.00005	14	0.0035	0.0005	6.7	0.00005	0.00075	3	34	0.0025	47	22	0.048	69	0.025	
Standard Deviation *	0	0	0	0	1.2	0.0024	0	0.58	0	0.00029	0	0	0	1.2	2	0.0096	1.2	0.01	
95% UCL (Student's-t) *	10	50	0.0005	0.00005	16.28	0.0063	0.0005	7.64	0.00005	0.00109	3	34	0.0025	49.28	25.37	0.0588	71.28	0.0368	
% of Detects	0	0	0	0	100	100	0	100	0	50	100	100	0	100	100	100	100	100	
% of Non-Detects	100	100	100	100	0	0	100	0	100	50	0	0	100	0	0	0	0	0	

\* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

ANZG, March 2021, ANZG (2018) Freshwater 99% LOSP Toxicant DGVs

Table 4: Surface Water Analytical Results

	Inorganics						Perfluorocarbons						
	Anions Total	Cations Total	Chloride	Kjeldahl Nitrogen Total	Nitrogen (Total)	Sulfate as SO4 - Turbidimetric (filtered)	Sum of WA DWER PFAS (n=10)*	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Sum of PFAS	Sum of PFHxS and PFOS
	meq/L	meq/L	mg/L	mg/L	mg/L	mg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR	0.01	0.01	1	0.1	0.1	1	0.0002	0.0002	0.0005	0.0005	0.0005	0.0002	0.0002
ANZG (2018) Freshwater 95% toxicant DGVs													
ANZG (2018) Freshwater 99% LOSP Toxicant DGVs													
PFAS NEMP 2.0 Table 5 Freshwater 95%								0.13			220		
PFAS NEMP 2.0 Table 5 Freshwater 99%								0.00023			19		
ANZECC 2000 Irrigation - Short-term trigger value					25								
ANZECC 2000 Irrigation - Long-term trigger value					5								
Buildings & Structures (AS2159-2009)			6,000										
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand													

Field ID	Date	Lab Report Number													
QA100	08 Oct 2024	ES2432838				0.7	0.7		0.0055	0.0010	0.0028	0.0010	0.0007	0.0055	0.0010
SW01	08 Oct 2024	ES2432838	2.88	2.88	28	0.7	0.7	35	0.0053	0.0010	0.0024	0.0008	0.0011	0.0053	0.0010
SW02	08 Oct 2024	ES2432838	2.92	2.88	29	0.7	0.7	34	0.0067	0.0014	0.0033	0.0008	0.0012	0.0067	0.0014
SW03	08 Oct 2024	ES2432838	2.94	2.70	29	0.7	0.7	35	0.0062	0.0018	0.0028	0.0007	0.0009	0.0062	0.0018

Statistics														
Maximum Concentration	2.94	2.88	29	0.7	0.7	35	0.0067	0.0018	0.0033	0.001	0.0012	0.0067	0.0018	
Average Concentration *	2.9	2.8	29	0.7	0.7	35	0.0059	0.0013	0.0028	0.00082	0.00098	0.0059	0.0013	
Standard Deviation *	0.031	0.1	0.58	0	0	0.58	0.00064	0.00038	0.00037	0.00013	0.00022	0.00064	0.00038	
95% UCL (Student's-t) *	2.965	2.995	29.64	0.7	0.7	35.64	0.00668	0.00175	0.00326	0.00097306	0.00124	0.00668	0.00175	
% of Detects	100	100	100	100	100	100	100	100	100	100	100	100	100	
% of Non-Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	

\* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards  
ANZG, March 2021, ANZG (2018) Freshwater 99% LOSP Toxicant DGVs

Table 5: Acid Sulfate Soil Analytical Results

Project: 305001663  
 Site: Jordan Springs High School  
 Detailed Site Investigation



