

ANPRISA PTY LTD



**Hydrogeological Report
including Dewatering
Management Plan and
Groundwater Seepage Analysis**

40-76 William Street, Leichhardt NSW

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1. INTRODUCTION

1.1 Background and Purpose

EI Australia (EI) was engaged by Anprisa Pty Ltd ('the client') to prepare a Hydrogeological Report including Dewatering Management Plan and Groundwater Seepage Analysis (the 'report') for 40-76 William Street, Leichhardt NSW ('the site').

The site is located within the local government area of the Inner West Council, as shown in **Figure A1, Appendix A**. The subject site can be identified as Lot 2 in Deposited Plan (DP) 789576, and covers a total area of approximately 6,930 m² (**Figure A2**). At the time of this report the site was occupied by large storage warehouses and car parking.

Site redevelopment will involve the construction of a two-level drained basement, which will likely intercept the local groundwater system; therefore, site dewatering will be required to enable basement construction. Groundwater drawn into the dewatering system is proposed to be appropriately treated to comply with relevant water quality criteria for subsequent discharge into the local municipal stormwater system, subject to Council approval.

The NSW Government considers this project to be of state-level importance (i.e. a State Significant Development, or SSD), which warrants a State Significant Development Application (SSDA) submitted for assessment and determination under the SSD provisions of the Environmental Planning and Assessment Act 1979 (EP&A Act). The purpose of this report is twofold, as follows:

- 1) To address the Secretary's Environmental Assessment Requirements (SEARs), which are listed in **Table 1-1**, in support of the SSDA (SSD-119545240); and
- 2) To provide a dewatering management plan, which describes baseline groundwater conditions, quantifies construction groundwater take volumes and provides strategies for mitigating potential adverse impacts on neighbouring properties and infrastructure, local groundwater users and the environment.

Table 1-1 Secretary's Environmental Assessment Requirements

SEARS Requirement	Relevant Section of Report
11. Water Management	Dewatering Methodology – Section 4
- <i>Detail the proposed drainage design and servicing infrastructure to be incorporated as part of the development (stormwater and wastewater).</i>	Water Quality Management – Section 5
- <i>Demonstrate how the development complies with council's drainage requirements and identify proposed stormwater treatment and water quality management measures to minimise adverse environmental impacts.</i>	Minimal Harm Assessment – Section 7
12. Ground and Groundwater Conditions	Acid sulfate soils – Section 2.3
- <i>Assess the potential impacts on soil resources and related infrastructure and riparian land on and near the site and including soil erosion.</i>	Groundwater resource use – Section 2.4
- <i>Where required provide a Groundwater Impact Assessment in accordance with</i>	Downstream surface water receptors – Section 2.6
	Groundwater dependent ecosystems – Section 2.7
	Soil salinity – Section 2.8

SEARS Requirement	Relevant Section of Report
<i>relevant Groundwater Guidelines. If the proposed development is on land identified as having high salinity or acid sulfate soil potential in an EPI provide a Salinity Management Plan or Acid Sulfate Soil Management Plan that includes appropriate management measures and strategies.</i>	Acid sulfate soils – Sections 2.3 and 2.9 Soil erosion – Section 2.10 Construction dewatering groundwater take in ML/year – Section 4.2 Potential impact to any surrounding properties via drawdown induced ground settlement – Section 4.6 Discharge water quality for temporary disposal to municipal storm water system during construction dewatering phase – Section 5.2 Consideration of the Aquifer Interference Policy and minimal harm assessment – Section 7.1

1.2 Proposed Development

Based on the supplied plans (**Appendix C**), the proposed development involves the partial demolition of existing structures, retention of the majority of the internal and external fabric, which will be incorporated into the construction of six multi-storey residential buildings overlying a two-level basement. The lowest basement level is proposed to have a Finished Floor Level of RL 3.5m. A bulk Excavation Level (BEL) of approximately RL 3.2m is assumed, which includes allowance for the construction of the basement slab. To achieve the BEL, excavation depths ranging from 5.7m to 11.1m Below Existing Ground Level (BEGL) have been estimated. Locally deeper excavations may be required for footings, lift overrun pits, crane pads and service trenches.

1.3 Report Objectives

The objectives of this report are to:

- Describe the conceptual hydrogeological model for the site and summarise baseline groundwater conditions, including pre-dewatering groundwater depth and groundwater quality;
- Summarise relevant hydrogeological and groundwater modelling information, with reference to the GSA report, which is attached as **Appendix D**;
- Describe the dewatering methodology, groundwater treatment requirements, monitoring and reporting procedures to be employed during construction phase dewatering;
- Provide effective management and contingency procedures, to ensure that dewatering discharge does not pose unacceptable risks to the receiving environment, in compliance with the *Protection of the Environment Operations Act 1997*;
- Detail post-construction monitoring and reporting procedures for the occupational phase of the development; and
- Provide relevant information on anticipated groundwater impacts, with reference to the NSW Aquifer Interference Policy to properly inform the regulatory approval process.

It is understood that this report will accompany the SEARs application, seeking development consent under Division 4.7 State Significant Development of the Environmental Planning & Assessment Act 1979 (EP&A Act). The report will also be submitted to Council as part of a permit application for connection and discharge to the municipal stormwater system, and to WaterNSW for a water supply works (dewatering licence), with the approval of the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

1.4 Scope of Work

With reference to the above report objectives, the following works were undertaken:

- A desktop study including:
 - Review of the development proposal and proposed shoring/dewatering designs;
 - Review of hydrogeological, landscape and acid sulfate soil risk maps for the area;
 - Review of previous investigation reports and plans, which included:
 - A search of registered bores located within a 500 m radius of the site to review local groundwater usage;
 - Onsite drilling data, including sub-surface stratigraphic data and depth to water bearing zones; and
 - Details in relation to potential onsite and offsite sources of contamination that may impact on dewatering discharge water quality and the beneficial use category of the groundwater source, particularly in relation to any local water supply bores.
- Groundwater monitoring event (GME), including sampling of existing monitoring wells and laboratory analysis for relevant analytical parameters to characterise baseline groundwater quality.
- Interpretation of groundwater quality results in relation to the relevant water quality criteria for the expected receiving waters;

This report also relies on information provided in the GSA report, which includes the findings from field-based hydraulic testing and computer-based groundwater modelling used to determine predicted groundwater take volumes and provide estimates for associated water level drawdown effects. GSA details and findings are incorporated into various parts of this report.

1.5 Regulatory Framework

The following regulatory framework and guidelines were considered during the preparation of this report:

Table 1-2 Regulatory Framework

NSW Legislation and Regulatory Instruments	Requirements / Objectives
<i>Contaminated Land Management Act 1997 (CLM Act)</i>	Promotes the effective management of contaminated land in NSW by setting out the roles and responsibilities of the NSW EPA and its rules.
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	The EP&A Act stipulates the regulations and gives rise to state environmental planning policy (SEPP) to assist regulators with the protection of human and environmental health.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	The objective of the <i>POEO Act</i> is to achieve the protection, restoration and enhancement of the quality of the environment.
<i>NSW Water Management (General) Regulation 2018.</i>	Details relating to Water Access License requirements, if relevant.

NSW Legislation and Regulatory Instruments	Requirements / Objectives
<i>Water Management Act 2000</i> and <i>Water Act 1912</i> (WM Act)	Protects the health of rivers, streams and groundwater systems and gives rise to Water Sharing Plans and quality objectives for catchments within the state of NSW. Manages aquifer interference activities which involve: ▪ The penetration of an aquifer; ▪ The interference of water in an aquifer; ▪ The obstruction of water flow or taking of water from an aquifer when carrying out prescribed activities; and ▪ The disposal of water taken from an aquifer.
<i>NSW Aquifer Interference Policy (2012)</i>	Details the scope of aquifer interference activities, minimal impact assessment and provides specific guidance on the licensing and approval requirements for activities that interfere with aquifers.
Inner West Council Plans and Policies	Provides controls and guidelines for development in the area. ▪ <i>Leichhardt Development Control Plan 2013</i>; and ▪ <i>Inner West Local Environmental Plan 2022</i>. <u>Note:</u> For projects involving site dewatering, Council typically requires details for the proposed water disposal connection to the stormwater system, preferably in the form of engineering drawings and plans.
Relevant Guidelines (but not limited to)	▪ ANZG (2018) <i>Guidelines for Fresh and Marine Water Quality</i>; ▪ ANZECC & ARMCANZ (2000) <i>Guidelines for Fresh and Marine Water Quality, Vol. 1, Chapter 3, Aquatic Ecosystems</i>; ▪ DPE (2022) <i>Minimum requirements for building site groundwater investigations and reporting</i>; ▪ NHMRC (2008) <i>Guidelines for Managing Risks in Recreational Water</i>; and ▪ NSW DEC (2007) <i>Guidelines for the Assessment and Management of Groundwater Contamination</i>.

2. SITE DESCRIPTION

2.1 Property Identification, Location and Physical Setting

Site identification details and associated information are summarised in **Table 2-1**. Figures illustrating the site location and assessment area are provided in **Appendix A**.

Table 2-1 Site Identification, Location and Zoning

Attribute	Description
Street Address	40-76 William Street, Leichhardt NSW
Location Description	Approximately 5 km west of Sydney CBD, bound by William Street (north), commercial and residential properties (east and south), and North Street (west).
Lots and DPs	Lot 2 in DP789576
Site Area	6,930 m ²
Site Coordinates	Northern-eastern corner of site (GDA2020-MGA56): ▪ Easting: 329280.926 ▪ Northing: 6249883.726 (Source: https://maps.six.nsw.gov.au/)
LGA	Inner West Council
Current Zoning	R1 – General Residential (<i>Inner West Local Environmental Plan 2022</i>)

2.2 Surrounding Land Use

The site is situated within an area of mixed land-uses. Current uses of surrounding land are indicated in **Table 2-2**.

Table 2-2 Local Land Use

Direction relative to site	Land Use Description
North	William Street, a two lane, asphalt paved road. Beyond this are one to two-storey brick residential and mixed-use buildings with no apparent basements, as well as Hubert Street, a two lane, asphalt paved road.
South	Two residential flat buildings which form part of the 96 Francis Street development. The eastern building is setback about 3m, and the western building is setback about 8m from the southern site boundary.
East	Property at 38 William Street, a three storey brick warehouse building which has been converted to a residential building and abuts the eastern site boundary. Continuing to the south are No's 84 to 78 Francis Street, which comprises two storey warehouse buildings which have been converted into residential dwellings. These are setback from the eastern site boundary by about 6m. Further to the south is No. 69 Francis Street, a large residential flat development comprising a total of about 17 buildings. Adjoining the eastern site boundary is one building which comprises five two to three-storey townhouses with parking and a shed at the rear. The shed and parking area about the southern end of the eastern site boundary, and the residences are setback about 19m from the eastern boundary.
West	Mixed commercial and residential properties followed by Francis Street (St Columba's Catholic Primary School 65 m and North Street Playground 15m).

2.3 Regional Setting

A description of the regional setting, including ground surface topography, hydrogeology, acid sulphate soil conditions and soil landscape, are summarised in **Table 2-3**.

Table 2-3 Regional Setting Information

Attribute	Description
Topography	The site generally lies flat, with a slight gradient to the west, towards North Street, from approximate RL 11.99 m AHD at Francis Street, to approximate RL 11.32 m AHD at North Street, <i>Ref. Site Survey Plan by Total Survey Solutions (TTS)</i> .
Site Drainage	Consistent with the general slope of the site. Stormwater is assumed to flow west towards Hawthorne Canal via drainage systems discharging to various stormwater easements and the municipal stormwater system.
Regional Geology	With reference to the 1:100,000 scale Geological Series Sheet 9130 (Sydney) the site is likely to be underlain by the Hawkesbury Sandstone, which is described as <i>medium to coarse-grained quartz sandstone, very minor shale and laminite lenses</i> .
Soil Landscape	The Soil Conservation Service of NSW Landscapes of the Sydney 1:100,000 Sheet (Chapman and Murphy, 1989) indicates that the site overlies the Gynea (gy) Erosional Landscape, which typically includes Hawkesbury Sandstone.
Acid Sulfate Soils (ASS) Risk	With reference to the Botany Bay Acid Sulfate Soil Risk Map (1:25,000 scale; Murphy 1997), the subject land lies within the map class description of <i>No Known Occurrence</i>. In such cases, acid sulfate soils (ASS) are not known or expected to occur and "land management activities are not likely to be affected by ASS materials". The Inner West Local Environmental Plan 2022 Acid Sulfate Soil Risk Map indicates that site lies within a Class 5 Area. This means that a development consent is required to carry out the following: ▪ Works within 500m of adjacent Class 1, 2, 3 or 4 land that is below 5m Australian Height Datum; and ▪ Works by which the watertable is likely to be lowered below 1m Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.
Nearest Water Feature	Hawthorne Canal is located approximately 500m west to 650 m to the north of the site and forms the nearest surface water body. Hawthorne Canal flows into the Iron Cove, at Parramatta River, which is a tidally influenced surface water body.
Groundwater Flow Direction	Groundwater flow direction in the vicinity of the site was anticipated to be towards the north-west towards Hawthorne Canal and Iron Cove at Parramatta River.

2.4 Local Groundwater Use

An online search of registered groundwater bores was conducted through the Water NSW online data base (Ref. <https://realtimedata.waternsw.com.au/water.stm>) on 14 May 2026. The search identified six registered bores within an approximate 500m radius of the site, as shown on a marked-up bore location map in **Appendix E**. All six bores were designated for use as monitoring wells, as shown in the bore Work Summary forms archived in the WaterNSW database. Bore details are briefly summarised in **Table 2-4**.

The search did not identify any registered groundwater bores used for water supply purposes, which indicated that the local groundwater resource is not being utilised for beneficial purposes within 500 m of the site.

Table 2-4 Summary of Registered Water Bores within 500m of the site

Bore No.	Date Drilled (Well depth in m BGL)	SWL*/Salinity/Yield	Bore Purpose	Bore distance (m) & direction from site
GW111663	09/11/2011 (4.0)	-	Monitoring Bore	263m North
GW111653	09/11/2011 (2.5)	-	Monitoring Bore	263m North
GW111654	09/11/2011 (3.0)	-	Monitoring Bore	288m North
GW114005	06/12/2013 (8.0)	-	Monitoring Bore	386m Southwest
GW114004	06/12/2013 (6.2)	-	Monitoring Bore	387m Southwest
GW114003	06/12/2013 (6.15)	-	Monitoring Bore	425m Southwest

Note 1: – Data not recorded; mBGL – metres below ground level

Drilled depths ranged from 2.5 to 8.0 metres below ground level (BGL). Standing water levels, well yield and salinity data were not available for any of these bores.

2.5 Potential Sources of Contamination

Potential contamination sources were noted in the DSI report (EI, 2026a) as follows:

2.5.1 Potential onsite sources

- Importation of fill of unknown origin and quality placed at the site;
- Hazardous building products contained within existing site structures;
- Weathering of exposed building fabrics, painted surfaces, and metallic objects from site structures;
- Application of pesticides near surface soil beneath existing buildings;
- Leakage from vehicles through cracks on concrete slab; and
- Historical site use for industrial purposes.

Given the historic industrial site use, the potential for localised hydrocarbon impacts to site soils to be medium to high. Potential contamination attributed to imported fill materials, application of pesticides and localised petrol and oil impacts will be removed during bulk excavation for basement construction.

2.5.2 Potential offsite sources

The site is located in an area of mixed use comprising of residential, commercial and industrial properties. Searches undertaken during the DSI report (EI, 2026a) identified potential off-site contamination sources that could impact groundwater quality. Five former and existing dry cleaning businesses and nine former and existing motor garages and service stations were identified within 500m of the site. These were reported to have operated between 1948 and 1985. Currently, no upgradient potential contamination sources have been identified within 100 m from the site.

A former factory building was also known to operate adjacent to the south boundary of the site from 1930s until 1990s. Given the limited information of historical operations at the factory, it was conservatively concluded that it would be prudent to expect that groundwater impacts may be occurring, which may warrant water treatment during site dewatering.

Given the distance of these facilities from the site, they were considered unlikely to impact groundwater quality on site since field testing (as described in the GSA report and **Section 3.2**) characterised the bedrock as being a low hydraulic conductivity material, which due to low

matrix porosity and incomplete fracture connectivity, would limit the potential for contaminants to travel extended distances via groundwater.

Furthermore, the lack of active groundwater supply bores within the area indicates that there are no local groundwater users at risk of suffering adverse impact to groundwater quality and/or any associated downgrading of the beneficial use category of the groundwater source, that may result from known or unknown, migrating contaminants.

Notwithstanding, the design of the water treatment system at the site dewatering activity should be mindful of, and able to respond to the potential detection of petroleum hydrocarbons and/or chlorinated solvent (dry cleaning) chemicals, should they be discovered at significant concentrations during dewatering monitoring.

2.6 Potential Environmental Receptors

It is assumed that water extracted from the site during the construction dewatering phase will be pumped through an onsite water treatment system, if required on the basis of groundwater quality monitoring (as described in **Sections 3.4.9** and **5.5**). Treated water may subsequently be discharged into the local municipal stormwater system. Stormwater is expected to drain into the tidally influenced Hawthorne Canal, which drains into Parramatta River at Iron Cove located approximately 500m north to north-west of the site.

Due to tidal influences, Parramatta River is considered a moderately to highly disturbed marine ecosystem for discharged water quality considerations, as described **Section 5.2**.

2.7 Groundwater Dependent Ecosystems

A search of the NSW Water Sharing Plan for the Greater Metropolitan Region groundwater Sources 2023 – Schedule 4 was conducted on 1 September 2025. The search found no high priority groundwater dependent ecosystems listed for the areas surrounding the general locality of the site. This information is used in the minimal harm assessment considerations under the NSW Aquifer Interference Policy, as described in **Section 7**.

2.8 Soil Salinity

The site and its surrounding area have not been assigned any salinity classification according to the Map of Salinity Potential (DCCE, 2002). It was therefore assumed that the potential for saline soils was low, and further assessment in regards to soil salinity was therefore considered unwarranted.

2.9 Acid Sulfate Soils

As documented in **Table 2-3**, both the Inner West Local Environmental Plan 2022 and Botany Bay Acid Sulfate Soil Risk Map (1:25,000 scale; Murphy 1997), identified a low risk of acid sulfate soils. Given the site elevation, the map information and the proposed development, further assessment of ASS was considered unwarranted for the site.

2.10 Soil Erosion

As the site will be largely covered by building structures and landscaping underlying, constructed basement car parking facilities, pedestrian walkways and drainage control, erosive dispersion is not a significant risk for the proposed development.

The following measures are considered relevant however, for minimising erosion in proposed landscaped areas with vegetation:

- Areas of established vegetation should be maintained (where possible). In areas of deep soil, mulch should be used or salt tolerant plants should be planted to use the groundwater source and reduce infiltration.
- Landscaping plans apply to 'waterwise' gardening principles. However, procedures designed to encourage excessive infiltration through the soil should be avoided. In certain landscaping situations, infiltration measures to be incorporated may include a sub-surface drain and liner when rapid infiltration to groundwater is likely to occur.
- Irrigation systems should be properly installed to avoid leakage and smart sprinkler systems should be considered.
- Watering of open space should be kept to a minimum.
- Over-watering must be avoided.

3. GROUNDWATER CONDITIONS

3.1 Previous Investigations

Previous site investigations have been documented in the following reports:

- EI (2020a) *Hazardous Material Survey; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E10_Rev0, 4 August 2020;
- EI (2020b) *Asbestos Management Plan; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E12_Rev0, 17 August 2020;
- EI (2025a) *Geotechnical Investigation; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.G03_Rev6, 18 September 2025;
- EI (2026a) *Detailed Site Investigation; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E02_Rev8, 7 May 2026;
- EI (2026b) *Remediation Action Plan; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E06_Rev6, 7 May 2026;
- EI (2026c) *Groundwater Level Monitoring Report No. 2; 46-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.G11.GW02, 13 May 2026; and
- EI (2026d) *Groundwater Seepage Analysis; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.G12_Rev7, dated 13 May 2026.

The three groundwater monitoring wells (BH101M, BH3M and BH9M), were installed during EI's Geotechnical Investigation, which were reported in EI (2025a). Well locations are shown in **Figure A2** and construction logs are presented in **Appendix F**.

3.2 Conceptual Hydrogeological Model

Based on the findings of previous investigations, the conceptual hydrogeological model for the site is summarised as follows:

- Subsurface soil profile comprising:
 - Fill (sand / sandy gravel), to a maximum depth of 2.9 mBGL;
 - Residual soil (alluvial sand), to a maximum depth of 3.5 mBGL; and
 - Bedrock (sandstone), encountered at depths ranging from 0.3-3.5 mBGL.
- Groundwater in the bedrock is under pressure with standing water levels (SWLs) ranging between 3.24 and 9.58 m AHD, as measured in monitoring wells located across the site, and summarised in **Table 3-1**.
- Based on rising head tests completed at each well, hydraulic conductivities of the sandstone (Class III) bedrock were calculated and found to range as follows:
 - BH101M: between 1.40×10^{-7} m/s and 2.30×10^{-7} m/s;
 - BH3M: between 5.50×10^{-8} m/s and 7.90×10^{-8} m/s; and
 - BH9M: 1.30×10^{-8} m/s and 6.0×10^{-9} m/s
- Groundwater flow is predominantly moving through the sandstone bedrock along bedding planes, joints and fractures. Flow direction and hydraulic gradient during high and low groundwater levels are assessed in **Section 3.3**.

3.3 Pre-Dewatering Groundwater Depth and Hydraulic Gradient

Three months of continuous groundwater level monitoring has been completed at wells BH101M, BH3M and BH9M, during the period 22 August 2025 to 25 November 2025 (EI, 2026c). Monitoring results were reported as hydrographs with rainfall data overlays, as shown in an appendix to the GSA report (see **Appendix D**). Maximum and minimum groundwater levels recorded at each well during the continuous water level monitoring period are summarised in **Table 3-1**. The maximum and minimum recorded groundwater levels are shown as bold text values.

Table 3-1 Summary of 3-month Groundwater Monitoring Results

Well ID	Average g/water RL (m AHD) ¹	Highest g/water RL (m AHD) / Date / Time	Lowest g/water RL (m AHD) / Date / Time	Contoured Groundwater Levels	
				At time of Highest g/water level (m AHD) ²	At time of Lowest g/water level (m AHD) ³
BH101M	6.52	6.66	6.29	6.51	6.46
BH3M	3.53	3.87	3.24 06.09.25 / 01:15am	3.57	3.24
BH9M	8.82	9.58 23.08.25 / 10:15am	8.16	9.58	8.83

Note 1 – The average groundwater RL, as calculated for the recorded groundwater levels at each well, for the continuous groundwater level monitoring period.

Note 2 - The groundwater RL, at each well, for the exact time that the highest groundwater level was recorded during the continuous monitoring period.

Note 3 – The groundwater RL, at each well, for the exact time that the lowest groundwater level was recorded during the continuous monitoring period.

Groundwater level data for all three monitoring wells as at the timing of the maximum and minimum groundwater levels recorded during the continuous monitoring period, were used to produce the groundwater contour maps presented in **Figure A3, Appendix A**. The analysis showed that:

- The highest recorded groundwater level occurred at BH9M at 10:15 am on 23 August 2025. Based on the contour analysis for water levels at this time, groundwater was inferred to be flowing in a north-westerly direction, under a hydraulic gradient of 0.13.
- The lowest recorded groundwater level occurred at BH3M at 1:15 am on 6 September 2025. Based on the contour analysis for water levels at this time, groundwater was also inferred to be flowing in a north-westerly direction, under a hydraulic gradient of 0.13.

Groundwater levels showed no significant variation over the monitoring period, with water levels remaining close to the initial groundwater level as indicated in the hydrographs, included with the water level monitoring report. A 30mm rainfall event occurring at the start of monitoring did not cause any response on groundwater levels, and it was therefore concluded that groundwater flow direction did not vary significantly in response to short-term storm events.

As discussed in the GSA report in relation to the analysis of Section A-A (west-east), design groundwater levels of RL 10.6 m AHD and RL 7.7 m AHD were adopted for the west and east site boundaries, respectively. These values have considered seasonal variation of 1.0 m above the highest water levels measured in BH9M and BH101M.

For the analysis of Section B-B (south-north), design groundwater levels of 6.1 m and 4.9 m AHD were adopted for the south and north boundaries, respectively. These values have considered possible seasonal variation of 1.0 m above the highest water levels measured in BH1M on the south boundary and measured groundwater levels at BH3M on the north boundary. Due to the absence of subsurface conditions or groundwater level data along the

southern boundary of the site, data from BH1M located on the south-eastern boundary was used to represent the southern portion of the site for modelling purposes.

No other construction dewatering activities were observed to be taking place in the vicinity of the site during baseline groundwater level monitoring. As draining basements may already exist at nearby properties however, the determined design groundwater levels were considered to be indicative of ambient groundwater levels inclusive of any cumulative groundwater level declines that may have occurred as at the time of the assessment.

3.4 Baseline Groundwater Quality Assessment

The data used for the baseline groundwater quality assessment was sourced from the results of the most recent GME carried out on 22 August 2025, as reported below.

3.4.1 Data Quality Assessment

Laboratory documentation, internal laboratory QA/QC data and analytical reports are attached in **Appendix G**. A data quality assessment in relation to field water quality tests and laboratory QA/QC is provided in **Appendix H**. EI's data validation process found that the overall quality of field-based and laboratory analytical data produced for baseline groundwater samples were of an acceptable standard for interpretive use.

3.4.2 Monitoring Well Locations

The August 2025 GME involved groundwater level gauging and sampling at three monitoring wells BH101M, BH3M and BH9M. All well locations are illustrated on **Figure A2**.

3.4.3 Sampling, Analysis and Quality Plan

The sampling, analytical and quality plan (SAQP) ensured that the data collected were representative of ambient groundwater at each respective sampling point and provided a robust basis for assessment decisions. The SAQP for the baseline GME included consideration of the following:

- Data quality objectives (DQO), including a summary of the objectives of the GME;
- Data quality indicators (DQI), applied to the field and laboratory quality control samples;
- Sampling methodology, including the wells to be sampled (sampling points), screening procedures, handling, preservation and storage, and details of the analytes to be monitored;
- Laboratory analysis methods;
- Appropriate water quality assessment criteria; and
- Analytical quality assurance / quality control (QA/QC).

3.4.4 Groundwater Sampling Methodology

The groundwater sampling methodology followed during the most recent GME is described in **Table 3-2**.

Table 3-2 Summary of Groundwater Sampling Methodology

Activity/Item	Details
Fieldwork	The most recent GME was conducted on 22 August 2025 at the existing monitoring wells (BH101M, BH3M and BH9M). Field work involved water level gauging followed by: well purging, on-site measurement of physiochemical water quality parameters and groundwater sampling, as described below.

Activity/Item	Details
Well depth	- BH101M: total well depth 8.0 m BGL, screen interval 5.0 to 8.0 mBGL; - BH3M: total well depth 10.2 m BGL, screen interval 4.2 to 10.2 mBGL; and - BH9M: total well depth 9.7 m BGL, screen interval 3.7 to 9.7 mBGL. Monitoring bore logs are presented in Appendix F.
Well Gauging	Monitoring wells were gauged to determine standing water level (SWL) prior to groundwater purging and sampling. Gauging was conducted with a water/oil interface probe to assess for the presence of light non-aqueous phase liquid (LNAPL).
Well Purging, Water Quality Measurements and Sampling	After water level gauging, wells were purged of stagnant groundwater and representative groundwater was then sampled by low-flow / minimal draw-down method, using a peristaltic pump with dedicated tubing. During the well purging process, continuous field measurements were obtained for water temperature (Temp), electrical conductivity (EC), reduction-oxidation potential (Redox), dissolved oxygen (DO) and water pH, using a <i>Hanna Multi Parameter 9829</i> probe positioned within an open flow-through cell. Once water quality parameters stabilised (i.e. within $\pm 10\%$ for DO, $\pm 3\%$ for EC, ± 0.05 for pH, $\pm 0.2^\circ$ for temperature and $\pm 20\text{mV}$ for Redox), the measured values were recorded. Groundwater sampling was then undertaken by diverting the outlet of the pump (immediately before the flow cell) to the laboratory-supplied sampling vials and bottles for sample collection.
Decontamination Procedure	Sampling equipment (interface probe and water quality kit probes) were decontaminated between sampling locations by washing in a solution of potable water and Decon 90, followed by rinsing with potable water. Decontamination was not required for the sampling pump, as dedicated disposable tubing was used for sampling at each individual well. Dedicated gloves were used for the handling of equipment and collection of each sample.
Sample Preservation	Pre-preserved sample containers were supplied by the laboratory as follows: - one, 1 litre amber glass, acid-washed and solvent-rinsed bottle; - two, 40ml glass vials, pre-preserved with dilute hydrochloric acid and Teflon-sealed; - one, 250mL, HDPE bottle, pre-preserved with dilute nitric acid (1mL); - Additional bottles and preservatives were used for the more detailed suite of tested parameters, as listed and described in Section 3.4.5. Samples for metals analysis were field-filtered using 0.45 μm pore-size membrane filters. All containers were filled with sample to the brim then capped and stored in insulated chests (containing chilled and sealed 'ice' bricks), until completion of the fieldwork and during sample transit to the laboratory.
Sample Transport	After sampling, the chilled chests were transported to SGS Pty Ltd (SGS; the primary laboratory) using strict chain-of-custody (COC) procedures. Sample Receipt Advice (SRA) was provided by the laboratory to document sample condition upon receipt. Copies of the SRA and COC certificates are presented in Appendix G .
Quality Control (QC), Laboratory Analysis and Sample Transport	Groundwater samples were analysed by SGS for the requested analytes as detailed on the COC form. All samples were analysed within the required holding period, as documented in the corresponding laboratory reports (included in Appendix G). In addition to an inter-laboratory duplicate sample (analysed by Envirolab Services Pty Ltd, the secondary laboratory), QC analyses also included a blind (intra-laboratory) field duplicate sample that was analysed by SGS.

3.4.5 Tested Parameters

As summarised in **Table 3-3**, groundwater samples from wells BH3M and BH9M were analysed for a condensed, *Standard suite* of analytes; however, the sample from well BH101M was analysed for an extended *Baseline suite* of analytes, which included all mandatory groundwater

quality test parameters listed under Appendix A of DPE (2022), plus a number of additional parameters selected by the EI investigation team for groundwater characterisation purposes.

In summary, the *Baseline test suite*, included:

- **Physical parameters:** Alkalinity (bicarbonate, carbonate, hydroxide and total), electrical conductivity (EC), pH, redox potential (Eh), total dissolved solids (TDS), total hardness, temperature, dissolved oxygen (DO);
- **Other physical parameters:** Turbidity (NTU), total suspended solids (TSS), total organic carbon (TOC), sodium absorption ratio (SAR);
- **Major anions:** Sulfate (SO₄), chloride (Cl), carbonates (CO₃), bromide (Br), fluoride (F);
- **Major cations:** Calcium (Ca), magnesium (Mg), sodium (Na), potassium (K);
- **Ionic balance:** Cation / anion balance (as a percentage);
- **Dissolved inorganics & metals:** Aluminium (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), boron (B), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), lithium (Li), manganese (Mn), mercury (Hg), molybdenum (Mo), nickel (Ni), selenium (Se), silica (dissolved SiO₂), silver (Ag), strontium (Sr), uranium (U), vanadium (V), zinc (Zn);
- **Nutrients:** Ammonia (NH₃), nitrate (NO₃), total nitrogen (N), oxidised nitrogen (N), total phosphorus (P), reactive phosphorus (P);
- **Microbiological organisms:** Faecal coliforms, faecal streptococci, Escherichia coli;
- **Organics:** Benzene toluene ethylbenzene xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRHs);
- **Other:** the following additional parameters were also analysed as part of the site characterisation process:
 - Volatile Organic Compounds (VOCs), including Chlorinated VOCs (CVOCs);
 - Total cyanide and total phenols; and
 - Perfluoroalkyl and polyfluoroalkyl substances (PFAS).

The *Standard test suite*, included:

- Physical parameters: pH, EC, TDS and Hardness.
- Dissolved metals: aluminium, arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc;
- Organics: TRHs, BTEX, PAHs, VOCs, semi-volatile organic compounds (SVOCs), chlorinated aliphatic compounds (which include CVOCs and low volatility chlorinated compounds, e.g. chlorinated paraffins and chlorinated pesticides);
- Total cyanide and total phenols.

Table 3-3 Summary of Groundwater Quality Test Parameters

Sampling Date	Monitoring Well	Testing
22/08/25	BH101M	Baseline suite
	BH3M	Standard suite
	BH9M	Standard suite

3.4.6 Assessment Criteria

Water quality results were assessed against discharge water criteria (the 'DWC') based on the default guideline values (DGVs) for marine ecosystems, as published under ANZG (2018).

These were the 95% Marine Default Guideline Values (DGVs) and 99% Marine DGVs for bio-accumulative toxicants (cadmium, mercury and benzo(a)pyrene). For parameters that are not currently addressed by the ANZG marine water DGVs, relevant alternative criteria were adopted, as detailed in **Section 5.2**.

The criteria values are presented alongside the groundwater analytical results in the corresponding summary tables (**Table B1** and **Table B2** in **Appendix B**).

3.4.7 Field-based Water Quality Testing and Observations

The field water quality parameters DO, pH, EC, Temperature and Redox potential, were measured onsite using a flow cell and recorded as presented in **Table 3-4**. The groundwater samples were also evaluated on the basis of odour and visual signs of contamination, with the following observations noted:

- Groundwater samples were observed to be in light brown in colour, with moderate turbidity;
- Slight hydrocarbon odours and sheen were observed in monitoring well BH101M;
- No hydrocarbon odours or visual evidence of contamination were detected during well purging and groundwater sampling of wells BH3M and BH9M; and
- A portable photo-ionisation detector (PID) was used to screen the top of each well for VOCs and PID readings were low (<1ppm, i.e. less than background levels) at all three wells.

The field water quality data indicated that groundwater beneath the site is slightly acidic to neutral (pH: 5.4 – 6.9), fresh to marginal in terms of water salinity (EC 362 – 947 $\mu\text{S/cm}$), and under oxidising conditions, as indicated by the positive Eh values (283 – 396 mV).

Table 3-4 Groundwater Field Data (GME date: 24/07/2025)

Well ID	DO ¹ (mg/L)	pH	EC ($\mu\text{S/cm}$)	Temperature (°C)	Eh ² (mV)
BH101M	-	6.9	937	14.53	294
BH3M	-	5.4	947	14.77	283
BH9M	-	5.6	362	17.59	396

Notes:

DO – Dissolved Oxygen; EC – Electrical Conductivity;

¹ Dissolved Oxygen readings were not taken due to equipment malfunction.

² Eh (mV) values were calculated as field Redox adjusted to Standard Hydrogen Electrode (SHE) by adding field electrode potential (205mV).

3.4.8 Laboratory Analytical Results

Laboratory documentation is attached in **Appendix G**. With reference to the results summary tables presented as **Table B1** and **Table B2** (**Appendix B**), the results of the most recent GME (22 August 2025) showed groundwater concentrations are generally compliant with the discharge water criteria (DWC) in most samples, with the following exceptions:

- Dissolved aluminium concentration was above the DWC value (37 $\mu\text{g/L}$) in groundwater samples BH3M-1 (49 $\mu\text{g/L}$), BH9M-1(66 $\mu\text{g/L}$) and BH3M (68 $\mu\text{g/L}$).
- Dissolved iron concentration was above the DWC value (540 $\mu\text{g/L}$) in groundwater sample BH101M (29,000 $\mu\text{g/L}$).
- Dissolved manganese concentration was above the DWC value (80 $\mu\text{g/L}$) in groundwater sample BH101M (210 $\mu\text{g/L}$).
- Escherichia coli (E. coli) was detected in groundwater sampled at monitoring well BH101M, which exceeded the DWC guideline of no detection in 100 mL.

- Ammonia nitrogen was above the DWC value (910 µg/L) in groundwater sampled at monitoring well BH101M (7,300 µg/L).
- Total nitrogen was above the DWC value (120 µg/L) in groundwater sampled at monitoring well BH101M (8600 µg/L).
- Total phosphorus was above the DWC value 25 µg/L in groundwater sampled at monitoring well BH101M (280 µg/L).
- Turbidity was above the DWC value 10 NTU at all three monitoring wells: BH101M (180 NTU), BH3M (32 NTU) and BH9M (85 NTU); and
- Groundwater pH was outside the adopted DWC range 6.5 – 8.4 at monitoring well BH3M (field and laboratory tested pH - ranged 4.3-5.5) and monitoring well BH9M (field and laboratory tested pH - ranged 4.69-6.2)

3.4.9 Water Treatment Requirements

Water treatment during construction dewatering

The baseline groundwater quality data indicates water treatment is required prior to discharge in relation to:

- The physical parameters: pH and turbidity;
- Metals: aluminium, iron and manganese;
- Escherichia coli (E. coli); and
- Nutrient parameters: ammonia nitrogen, total nitrogen and total phosphorus.

In many cases neutralising water pH and lowering water turbidity through appropriate water treatment can significantly reduce the levels of other elevated water quality parameters. Potential water treatment options include pumping the water through a sediment settlement tank, where the following could also be implemented:

- Flocculation/coagulation to promote precipitation and settlement of suspended particles to reduce turbidity and assist in the control of metals;
- pH correction via the addition of sodium hydroxide (or equivalent) solution, implemented concurrently to increase water pH to the required range; and
- Adjustment of the flow rate to allow sufficient residence time for flocculation/coagulation and sediment settlement to take place.

While the above provides basic guidance in relation to available treatment options, a water treatment specialist should be engaged to advise on appropriate technologies for water treatment. It would be appropriate to engage the water treatment specialist well in advance of project commencement to allow sufficient time for the design and mobilisation of the water treatment system, prior to the start of dewatering.

Testing of treated water quality is required prior to discharge to confirm that water treatment procedures are effectively achieving compliant discharge water quality. Further details on water quality monitoring and management are provided in **Section 5.4**. Additional information in regards to water treatment system design and maintenance are provided in **Section 5.5**.

Water treatment during operational dewatering

The water quality data set at the conclusion of the construction dewatering phase will be used to inform water treatment requirements, to ensure compliant discharge waters for the operational phase, as described in **Section 7.3**.

4. DEWATERING METHODOLOGY

4.1 Excavation and Shoring

As stated in **Section 1.2**, the proposed development will include a two-level basement, with an estimated BEL from 5.7 to 11.1 metres below (existing) ground level, and locally deeper excavations for footings, service trenches, crane pads and lift overrun pits.

At the time of this DMP, no detailed structural designs were provided. With reference to the GSA report (**Appendix D**), it has been assumed that the shoring system will be a soldier pile wall. This shoring system is assumed to be permeable and freely allowing water to drain through.

The GSA did not assess the overall stability and embedment depth of the shoring system. Once final designs are made available, this assessment should be revised accordingly.

4.2 Estimated Groundwater Take Volume and Dewatering Duration

As described in the GSA report, groundwater seepage analysis was undertaken using the software package PLAXIS 2D (Version 2024.1.0.1060). PLAXIS 2D is a finite element software package, which is appropriate for non-complex sites with laterally uniform subsurface conditions. The model estimates the seepage rate of water entering the excavation through and beneath the shoring wall; therefore, predicts the water take volume during basement construction dewatering.

Based on a specific set of assumptions and field test data, which included determination of the design groundwater level (**Section 3.3**), as well as the onsite, layer-specific hydraulic conductivities (as detailed in the GSA report), groundwater seepage flow draining through and beneath the shored walls into the excavation is predicted to be **1.71 ML** over a projected 365 days of construction dewatering (i.e. $4.69 \text{ m}^3 / \text{day}$).

For the long-term management of groundwater, the annual water take for the occupational phase is therefore estimated to be **1.71 ML/year**. As the basement will be designed as a draining structure groundwater mounding was not a consideration for modelling purposes.

It is noted that in accordance with the NSW *Water Management (General) Regulation 2018*, a Water Access Licence is required where the estimated groundwater take is more than 3 ML/year in the absence of any relevant exemption. Based on the modelled seepage volume, a Water Access License will not be required.

4.3 Dewatering Level, Drawdown-Induced Ground Settlement and Monitoring

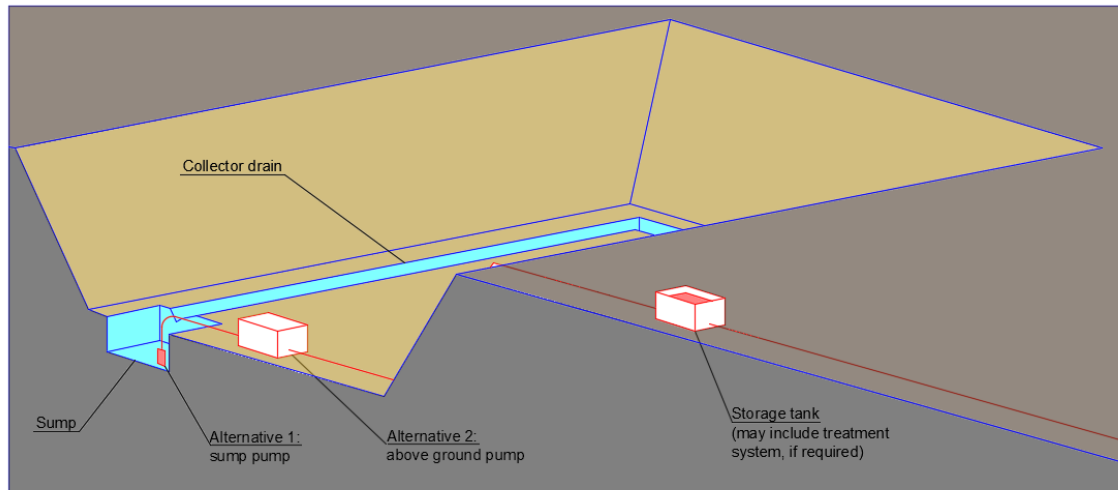
Groundwater modelling indicated the predicted drawdown behind the shoring wall, surrounding the basement boundaries, is less than 5.5 m. Based on the modelling results, ground settlement immediately outside the basement wall due to dewatering is estimated to be approximately <1 mm. This level of settlement is considered to pose a 'negligible' risk in terms of the category of damage risk due to dewatering, as defined by Cashman and Preene (2021).

Groundwater elevations will be monitored periodically during the construction dewatering period by measuring groundwater depth in selected monitoring wells. Groundwater depth monitoring may be adequately gauged manually by electric water contact meter during each dewatering monitoring event, as described in **Section 5.4**.

4.4 Dewatering Method

Due to the characteristically low hydraulic conductivity characteristics of the fractured bedrock a sump and pump system will be for the control of water seepage into the excavation during basement construction. A typical sump-and-pump setup is illustrated in **Figure 4-1**.

Figure 4-1 Hypothetical layout of a Sump and Pump seepage collection system



4.4.1 Construction Phase Dewatering

During construction, seepage water is to be collected and appropriately treated prior to discharge to the stormwater system. A collection sump is typically located at the lowest part of the excavation, from which collected seepage waters are pumped into a storage tank for sediment settling. The preferred tank type will require capacity to accommodate the rate of groundwater seepage inflow during basement construction, which was modelled at 4.69 m³/day (**Section 4.2**).

Groundwater treatment will be undertaken either in the settling tank, or via a water treatment system installed close to the tank prior to discharge. The treated water will then be discharged into the municipal storm water pit provided that prior approval for discharge has been obtained from the relevant consent authority.

The pumping system may operate on a full time or intermittent basis (as required), for the approved construction dewatering period.

The Site Manager, Dewatering Contractor and Water Treatment Specialist must agree on a dewatering strategy and appropriate locations for the dewatering treatment system and water retention tanks to be set up, prior to the commencement of the excavation works.

4.4.2 Operational Phase Dewatering

Due to the drained basement design, the ongoing collection of groundwater seepage via onsite detention storage (OSD tank, or equivalent) and any required water treatment prior to discharge to the municipal stormwater network, may be required for the operational life of the project.

It is understood that WaterNSW and DCCEEW may consider an application for long-term, operational phase dewatering, where minimal impact considerations under the NSW Aquifer Interference Policy (AIP) are satisfied. An assessment against the AIP was undertaken, as described in **Section 7**.

4.5 Discharge Flow and Volume Monitoring

The volume of water discharged must be monitored by a calibrated flow meter (or equivalent alternative means) that is integrated as part of the dewatering system for the complete duration of the temporary construction dewatering period. The flow meter will therefore display cumulative volume discharged at any stage during dewatering, which will be documented as part of the dewatering monitoring records.

Flow monitoring data will be documented by a suitably trained site employee under the supervision of the Site Manager. Tabulated records should be maintained on site and made available to the Environmental Consultant for inclusion in the routine monitoring event reports.

These records will be used to calculate the actual groundwater volume taken from the site and will be included in the Construction Dewatering Completion Report (**Section 5.6**), to be issued to Council and WaterNSW after the completion of construction dewatering activities.

For the construction phase, water level and volume monitoring will be conducted during the same monitoring events described in **Section 5.4**. For the operation phase, these monitoring events will be conducted annually until consistent water quality is confirmed, as described in **Section 7.3**.

4.6 Potential Drawdown-Induced Impacts

A review of potential adverse effects of dewatering on neighbouring properties and groundwater dependent ecosystems was undertaken, as summarised in **Table 4-1**.

Table 4-1 Assessment of Potential Dewatering Effects

Attribute	Description
Water supply losses by neighbouring groundwater users	As described in Section 2.4 a review of registered bores within a 500m radius of the site indicated no water supply bores in the locality, indicating that local groundwater was not being utilised or relied on as a water supply source. There are no known groundwater users therefore, that would be affected by water supply losses as a direct result of any groundwater level drawdown from site dewatering.
Potential impacts on groundwater quality resulting from contaminant migration	A number of former potential contamination sources were identified at offsite locations within 500m of the site (Section 2.5.2). As groundwater is not utilised for water supply purposes, it is unlikely that groundwater quality impacts due to site dewatering would cause degradation of the beneficial use category of the groundwater source for any user. Detection of contaminants during dewatering monitoring would feasibly be managed by the onsite water-treatment system to ensure that treated water quality complies with the discharge water criteria, as detailed in Section 5 . Potential on-site contamination sources will be removed during basement excavation.
Proximity of Groundwater Dependent Ecosystems	No high priority groundwater dependent ecosystems were documented within a 500m radius of the site, as described in Section 2.6 .
Potential subsidence of neighbouring structures	Drawdown-induced ground settlement for the proposed development is predicted to be less than 1 mm immediately outside of the shored basement perimeter (Section 4.3). Ground settlements less than 10mm pose 'Negligible' risk in regards to category of damage risk due to dewatering, as defined in Cashman and Preece (2021). This finding is consistent with the fact that the dewatered lithology comprises competent bedrock.
Potential groundwater mounding upgradient of the basement	As the basement will be designed as a draining structure for this project, groundwater mounding is unlikely, therefore not warranting consideration for seepage modelling purposes.

5. WATER QUALITY MANAGEMENT

5.1 Responsibility

The Principal Contractor or Site Manager, appointed for the construction works, will be responsible for implementing the water quality management procedures described in this report. Post-construction (i.e. occupational phase) water quality management, including water treatment and water quality monitoring will be overseen by strata management (see also **Section 7.3**).

5.2 Discharge Water Quality Guidelines

In accordance with statutory requirements for site dewatering operations, discharged waters must comply with the ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, or relevant default criteria where the ANZG (2018) guidelines do not provide values. This requirement is in compliance with the *Protection of the Environment Operations Act 1997*.

The nearest receiving water body is Hawthorne Canal, which is regarded as a moderately to highly disturbed marine ecosystem (**Section 2.6**). The ANZG (2018) *95% Marine Default Guideline Values (DGVs)* were therefore adopted as the Discharge Water Criteria (DWC), with the 99% DGVs to be adopted for bio-accumulative toxicants. These will be the water quality trigger levels for contingent actions (see **Section 6.5**) to ensure that water of an appropriate quality is discharged to the environment.

For water quality parameters that are not currently addressed by the ANZG marine DGVs, relevant alternative criteria have been adopted as the default DWC, as detailed in **Table 5-1**.

The listed parameters and corresponding criteria will apply for all water being discharged to the storm water system during dewatering. It is noted however, that the testing of specific analytical parameters is not mandatory after the baseline groundwater quality assessment, as stated in Appendix A of DPE (2022). The appointed water quality specialist may therefore adjust the testing regime subject to consistent results, to maintain the required level of water quality monitoring.

Table 5-1 Discharge Water Criteria (DWC)

Analyte	DWC (µg/L) ¹
Dissolved Metals	
Aluminium (Al)	37
Antimony (Sb)	9 ²
Arsenic III (As III)	94 ²
Arsenic V (As V)	42 ²
Barium (Ba)	20,000 ⁹
Beryllium (Be)	600 ⁹
Boron (B)	1500 ²
Cadmium (Cd)	0.7
Chromium III (Cr III)	27
Chromium VI (Cr VI)	4.4

Cobalt (Co)	1
Copper (Cu)	6 ³
Iron (Fe)	540
Lead (Pb)	4.4
Lithium (Li)	No Relevant Criteria
Manganese (Mn)	80
Mercury (total) (Hg)	0.1
Molybdenum (Mo)	34 ²
Nickel (Ni)	70
Selenium (Se)	18 ²
Silica (dissolved SiO ₂)	No Relevant Criteria
Silver (Ag)	1.4
Strontium (Sr)	No Relevant Criteria
Uranium (U)	0.5 ²
Vanadium (V)	100
Zinc (Zn)	80 ³
Petroleum Hydrocarbons / Total Recoverable Hydrocarbons (TRH)	
Oil and grease	No visible sheens, surface films or oil and grease ⁴
Volatile TPH (C ₆ – C ₉)	No Relevant Criteria
Semi-volatile to heavy TPH (C ₁₀ – C ₄₀)	No Relevant Criteria
Monocyclic Aromatic Hydrocarbons (BTEX)	
Benzene	700
Toluene	180
Ethylbenzene	80
o - xylene	470 ²
p - xylene	250 ²
m - xylene	75
Polycyclic Aromatic Hydrocarbons (PAH)	
Benzo(a)pyrene	0.1
Naphthalene	70
Microbiological Organisms	
Faecal coliforms	No Relevant Criteria
Faecal streptococci	No Relevant Criteria
Escherichia coli (E. coli)	Not detectable in 100 mL ⁹
Major Ions	
Anions: sulfate, chloride, carbonates, bromide, fluoride	No Relevant Criteria
Cations: calcium, magnesium, sodium, potassium	No Relevant Criteria
Ionic balance: cation / anion balance (as a percentage)	No Relevant Criteria

Nutrients	
Ammonia	910
Nitrate (NO ₃)	38,000 ⁵
Nitrite (NO ₂)	30,000 ⁹
Oxidised Nitrogen (NO _x)	5 ⁸
Total Nitrogen (TN)	120 ⁸
Total Phosphorus (TP)	25 ⁸
Reactive Phosphorus (FRP)	10 ⁸
Other Organics	
perchloroethylene (PCE)	70
trichloroethylene (TCE)	330
cis-1,2-dichloroethylene (cDCE)	No Relevant Criteria
chloroethylene (or vinyl chloride)	100
Total Cyanide	4
Phenol	400
PFOS	0.13 ¹⁰
PFOA	220 ¹⁰
Physiochemical Parameters	
pH (pH units)	6.5 to 8.4 ⁶
Turbidity (NTU)	10 ⁷

Note 1 Discharge water criteria are the ANZG (2018+) 95% Default Guideline Values (DGVs) for the protection of slightly to moderately disturbed marine ecosystems, with the 99% DGVs applied for the bio-accumulative parameters benzo(a)pyrene, cadmium and mercury, unless otherwise indicated. The ANZG (2018+) only provides marine criteria at an 'unknown' level (%) of species protection for manganese; therefore, these DGVs are applied.

Note 2 The ANZG (2018+) 90% Freshwater DGVs for highly disturbed freshwater ecosystems are applied for the indicated parameters (arsenic, boron, selenium, o – xylene and p - xylene), in the absence of marine water criteria. The ANZG (2018+) only provides freshwater criteria at an 'unknown' level (%) of species protection for antimony, molybdenum and uranium; therefore, these DGVs are applied.

Note 3 For the metals copper and zinc, which are commonly present as regional background components in groundwater at concentrations above the ANZG (2018+) 95% Marine DGVs, discharge water criteria are set at one order of magnitude (10 x) higher than the ANZG DGV.

Note 4 NHMRC (2008) No Detectable Oil & Grease - OG test must find No visible film or sheen at the water surface and No detectable hydrocarbon odours, based on aesthetic aspects, as described in NHMRC (2008) Guidelines for managing risks in recreational water, Section 10.2.2.

Note 5 In the absence of ANZG (2018+) marine criteria for nitrate the ANZG 2025 freshwater 90% DGV is adopted, assuming hard water (>150 mg/L CaCO₃) for marine environments.

Note 6 In the absence of ANZG (2018+) criteria for pH, the ANZECC / ARMCANZ (2000) Table 3.3.2 Default trigger values for physical and chemical stressors for south-east Australia for slightly disturbed ecosystems are applied. The adopted pH range is between the lower and upper limit values for Marine water settings.

Note 7 In the absence of ANZG (2018+) criteria for turbidity, the ANZECC & ARMCANZ (2000) Table 3.3.3 upper default trigger value for estuarine and marine ecosystems is applied.

Note 8 In the absence of ANZG (2018+) criteria, alternative criteria from ANZECC / ARMCANZ (2000), Table 3.3.2, Default trigger values for physical and chemical stressors for south-east Australia for slightly disturbed ecosystems. The marine criteria for total oxidised nitrogen (NO_x), total phosphorus (TP), reactive phosphorus (FRP) and total nitrogen (TN) were adopted.

Note 9 For chemical parameters not addressed by either ANZG (2018+) or ANZECC / ARMCANZ (2000), i.e. nitrite, barium and beryllium, the NHMRC (2011) Australian Drinking Water Guidelines, Vers. 3.8, Rev 2022, Table

10.6 Guideline values for physical and chemical characteristics, address potential discharge to recreational beach settings. The discharge water criteria are set at one order of magnitude (10 x) higher than the Drinking water health-based value, or 10 x the aesthetic-based value, in the absence of a drinking value. Note: The Table 10.5 Performance measure threshold is applied for the microbiological parameter *E. coli*.

Note 10 In the absence of ANZG (2018+) criteria for PFAS (specifically PFOA and PFOS), the NEMP (2025) Table 8 Interim Marine ecological water quality guideline values are applied.

5.3 Additional Pre-dewatering Monitoring Event

As the baseline groundwater quality assessment included all mandatory parameters listed in Appendix A of DPE 2022 (as detailed in **Section 3.4.5**), an additional pre-dewatering GME is unwarranted.

5.4 Discharge Water Quality Monitoring

5.4.1 Visual and Odour Monitoring

Visual inspections of the dewatering measures and equipment should occur regularly (daily where possible) by the Site Manager and/or Dewatering Contractor, to ensure:

- The effective operation of all dewatering treatment equipment, including inspection that short-circuiting of water around baffles and filter media is not occurring within sediment retention tanks;
- No petrochemical sheens are visible on the water surface and no hydrocarbon odours are being generated by the treated groundwater or sediment; and
- No green, blue or extremely clear effluent, potentially indicating high levels of dissolved aluminium (if used in the treatment process).

The Site Manager must keep a record of all visual observations and operational measurements such as flow rates and water flow meter readings (if used), as detailed in **Section 5.6**.

5.4.2 Sample Collection and Analysis

On-going sample analysis must continue for the duration of construction dewatering activities, to establish that the treatment system (if required) is functioning as intended, and to confirm the quality of discharge water is acceptable for release into receiving water body.

Sample collection should be completed by a suitably qualified environmental scientist or equivalent, with the subsequent analyses performed by a reputable environmental laboratory using NATA-registered analytical methods. The analytical program is to include the parameters listed in (**Section 5.2**) and/or the parameters in accordance with *Appendix A – Routine water quality monitoring lists* (DPE, 2022). Certain parameters may be removed from the testing suite, subject to laboratory analytical results, as advised by the appointed water quality specialist / environmental consultant.

The following activities are to be implemented for the on-going monitoring program:

Trial-Run Period

- Prior to the discharge of any extracted groundwater, a trial run will be completed as follows:
 - Groundwater seepage will be circulated by pumping from the sump into the sediment settlement tank and passed through the water treatment system, then diverted into the excavation, until a reduction in suspended sediments is observed;
 - Treated water samples will be collected and laboratory analysed for the water quality parameters listed in **Table 5-1**; and
 - After confirmation that the water quality complies with the DWC, the extracted groundwater will be directed to the municipal storm water system, using the Council-approved connection point.

- As a minimum, two samples of treated groundwater will be collected for each of two weeks during the designated trial-run period. The analytical results will be compared to the DWC to assess the performance of the water treatment system and to make adjustments where necessary.
- Sampling for trial run purposes will cease once the target parameters in treated water stabilise (i.e. consecutive tests are within $\pm 10\%$ of the observed results) and contaminant concentrations are within the adopted discharge criteria for three consecutive sampling events. The trial-run period may be extended if stabilisation is not observed, or if the treated water does not satisfy the DWC ().
- The Dewatering Contractor / Water Treatment Specialist should seek advice from the Environmental Consultant regarding termination of the trial-run period.
- During the trial-run period, all collected groundwater seepage (including treated water) should be retained on-site and stored in appropriate bulk containers. No collected groundwater should be discharged until it is proven to meet the adopted DWC.

Construction Phase - Monitoring Frequency (Weekly, Fortnightly and Monthly)

- After the Trial-Run Period, and subject to statutory authority approval, treated water may be discharged to the storm water system. A weekly sampling frequency will be adopted for four weeks. The sampling program will involve the collection of one system discharge (i.e. treated) sample (as a minimum), to be analysed for the target parameters of concern, to confirm the system is functioning as intended.
- After four weeks, the weekly sampling frequency may be extended to fortnightly monitoring for one month and then monthly for the remaining duration of construction phase dewatering, provided the analytical monitoring results indicate the treated water quality consistently meets the DWC. If this is not achieved, contingency measures must be implemented, with monitoring frequency going back to weekly until consistency in the discharged water results is re-established.

Operational Phase - Monitoring Frequency (Annual)

- Provided that the Discharge Monitoring Period shows consistent and compliant results, the monitoring frequency can be extended to annually during the operational period, until the end of year 3, as described in **Section 7.3**.
- As per the construction phase monitoring, contingency measures detailed in **Section 6.5** should be implemented if groundwater results exceed the DWC for any one monitoring event.
- Any changes to the sampling frequency are to be determined by the appointed environmental consultant, and justification must be documented in the monitoring records.

5.4.3 Reporting of Water Quality Results

Dewatering management procedures and monitoring results will be reviewed by the appointed Environmental Consultant to ensure that the treatment procedures are effective, and that the discharge waters are in compliance with the adopted DWC (**Table 5-1**). Discharge water quality reporting will be required as follows:

- **Interim Monitoring Reports** will be prepared and issued to the Site Manager (during the construction phase), upon receipt of laboratory data for each round of water quality monitoring for the discharged waters. The interim reports will detail the sampling methods and procedures, provide a comparison between historical and current results, assess the results against the DWC and provide recommendations on corrective actions, when required.

- **Interim Dewatering Completion Report** - Following completion of construction dewatering activities, an *Interim Dewatering Completion Report* ('interim DCR') will be prepared by the appointed Environmental Consultant, as described in **Section 5.6.1**. The interim report will report on construction phase dewatering and must include copies of all analytical results and monitoring reports issued during the construction phase dewatering period. The interim DCR will be prepared using the pro-forma available for download through the WaterNSW website, as described in **Section 5.6**, and will be submitted to Council and Water NSW.
- **Annual Dewatering Monitoring Reports** will be prepared as described in **Section 5.6.2**, upon receipt of laboratory data for each annual round of water quality monitoring during the operational phase of the development, as described in **Section 7.3**.

5.4.4 Reporting of Other Information

The Site Manager must keep records of cumulative discharge volume and treatment methods and treatment chemicals applied to the water discharge, if any. In addition, any periods of dewatering stoppage should also be recorded. This information must also be compiled using the DCR pro-forma (see **Section 5.6**).

5.4.5 Groundwater Level Monitoring

Groundwater levels will be measured at each monitoring well during the dewatering period to monitor groundwater level drawdown. The data will be recorded and included in the DCR.

5.5 Water Treatment

5.5.1 Treatment System Design Considerations

Baseline groundwater quality data to date (**Section 3.4**) indicate that aluminium, iron, manganese, total nitrogen, E. coli, ammonia nitrogen, total phosphorus, turbidity and pH have been detected at levels that are outside of the DWC.