			Field Screen				Chromium Reducible Sulfur Suite														Liming
			pH (F)	pH (Fox)	pH Difference	Reaction Rate	Chromium Reducible Sulfur	pH (KCl)	Titrateable Actual Acidity	HCl Extractable Sulfur	KCl Extractable Sulfur	Net Acid Soluble Sulfur (in sulfur units)	Retained Acidity	Acid Neutralising Capacity - BT (ANC-BT)	Acid Neutralising Capacity - BT (ANC-BT)	Acid Neutralising Capacity - BT (ANC-BT)	CRS Suite - Net Acidity (Acidity Units)	CRS Suite - Net Acidity (Sulfur Units)	CaCO3 equivalent neutralising		
			pH Unit	pH Unit	pH Unit	-	%S	pH Unit	mol H+/t	%S	%S	%S	%S	%S	% CaCO3	mol H+/t	kg/CaCO3	mol H+/t	% S	kg/CaCO3	
LOR			0.1	0.1		0	0.005	0.1	2	0.005	0.005	Calculated	Calculated		0.01	Calculated	Calculated	Calculated	Calculated	Calculated	
ASSMAC (1998) / NASSG (2018) Action Criteria - Fine Soils (>1000 tonnes)																	18	0.03			
NASSG (2018) Sulfidic Soils, potential AASS							0.01	≤ 4													
ASSMAC (1998) Actual Acid Sulfate Soil Indicator Value			≤ 4																		
ASSMAC (1998) Potential Acid Sulfate Soil Indicator Value			>4	<3	>1																
Location	Depth	Source																			
TP11_2.2-2.3			5	7.6	2.6	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
TP11_2.6-2.7			7.5	7.2	-0.3	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH01_4.3			6.3	4.4	-1.9	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH01_5			6.4	4.4	-2	3	0.029	5.9	5	-	-	-	-	N/A	-	-	23.09	0.04		1.16	
BH01_5.5			6.6	4.4	-2.2	3	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH01_6			6.1	4.4	-1.7	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH01_6.5			6.1	7	0.9	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH01_7			5.9	5.2	-0.7	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH03_4.5			4.8	3.5	-1.3	2	0.017	4.3	56	<0.02	<0.02	-	-	N/A	-	-	66.60	0.11		3.33	
BH03_5			4.9	3.8	-1.1	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH03_5.5			4.7	4.1	-0.6	2	0.021	4.4	36	<0.02	<0.02	-	-	N/A	-	-	49.10	0.08		2.46	
BH03_6			4.9	4.8	-0.1	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH03_6.5			5.3	6.7	1.4	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH03_7			5.1	6.9	1.8	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH03_7.5			5.3	6.8	1.5	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH04_5			7.1	4.7	-2.4	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH04_5.5			6.9	5	-1.9	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH05_4.3			9.5	8.8	-0.7	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH05_4.5			9.2	9.2	0	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH05_5			8.2	7.2	-1	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH05_5.5			8.1	7.6	-0.5	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH05_6			9.2	6.4	-2.8	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH07_5			8.3	7.6	-0.7	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH07_5.5			7.9	7.4	-0.5	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH07_6			8.1	7.9	-0.2	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_3.5			6.9	7.2	0.3	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_4.0			6.7	7.6	0.9	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_4.5			7	7.5	0.5	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_5.0			7.9	8.3	0.4	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_5.5			7.8	8.2	0.4	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH08_6.0			8.2	8.6	0.4	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH09_4.5			8.2	7.8	-0.4	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH09_5			8.8	8.9	0.1	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH09_5.5			8.4	8.9	0.5	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH09_6			8.6	8.8	0.2	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH10_4.0			6.2	7.4	1.2	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH10_4.5			7.6	7.2	-0.4	4	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH12_5.0			6.8	4.3	-2.5	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH12_5.5			6	3.1	-2.9	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH202_5			7.1	4.6	-2.5	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH202_6			5.2	3.4	-1.8	2	0.025	4.3	62	<0.02	<0.02	-	-	N/A	-	-	77.59	0.12		3.88	
BH202_8.5			5.5	4.7	-0.8	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH203_7.0			5.8	5.1	-0.7	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH203_8.5			5.8	4.4	1.4	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	
BH203_10.0			6.4	5.2	1.2	2	-	-	-	-	-	-	-	N/A	-	-	-	-	-	-	



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