It is recommended that the selection and design of the preferred water treatment system is made by the Dewatering Contractor / Water Treatment Specialist, in collaboration with the appointed Environmental Consultant. Alternative and/or additional water treatment options may be implemented, if necessary, depending on which parameters are found to exceed the DWC during the Trial-Run period described in **Section 5.4.2**.

The design and installation of the preferred system should consider:

- A treatment tank with minimum capacity capable of containing the expected inflow for the basement (as described in **Section 4.4.1**);
- Water filtration to reduce fine particulates;
- If applicable, automated in-line chemical dosing systems for the addition of buffering solutions and/or coagulants for the adjustment of pH, turbidity and other parameters, which may be required as described in **Section 6.5 Dewatering Contingencies**;
- Water treatment to reduce concentrations of contaminants exceeding the DWC to below the values presented in **Section 5.2**;
- Spare retention tank(s) (if required) to provide additional residence time and sedimentation, in the case that non-compliant water quality is identified during routine monitoring, triggering temporary redirection and storage while adjustments to the water treatment system are being implemented; and
- A means of monitoring flow rate to enable accurate determination of total discharge volume.

The above information is provided for guidance purposes. A water treatment specialist should be engaged to advise on appropriate technologies for the treatment of all non-compliant water quality parameters.

The water treatment system should be installed, tested and operational prior to the commencement of dewatering, to ensure that only treated water meeting the adopted DWC is discharged from the site.

5.5.2 Treatment System Maintenance

The groundwater treatment system(s) must be regularly maintained by the Dewatering Contractor / Water Treatment Specialist. Maintenance must include (if applicable):

- Regular cleaning and or replacement of the geo-fabric / particle filters within the retention tanks;
- Media changeover (e.g. granular activated carbon) whenever breakthrough conditions are met; and
- Regular removal of sediment from the retention tanks by an appropriately-licensed waste contractor.

5.6 Reporting of Dewatering Information

5.6.1 Interim Report - Construction Dewatering

In accordance with WaterNSW requirements (Ref. WaterNSW Fact Sheet 260923, Link: https://www.waternsw.com.au/_data/assets/pdf_file/0005/155417/Fact-sheet-Completion-report-Construction-dewatering.pdf), a *completion report* will be prepared and submitted to WaterNSW, at the completion of site dewatering. The completion report must accompany an application to WaterNSW to surrender the *water supply work approval* at the time that site dewatering is ended.

As the proposed dewatering will involve operational dewatering, the first report to be submitted to WaterNSW for this site will be titled “*Interim Report – Construction Dewatering*” and will document all records collected from the beginning to the end of the construction dewatering period. A blank *Interim Report* form may be downloaded from the WaterNSW website using the internet link: https://www.waternsw.com.au/_data/assets/pdf_file/0004/167278/Completion-report-for-dewatering-work.pdf, and is to be used to record all of the required information, as listed on the form itself (see **Appendix I**).

The routine logging of flow meter readings at the start and finish of each dewatering event is to be completed by a responsible representative of the construction team (e.g. the Site Manager). Each flow meter entry will record a volume of water take associated with it, to enable the calculation of cumulative water take volume at any time during the site dewatering period.

Other records including water quality results, laboratory analytical reports and groundwater level monitoring records may be supplied by the appointed specialist contractors/consultants to the responsible person, who will compile and attach the relevant information to the Interim Report form. The Site Manager may authorise a qualified contractor/consultant to maintain the Interim Report on the Site Manager's behalf.

At the completion of the construction phase, the Interim Report will be submitted to WaterNSW for review.

5.6.2 Annual Reporting for Operational Dewatering

As site dewatering will continue during the occupational phase of the development, monitoring will continue under the responsibility of Strata Management through the occupational phase. This will require the same information as required for the *Interim Report* (described in **Section 5.6.1**), to be logged and submitted to WaterNSW on an annual basis under the report title “*Annual Report – Occupational Dewatering*”.

Monitoring frequencies for the occupational phase are detailed in **Section 7.3**.

All laboratory analytical results, flow meter logs and groundwater level monitoring records must be maintained by strata management, and should be made available upon request by Council and/or WaterNSW.

5.6.3 Dewatering Completion Report

A final “*Dewatering Completion Report*” will be submitted to WaterNSW at the termination of site dewatering, together with an application to surrender the water supply works approval (a copy of this form is also provided in **Appendix I**).

6. SITE MANAGEMENT AND CONTROLS

6.1 Deviations from this Plan

The Site Manager should seek advice from the Environmental Consultant if deviation from the agreed monitoring program is considered. To ensure the monitoring data set and the early warning objectives of the DMP are not compromised, variations will only be considered where technical justification exists, and any deviations that may be accepted will be documented within the corresponding reports, and must include all justifications for the variation accepted.

Should deviations from the DWC be considered technically justifiable, approval from Council and/or WaterNSW must be obtained before alternative discharge criteria are applied.

6.2 Contact Details for Key Personnel

Once the relevant personnel have been appointed, their names and contact information must be clearly displayed on-site, within the site office. An example format is as follows:

Site Manager	Name: To be confirmed Company: To be confirmed	Mobile phone: To be confirmed Email: To be confirmed
Dewatering Contractor	Name: To be confirmed Company: To be confirmed	Mobile phone: To be confirmed Email: To be confirmed
Water Treatment Specialist	Name: To be confirmed Company: To be confirmed	Mobile phone: To be confirmed Email: To be confirmed
Environmental Consultant (Water Quality Expert)	Name: To be confirmed Company: To be confirmed	Mobile phone: To be confirmed Email: To be confirmed

6.3 Summary of Specific Activities

The appointed contractors and/or Site Manager will be responsible for ensuring that the following activities (requirements) are undertaken during the dewatering program:

- Maintain erosion and sediment control measures in a functioning condition, until all earthwork activities are completed.
- Perform daily inspection of the recharge well(s), stormwater diversions and sediment / erosion control devices, ensuring it is operating effectively and at full capacity.
- Implement appropriate remedial measures where any controls or devices are not functioning effectively or are inappropriate.
- Collate records and comments on the condition of existing erosion and run-off controls (drains, silt fences, catch drains etc.), dewatering procedures and test results, and any site instructions issued to sub-contractors to undertake remedial works.
- Maintain rainfall data (to be filed on site).
- Confirm water quality parameters meet the relevant discharge limits, by disclosing supporting documentation upon request.
- Reporting any incidents of poor drainage or uncontrolled discharge.
- Recording all daily inspection reports, environmental incidents and controlled discharge volumes, which may be reviewed during any environmental audit performed on the site.

6.4 Vibration, Noise, and Odour Management

The following vibration, noise and odour risks must not occur during dewatering:

- Excessive vibration and noise levels associated with site plant / dewatering equipment; and
- Odours released from collected groundwater, which may pose a risk to human health and/or the aesthetic condition of the environment.

It is the responsibility of the Site Manager to ensure appropriate management of vibration, noise and odour during dewatering operations. Appropriate management methodologies include:

- Undertaking dilapidation surveys of neighbouring buildings, in accordance with potential for impacts in final design type.
- All sub-contractors to work only within defined hours set by the DA conditions.
- All reasonable steps shall be taken to muffle and acoustically baffle all plant and equipment. Noise and vibration levels generated by site works must be within the limits set by the DA conditions, the site specific environmental management plan and the *Protection of Environmental Operation Act 1997*.
- Give consideration to the noise emission of plant/equipment prior to its selection/mobilisation to site.
- Schedule the use of noisy equipment at the least-sensitive time of day.
- Situate noisy equipment at the greatest distance from the noise-sensitive area, or orient the equipment so that noise emissions are directed away from sensitive areas, to achieve the maximum attenuation of noise.
- Where there are several noisy pieces of equipment, schedule operations to minimise cumulative impacts.
- Keep equipment well maintained.
- Ensure engine shrouds (acoustic linings) are installed (where feasible).

6.5 Dewatering Contingencies

Contingent actions for scenarios that may arise during dewatering are detailed in **Table 6-1**.

Table 6-1 Mitigation Measures for Potential Dewatering Issues

Anticipated Problems	Preventive / Corrective Actions
Water Quality Criteria Non-compliance	
<i>Water Quality Criteria Exceedance</i> Laboratory analytical report for any monitoring event reveals that treated water quality does not satisfy the Water Quality Trigger Values.	<u>Water quality trigger values</u>, also referred to as the discharge water criteria (DWC), are detailed in Section 5.2, Table 5-1. Immediate action must be taken to halt the release of water into receiving water bodies, where water quality is found not to meet the DWC. Discharge of water must be suspended to enable the following procedure to be implemented: 1) Water will be redirected to storage retention basin/tanks; 2) A water sample will then be collected and sent to the laboratory for confirmation analysis for the non-compliant parameter(s) on an express (24hr) results turn-around basis; 3) Should the analytical result for the confirmation sample show that the previously non-compliant parameter(s) is/are now meet the DWC, the treated water outlet may be redirected to receiving water bodies; however 4) Should the analytical result for the confirmation sample show

Anticipated Problems	Preventive / Corrective Actions
	that the discharge water quality does not comply with the DWC, the environmental consultant / water treatment specialist will be required to modify the water treatment system, in order to achieve compliant discharge water quality. Collection of further treated water samples will be required to confirm the effectiveness of the modifications; 5) After laboratory confirmation that the revised treated water quality complies with criteria, extracted groundwater may be redirected to receiving water bodies; and 6) Weekly monitoring of treated discharge water quality monitoring will be required, until such time that contaminant concentrations are within the DWC values for three consecutive sampling events. Once this is achieved, fortnightly monitoring may be reinstated. Note: Wastewater Removal - It may be necessary to have collected waters removed by a licensed wastewater contractor, should quantities exceed the on-site capacity for temporary storage. In this case, records must be maintained to document quantities of wastewater disposed in this way, with provision of wastewater disposal dockets issued by the contractor to be retained for audit and reporting purposes.
<i>Visible and Olfactory Impacts</i> Visual and/or olfactory anomalies (e.g. change in water colour, turbidity, odour, presence of oil / grease) are observed in extracted groundwater.	Similar to the above procedure (Steps 1 to 6) treated water will be redirected to an alternative retention vessel, while the treatment system is adjusted. It may be necessary to have collected waters removed by a licensed wastewater contractor, should retained quantities exceed the on-site capacity for temporary storage. The contractor is to seek advice from a suitably experienced environmental consultant in regard to the additional assessment and treatment that may be required for any observed changes to water appearance or detectable odours.
<i>Repeated Criteria Exceedances</i> After three non-compliances for discharge water quality.	Retain extracted water onsite in appropriate bulk containers for subsequent removal by a licensed wastewater contractor. Determine an alternative discharge method, if necessary, updating this report accordingly.
Groundwater Take Non-compliance	
<i>Excessive Extraction</i> The predicted daily inflow rate (specified in Section 4.2) is exceeded.	<u>Groundwater take trigger levels</u> are provided to ensure that appropriate measures are implemented to minimise the risk of exceeding the groundwater take limit, which would form a breach of the conditions of the WaterNSW Statement of Approval. The following trigger levels are based on the regular flow meter readings that are recorded during the dewatering monitoring program, as described in Section 5.6: <u>Trigger 1</u>: when the flow meter data indicates that 70% of the total approved groundwater take limit has been extracted, the monitoring manager is to notify the Site Manager and the Dewatering Contractor, to activate a review of construction progress against dewatering rate and to make adjustments if necessary, so as not to exceed the approved groundwater take limit. <u>Trigger 2</u>: at 80% of the total approved groundwater take limit, if basement construction is not close to completion, the monitoring consultant is to engage site management and the dewatering contractor to review the reasons for the increased dewatering rate and to explore options and take action to achieve sufficient lowering of the dewatering rate for compliance with the groundwater take limit. <u>Trigger 3</u>: at 90% of the total approved groundwater take limit, if effective reductions in dewatering rate cannot be implemented,

Anticipated Problems	Preventive / Corrective Actions
	WaterNSW should be contacted to review options, which may include a combination of: ▪ Applying for an increase to the groundwater take limit, which may require a Water Access License to be acquired. ▪ Temporary retention of tail water onsite in appropriate bulk containers for subsequent removal by a licensed waste contractor; ▪ Aquifer re-injection after obtaining regulatory approval; and/or ▪ Fast-tracking of construction works to complete dewatering sooner than the scheduled timeframe.
Drawdown-Induced Ground Settlement Risk	
<i>Excessive Water Level Drawdown</i>	<u>Groundwater drawdown trigger levels</u> will also apply to minimise the risk of unforeseen impacts in relation to ground settlement on neighbouring land. As documented in the GSA report (Appendix D), dewatering is expected to have negligible, adverse impact on the neighbouring properties, given that dewatering will occur in competent bedrock materials. Notwithstanding, should groundwater level monitoring during site dewatering reveal declining groundwater levels greater than the predicted, maximum drawdown outside of the basement boundary, the following contingency measures will apply at the indicated trigger levels: <u>Trigger 1</u>: when monitoring of groundwater levels indicates that the maximum predicted groundwater drawdown level has been reached in the vicinity of the shored excavation boundary wall, and groundwater levels are still falling, excavation works should cease (HOLD POINT) and the monitoring manager is to notify the Site Manager and the Geotechnical Engineer to review construction progress and confirm that works can effectively continue without significant, additional groundwater level decline. The review may find that further groundwater level decline may be greater than 25% of the predicted maximum drawdown outside of the shoring wall. <u>Trigger 2</u>: should the Trigger 1 review indicate that further groundwater level decline may be greater than 25% of the predicted maximum drawdown outside the shoring wall, the appointed Structural Engineer will be notified to assess whether this water level decline potentially poses adverse risks to neighbouring structures that would warrant mitigation measures to be implemented, and if so, to recommend relevant mitigation options for consideration and action prior to continuation of deepening the excavation.
System Performance Issues	
Dewatering System Failures	Ensure that spare equipment (where practical) is on hand. Ensure that the failed equipment can be serviced by site personnel or an appointed contractor who can rapidly report to site when needed.
Power Outages	Ensure that a backup generator is readily available. In this event, an assessment across the site and surrounding sites should also be completed in order to identify whether any other lights and electrical equipment are working so to identify if the issue is site specific or if it is across a whole area. In addition to having the back-up generator running, the contractor should also seek advice from an electrician in regard to the additional assessment and repairs that may be required.

Anticipated Problems	Preventive / Corrective Actions
Unexpected contaminants found during monitoring	Contact the appointed environmental consultant / water quality expert and collect samples for analysis, to assess the identified concentrations against relevant criteria. If the contaminant is found to exceed the DWC, follow the corrective actions corresponding to <i>Water Quality Criteria Exceedance</i> above. Expand the DWC accordingly.
Chemical/fuel spill and leaks from machinery	Stop earthworks, notify site manager. Use accessible soil or appropriate absorbent material to absorb the spill (if practicable). Stockpile the impacted material in a secure location, on builder's plastic to avoid cross contamination. Inspect groundwater and note any visual and/or changes. The contractor should seek advice from environmental consultant in regard to assessment and treatment requirements.
Excessive rainfall	Ensure sediment and surface water controls are in place and functioning as intended, as per the designs provided in the site-specific Soil and Water Management Plan. Any non-conformance is to be documented and rectified. The capacity of the dewatering system to dispose larger volumes of water should be evaluated and if required, a temporary system should be utilised following correspondence with Council / WaterNSW and the environmental consultant.
Excessive noise	Identify the source and isolate if possible. Modify the actions of the source or erect temporary noise barriers if required.
Impacts on the stability of adjacent structures	Contractor to seek advice from qualified professional (such as a geotechnical engineer and/or structural consultant) in regards to the additional assessment and monitoring that may be required.
Excessive organic odours / vapours	In accordance with Council's Contaminated Land Policy, no nuisance odours are to be detected at any site boundary during the dewatering stage. Should odour emissions be detected at a site boundary, the following measures will be implemented: 1) Stop work, to allow odour to subside. 2) Monitor ambient air across the site and boundaries with a portable photo-ionisation detector (PID). 3) Implement control measures, including respirators for on-site workers, use of odour suppressants and wetting down of excavated material. 4) Notify the occupants of adjoining premises regarding odour issues. Notification should be in writing, providing the contact details of the responsible site personnel. 5) Record logs for odours and volatile emissions using photo-ionisation detectors (PID), if applicable.
Complaint management	Notify client, site manager and environmental consultant (if required) logging and following up complaint. Reporting should follow management procedures. Implement control measures to address reason of complaint (if possible) and notify complainant of outcome.

7. MINIMAL HARM ASSESSMENT

7.1 Consideration of NSW Aquifer Interference Policy

In accordance with the NSW Water Management Act 2000 the taking of water from an aquifer and/or the disposal of water taken from an aquifer is defined as an aquifer interference activity. The NSW 2012 Aquifer Interference Policy (the 'NSW AIP') provides guidance for the assessment of potential impacts of dewatering on water users and groundwater dependent ecosystems. The NSW AIP assessment process was performed with due regard for all hydrogeological information collected for the site and is presented below.

7.1.1 Hydrogeological Model Summary

With reference to the site-specific, conceptual hydrogeological model (**Section 3.2**), for a bedrock aquifer with groundwater under pressure, groundwater seepage would enter the excavation flowing through joints, faults and bedding plane fractures. Lower seepage flow volumes may be expected during depressed groundwater levels in dry periods, with higher seepage flow after high rainfall events, which would be expected to cause temporary, elevated groundwater levels.

7.1.2 Groundwater source category

Under the NSW 2012 Aquifer Interference Policy (the 'NSW AIP') *highly productive groundwater* is defined as a groundwater source that:

- a) *has total dissolved solids (TDS) of less than 1,500 mg/L; and*
- b) *contains water supply works that can yield water at a rate greater than 5 L/sec.*

Baseline groundwater salinity was shown to be low with EC values ranging up to 947 $\mu\text{S}/\text{cm}$ and a maximum laboratory TDS of 260 mg/L (see **Table B2**). Modelled inflow to the basement is predicted to be 0.0542 L/sec (i.e. 4.69 m^3 / day, **Section 4.2**), during the construction and occupational phases of the development.

The aquifer at the site therefore meets the description of a "*less productive groundwater source*", as defined under Section 3.2.1 *Aquifer impact assessment* of the NSW AIP.

7.1.3 Minimal impact considerations

In accordance with the NSW AIP Table 1 "*If the predicted impacts are less than the Level 1 minimal impact considerations, then these impacts will be considered as acceptable.*"

Table 1 *Minimal Impact Considerations for Aquifer Interference Activities* of the NSW AIP shows that for *Less Productive Groundwater Sources* in low yielding porous and fractured rock water sources, with groundwater under pressure, the following minimal impact considerations are applicable:

Drawdown

- *Level 1 – A cumulative pressure head decline of not more than 2m, at any water supply work.*
- *Level 2 – If the predicted pressure head decline is greater than the Level 1 requirement (above), then appropriate studies are required to demonstrate to the Minister's satisfaction that the decline will not prevent the long-term viability of the affected water supply works unless make good provisions apply.*

Water Quality

- *Level 1 - Any change in groundwater quality should not lower the beneficial use category of the groundwater source beyond 40m from the activity.*
- *Level 2 - If the Level 1 condition (above) is not met, then appropriate studies will need to demonstrate to the Minister's satisfaction that the change in groundwater quality will not prevent the long-term viability of the dependent ecosystem, significant site or affected water supply works.*

7.1.4 Impact Assessment Conclusions

The proposed dewatering for the construction and operational phases of the project are considered to be compliant with the NSW AIP minimal impact criteria for the following reasons:

- A maximum groundwater level drawdown of 6.3 m was modelled (**Section 4.3**) at the basement boundaries, based on an estimated cone of depression extent of 30 m for the dewatering activity. As the dewatered strata comprise mainly competent bedrock, with less than 1 mm of predicted ground settlement immediately outside of the shored basement wall, decreasing with increasing distance from the dewatering activity, drawdown-induced ground settlement would therefore have negligible impact on neighbouring properties, beyond the site boundary.
- The lack of registered water supply bores within 500m of the site (**Section 2.4**) indicates that groundwater is not relied on as a local water supply source. There are no beneficial groundwater users within the zone of drawdown influence therefore, that would experience water losses due to the dewatering activity; therefore, *Level 1 minimal impacts with respect to Drawdown* will be achieved.
- Potential offsite groundwater contamination sources were identified (<500m) in the form of former and existing dry cleaners, motor garages and service stations (**Section 2.5.2**). As groundwater is not being utilised, site dewatering would be unlikely to adversely impact the beneficial use category of the groundwater source and the *Level 1 minimal impacts with respect to Water Quality* would also be maintained.
- The dewatering monitoring program includes visual inspection, odour assessment and laboratory analysis of seepage waters. Any detection of petroleum-related impacts that may originate from the former factory, or any other potential source, will be appropriately managed by onsite water-treatment to ensure that treated water quality complies with the discharge water criteria, as detailed in **Section 5**
- Potential onsite contamination sources will be effectively removed during basement excavation, and any residual groundwater impacts will be treated to comply with the approved discharge water criteria (i.e. specified in **Section 5.2**).
- There is no documented, high priority, groundwater dependant ecosystem within 500 m of the site.
- As the basement will be designed as a draining structure, potential groundwater mounding impacts as a result of the constructed structure are unlikely.

In addition to the above, the routine monitoring of treated water quality, groundwater drawdown and water take, as well as the dewatering contingencies tabulated in **Section 6.5**, are designed to ensure that potential impacts are minimised.

7.2 Assessment Inputs

The inputs for assessing the potential impacts of dewatering on the groundwater system are summarised in **Table 7-1**.

Table 7-1 Assessment inputs summary

Assessment Items	Comments
1. Estimated water take volume	As detailed in Section 4.2 , the water take volume is estimated to be 1.71 ML per year during the construction and operational phases of development.
2. Suitability of volume estimation	Use of PLAXIS 2D (a finite element computer model), implemented by experienced Geotechnical Engineer and reviewed by Senior Geotechnical Engineer (see also the GSA report in Appendix D).
3. Ground elevation across the site	The site is generally flat with a slight gradient towards the west. Site elevations range from approximately RL 11.99 m AHD at Francis Street to RL 11.32 m AHD at North Street (Appendix C).
4. Geotechnical ground characterisation	Refer to GSA report in Appendix D .
5. Water level measurements	Groundwater levels were measured at depths from 3.24 m AHD (minimum) to 9.58 m AHD (maximum), as detailed in Section 3.3 . Periodic groundwater level gauging will be conducted on an annual basis (i.e. 1 monitoring event per year) at monitoring wells during the operational phase, as described in Section 5.4.5 .
6. Required water level draw down and potential impacts	As described in Sections 4.6 and 7.1.4 drawdowns resulting from site dewatering are unlikely to adversely impact on ground settlement, groundwater access in existing water supply bores or lowering of beneficial use category of the groundwater source.
7. Works proposed for dewatering	A drained basement using drainage to a sump-and-pump system, with water treatment to achieve compliant discharge water quality, as described in Section 4.4 and Section 5.5 .
8. The base level of the aquifer	Sandstone bedrock extends below the proposed BEL, see Section 3.2 .
9. Excavation footprint dimensions	Refer to basement plan included in Appendix C .
10. Hydraulic conductivity of lithological units	Detailed in Table 1 of the GSA report in Appendix D .
11. Anticipated duration of dewatering	Dewatering will be ongoing for the approved construction dewatering period, while operational dewatering will be ongoing for the life of the project.
12. Depth of piling embedment beneath bulk excavation	Refer to Section 4.1 – embedment depth will be provided with final design and detailed shoring plans.

7.3 Operational (Occupational) Phase Dewatering Management

7.3.1 Operational Phase Water Treatment

The need for water treatment during the operational phase will be dependent on water quality, as characterised by routine monitoring during construction phase dewatering. To confirm for which parameters water treatment is still necessary, a pre-treatment water sample will be collected and laboratory analysed for the dewatering parameters listed in **Table 5-1**. Any exceedances of the DWC will indicate the need for water treatment for the non-compliant water quality parameter(s). An appropriate water treatment system will be established to ensure that discharge water quality (i.e. treated water) is appropriate for stormwater discharge.

It will be the responsibility of Strata Management to ensure that the water treatment is appropriately maintained to ensure that only compliant water quality is discharged from the site.

7.3.2 Monitoring Frequency and Reporting

Strata Management is also responsible for the engagement of a suitably qualified and appropriately experienced environmental consultant, to perform dewatering monitoring and annual reporting for the occupational phase of the project. The following procedure will be adhered to by strata management to ensure that the long-term dewatering system is managed appropriately:

- **Groundwater level monitoring:** Scheduled groundwater level monitoring is required for the first 36 months of the sump and pump operational phase in order to characterise seasonal groundwater level fluctuations for the operational (post-construction) phase of the development. It is noted that the occupational phase of the development commences prior to the sump and pump commences operation.

A quarterly groundwater level monitoring frequency (i.e. once every 3 months) will be adopted for the first twelve months of occupation. This will be followed by semi-annual water level monitoring (i.e. once every 6 months) for the second year; then annual monitoring (i.e. a monitoring event at the end of the third year). Water level data will be recorded on a data form to document date of monitoring, well identification number, reference point from where all water level measurements are consistently taken (e.g. top of well casing, or ground level), the depth to water and the name of the person conducting the monitoring. Should it be discovered that the monitoring wells are no longer functional, Strata Management must be immediately notified to implement the Well Replacement Protocol described in **Section 7.3.3**.

- **Discharge volume monitoring:** The volume of water discharged to stormwater must be monitored by a calibrated flow meter (or equivalent alternative means) that is integrated as part of the long-term pumping system. The flow meter (or flow monitoring device) will display cumulative volume discharged, which will be recorded onto the same data form used to document groundwater level, at the time of each water level monitoring event. Discharge volume monitoring frequency will therefore be the same as for groundwater level monitoring, i.e. quarterly for the first year, every 6 months for year two, and a single monitoring event at the end of year three.
- **Water quality monitoring:** A single, post-treatment water sample will be collected on an annual basis during the final monitoring event in each year (i.e. at 12 months and 24 months of operation). Treated water samples will be laboratory analysed for the priority discharge water quality parameters (**Table 5-1**), to confirm that DWC compliance and show that discharge water quality is not deteriorating with time. Given that the groundwater is to be treated prior to offsite discharge, the risks presented to the human health and environment for the construction phase of the development are considered low and acceptable. Groundwater assessment of water quality parameters is required at the end of the construction phase to verify concentrations, and review or amend proposed operational phase water treatment if required.
- **Annual dewatering monitoring report:** A factual, 12-monthly *Interim Report – Operational Dewatering* will be prepared using the WaterNSW Completion Report form template (described in **Section 5.6.1**), after each 12 months of monitoring. Each report will document the groundwater level gauging results, groundwater quality results and the cumulative volume of water discharge from the seepage collection sump to the storm water system. Each annual monitoring report will also include a trend analysis of the monitoring data and provide a discussion to characterise discernible/statistical trends in groundwater quality, and/or groundwater levels as measured in the monitoring well(s) and water discharge volumes over time.
- **Cessation of monitoring:** Should the annual dewatering monitoring report after the 36th month of occupation confirm that groundwater quality, groundwater level fluctuations at the monitoring well(s) and annual groundwater discharge volumes are stable (i.e. not

statistically trending up or down), then it will be determined that equilibrium has been reached and termination of the monitoring program would be justified. If this is not the case then the dewatering program will be reviewed accordingly.

The appointed environmental consultant will provide notification to Council to document the termination or continuation of monitoring at this stage. Should monitoring be continued, a review of monitoring frequency will be undertaken and appropriate notification to Council will be issued by the appointed environmental consultant, through Strata management.

7.3.3 Monitoring Well Replacement Protocol

EI notes that only one of the existing groundwater monitoring wells is located outside the basement footprint (BH101M). This well (and if practical, all) should be preserved to enable groundwater level monitoring close to the basement.

Should the existing wells be damaged during the construction works, installation of a new groundwater monitoring well must be installed as follows:

- a) The replacement monitoring well must be appropriately located so as to avoid any damage or destruction during construction works;
- b) Well design should be in accordance with the design for water monitoring bores for water level monitoring as specified under the *Minimum Construction Requirements for Water Bores in Australia* (Ref. NUDLC, 2020);
- c) The well should be appropriately screened, with the water intake interval set across the lowermost basement level to monitor groundwater levels at the bulk excavation level, assuming uniform ground conditions; and
- d) All reasonable steps must be taken to have the replacement bore installed within one week of the damage having occurred, subject to licensed driller availability.

8. DEWATERING MANAGEMENT SUMMARY

The requirements of this report are summarised in **Table 8-1**.

Table 8-1 Dewatering Management Summary

Item	Requirement / Procedure
Objective	Ensure that the proposed dewatering operations do not impact on the quality of the receiving surface waters (i.e. at the point of groundwater discharge). Where necessary, groundwater will be treated to achieve an acceptable water quality prior to discharge: ▪ See Section 3 for groundwater conditions. ▪ See Section 5.2 for groundwater quality discharge requirements. ▪ See Section 5.5 for groundwater treatment options. Provide comment on groundwater level changes that occur during dewatering: ▪ See Section 4 for summary of groundwater take assessment and dewatering drawdown impacts. ▪ Refer to Appendix D for groundwater seepage analysis model. Provide relevant information demonstrating that post-construction, operational dewatering would pose minimal harm to the groundwater source: See Section 7.3 for operational phase dewatering management.
Person Responsible for Implementation of this Report	During basement excavation and construction, the Site Manager / Water Treatment Specialist will be responsible for ensuring the implementation of appropriate treatment of extracted groundwater, as outlined in this document. Occupation phase responsibility will rest with the Site Manager (yet to be determined).
Operation Dewatering Policy	To ensure that all extracted groundwater from dewatering is effectively treated prior to discharge to the receiving water bodies, as will be confirmed by the Operational Dewatering Management Procedure detailed in Section 7.3.
Pre-Dewatering Groundwater Assessment	As set out in Section 3.4, representative samples were collected prior to dewatering and tested for the identified potential contaminants, to provide baseline groundwater quality data and review the proposed discharge water quality requirements.
Geotechnical Monitoring Report	The geotechnical monitoring report, detailing the current continuous groundwater level monitoring results, is presented as an appendix in the GSA report in Appendix D.
Discharge Water Quality Criteria	All groundwater to be discharge into the local stormwater network is to meet (at the very least) the criteria outlined in Table 5-1, Section 5.2.
Implementation Strategy	All extracted groundwater will be monitored and treated (where necessary). On-going testing to be performed to confirm water quality meets the adopted Discharge Water Criteria (DWC) prior to release into the storm water network, which discharges to receiving water bodies. Additional treatment / wastewater disposal to be undertaken if the DWC values are not met.

Item	Requirement / Procedure
Monitoring Requirements for Construction Phase Dewatering	As specified in Section 5.3: ▪ 1. Initial Assessment = Prior to dewatering ▪ 2. Trial-Run Period = Twice per week* ▪ 3. Discharge Monitoring Period = Weekly for a month to fortnightly for a month then monthly* <i>*provided the analytical results indicate treated water quality meets the DWC, or risks are considered to be significantly low. Should analytical results exceed the adopted discharge criteria, contingencies listed in Section 6.5 must be followed.</i>
Monitoring Requirements for Operational Phase Dewatering	As specified in Section 7.3: Quarterly for the first year, every 6 months for year two, and a single monitoring event at the end of year three.
Auditing	The appointed environmental consultant (water quality expert) will undertake weekly audits during the Trial-Run Period (if required), and monthly audits during the Monitoring Period, to ensure that all discharges comply with the criteria specified in Section 5.2.
Reporting	The contractor responsible for dewatering will keep records of all monitoring and laboratory test results, as well as quantities of treatment agents applied during the dewatering process. All records should be made available for inspection onsite during the construction phase.
Corrective Actions	As specified in the contingency measures, outlined in Section 6.5.

9. STATEMENT OF LIMITATIONS

This plan has been prepared for the exclusive use of Anprisa Pty Ltd, whom is the only intended beneficiary of EI's work. The scope of work completed for the purpose of this plan is limited to that agreed with Anprisa Pty Ltd.

No other party should rely on the document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in drafting similar plans by reputable members of the environmental industry in Australia, as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section must be read in conjunction with the whole of this plan, including its appendices.

EI's professional opinions are reasonable and based on its judgment, experience, training and results from analytical data. EI may also have relied upon information provided by the client and other third parties to prepare this document, some of which may not have been verified by EI.

EI's professional opinions contained in this document are subject to modification if additional information is obtained through further investigation or observations. In some cases, further testing and analysis may be required, which may result in a further report with different conclusions.

Should you have any queries regarding this plan, please do not hesitate to contact EI.

10. REFERENCES

- ANZECC/ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, October 2000.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT, Australia, August 2018.
- Cashman and Preene (2021) *Groundwater Lowering in Construction. A Practical Guide*, (3rd Edn.), Spon Press, New York, 2021.
- Chapman GA and Murphy CL (1989) *Soil Landscapes of the Sydney 1:100 000 Sheet*, Soil Conservation Service of NSW, Sydney, September 1989.
- DCCEEW (2024) *eSPADEV2.2 Portal*. NSW Department of Climate Change, Energy and the Environment and Water (retrieved from: www.environment.nsw.gov.au/eSpade2WebApp).
- DEC (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*, New South Wales Department of Environment and Conservation, DEC 2007/144, June 2007.
- DMR (1985) *Sydney 1:100,000 Geological Series Sheet 9130*, Edition 1 Geological Survey of New South Wales, Department of Mineral Resources.
- DPE (2022) *Minimum requirements for building site groundwater investigations and reporting*, NSW Dept. of Planning and Environment, Doc. PUB20/940, Rev. V02.2210, October 2022.
- EI (2020a) *Hazardous Material Survey; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E10_Rev0, 4 August 2020.
- EI (2020b) *Asbestos Management Plan; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.E12_Rev0, 17 August 2020.
- EI (2025a) *Geotechnical Investigation; 40-76 William Street, Leichhardt NSW*, EI Australia Ref. E24470.G03_Rev6, 18 September 2025.
- Inner West Local Environmental Plan 2022Landcom (2004) *Managing Urban Stormwater: Soils and Construction* (Fourth Edition), Published by the New South Wales Government, March 2004.
- Look B (2007) *Handbook of Geotechnical Investigation and Design Tables*, Taylor & Francis Group, London, 2007.
- Murphy CL (1997) *Acid Sulfate Soil Risk of the Botany Bay*, Sheet 9130S3 (Second Edition), Department of Land and Water Conservation
- NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure*, National Environment Protection Council, April 2013.
- NHMRC (2008) *Guidelines for Managing Risks in Recreational Water*, National Health and Medical Research Council, Commonwealth of Australia, Canberra February 2008.
- NHMRC (2022) *Australian Drinking Water Guidelines. Paper 6 National Water Quality Management Strategy*, National Health and Medical Research Council, Commonwealth of Australia, Canberra, Version 3.7, January 2022.
- NSW EPA (2013) *Licensing Fact Sheet – Using Environment Protection Licensing to Control Water Pollution*, New South Wales Environment Protection Authority, EPA 2013/0119, May 2013.

NSW Government (2018) *Water Management (General) Regulation*.

NSW Government (2021) *Minimum Requirements for Building Site Groundwater Investigations and Reporting, Information for Developers and Consultants*, Department of Planning, Industry and Environment, January 2021.

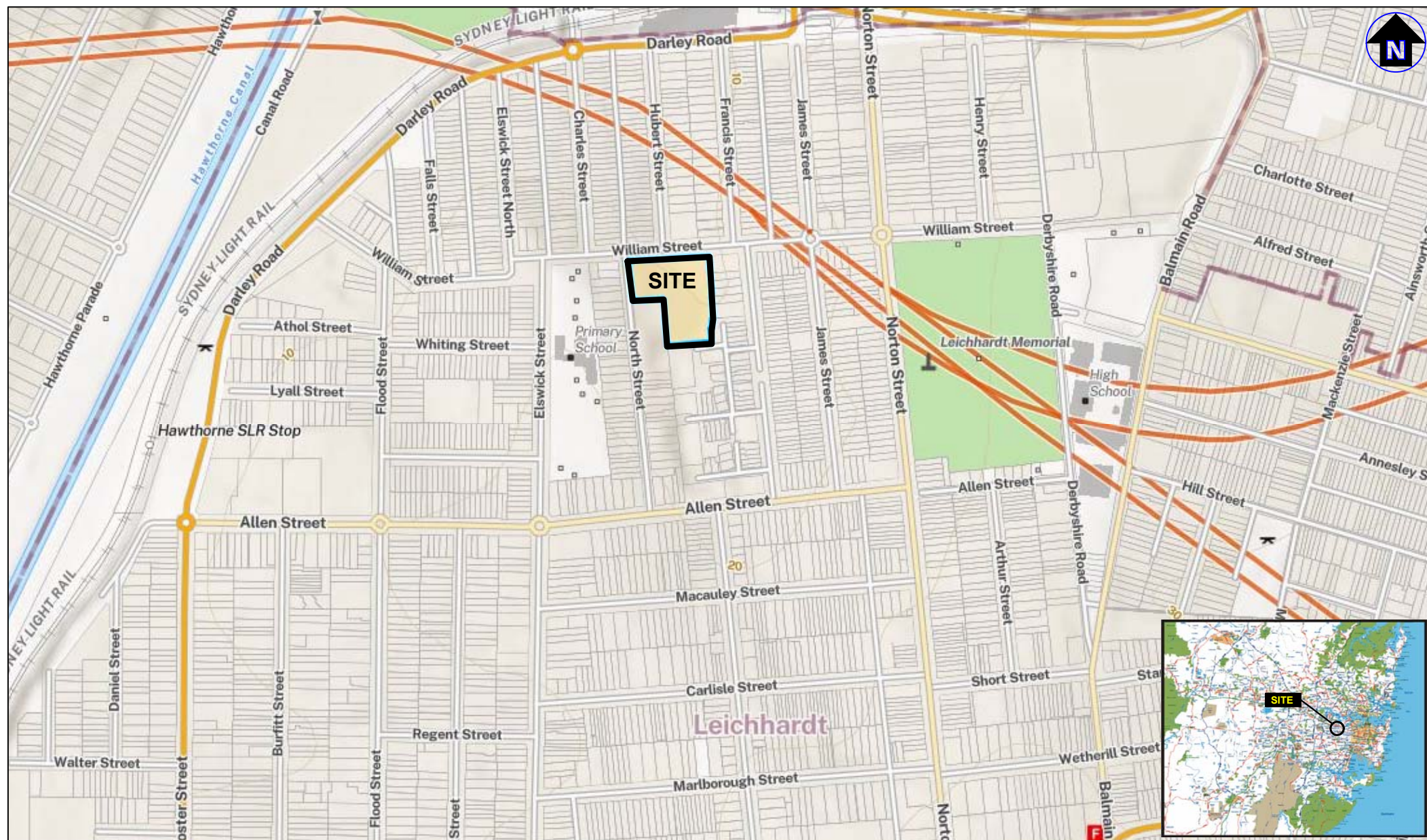
NUDLC (2020) *Minimum Construction Requirements for Water Bores in Australia* (Fourth Edition), National Uniform Drillers Licensing Committee.

ABBREVIATIONS

AIP	Aquifer Interference Policy
ANZECC	Australian and New Zealand Environment Conservation Council
ANZG	Australian and New Zealand Governments
ASS	Acid Sulfate Soil
BEL	Bulk Excavation Level
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
CVOC	Chlorinated Volatile Organic Compounds
DGV	Default Guideline Values
DO	Dissolved Oxygen
DP	Deposited Plan
DWC	Discharge Water Criteria
EC	Electrical Conductivity
EI	EI Australia
FFL	Finished Floor Level
GME	Groundwater Monitoring Event
GSA	Groundwater Seepage Analysis
LGA	Local Government Area
LOR	Limit of Reporting (limit of laboratory reporting for analytical method; see PQL)
m	metres
mAHD	metres Australian Height Datum
mBGL	metres Below Ground Level
ML	Megalitres
mg/L	Milligrams per Litre
µg/L	Micrograms per Litre
µS/cm	Microsiemens per Centimetre
N/A	No Available Criterion
NATA	National Association of Testing Authorities
NTU	Nephelometric Turbidity Units
PAHs	Polycyclic Aromatic Hydrocarbons
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
pH	Potential Hydrogen (a measure of the acidity or basicity of an aqueous solution)
PID	Photo-ionisation Detector
PQL	Practical Quantitation Limit (limit of reporting for analytical method; see LOR)
RL	Reduced Level
TDS	Total Dissolved Solids
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
VOCs	Volatile Organic Compounds

(Note: Some of the above abbreviations may not have been used in this report)

Appendix A – Figures



Drawn:	C.T
Approved:	N.K
Date:	20-10-25
Scale:	Not To Scale



LEGEND (All Locations are Approximate)

- Site boundary
- Basement boundary
- ▼ Monitoring well location



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Drawn:

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Approved:

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Date:

20-10-25

Anprisa Pty Ltd

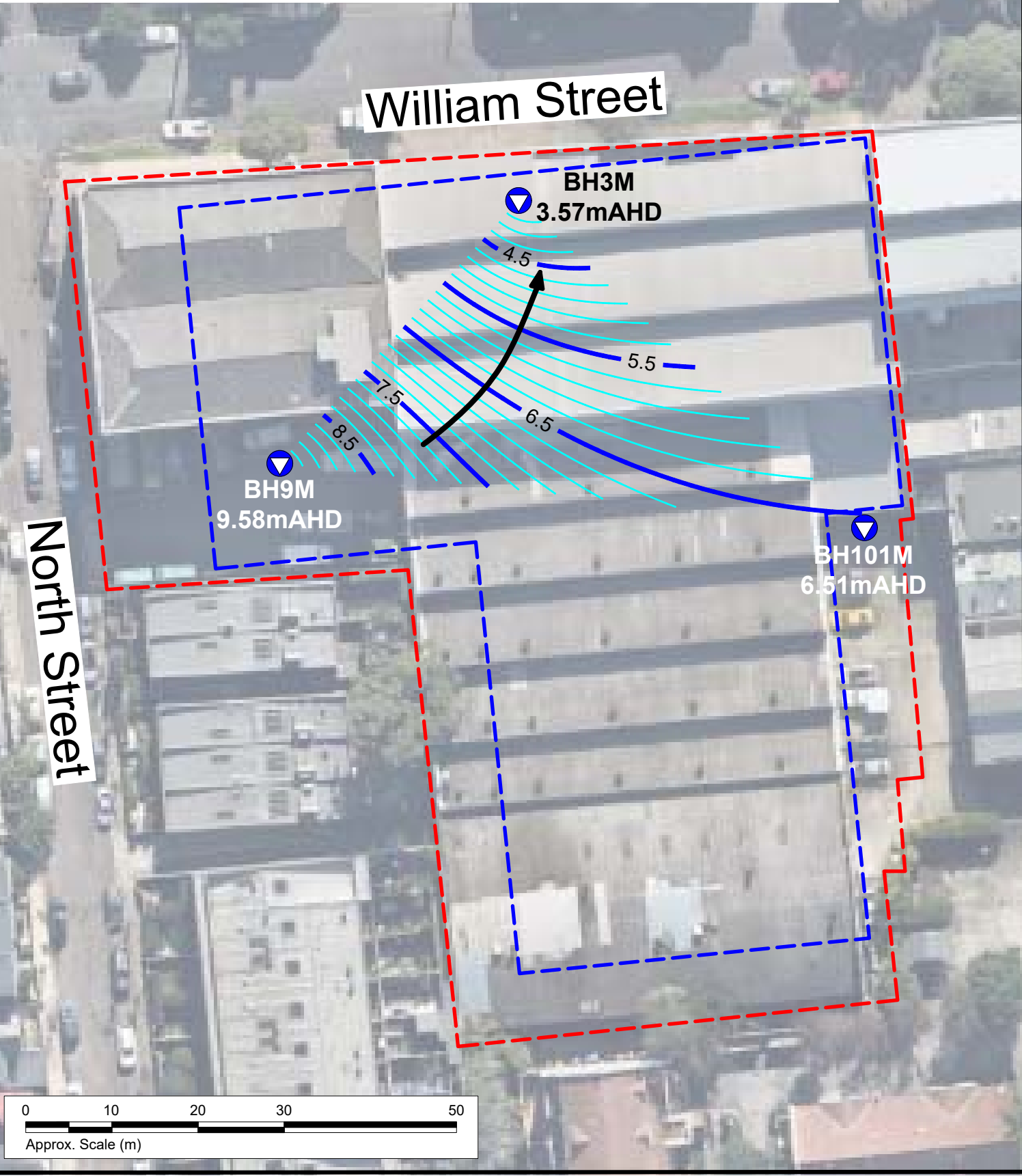
Hydrogeological Report including DMP & GSA
40-76 William Street, Leichhardt NSW
Borehole Location Plan

Figure:

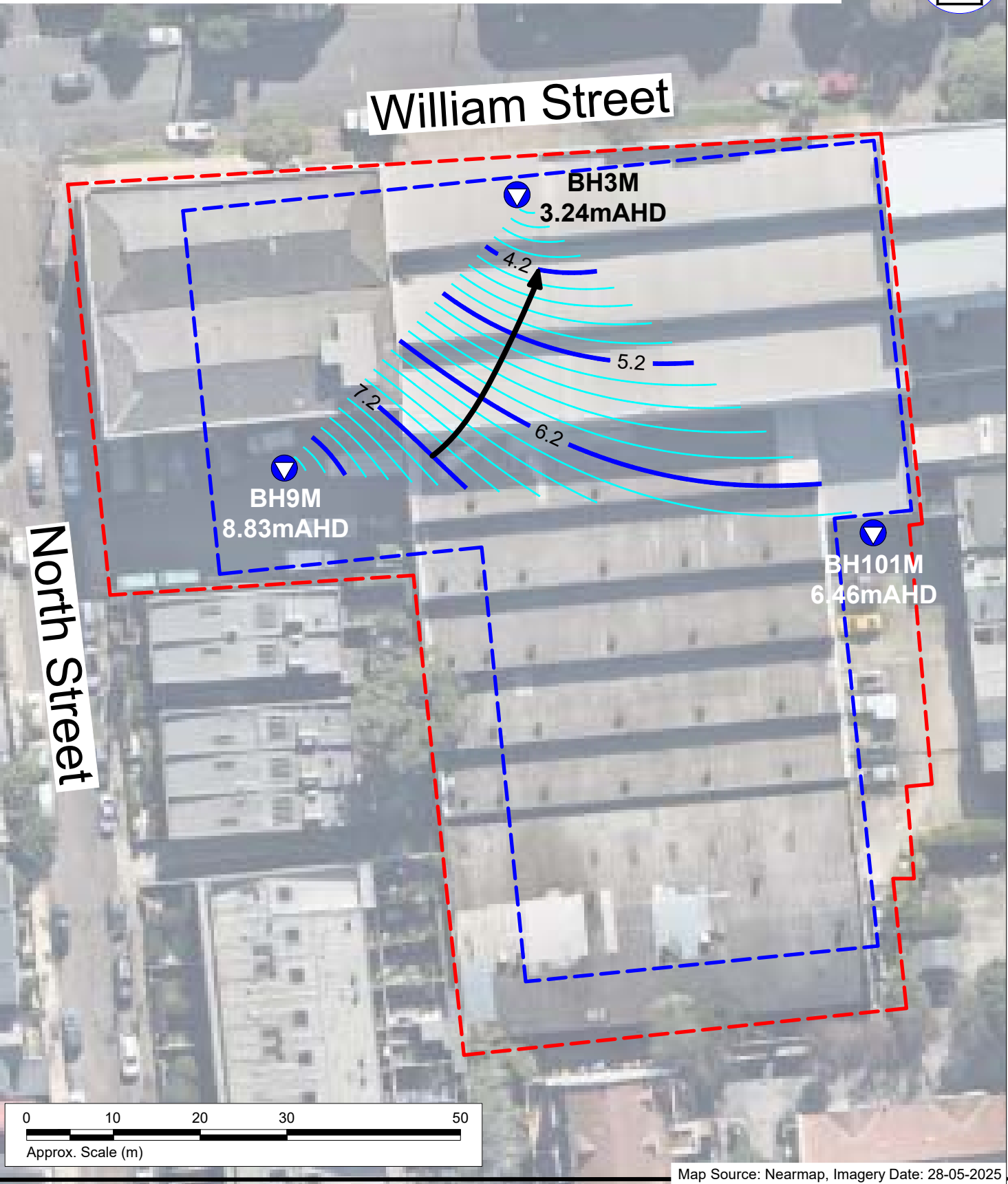
A2

Project: E24470.E16

Groundwater elevation contours as at time of highest groundwater level at BH9M, measured at 10:15 AM, 23/08/25.



Groundwater elevation contours as at time of lowest groundwater level at BH3M, measured at 01:15 AM, 06/09/25.



Map Source: Nearmap, Imagery Date: 28-05-2025

LEGEND (All Locations are Approximate)

- Site boundary
- Basement footprint
- Borehole/monitoring well location

- Groundwater contour, 0.20 interval (mAHD)
- Inferred groundwater flow direction



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Drawn:

C.T

Approved:

-

Date:

18-05-26

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Hydrogeological Report including DMP & GSA
40-76 William Street, Leichhardt NSW
Groundwater Contour Map

Figure:

A3

Project: E24470.E16

Appendix B – Tables

Table B1 – Summary of Baseline Groundwater Quality Results: Physical Parameters

E24470.E16 - Leichhardt

Sample ID	Date sampled	Measurements & Analyses																				Visual Assessment		
		Sodium Adsorption Ratio (SAR)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Hydroxide Alkalinity as OH (mg/L)	Bicarbonate Alkalinity as HCO3 (mg/L)	Carbonate Alkalinity as CO3 (mg/L)	Electrical Conductivity Field EC (µS/cm)	Electrical Conductivity (µS/cm)	field pH	pH	Field Redox (mV)	Eh ¹ (mV)	Total Dissolved Solids (mg/L)	Total Suspended Solids (TSS) (mg/L)	Turbidity (NTU)	Hardness (mg CaCO ₃ /L)	Field Water Temperature (°C)	Dissolved Oxygen Field DO (mg/L)	Dissolved Oxygen (mg/L)	Total Organic Carbon (TOC) as NPOC (mg/L)	Field Oil & Grease (Present/Absent)
Groundwater Investigation - Round 1 (EI, 2021)																								
BH3M-1	3/9/2021	NA	NA	NA	NA	NA	NA	NA	NA	620	450	4.51	4.3	146.2	351.2	380	NA	89	30	21.65	1.23	NA	NA	Absent
BH9M-1		NA	NA	NA	NA	NA	NA	NA	NA	319	270	4.69	5.1	122.4	327.4	270	NA	340	50	20.11	1.52	NA	NA	Absent
Groundwater Investigation - Round 2 (EI, 2025)																								
BH101M	22/8/2025	0.6	230	<5	<5000	<5000	<5	280	<5000	937	500	6.9	6.9	88.5	294	260	110	180	170	14.53	0 ²	3.6	8.7	Absent
BH3M		NA	NA	NA	NA	NA	NA	NA	NA	947	350	5.4	5.5	77.5	283	200	NA	32	24	14.77	0 ²	NA	NA	Absent
BH9M		NA	NA	NA	NA	NA	NA	NA	NA	362	270	5.6	6.2	191.4	396	180	NA	85	70	17.59	0 ²	NA	NA	Absent
Discharge Water Criteria																								
DWC - Marine												6.5 - 8.4	6.5 - 8.4					10					No visible sheens, surface films or oil and grease	

Notes:

All values are in units as shown.

All parameters which state 'Field' were tested onsite using portable water quality test meters and probes, all other parameters were tested in the laboratory.

NA = Not Analysed

Water quality criteria are based on the ANZG (2018+) 95% marine water DGVs, or relevant default guidelines where ANZG marine water DGVs are not currently available, as explained in the footnotes to **Table 5-1**, in **Section 5** of the DMP.

1 Eh in units of millivolts (mV) - Adjusted redox potential relative to Standard Hydrogen Electrode (SHE), calculated as field Redox probe reading plus field probe potential (205 mV).

2 Dissolved Oxygen readings were not taken due to equipment malfunction.

	Highlighted value does not meet the adopted criteria
	No relevant criteria are currently available



Table B2 - Summary of Baseline Groundwater Quality - Chemical Parameters

E24470 - Leichhardt

Sample ID	Sampling Date	Metals																							BTEX					VOCs	Chlorinated VOCs				
		Total As	Cd	¹ Total Cr	Cu	Pb	Hg	Ni	Zn	Al	Sb	Ba	Be	B	Co	Fe	Li (mg/L)	Mn	Mo	Se	SiO ₂ (mg/L)	Ag	Sr	U	V	Benzene	Toluene	Ethylbenzene	o-xylene	m/p-xylene	Total VOCs	Perchloroethylene, PCE	Trichloroethylene, TCE	cis-1,2-dichloroethene	Vinyl Chloride (chloroethylene)
Groundwater Investigation - Round 1 (EI, 2021)																																			
BH3M-1	3/9/2021	<1	<0.1	<1	<1	<1	<0.1	5	24	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	NA	NA	NA	NA	NA
BH9M-1		<1	<0.1	<1	2	<1	<0.1	2	37	66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	NA	NA	NA	NA	NA
Groundwater Investigation - Round 2 (EI, 2025)																																			
BH101M	22/8/2025	2	<0.1	<1	<1	<1	<0.1	<1	20	<5	<1	220	<1	280	<1	29,000	5	210	<1	<1	21000	<1	370	<1	<1	<0.5	<0.5	0.5	<0.5	<1	<10	<0.5	<0.5	<0.5	<0.3
BH3M		<1	<0.1	<1	2	<1	<0.1	3	33	68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	NA	NA	NA	NA	NA
BH9M		<1	<0.1	<1	3	<1	<0.1	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	NA	NA	NA	NA	NA
Discharge Water Criteria																																			
DWC - Marine		94 (As III) 42 (As V)	0.7	27 (Cr III) 4.4 (Cr VI)	6	4.4	0.1	70	80	37	9	20000	600	1500	1	540		80	34	18		1.4		0.5	100	700	180	80	470	275		70		330	100

Sample ID	Sampling Date	Petroleum Hydrocarbons			PAHs			Microbiological Organisms				Total Phenols	Total Cyanide	PFAS			Major Cations				Major Anions				Ionic Balance (%)	Nutrients									
		Oil & Grease	TRH C6 - C9	TRH C10 - C40	Total PAHs	Benzo(a)pyrene	Naphthalene	Faecal coliforms (MPN/100mL)	Faecal streptococci (MPN/100mL)	Escherichia coli (E. coli) (MPN/100mL)	PFOs			PFOs + PFHs	PFOA	Fluoride (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Bromide (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Ammonia Nitrogen NH ₃ as N		Nitrate Nitrogen NO ₃ -N (mg/L)	Nitrite Nitrogen NO ₂ as N (mg/L)	Total Oxidised Nitrogen NO _x -N	Total Kjeldahl Nitrogen	Total Nitrogen (calc)	Total Phosphorus (Kjeldahl) as P	Filterable Reactive Phosphorus as P			
Groundwater Investigation - Round 1 (EI, 2021)																																			
BH3M-1	3/9/2021	NA	<40	<320	<1	<0.1	<0.1	NA	NA	NA	NA	<4	NA	NA	NA	NA	NA	NA	NA	0.9	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
BH9M-1		NA	<40	<320	<1	<0.1	<0.1	NA	NA	NA	NA	<4	NA	NA	NA	NA	NA	NA	NA	13	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Groundwater Investigation - Round 2 (EI, 2025)																																			
BH101M	22/8/2025	NA	<40	1,100	NA	<0.1	0.5	NA	NA	380	<50	<4	<0.01	<0.01	<0.01	<0.1	25	5.6	<0.05	49	12	18	15	1.72	7,300	<5	<5	<5	8,600	8,600	280	5			
BH3M		NA	<40	<320	<1	<0.1	<0.1	NA	NA	NA	<50	<4	NA	NA	NA	NA	NA	NA	NA	1.6	4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
BH9M		NA	<40	<320	<1	<0.1	<0.1	NA	NA	NA	<50	<4	NA	NA	NA	NA	NA	NA	NA	22	3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Discharge Water Criteria																																			
DWC - Marine		No detectable oil or grease	If TPH is detected analysis for BTEX and PAH is required				0.1	70		None detectable in 100mL	400	4	0.9		220									910	38	30	5		120	25	10				

Notes:

All values are µg/L unless stated otherwise

NA = Not Analysed

Water quality criteria are based on the ANZG (2018+) 95% marine water DGVs, or relevant default guidelines where ANZG marine water DGVs are not currently available, as explained in the footnotes to **Table 5-1**, in **Section 5** of the DMP.

1 This result was for Total Chromium.

2 TRH result was obtained using silica gel clean-up method, to allow quantification of petroleum impacts only.

	Highlighted value does not meet the adopted criteria
	No relevant criteria are currently available



Table B3 - Summary of Results for the Field QC samples

Sample identification	Sampled Date	Description	TRH				BTEX				Heavy Metals							
			F1*	F2**	F3 (>C ₁₆ - C ₃₄)	F4 (>C ₃₄ - C ₄₀)	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
BH101M	22/8/2025	Groundwater	<50	480	590	<500	<0.5	<0.5	<0.5	<1.5	2	<0.1	<1	<1	<1	<0.1	<1	20
QD2		Duplicate of BH101M	<50	250	<500	<500	<0.5	<0.5	<0.5	<1.5	2	<0.1	<1	1	<1	<0.1	1	20
RPD (%)			0.0	63.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inter-laboratory Duplicate																		
BH101M	22/8/2025	Groundwater	<50	480	590	<500	<0.5	<0.5	<0.5	<1.5	2	<0.1	<1	<1	<1	<0.1	<1	20
QT1		Duplicate of BH101M	<10	270	240	<100	<1	<1	<1	<3	2	<0.1	<1	7	<1	<0.05	1	22
RPD (%)			NA	56.0	84.3	NA	NA	NA	NA	NA	0.0	0.0	0.0	160.0	0.0	NA	0.0	9.5
Groundwater																		
WTB	22/08/2025	Trip blank	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
WTS		Trip spike	-	-	-	-	[99%]	[97%]	[100%]	-	-	-	-	-	-	-	-	-
QR2		Rinsate	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	2	<1	<0.1	<1	<5

Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.

RPD exceeds 30-50% range referenced from AS4482.1 (2005)

NOTE:

All soil results are reported in mg/kg . All water results are reported in µg/L.

* TRH-F1 was calculated as TPH C6 - C10 minus the sum concentration of BTEX

** TRH-F2 was calculated as TPH >C6 - C16 minus the concentration of naphthlene

Appendix C – Survey and Development Plans

BOUNDARIES HAVE BEEN DETERMINED BY SURVEY ON 15/10/2019.

ALL ADJOINING BOUNDARY INFORMATION SHOWN ON
THIS PLAN IS APPROXIMATE ONLY.

PRIOR TO ANY CONSTRUCTION WORK, SURVEY MARKS SHOULD BE PLACED TO DEFINE THE PROPERTY BOUNDARIES.

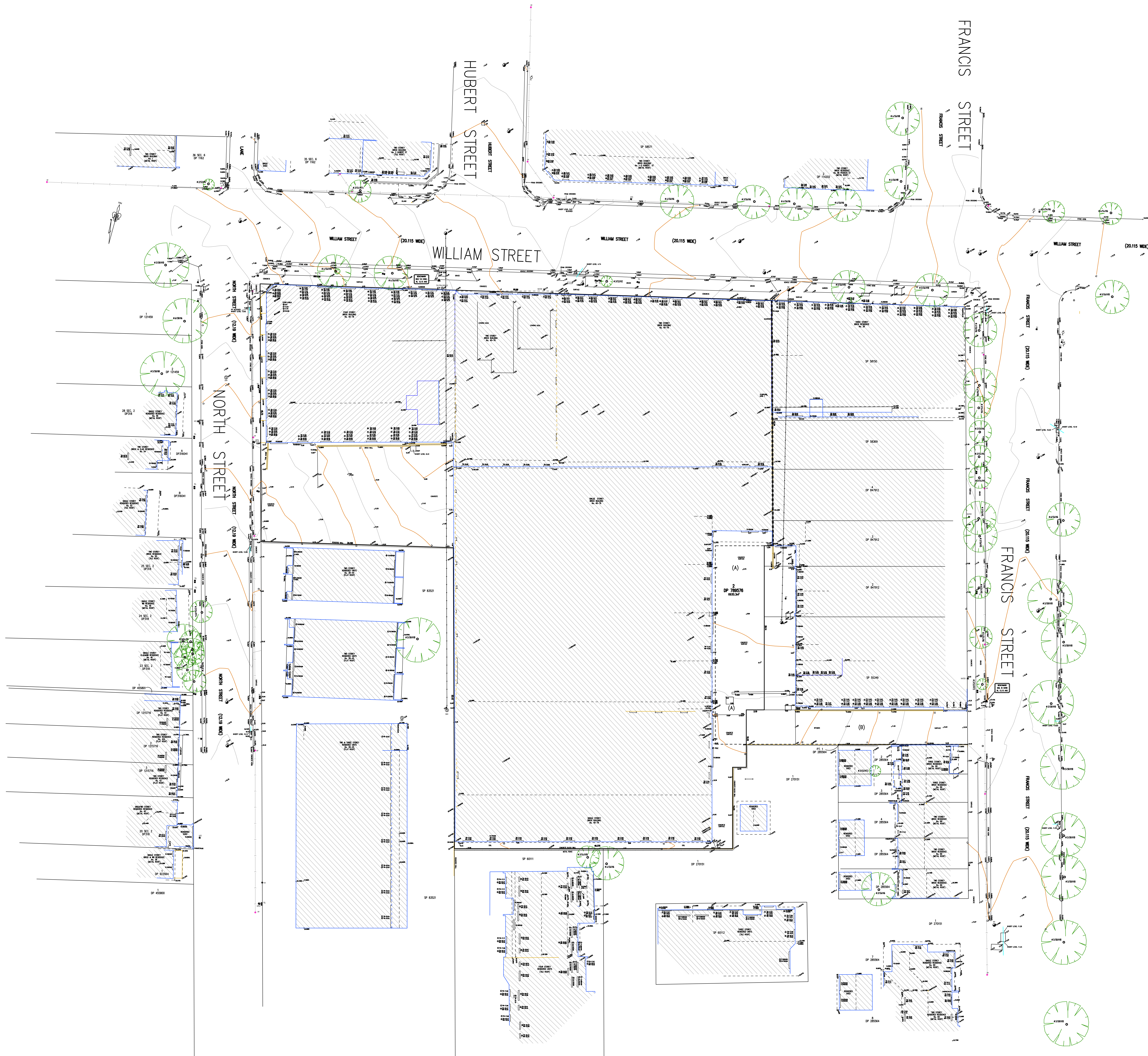
SERVICES SHOWN ARE INDICATIVE ONLY. POSITIONS ARE BASED ON SURFACE INDICATOR(S) LOCATED DURING FIELD SURVEY. CONFIRMATION OF THE EXACT POSITION SHOULD BE MADE PRIOR TO ANY EXCAVATION WORK. OTHER SERVICES MAY EXIST WHICH ARE NOT SHOWN.

LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD) USING SSM 91690 WITH RL 10.726 (AHD).

RIDGE & GUTTER HEIGHTS HAVE BEEN OBTAINED BY
INDIRECT METHOD AND ARE ACCURATE TO $\pm 0.05\text{m}$.

CONTOURS SHOWN DEPICT THE TOPOGRAPHY. EXCEPT AT SPOT LEVELS SHOWN THEY DO NOT REPRESENT THE EXACT LEVEL AT ANY PARTICULAR POINT. THE SPOT LEVELS ARE TRUE FOR THEIR POSITION, AND ARE INTENDED TO BE USEFUL TO REPRESENT THE GENERAL TERRAIN. CARE SHOULD BE TAKEN IF EXTRAPOLATING

- (A) RIGHT OF CARRIAGEWAY 5.5 AND 8.69 WIDE (DP789576)
(B) RIGHT OF CARRIAGEWAY AND FOOTWAY APPURTENANT TO THE LAND (F666500)
(C) EASEMENT FOR DRAINAGE (F666500)



BENCH MARK	
TELESTRA PIT	TEL
ELECTRIC LIGHT POLE	LP
POWER POLE	PP
SIGN POST	SP
SEWER INSPECTION PIT	SIP
SEWER VENT	SEWER
MANHOLE	MH
SEWER MANHOLE	SMH
STOP VALVE	SV
WATER HYDRANT	HYD
WATER METER	WM
GAS METER	G
STATE SURVEY MARK	SSM

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REVISION No.	REVISION DATE:	COMMENT:

EB - EDGE OF BITUMEN
EC - EDGE OF CONCRETE
TB - TOP OF BANK
BB - BOTTOM OF BANK
TW - TOP OF WINDOW
BW - BOTTOM OF WINDOW

TG - TOP OF GUTTER
RR - ROOF RIDGE
FL - FLOOR LEVEL
INV - INVERT LEVEL
ELEC - ELECTRICAL PIT
Ø.4/S10/H16 - DIAMETER/SPREAD/HEIGHT

CLIENT:	CEEROSE PTY LTD
PROJECT:	LEICHHARDT
ADDRESS:	40-76 WILLIAM STREET, LEICHHARDT

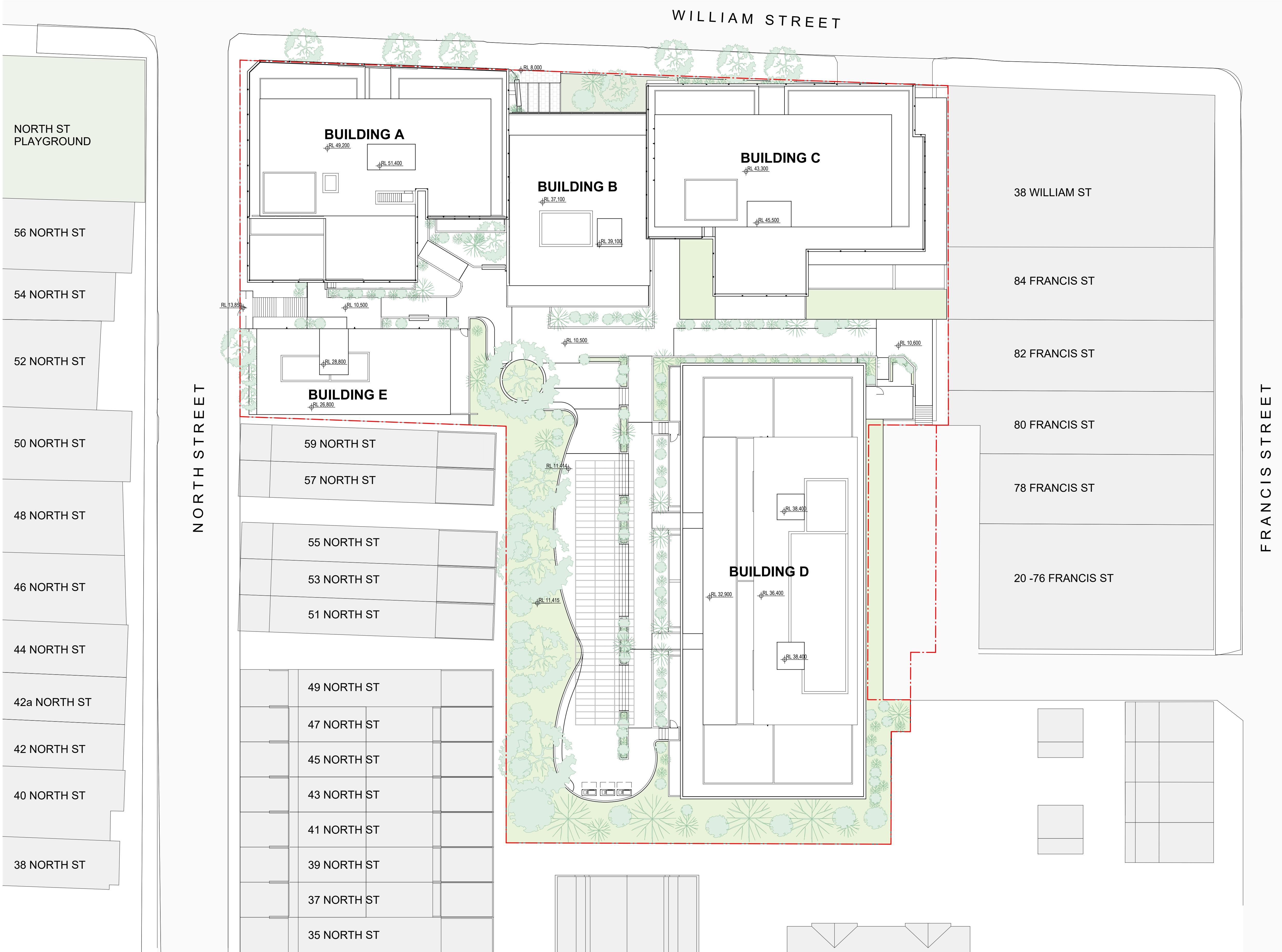
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PLAN No.: 192394-1	DATUM: AHD
DATE: 15/10/2019	SCALE: NOT TO SCALE
DRAWN: JH	CONT. INTERVAL: 0.5m
CHK: GS	SHEET 1 OF 7



TSS TOTAL SURVEYING
SOLUTIONS

LANE COVE | CAMDEN | MANLY VALE | CENTRAL COAST


Geoff Gallen
Registered Surveyor
N° 1083



Recent revision history

#	Status	Description	Date
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Notes

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Project

40-76 William Street

Client

Ceeroose

Issuer

W-B
WOODS BAGOT

Project number

122105

Size check

25mm

Checked	Approved	Sheet size	Scale
Checker	Approver	A1	1 : 250

Sheet title

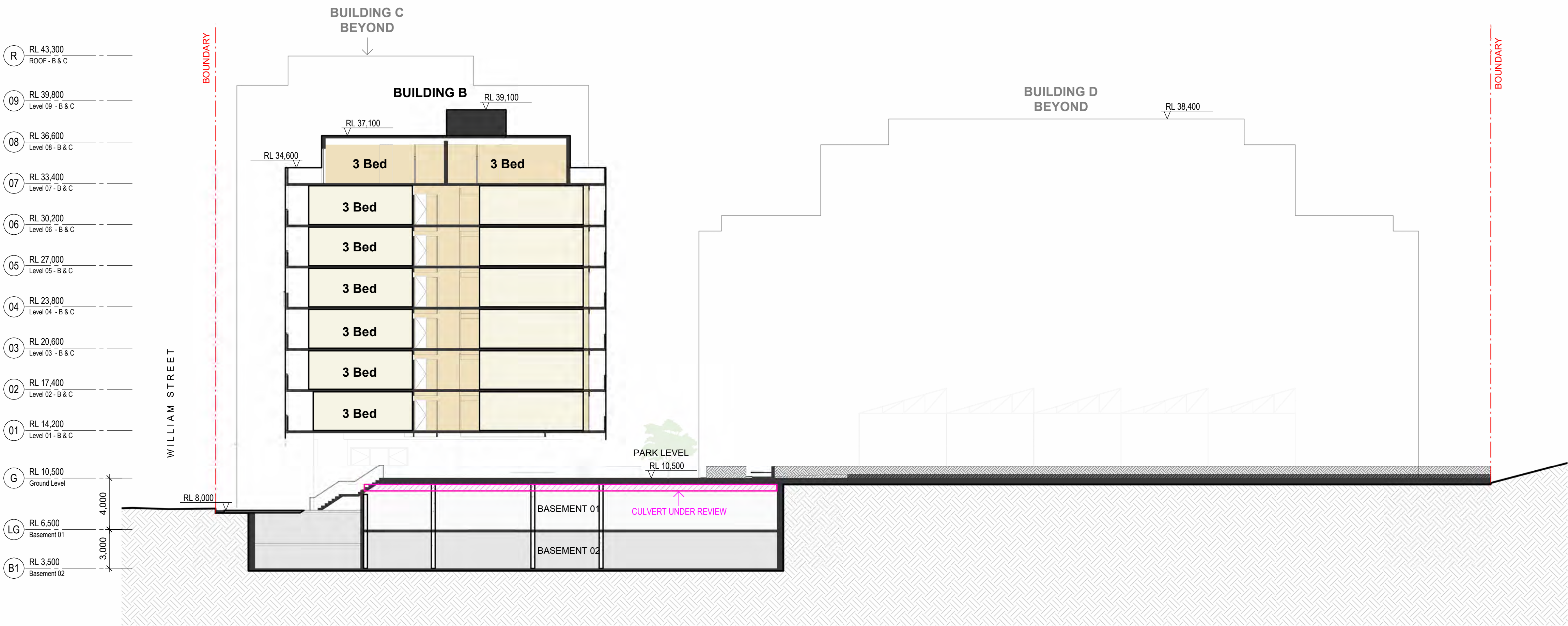
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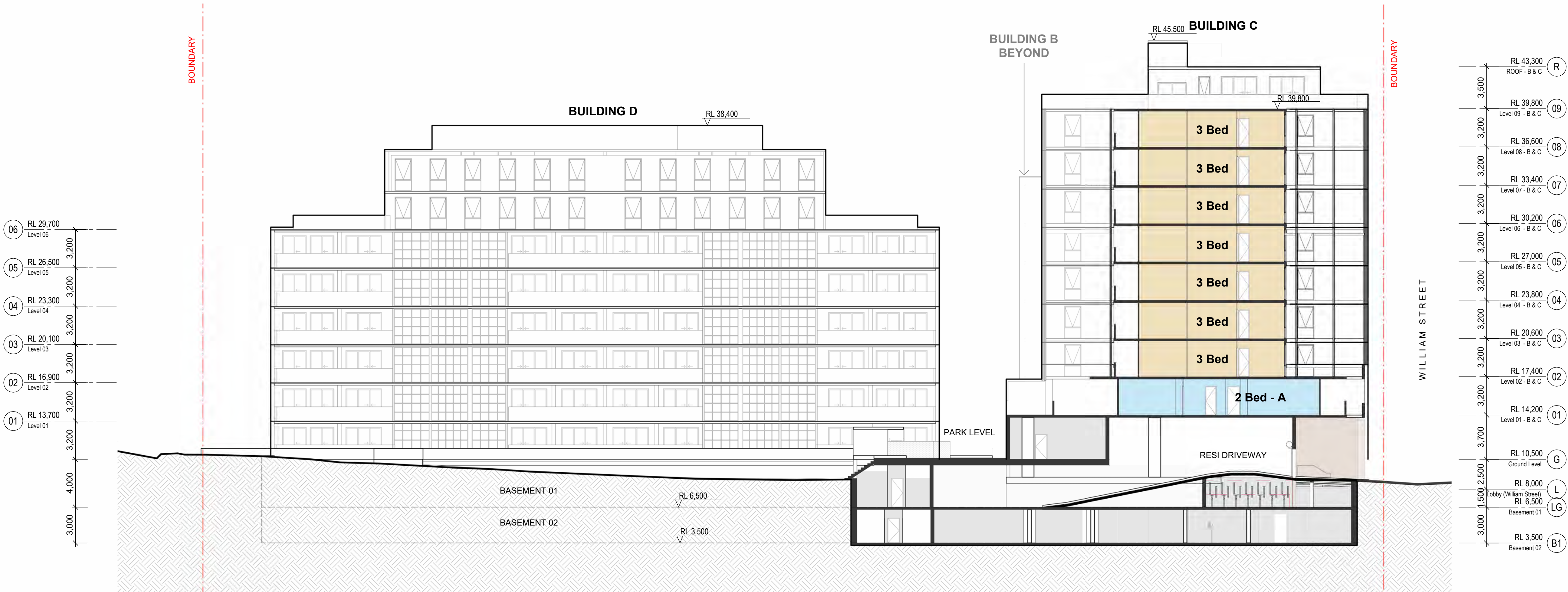
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Status

Revision



1 Section A
SCALE 1 : 200



2 Section B
SCALE 1 : 200

Recent revision history		
#	Status	Description
Date		

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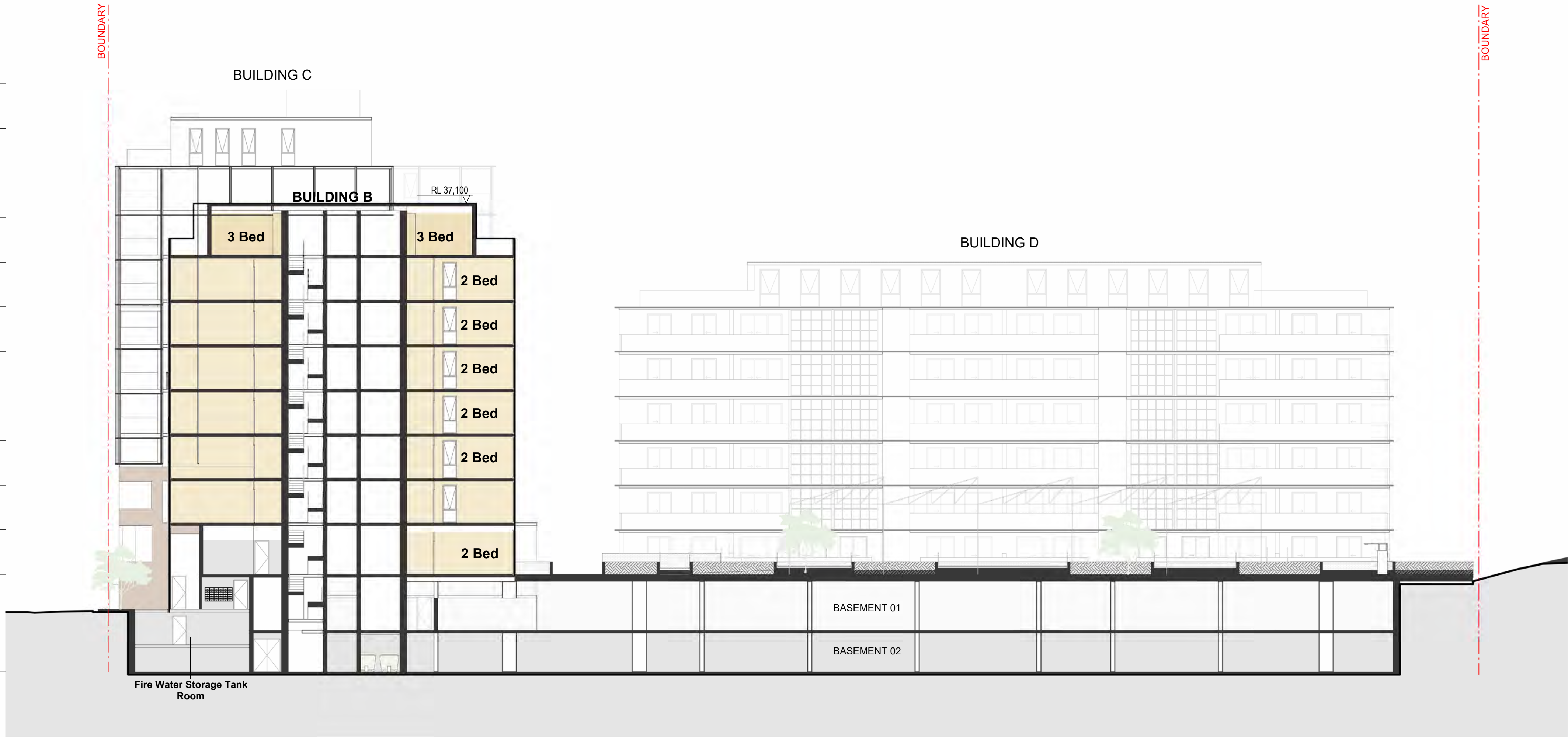
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Issuer
W-B
WOODS BAGOT

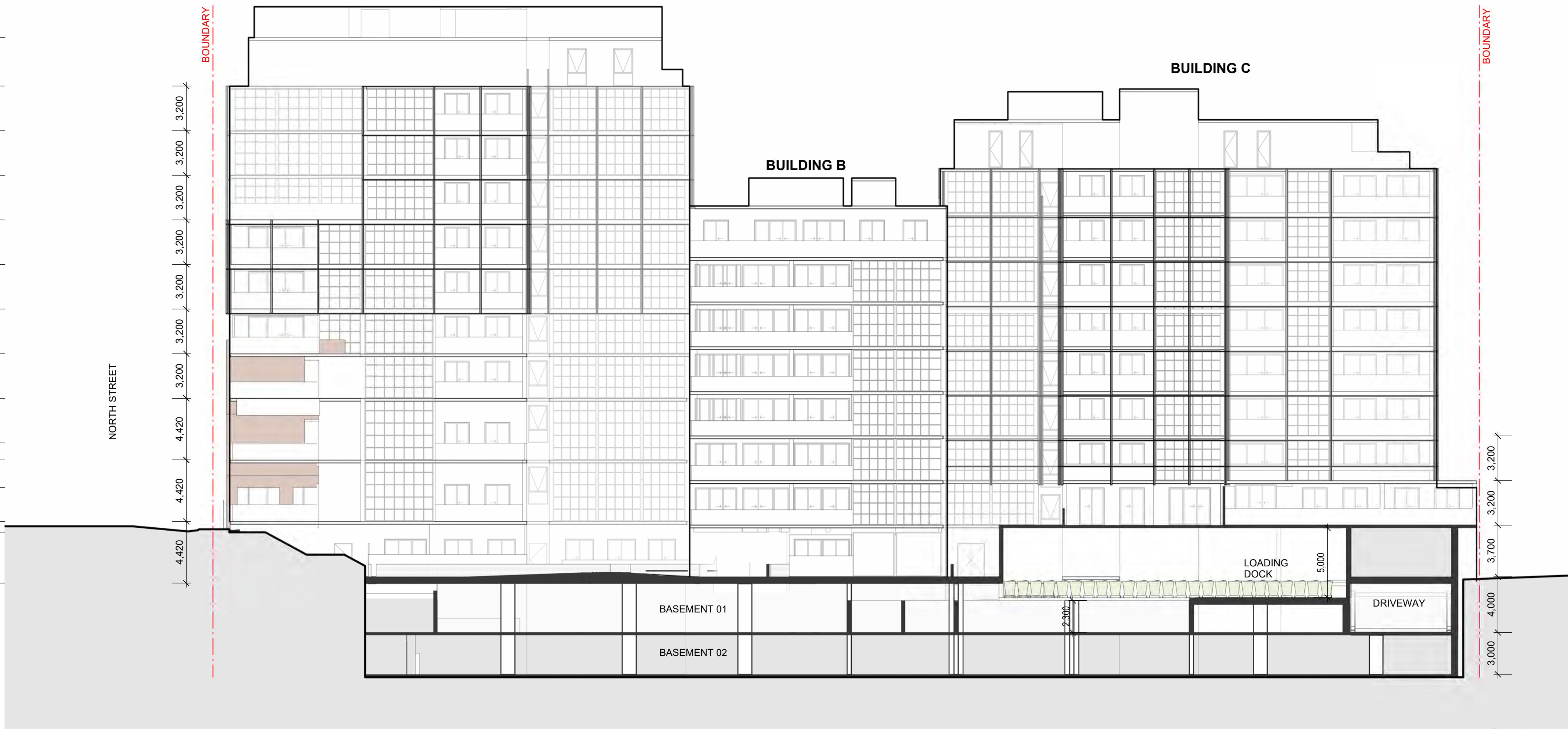
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Sheet title
Section A & B

Sheet number
SK-13201
Revision
Status



1 Section C
SCALE 1 : 200



2 Section D
SCALE 1 : 200

Recent revision history		
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Date		

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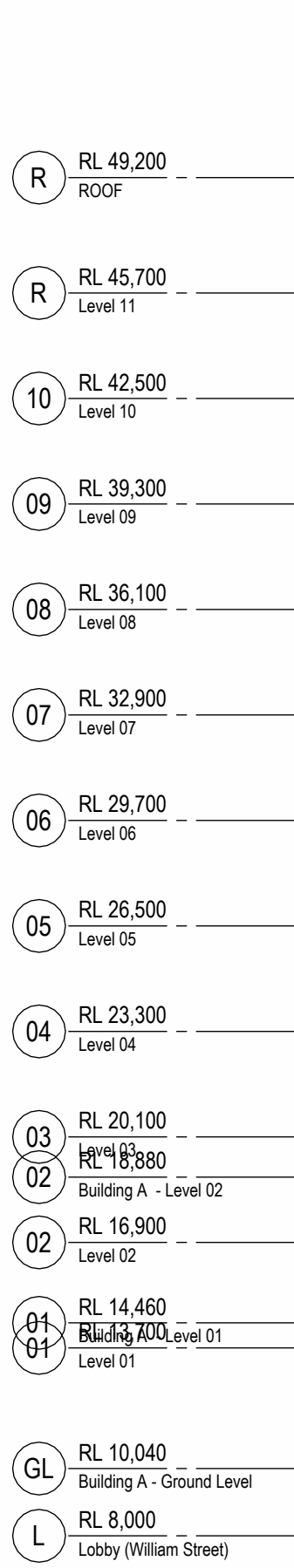
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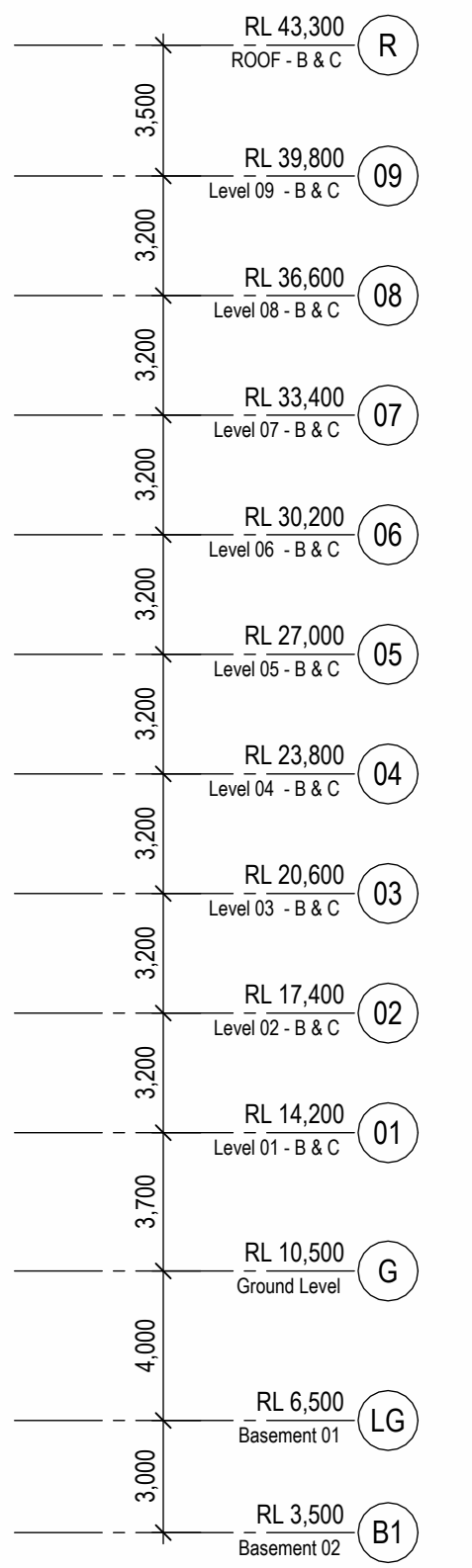
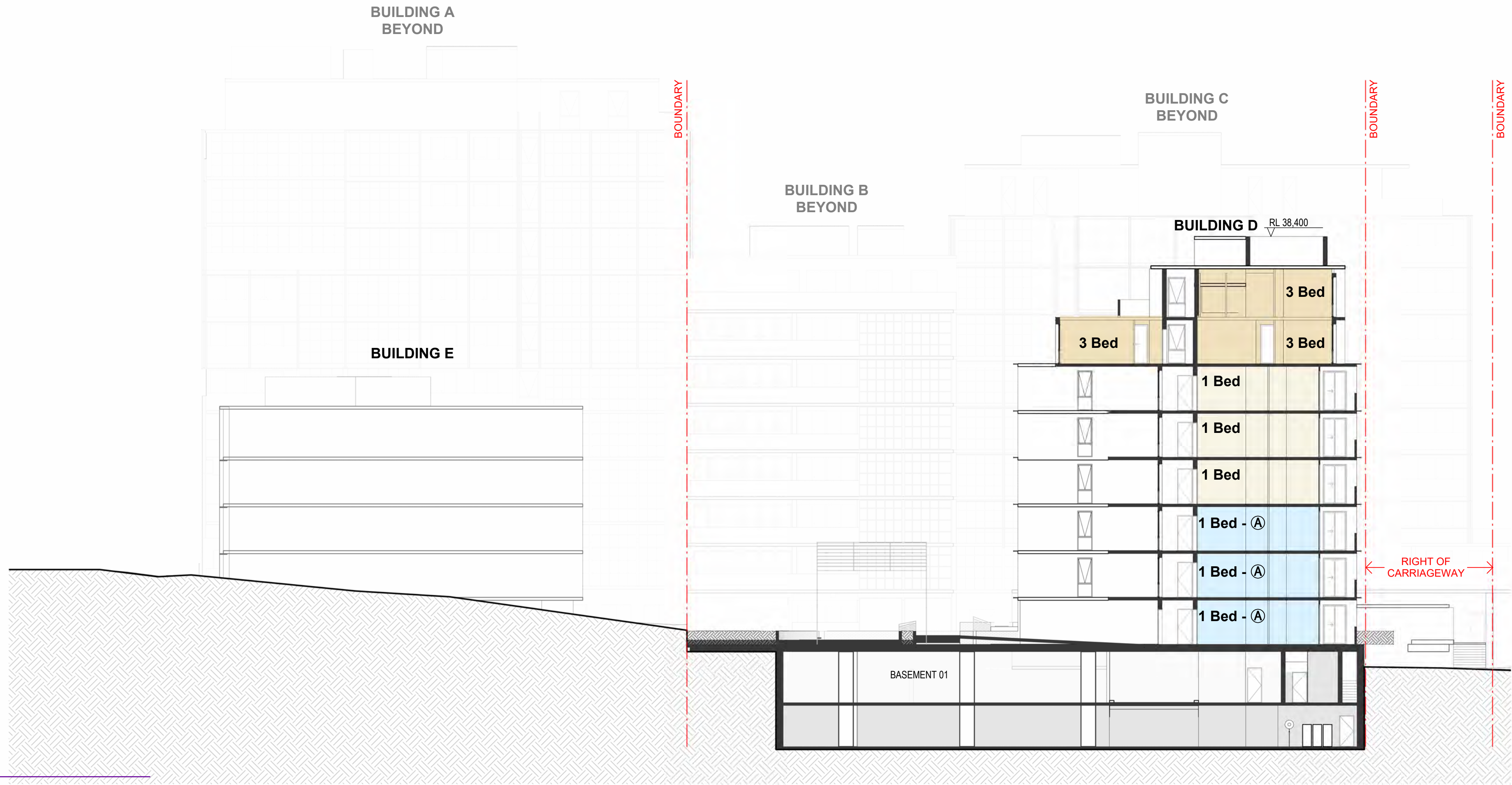
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Approved
Sheet size
Scale
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Sheet title
Section C & D

Sheet number
SK-13202
Revision
Status

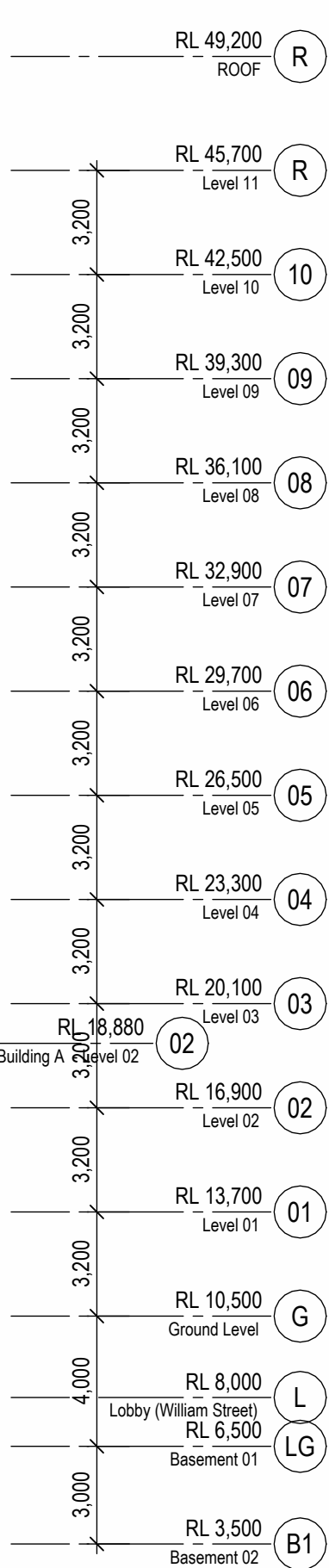
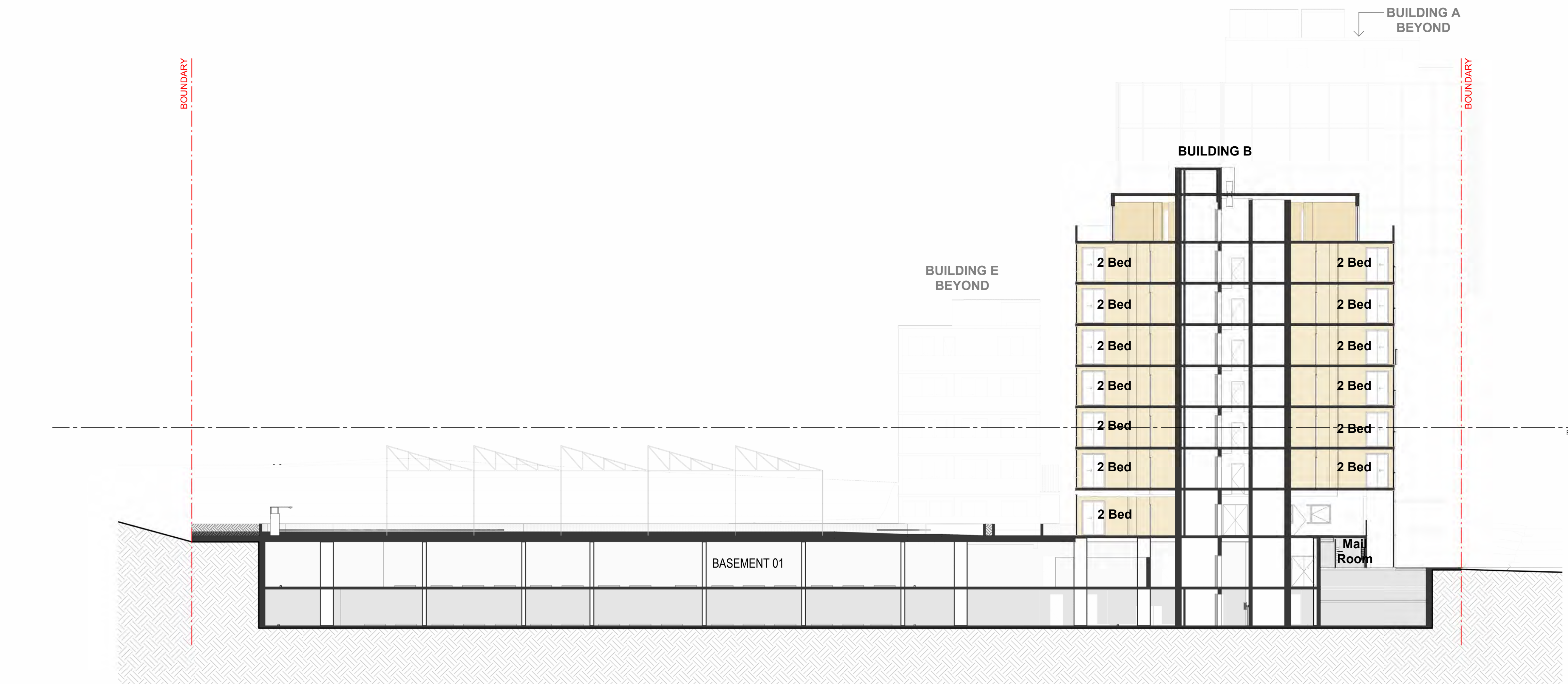


2 Section E
SCALE 1 : 200



Recent revision history		
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Date		

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1 Section F
SCALE 1 : 200

Project
40-76 William Street

Client
Ceerose

Issuer
W-B
WOODS BAGOT

Project number
122105

Size check
25mm

Checked
Approved
Sheet size
Scale

Checker
Approver
A1
1 : 200

Sheet title
Section E & F

Sheet number
SK-13203

Revision

Status

Appendix D – Groundwater Seepage Analysis & Monitoring Report

13 May 2026
E24470.G12_Rev7

Anprisa Pty Ltd
40-76 William Street
LEICHHARDT NSW 2040

Groundwater Seepage Analysis Proposed Residential Development 40-76 William Street, Leichhardt NSW

1 INTRODUCTION

1.1 BACKGROUND

At the request of Anprisa Pty Ltd (the Client), EI Australia (EI) has prepared this Groundwater Seepage Analysis for 40-76 William Street, Leichhardt NSW (the site).

The following documents were used to assist in the preparation of this analysis:

- Survey plan prepared by Total Surveying Solutions – Job No. 192394, Plan No. 192394-1, Sheets 1 to 7 of 7, dated 15 October 2019;
- Architectural drawings prepared by Woods Bagot – Project No. 122105, Drawing No.s SK12098, SK12099, SK-12100, undated;

EI has completed the following relevant reports for the site:

- Geotechnical Investigation (GI) report, Referenced E24770.G03_Rev7, dated 16 October 2025.
- Groundwater Level Monitoring Report No.2, Referenced E24470.G11.GW02, dated 13 May 2026.

The datum in the above documents is in Australian Height Datum (AHD), then all Reduced Levels (RL) mentioned in this report are henceforth in AHD.

Based on the provided documents, EI understands the proposed development involves demolition of the existing structures and construction of six to eleven-storey residential buildings (Buildings A, B, C, D and E) underlying a two-level basement. The lowest basement level is proposed to have a Finished Floor Level (FFL) of RL 3.5 m AHD. A Bulk Excavation Level (BEL) of approximately RL 3.2 m AHD is assumed, which includes allowance for the construction of the basement slab. To achieve the BEL, excavation depths from 5.7 m to 11.1 m Below Existing Ground Level (BEGl) have been estimated. Locally deeper excavations may be required for footings, lift overrun pits, crane pads, and service trenches.

1.2 ASSESSMENT OBJECTIVES

The objective of this GSA is to provide an estimation of the groundwater take volumes that require pumping out during the construction and operational stage of the development, estimation of the groundwater drawdown as a result of the dewatering, and its associated ground settlements (if any).

2 SITE MODEL

2.1 MODELLED SECTIONS

For the purpose of the groundwater take assessment, two cross sections at the middle of the development footprint are considered. Location of these sections is shown in the attached **Figure 1**.

- **Section A-A** runs in the west–east direction to account for the sloping topography. The RL's of the top of the unit on the western side is the RL's of the subsurface conditions encountered in borehole BH9M, while on the eastern side it is based on the RL's of the subsurface conditions encountered in the borehole BH101M.
- **Section B-B** runs in the south–north direction to account for the sloping topography. The RL's of the top of the unit on the southern side is the RL's of the subsurface conditions encountered in boreholes BH1M, while on the northern side it is based on the RL's of the subsurface conditions encountered in boreholes BH3M.

2.2 SUBSURFACE CONDITIONS AND PERMEABILITY

For the purpose of this groundwater seepage analysis, the subsurface conditions outlined in EI's GI report referenced above have been used. For the modelling of these sections, the subsurface conditions encountered in the boreholes (BH1M, BH3M, BH9M, and BH101M) has been generalised from the nearest borehole set at each end of the model section. A summary of adopted subsurface conditions and permeability values are presented in **Table 1** below.

Table 1 Summary of Subsurface Conditions and Adopted Design Parameters

Material ¹	Section A-A		Section B-B		Adopted Permeability (m/s)	$k_{\text{Vertical}}/k_{\text{Horizontal}}$
	Approximate Average RL of Top of Unit (m AHD) along West ²	Approximate Average RL of Top of Unit (m AHD) along East ⁵	Approximate Average RL of Top of Unit (m AHD) along South ²	Approximate Average RL of Top of Unit (m AHD) along North ²		
Fill (Sand) ³	13.0	8.00	10.0	7.6	1×10^{-5}	1.0
Class VI/IV Sandstone ⁴	10.80	6.45	6.90	5.20	5×10^{-8}	0.3
Class III Sandstone ⁵	8.35	5.72	4.83	4.04	1.02×10^{-7}	0.1

Notes:

- 1 For more detailed descriptions of subsurface conditions reference should be made to the EI's GI report.
- 2 Depths and levels presented in **Table 1** above are generalised using the levels from the Geotechnical Investigation across the excavation area for the purpose of groundwater seepage analysis.
- 3 Permeability values have been correlated for material encountered during the GSA using Look (2014).
- 4 Permeability values have been correlated for the material encountered during the GSA using Pells (2019).
- 5 Average permeability value of the class III sandstone bedrock was calculated based on the average of the permeability values calculated in the boreholes BH3M and BH101M from the rising head tests as discussed in **Section 2.3**.

2.3 GROUNDWATER OBSERVATIONS AND PUMP OUT TESTS

EI carried out the rising head tests on 7 September 2021, 22 August 2025 and 25 November 2025 within the monitoring wells (BH3M, BH9M and BH101M). Further to the completion of rising head tests on 22 August 2025, data loggers were installed in the groundwater monitoring wells (BH3M, BH9M and BH101M) for long-term groundwater monitoring. EI had visited the site on 25 November 2025 to download the data from the data loggers and decommission them. The details of the rising head tests are presented in the **Table 2**. Results are presented graphically in **Appendix B**. The summary of the groundwater levels recorded during the monitoring period from 22 August 2025 to 25 November 2025 are shown in **Table 3**. The full report of this continuous groundwater levels from Groundwater Level Monitoring Report No.2 is provided in **Appendix C**.

Table 2 Monitoring Well Details and Pump Out Test Results

Monitoring Well/ Test ID	Well Depth (m BEGL)	Screen Length (m)	Screened Section	Date of Test	Approximate RL of Groundwater Level (m AHD)	Estimated Permeability (m/s)
BH3M	10.2	6	Class III medium to high strength Sandstone	22-Aug-25	3.40	7.90×10^{-8}
				25-Nov-25	3.30	5.50×10^{-8}
BH9M	9.4	6	Class III medium to high strength Sandstone	7-Sep-21	7.63	6.0×10^{-9}
				22-Aug-25	9.56	1.30×10^{-8}
				25-Nov-25	8.38	8.0×10^{-9}
BH101M	8.0	3	Class III medium to high strength Sandstone	22-Aug-25	6.35	2.30×10^{-7}
				25-Nov-25	6.27	1.40×10^{-7}
BH1M	11.2	76	Class III medium to high strength Sandstone	22-Aug-25	5.1	-

Table 3 Summary of Groundwater Levels from the Long-term Groundwater Monitoring

Monitoring Well ID	Average Groundwater RL (m AHD)	Approximate Highest RL of Groundwater Level (m AHD)	Approximate Lowest RL of Groundwater Level (m AHD)
BH3M	3.53	3.87	3.24
BH9M	8.82	9.58	8.16
BH101M	6.52	6.66	6.29

Based on the measured groundwater levels above, the following design groundwater levels (GWL) for each section have been adopted for this analysis:

- **Section A-A (along west-east):** Design GWL of RL 10.6 m AHD and RL 7.7 m AHD has been adopted for the west and east sides, respectively. These values have considered possible seasonal variation of 1.0 m above the highest water tables encountered in BH9M & BH101M on the west side and east side, respectively.
- **Section B-B (along south-north):** Design GWL of RL 6.1 m AHD and RL 4.9 m AHD has been adopted for the south and north sides, respectively. These values have considered possible seasonal variation of 1.0 m above the highest water tables encountered in from the long-term groundwater monitoring in BH1M on the south side and measured groundwater levels encountered in BH3M on the north side respectively. Since there are no subsurface conditions or groundwater level data available along the southern boundary, the data from borehole/monitoring well BH1M, which is at the south eastern side of the site have been used to represent the southern portion of the site in this model.

2.4 MAXIMUM EXTENT OF THE CONE OF DEPRESSION

The estimated maximum extent of the cone of depression has been determined using Sichardt's Formula, as follows:

$$R = 3000 (H - h)\sqrt{k}$$

where:

- R = Maximum extent of the cone of depression (m).
- H = Highest design groundwater level (m).
- h = Estimated groundwater level at the BEL due to full duration of dewatering (m).
- k = Hydraulic conductivity of the aquifer (m/s).

The coefficient of 3000 is based on empirical observations, predominantly for sandy aquifers. The lowest coefficient outlined in Sichardt's formula is approximately 1000, which would result in a smaller radius of influence. Therefore, using a coefficient of 3000 in this case is considered conservative.

Based on the formula above, the maximum extent of cone of depression is calculated to be less than 10 m except towards the eastern site boundary. Hence so we have conservatively assumed a cone of depression of 30 m from the boundaries along the western, southern and northern site boundaries. The cone of depression along the eastern site boundary is calculated to be 40 m approximately. This extent has been adopted in the numerical model as a distance from the basement perimeter to the constant head boundary.

2.5 SHORING SYSTEM

At the time of this assessment, no detailed shoring designs were available. Based on the geotechnical investigation report referenced above, it is assumed that the shoring system may be comprised of soldier pile wall. Therefore the shoring system is modelled as permeable shoring system and is freely allowable to drain water.

This assessment does not assess the overall stability and embedment depth of the shoring system. Once final designs are made available, this assessment should be revised accordingly.

3 GROUNDWATER TAKE ASSESSMENT

3.1 GROUNDWATER SEEPAGE VOLUMES DURING CONSTRUCTION PHASE

Groundwater seepage analysis for flow into the proposed basement excavation during construction has been undertaken using PLAXIS 2D, a finite element groundwater seepage analysis software. PLAXIS 2D estimates the seepage rate of water entering the excavation from through and beneath the shoring wall. This model estimates the volume of water which will be required to be dewatered during the construction of the basement and until the dewatering is turned off.

EI notes that given the consistent subsurface conditions across the site comprising of fill, residual soil overlying the sandstone bedrock, we are of the opinion that PLAXIS 2D is appropriate for the site.

For the purpose of this modelling, it has been assumed that:

- The subsurface conditions were assumed to be horizontal outside the site boundaries. The permeability values presented in **Table 1** above were adopted for each unit.
- The design groundwater levels as provided at **Section 2.3** of this report were assumed to be constant at 30 m to 40 m away from the shoring wall as outlined in the **Section 2.4** of this report.
- As the basement width is varying along the site, for the purpose of this assessment the model is modelled based on the average width of the Section A-A is calculated to be 60 m. The width of the Section B-B is calculated to be 90 m approximately.
- For the simplicity of this model, temporary dewatering will be undertaken within the basement retaining wall perimeter to the BEL of RL 3.2 m AHD.

The PLAXIS 2D model is presented in **Appendix A. Table 4** below provides the estimated groundwater inflow rate into the basement for each Scenario.

Table 4 Summary of Analysis Results

Shoring System	Inflow per m length of perimeter wall (m ³ /day)	Inflow into excavation (m ³ /day)	Total Inflow during construction (ML/365 days)
Soldier Pile Wall System (Section A-A)	4.28 x 10 ⁻²	3.85	1.40
Soldier Pile Wall System (Section B-B)	1.42 x 10 ⁻²	0.85	0.31
		Total	1.71

3.2 ASSESSMENT OF GROUNDWATER TAKE DURING OPERATIONAL PHASE

A drained basement using sub-soil drainage and a sump-and-pump system was assumed. Therefore, the estimated volume of groundwater removed beneath the basement during the operation stage of the development will be same as the volume of water calculated during the construction stage of the development which is 1.71 ML.

3.3 GROUNDWATER DRAWDOWN AND DRAWDOWN INDUCED SETTLEMENT

EI have completed a settlement analysis using PLAXIS 2D to estimate the potential drawdown-induced settlements as a result of the above predicted drawdown. The predicted drawdown over the zone of influence and settlement is shown in Table 5. The predicted drawdown may serve as the predetermined groundwater level for monitoring during construction.

Table 5 Predicted Ground Settlement due to Groundwater Drawdown

Shoring system	Maximum Drawdown (m)	Ground settlement (mm)
Soldier Pile Wall (Section A-A)	5.5	<1
Soldier Pile Wall (Section B-B)	2.6	<1

The maximum ground settlements outside the proposed basement footprint due to the dewatering are estimated to be less than 1 mm and are considered to be a 'Negligible' risk in regards to category of damage risk due to dewatering, as defined in Cashman and Preene (2021), as shown in the excerpt in **Plate 1**. It should be noted that this predicted settlement accounts **only for water drawdown** and does not consider other factors, such as shoring wall deflection, surcharge loading, and other construction-related influences.

Although the PLAXIS 2D modelling provides predicted drawdown-induced ground settlement values, it would be prudent for a thorough assessment of potential risks posed on neighbouring structures to be completed by a qualified and experienced structural engineer.

<i>Risk category^a</i>	<i>Maximum settlement (mm)^b</i>	<i>Building tilt^c</i>	<i>Anticipated effects</i>
Negligible	<10	<1/500	Superficial damage unlikely
Slight	10–50	1/500–1/200	Possible superficial damage; unlikely to have structural significance
Moderate	50–75	1/200–1/50	Expected superficial damage and possible structural damage to buildings; possible damage to rigid pipelines
Severe	75	>1/50	Expected structural damage to buildings and expected damage to rigid pipelines or possible damage to other pipelines

Source: Preene, M., *Proceedings of the Institution of Civil Engineers—Geotechnical Engineering*, 143(4), 177–190, 2000. With permission.

^a The risk category is to be based on the more severe of the settlement or tilt criteria.

^b Maximum settlement is based on the nearest edge of the structure to the groundwater control system.

^c Tilt is based on rigid body rotation, assuming that all of the maximum settlement occurs as differential settlement across the width of the structure or across an element of the structure.

Plate 1 Excerpt from Cashman and Preene (2021)

4 CONCLUSIONS AND COMMENTS

Based on the findings of this report and within the limitations of available data, EI concludes that:

- The construction and operational phases of the proposed development, the groundwater take was calculated to be 1.71 ML approximately.
- The above estimate is based on the following assumptions:
 - ▶ The shoring wall system is an fully drained retention system;
 - ▶ Continuous dewatering in order to maintain the groundwater at a depth of BEL during construction;
 - ▶ The basement walls and slab will be designed as drained structure for the development lifetime.
 - ▶ This assessment does not take into consideration any excavation that may be required for footings, service trenches, lift pits, or crane pads. This additional excavation, if required, is not expected to affect the retention or the dewatering system.
- The ground settlements resulting from the predicted groundwater drawdowns outside the basement boundary are estimated to be less than 1 mm. This level of settlement is considered to pose the 'negligible' risk category for damage risk resulting from ground settlement due to dewatering, as per Cashman and Preene (2021). It would be prudent for potential risks to neighbouring structures to be assessed by a qualified and experienced structural engineer.

Should any design or construction conditions differ from that adopted in this report; this GSA should be reviewed and updated as required.

5 LIMITATIONS

This report has been prepared for the exclusive use of Anprisa Pty Ltd who is the only intended beneficiary of EI's work. The scope of the inspections carried out for the purpose of this report is limited to those agreed with Anprisa Pty Ltd.

No other party should rely on the document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in similar tasks by reputable members of the geotechnical industry in Australia as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this report must be read in conjunction with the whole of this report, including its appendices and attachments.

The conclusions presented in this report are based on a limited assessment of conditions, with specific locations chosen to be as representative as possible under the given circumstances.

EI's professional opinions are reasonable and based on its professional judgment, experience, training and results from analytical data. EI may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified by EI.

EI's professional opinions contained in this document are subject to modification if additional information is obtained through further investigation, observations, or validation testing and analysis during remedial activities. In some cases, further testing and analysis may be required, which may result in a further report with different conclusions.

6 CLOSURE

Please do not hesitate to contact the undersigned should you have any questions.

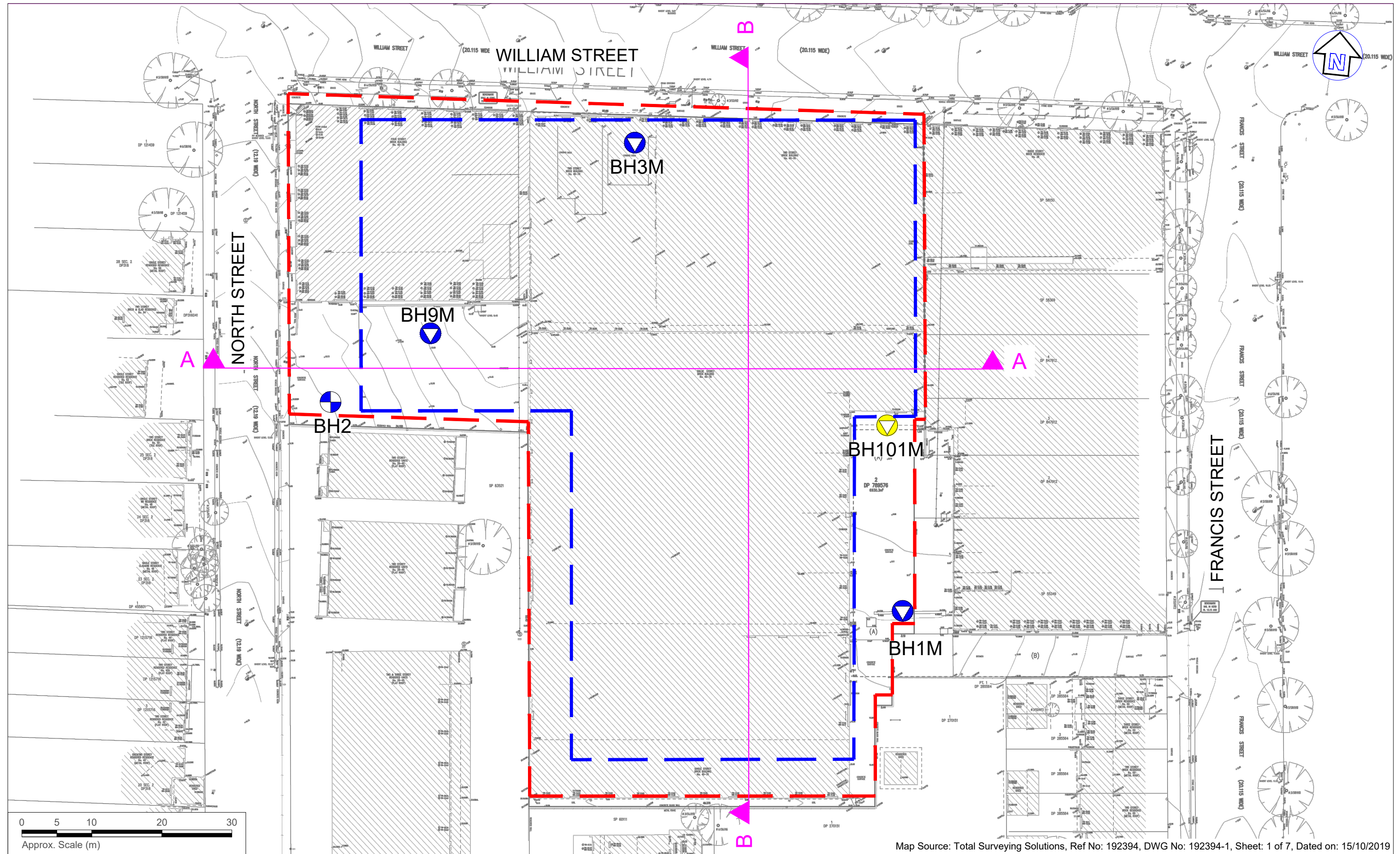
For and on behalf of
EI Australia

Author	Technical Reviewer
	
Gokul Pothineni Geotechnical Engineer	Huu Dang Principal Design Engineer

Figure 1 – Analysed Section Plan
Appendix A – PLAXIS 2D Model and Results of Analysed Sections
Appendix B– Rising Head Tests
Appendix C – Long-Term Groundwater Monitoring
Appendix D – Important Information

Figures

Figure 1 Analysed Section Plan



Map Source: Total Surveying Solutions, Ref No: 192394, DWG No: 192394-1, Sheet: 1 of 7, Dated on: 15/10/2019

LEGEND

- Approximate site boundary
- Approximate basement boundary
- ⊕ Approximate previous borehole location (EI, 2022)
- ▼ Approximate previous borehole/monitoring well location (EI, 2022)
- ▼ (Yellow) Approximate additional borehole/monitoring well location (EI, 2025)

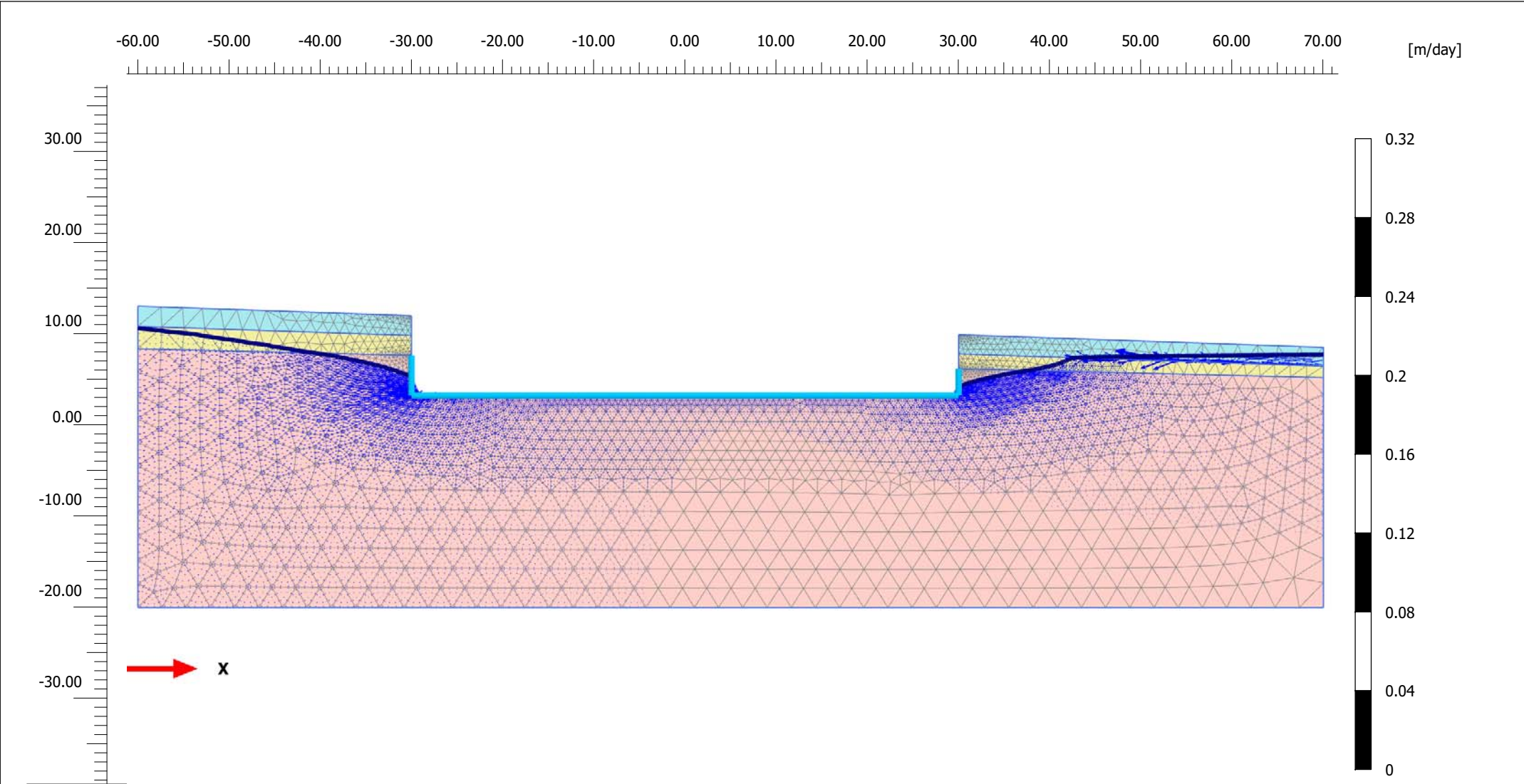

Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	G.P.
Approved:	H.D
Date:	15/10/25

Ceeroose Pty Ltd
Groundwater Seepage Analysis
40-76 William Street, Leichhardt NSW
Borehole Location Plan

Figure:
2
Project:
E24470.G12_Rev5

Appendix A – PLAXIS 2D Model and Results (Section A-A)



Groundwater flow |q| (scaled up 200 times)

Maximum value = 0.02680 m/day (Element 3158 at Stress point 37886)

Minimum value = 9.469*10⁻⁹ m/day (Element 3353 at Stress point 40225)

Project description

E24470.G12

Date

13/05/2026

Project filename

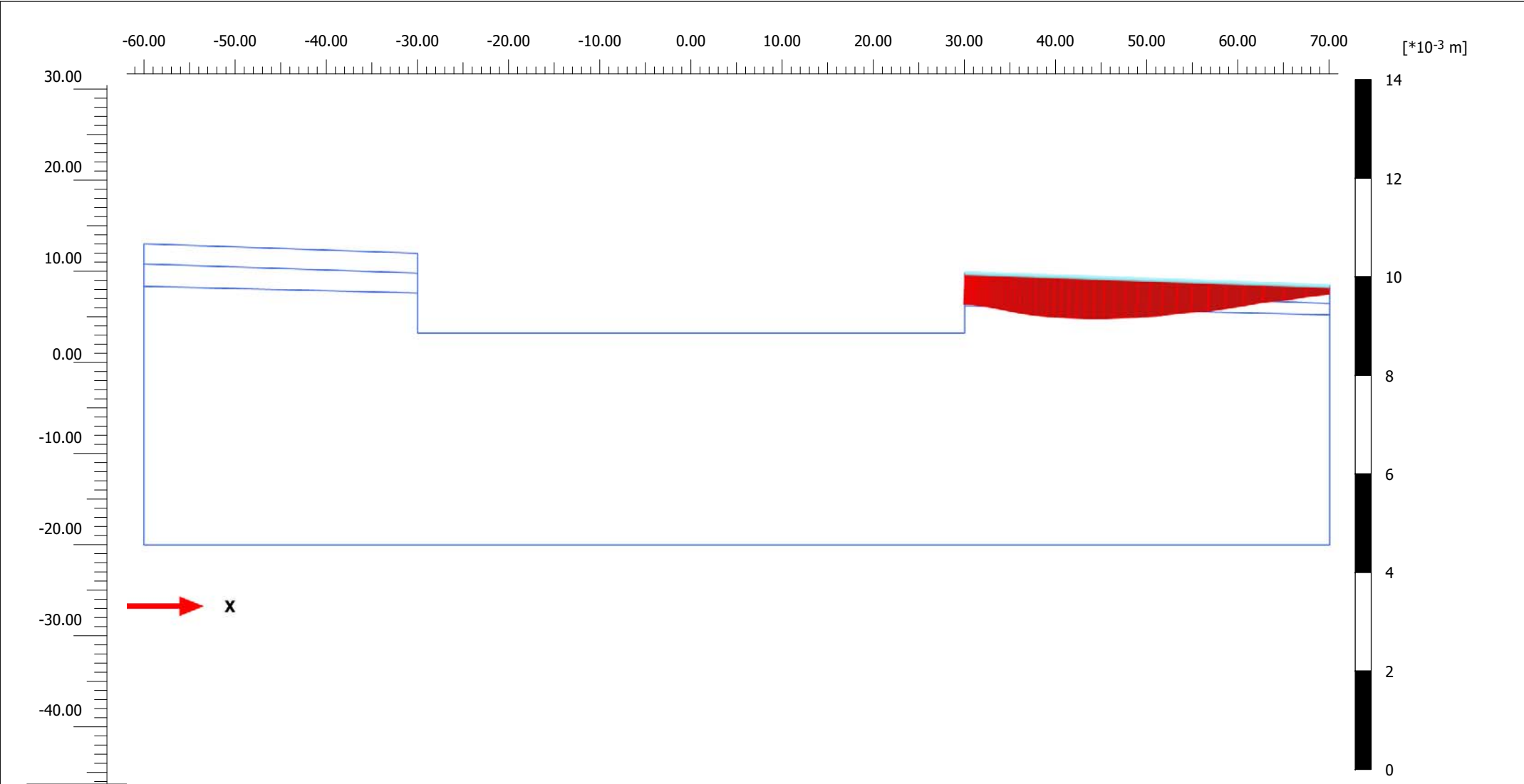
E24470.G12 Setion A-A_Rev1

Step

8

Company

EI Australia

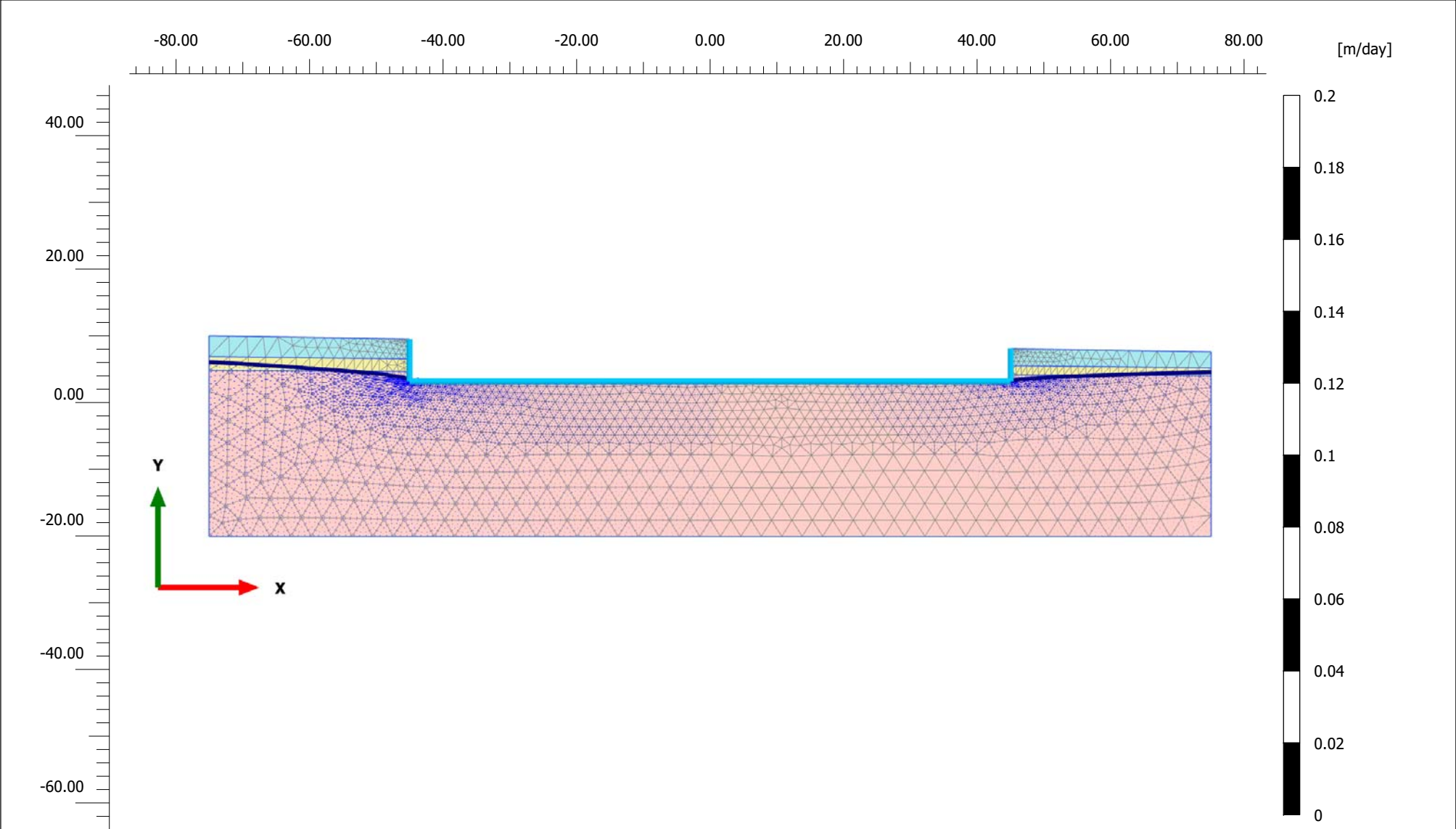


Total displacements u_y (scaled up 5.00×10^3 times)

Maximum value = $-0.1833 \times 10^{-3} \text{ m}$

Minimum value = $-0.9082 \times 10^{-3} \text{ m}$

<i>Project description</i> E24470.G12		<i>Date</i> 13/05/2026	
<i>Project filename</i> E24470.G12 Setion A-A_Rev1	<i>Step</i> 8	<i>Company</i> EI Australia	

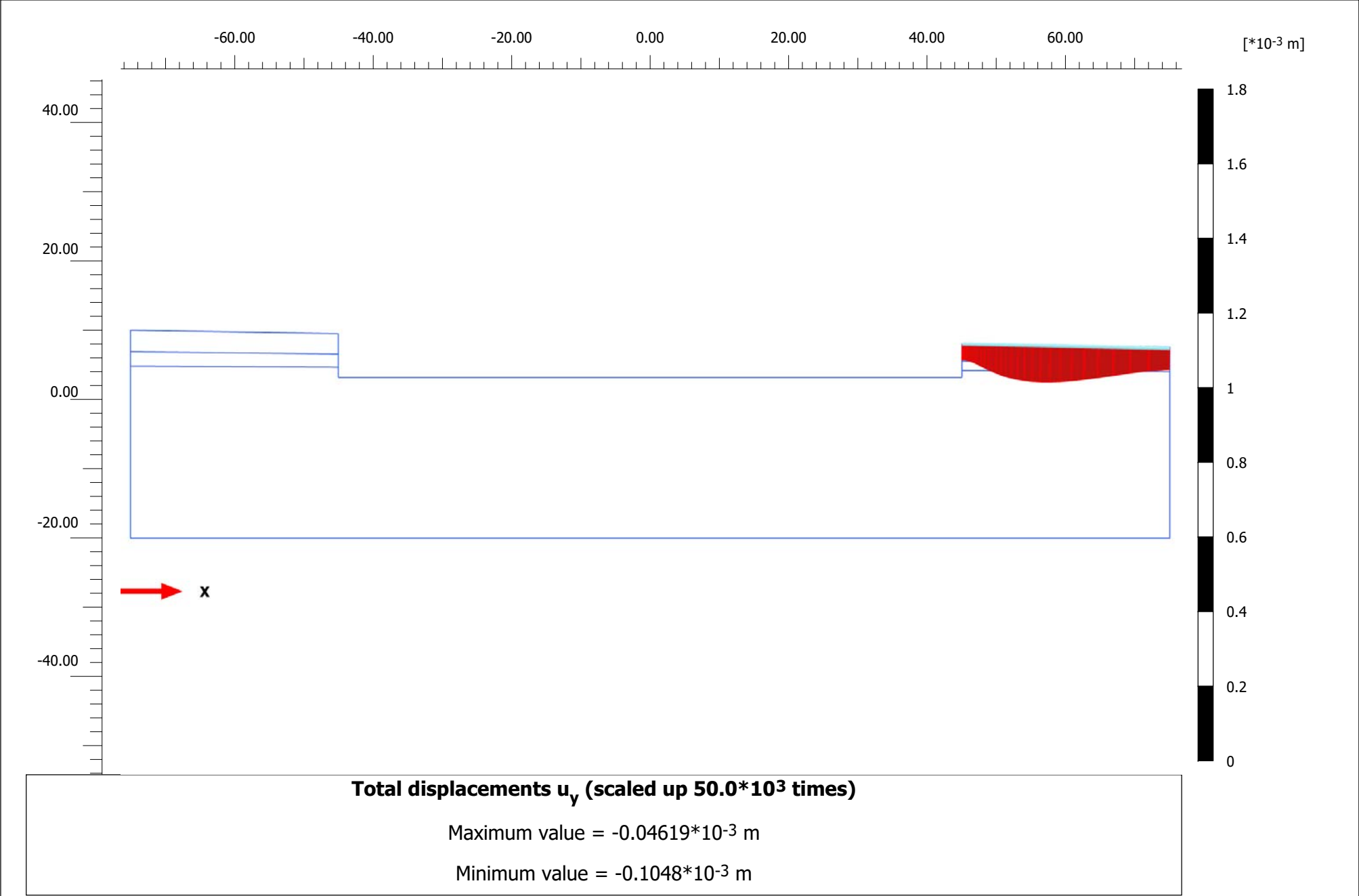


Groundwater flow |q| (scaled up 500 times)

Maximum value = $7.491 \cdot 10^{-3}$ m/day (Element 7138 at Stress point 85645)

Minimum value = $3.740 \cdot 10^{-9}$ m/day (Element 4451 at Stress point 53401)

	Project description E24470.G12			Date 13/05/2026	
	Project filename E24470.G12 Setion B_B_ ...	Step 6	Company EI Australia		



<i>Project description</i> E24470.G12		<i>Date</i> 13/05/2026	
<i>Project filename</i> E24470.G12 Setion B_B_ ...	<i>Step</i> 6	<i>Company</i> EI Australia	

Appendix B – Rising Head Tests

Rising Head Permeability Test

EI Job No.	E24470	Test Date	22/08/2025
By	LL	Location	

Borehole Detail

BH No.	BH3M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	6
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	10.2
Static Water Level (m BToC)	4.6
Lag time T0 (sec)	3338.97

auger radius = 0.05; core radius is 0.038

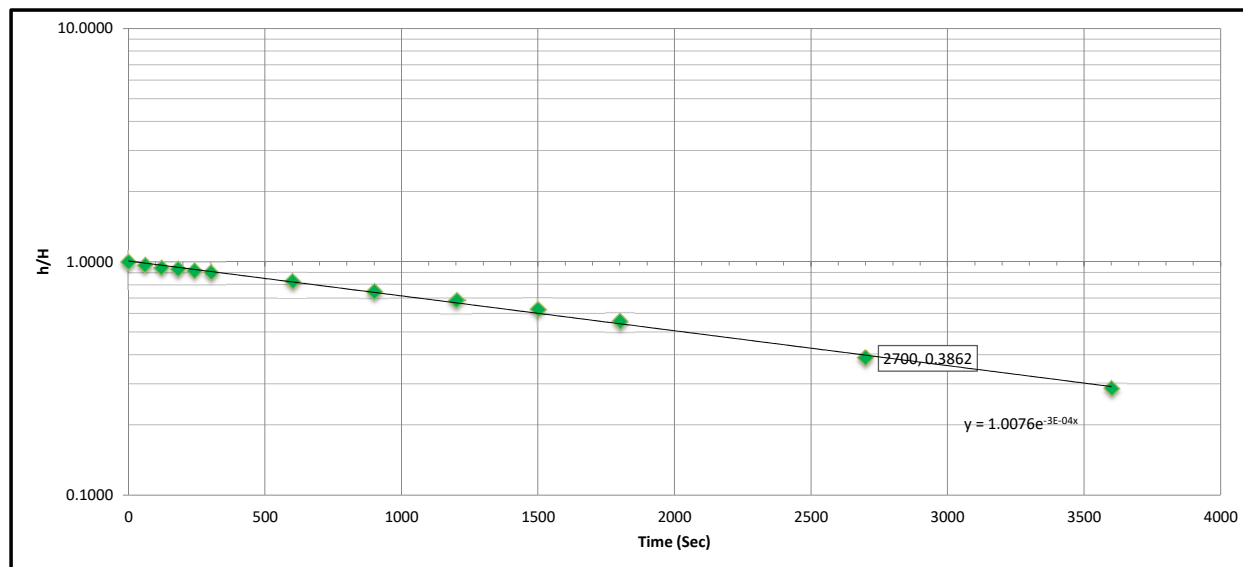
Based on Hvorslev Method

$$k = \frac{r^2}{2L} \ln\left(\frac{L}{R}\right) \left[\frac{\ln h_1/h_2}{t_2 - t_1} \right]$$

3.40

Calculated Permeability k **7.90E-08** m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			4.60		
0	0		7.5	2.90	1.0000
1	60		7.42	2.82	0.9724
2	120		7.35	2.75	0.9483
3	180		7.31	2.71	0.9345
4	240		7.27	2.67	0.9207
5	300		7.22	2.62	0.9034
10	600		7	2.40	0.8276
15	900		6.77	2.17	0.7483
20	1200		6.59	1.99	0.6862
25	1500		6.42	1.82	0.6276
30	1800		6.21	1.61	0.5552
45	2700		5.72	1.12	0.3862
60	3600		5.43	0.83	0.2862



Rising Head Permeability Test



EI Job No.	E24470	Test Date	22/08/2025
By	LL	Location	

Borehole Detail

BH No.	BH9M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	6
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	9.4
Static Water Level (m BToC)	2.34
Lag time T0 (sec)	19914.30

Based on Hvorslev Method

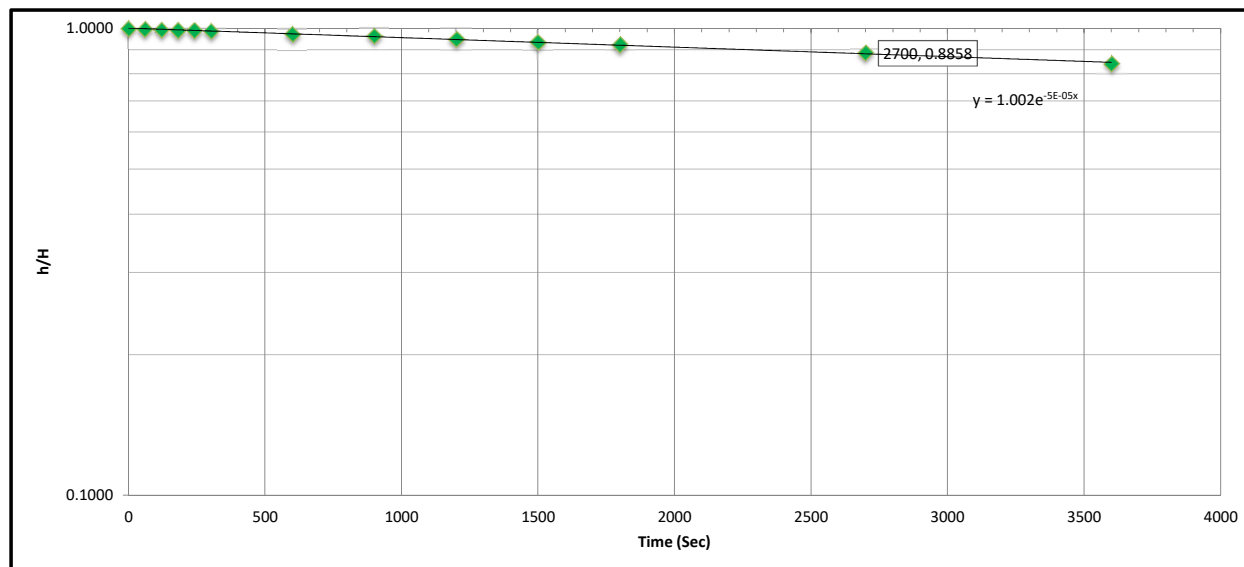
$$K = \frac{r^2 \ln(L/R)}{2LT_0}$$

auger radius = 0.05; core radius is 0.038

9.56

Calculated Permeability k 1.30E-08 m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			2.34		
0	0		9.08	6.74	1.0000
1	60		9.06	6.72	0.9970
2	120		9.04	6.70	0.9941
3	180		9.03	6.69	0.9926
4	240		9.01	6.67	0.9896
5	300		8.99	6.65	0.9866
10	600		8.91	6.57	0.9748
15	900		8.83	6.49	0.9629
20	1200		8.74	6.40	0.9496
25	1500		8.66	6.32	0.9377
30	1800		8.57	6.23	0.9243
45	2700		8.31	5.97	0.8858
60	3600		8.00	5.66	0.8398



Rising Head Permeability Test



EI Job No.	E24470	Test Date	7/09/2025
By	LL	Location	

Borehole Detail

BH No.	BH9M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	5.1
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	9.4
Static Water Level (m BToC)	4.27
Lag time T0 (sec)	48777.09

Based on Hvorslev Method

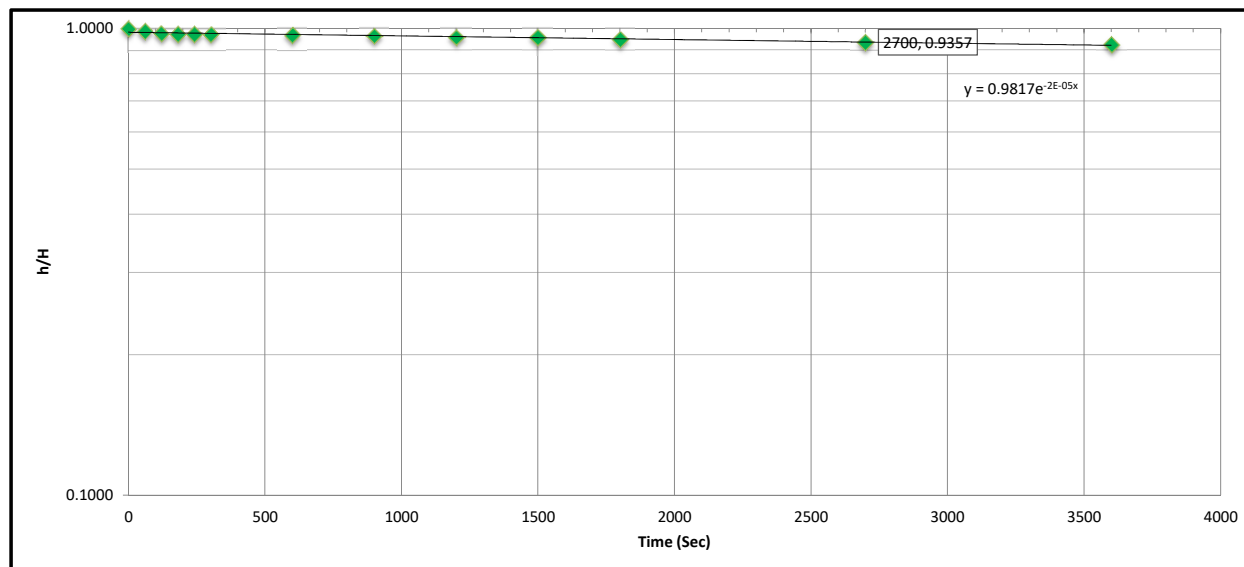
$$K = \frac{r^2 \ln(L/R)}{2LT_0}$$

auger radius = 0.05; core radius is 0.038

7.63

Calculated Permeability k 6.00E-09 m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			4.27		
0	0		9.4	5.13	1.0000
1	60		9.33	5.06	0.9864
2	120		9.28	5.01	0.9766
3	180		9.26	4.99	0.9727
4	240		9.26	4.99	0.9727
5	300		9.26	4.99	0.9727
10	600		9.24	4.97	0.9688
15	900		9.21	4.94	0.9630
20	1200		9.18	4.91	0.9571
25	1500		9.18	4.91	0.9571
30	1800		9.13	4.86	0.9474
45	2700		9.07	4.80	0.9357
60	3600		9.01	4.74	0.9240



Rising Head Permeability Test

EI Job No.	E24470	Test Date	25/11/2025
By	LL	Location	

Borehole Detail

BH No.	BH3M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	6
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	10.2
Static Water Level (m BToC)	4.7
Lag time T0 (sec)	4820.48

auger radius = 0.05; core radius is 0.038

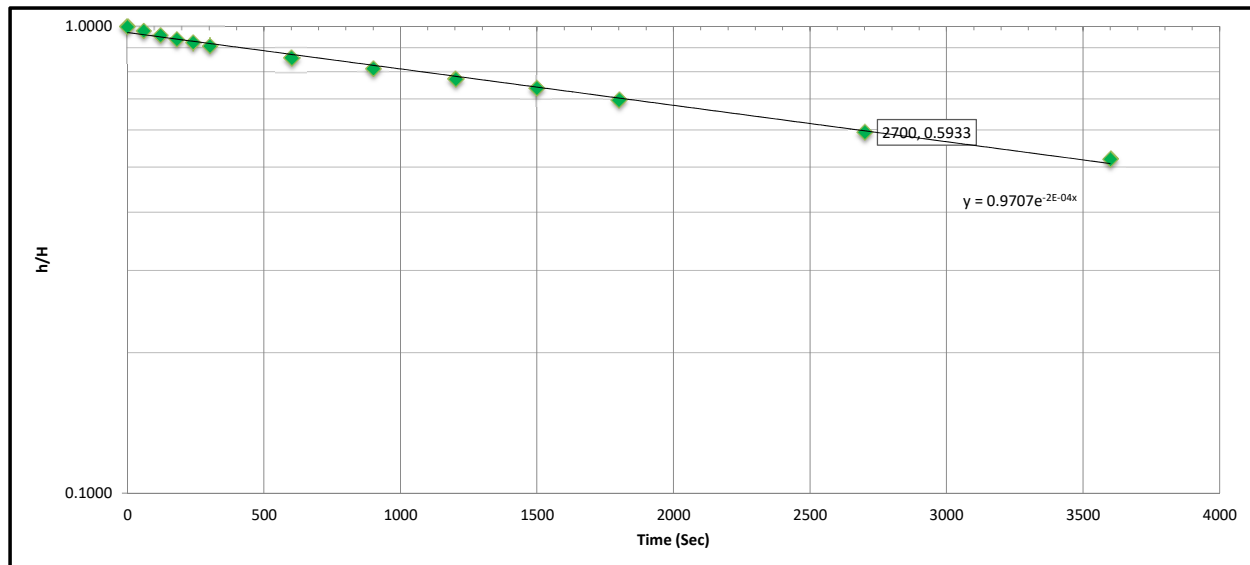
Based on Hvorslev Method

$$k = \frac{r^2}{2L} \ln\left(\frac{L}{R}\right) \left[\frac{\ln h_1/h_2}{t_2 - t_1} \right]$$

3.30

Calculated Permeability k **5.50E-08** m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			4.70		
0	0		7.97	3.27	1.0000
1	60		7.9	3.20	0.9786
2	120		7.83	3.13	0.9572
3	180		7.77	3.07	0.9388
4	240		7.72	3.02	0.9235
5	300		7.68	2.98	0.9113
10	600		7.51	2.81	0.8593
15	900		7.36	2.66	0.8135
20	1200		7.23	2.53	0.7737
25	1500		7.11	2.41	0.7370
30	1800		6.98	2.28	0.6972
45	2700		6.64	1.94	0.5933
60	3600		6.40	1.70	0.5199



Rising Head Permeability Test

EI Job No.	E24470	Test Date	25/11/2025
By	LL	Location	

Borehole Detail

BH No.	BH9M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	6
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	9.4
Static Water Level (m BToC)	3.52
Lag time T0 (sec)	32916.14

Based on Hvorslev Method

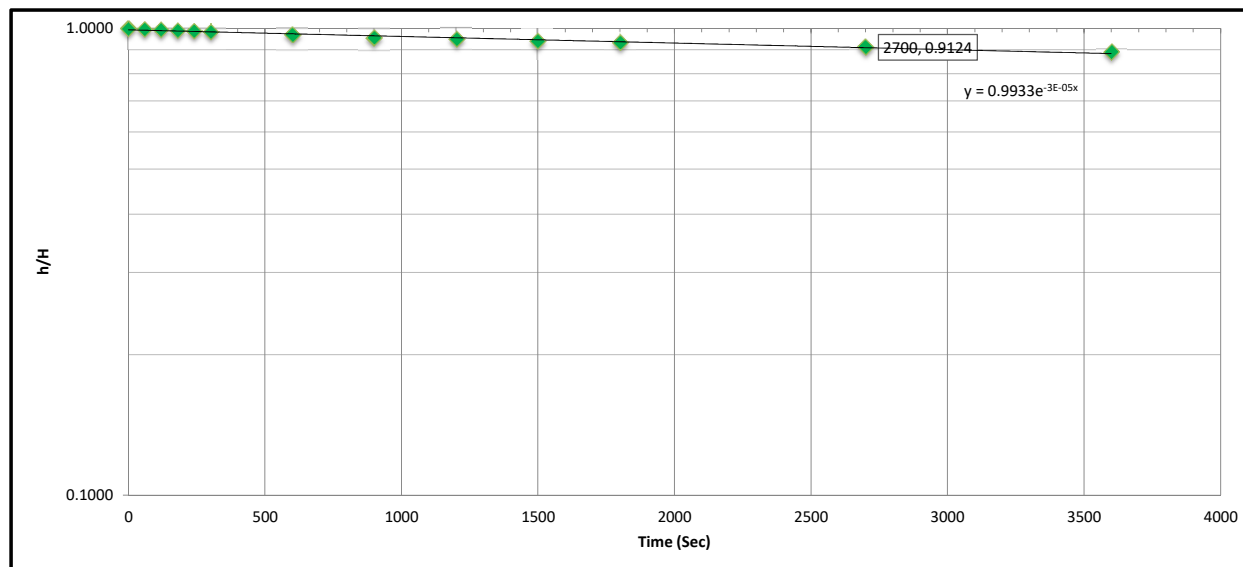
$$K = \frac{r^2 \ln(L/R)}{2LT_0}$$

auger radius = 0.05; core radius is 0.038

8.38

Calculated Permeability k **8.00E-09** m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			3.52		
0	0		9.23	5.71	1.0000
1	60		9.21	5.69	0.9965
2	120		9.19	5.67	0.9930
3	180		9.17	5.65	0.9895
4	240		9.16	5.64	0.9877
5	300		9.14	5.62	0.9842
10	600		9.06	5.54	0.9702
15	900		8.98	5.46	0.9562
20	1200		8.93	5.41	0.9475
25	1500		8.89	5.37	0.9405
30	1800		8.85	5.33	0.9335
45	2700		8.73	5.21	0.9124
60	3600		8.60	5.08	0.8897



Rising Head Permeability Test

EI Job No.	E24470	Test Date	25/11/2025
By	LL	Location	BH101M

Borehole Detail

BH No.	BH101M
Casing Stick-up (m)	-0.1
Effective Piezo Screen Length (m)	3
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	8
Static Water Level (m BToC)	2.38
Lag time T0 (sec)	3257.90

Based on Hvorslev Method

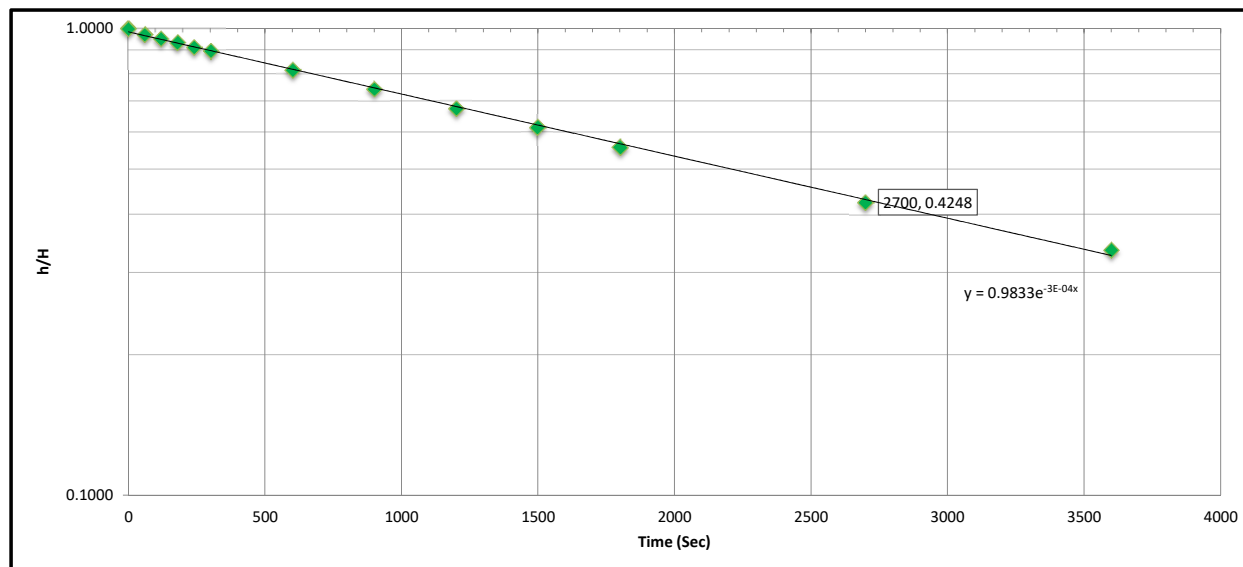
$$K = \frac{r^2 \ln(L/R)}{2LT_0}$$

auger radius = 0.05; core radius is 0.038

6.27

Calculated Permeability k **1.40E-07** m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			2.38		
0	0		7.63	5.25	1.0000
1	60		7.48	5.10	0.9714
2	120		7.38	5.00	0.9524
3	180		7.28	4.90	0.9333
4	240		7.18	4.80	0.9143
5	300		7.09	4.71	0.8971
10	600		6.66	4.28	0.8152
15	900		6.28	3.90	0.7429
20	1200		5.92	3.54	0.6743
25	1500		5.6	3.22	0.6133
30	1800		5.3	2.92	0.5562
45	2700		4.61	2.23	0.4248
60	3600		4.14	1.76	0.3352



Appendix C – Long-term Groundwater Monitoring

13 May 2026
E24470.G11.GW02

Anprisa Pty Ltd
447 Parramatta Road
LEICHHARDT NSW

Groundwater Level Monitoring Report No. 2 46 -76 William Street Leichhardt NSW

EI Australia (EI) has been engaged to prepare this factual letter report to provide continual groundwater levels at the above site. The monitoring period in this report is from Friday 22 August 2025 to Tuesday 25 November 2025.

Groundwater levels were collected using data loggers installed within monitoring wells. The data logger / monitoring well details and the groundwater levels observed during the monitoring period are summarised in Table 1 & 2 below.

Table 1 Summary of Data Logger & Well Installation Details

Monitoring Well ID	Top of Well RL (mAHD)	Existing Ground RL (mAHD)	Well Stickup (m)	Well Depth Below Ground (m) ¹	Sensor RL (mAHD)
BH101M	8.65	8.75	-0.10	8.00	0.75
BH3M	8.00	8.10	-0.10	8.20	0.30
BH9M	11.90	12.00	-0.10	9.40	3.40

Note 1: The level of the bottom of the well is based on manual measurements after the well installation. The measurement accounts for any variation of the well depth caused by infilling of material through the well screen.

Table 2 Summary of Groundwater Levels

Monitoring Well ID	Average Groundwater RL (mAHD)	Highest Groundwater RL (mAHD)	Lowest Groundwater RL (mAHD)	Highest Groundwater Depth (m Below Ground)	Lowest Groundwater Depth (m Below Ground)
BH101M	6.52	6.66	6.29	2.09	2.46
BH3M	3.53	3.87	3.24	4.23	4.86
BH9M	8.82	9.58	8.16	2.42	3.84

Please do not hesitate to contact the undersigned should you have any questions.

For and on behalf of:

EI AUSTRALIA

Author

Reviewer



David Jeong
Undergraduate Geotechnical Engineer



Gokul Pothineni
Geotechnical Engineer

Attachments:

Figure 1: Data Logger Location Plan
Figure 2-4: Groundwater Level, Daily Rainfall vs. Time From 22 August 2025 to 25 November 2025
Important Information



LEGEND

- Approximate site boundary
- Approximate basement boundary
- Approximate previous borehole/monitoring well location (EI, 2022)
- Approximate additional borehole/monitoring well location (EI, 2025)



Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

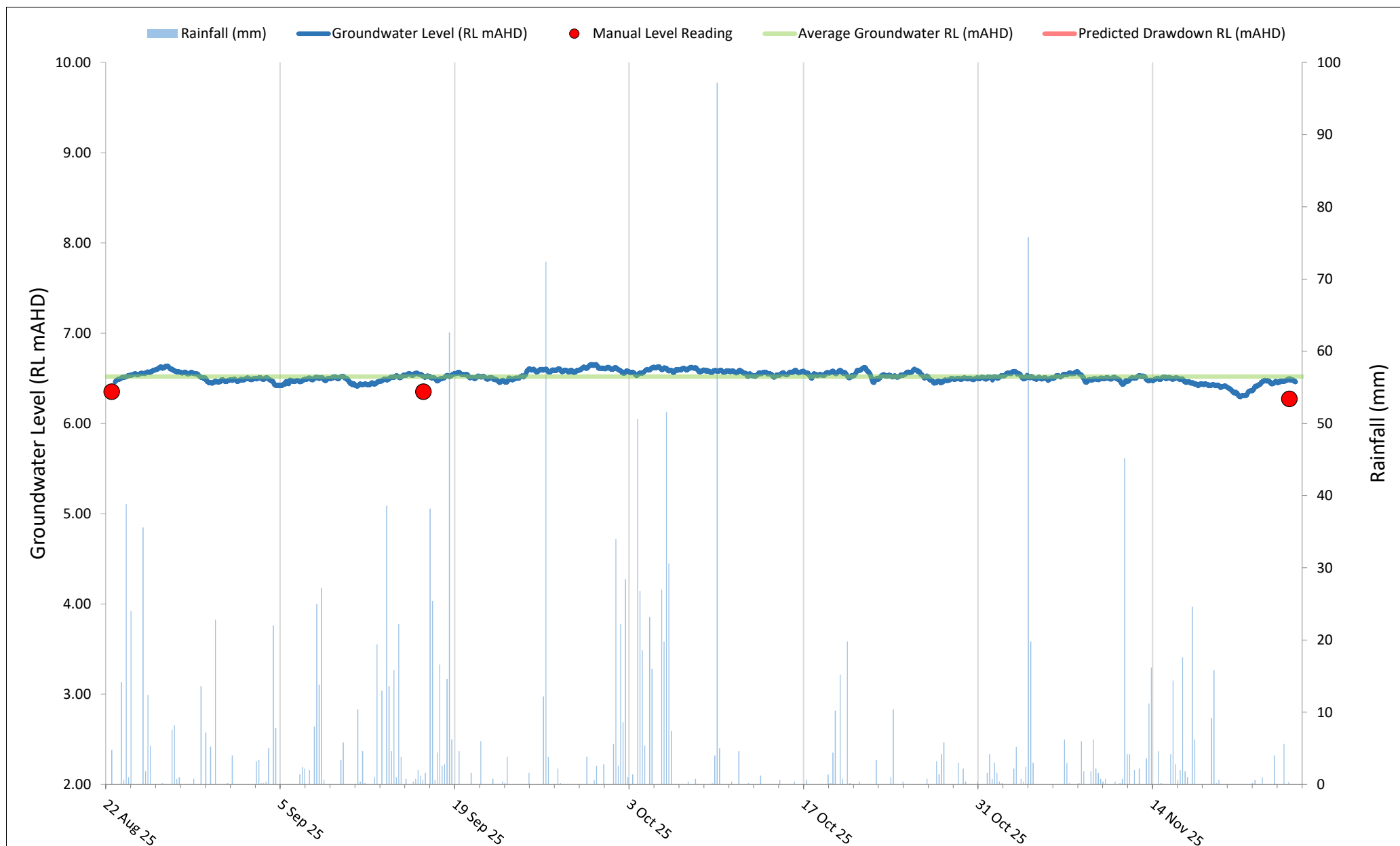
Drawn:	AM.H.
Approved:	G.P
Date:	25/8/2025

Ceeroose Pty Ltd
Groundwater Monitoring
40-76 William Street, Leichhardt NSW
Borehole Location Plan

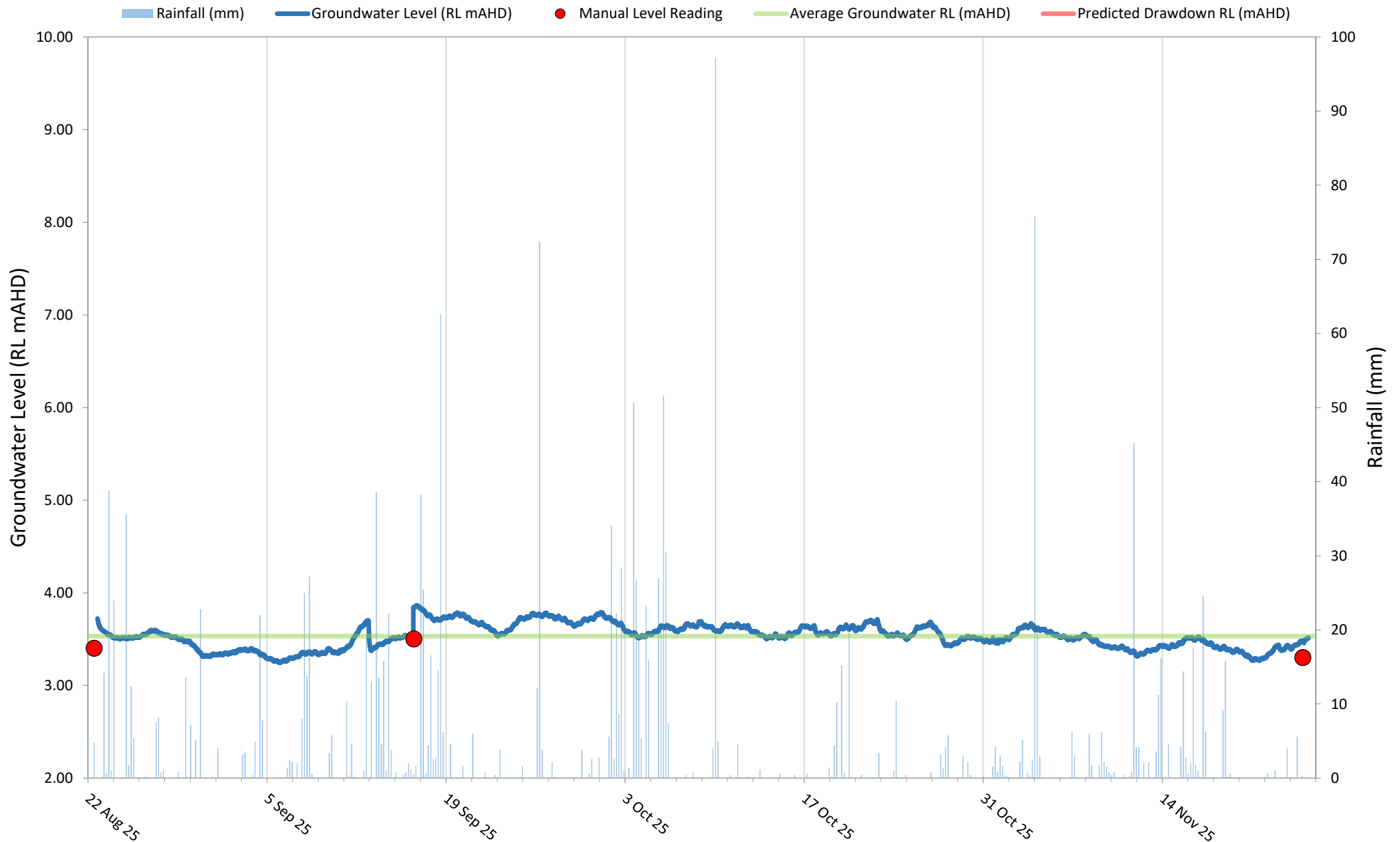
Figure:

2

Project:
E24470.G11



 Suite 6.01, 55 Miller Street, PYRMONT 2009 Ph. (02) 9516 0722 Fax (02) 9518 5088	Drawn:	DJ	Anprisa Pty Ltd Groundwater Level Monitoring 46 -76 William Street Leichhardt NSW BH101M	Figure:
	Approved:	GP		2
	Date:	13/05/2026		Project: E24470.G11.GW02



Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph. (02) 9516 0722 Fax (02) 9518 5088

Drawn:

DJ

Approved:

GP

Date:

13/05/2026

Anprisa Pty Ltd

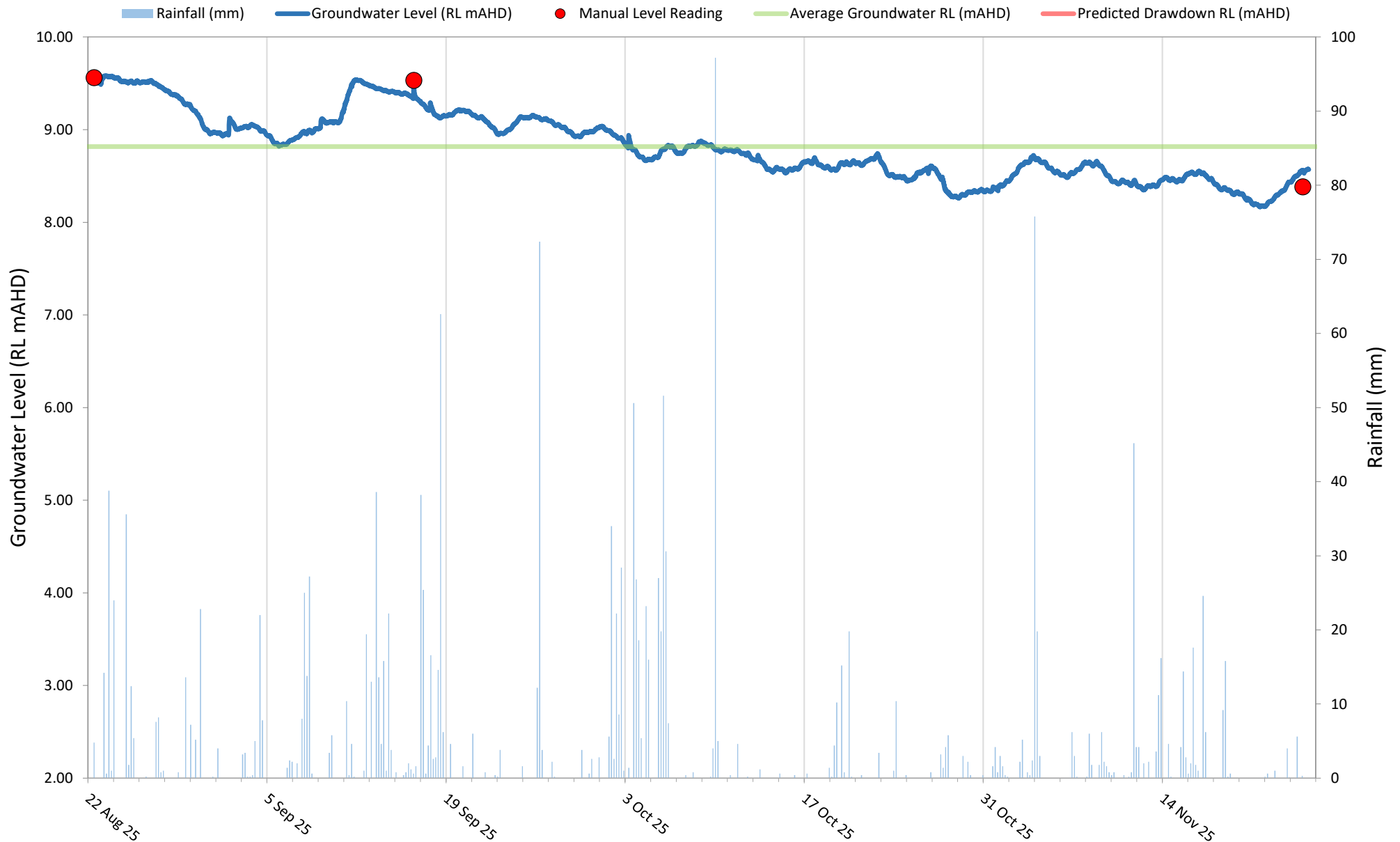
Groundwater Level Monitoring
46 -76 William Street Leichhardt NSW

BH3M

Figure:

3

Project: E24470.G11.GW02



Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph. (02) 9516 0722 Fax (02) 9518 5088

Drawn:

DJ

Approved:

GP

Date:

13/05/2026

Anprisa Pty Ltd

Groundwater Level Monitoring
46 -76 William Street Leichhardt NSW

BH9M

Figure:

4

Project: E24470.G11.GW02

Appendix D – Important Information

SCOPE OF SERVICES

The geotechnical report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client And EI Australia ("EI"). The scope of work may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

RELIANCE ON DATA

EI has relied on data provided by the Client and other individuals and organizations, to prepare the report. Such data may include surveys, analyses, designs, maps and plans. EI has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, EI will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to EI.

GEOTECHNICAL ENGINEERING

Geotechnical engineering is based extensively on judgment and opinion. It is far less exact than other engineering disciplines. Geotechnical engineering reports are prepared for a specific client, for a specific project and to meet specific needs, and may not be adequate for other clients or other purposes (e.g. a report prepared for a consulting civil engineer may not be adequate for a construction contractor). The report should not be used for other than its intended purpose without seeking additional geotechnical advice. Also, unless further geotechnical advice is obtained, the report cannot be used where the nature and/or details of the proposed development are changed.

LIMITATIONS OF SITE INVESTIGATION

The investigation programme undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation programme and subsequent laboratory testing are extrapolated across the site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behaviour with regard to the proposed development. Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies. The engineering logs are the subjective interpretation of subsurface conditions at a particular location and time, made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates.

SUBSURFACE CONDITIONS ARE TIME DEPENDENT

Subsurface conditions can be modified by changing natural forces or man-made influences. The report is based on conditions that existed at the time of subsurface exploration. Construction operations adjacent to the site, and natural events such as floods, or ground water fluctuations, may also affect subsurface conditions, and thus the continuing adequacy of a geotechnical report. EI should be kept apprised of any such events, and should be consulted to determine if any additional tests are necessary.

VERIFICATION OF SITE CONDITIONS

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that EI be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of change of soil and rock conditions requires experience and it is recommended that a suitably experienced geotechnical engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

REPRODUCTION OF REPORTS

This report is the subject of copyright and shall not be reproduced either totally or in part without the express permission of this Company. Where information from the accompanying report is to be included in contract documents or engineering specification for the project, the entire report should be included in order to minimize the likelihood of misinterpretation from logs.

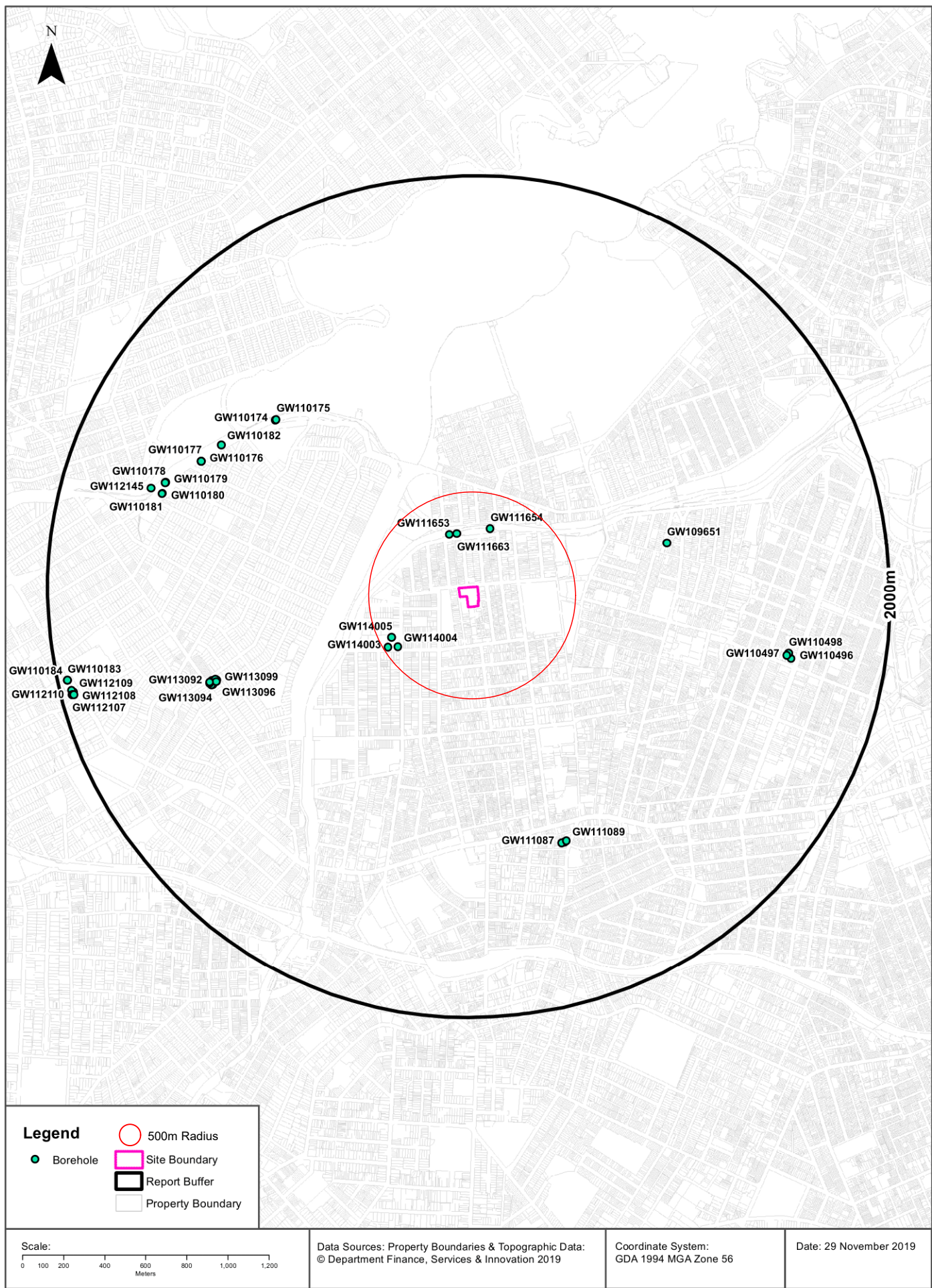
REPORT FOR BENEFIT OF CLIENT

The report has been prepared for the benefit of the Client and no other party. EI assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of EI or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

OTHER LIMITATIONS

EI will not be liable to update or revise the report to take into account any events or emergent circumstances or fact occurring or becoming apparent after the date of the report.

Appendix E – Registered Bore Search



Hydrogeology & Groundwater

40-76 William Street, Leichhardt, NSW 2040

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW111 653	10BL605 002	Bore	Other Govt	Monitoring Bore	Monitoring Bore		09/11/2011	2.40	2.50					263m	North
GW111 663	10BL605 001	Bore	Other Govt	Monitoring Bore	Monitoring Bore		09/11/2011	4.00	4.00					263m	North
GW111 654	10BL605 000	Bore	Other Govt	Monitoring Bore	Monitoring Bore		09/11/2011	3.00	3.00					288m	North
GW114 005	10BL605 487	Bore	Private	Monitoring Bore	Monitoring Bore		06/12/2013	8.00	8.00					386m	South West
GW114 004	10BL605 487	Bore	Private	Monitoring Bore	Monitoring Bore		06/12/2013	6.20	6.20					387m	South West
GW114 003	10BL605 487	Bore	Private	Monitoring Bore	Monitoring Bore		06/12/2013	6.15	6.15					425m	South West
GW109 651	10BL602 525	Bore	Private	Monitoring Bore	Monitoring Bore		27/05/2008	2.50	2.55	690	0.42	0.500		946m	East
GW110 175	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		22/11/2004	3.75	3.75		1.90			1207m	North West
GW110 174	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		27/11/2004	30.10	30.10		1.90			1209m	North West
GW111 089	10BL601 754	Bore	Private	Monitoring Bore	Monitoring Bore		03/05/2007	9.00	9.00					1223m	South
GW111 087	10BL601 754	Bore	Private	Monitoring Bore	Monitoring Bore		03/05/2007	8.70	8.70					1224m	South
GW111 088	10BL601 754	Bore	Private	Monitoring Bore	Monitoring Bore		03/05/2007	9.00	9.00					1224m	South
GW113 099	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	13/04/2011	6.00	6.00					1250m	West
GW113 097	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	11/04/2011	6.00	6.00					1254m	West
GW113 096	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	13/04/2011	5.60	5.60					1254m	West
GW113 098	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	12/04/2011	6.00	6.00					1271m	West
GW113 095	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	13/04/2011	5.00	5.00					1273m	West
GW113 094	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	12/04/2011	4.85	4.85					1282m	West
GW113 092	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	12/04/2011	5.00	5.00					1284m	West
GW113 093	10BL604 579	Bore	Private	Monitoring Bore	Monitoring Bore	BP - Haberfield	12/04/2011	5.60	5.60					1286m	West
GW110 182	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		10/12/2004	7.20	7.20					1348m	North West
GW110 176	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		02/12/2004	37.01	37.01					1394m	North West
GW110 177	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		02/12/2004	3.75	3.75					1395m	North West
GW110 181	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		07/12/2004	3.10	3.10					1511m	West
GW110 180	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		07/12/2004	34.00	34.00					1511m	West
GW110 179	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		23/06/2009	5.24	5.24					1514m	West
GW110 178	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		25/11/2004	48.03	48.03					1515m	West

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW110 497	10BL603 107	Well	Private	Monitoring Bore	Monitoring Bore		17/06/2009	4.00	4.00		2.40			1521m	East
GW110 498	10BL603 107	Well	Private	Monitoring Bore	Monitoring Bore		17/06/2009	4.00	4.00		2.30			1527m	East
GW110 496	10BL603 107	Well	Private	Monitoring Bore	Monitoring Bore		16/06/2009	4.00	4.00		1.75			1545m	East
GW112 145	10BL160 939	Bore	Private	Monitoring Bore	Monitoring Bore		12/12/2002	29.75	29.75					1572m	West
GW112 109	10BL161 525	Bore	Private	Monitoring Bore	Monitoring Bore		13/11/2002	4.00	4.00					1936m	West
GW112 108	10BL161 525	Bore	Private	Monitoring Bore	Monitoring Bore		01/11/2002	8.50	8.50					1937m	West
GW112 110	10BL161 525	Bore	Private	Monitoring Bore	Monitoring Bore		13/11/2002	4.00	4.00					1941m	West
GW112 107	10BL161 525	Bore	Private	Monitoring Bore	Monitoring Bore		13/11/2002	5.00	5.00					1944m	West
GW110 183	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		20/12/2004	30.00	13.20					1950m	West
GW110 184	10BL163 466	Bore	Other Govt	Monitoring Bore	Monitoring Bore		20/12/2004	3.00	3.00					1951m	West

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

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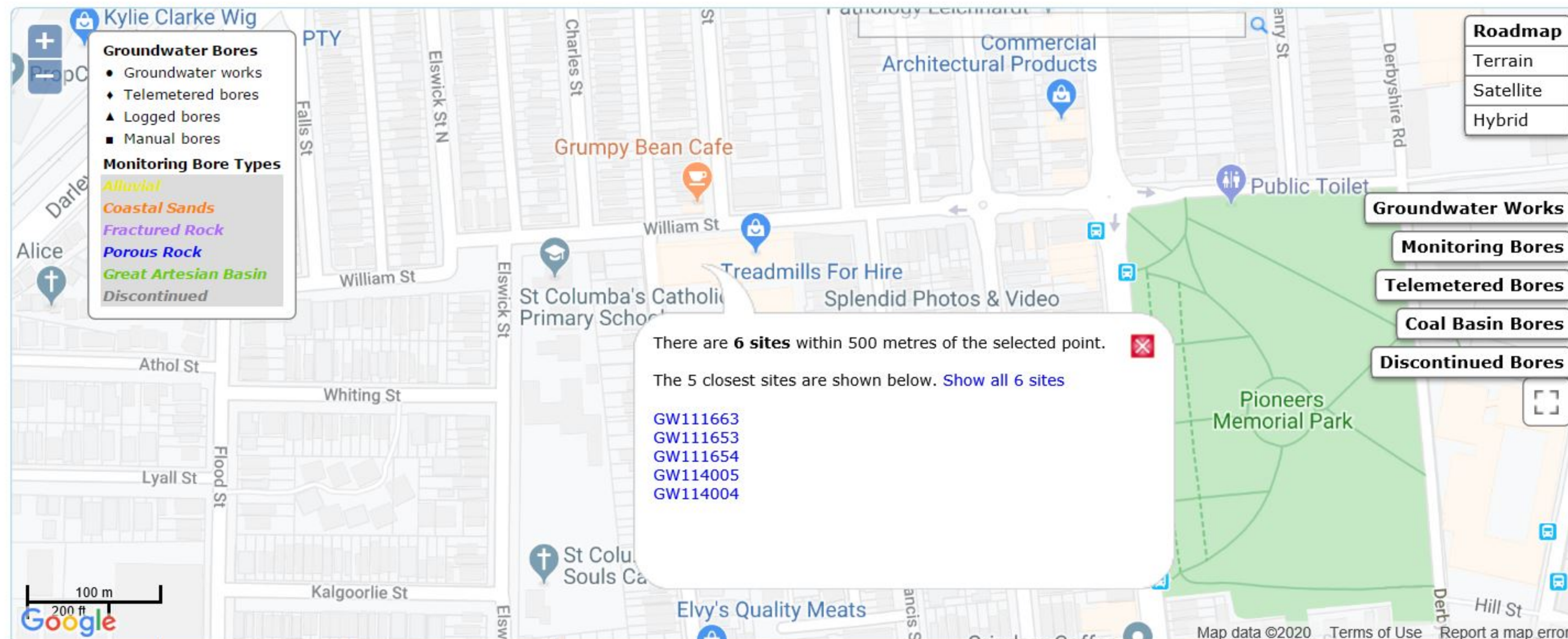
All Groundwater Site Details

All Groundwater Map

All data times are Eastern Standard Time

Map

Info



Scale = 1 : 3385

166021, 0, 31

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WaterNSW

Work Summary

GW111653

Licence: 10BL605002	Licence Status: ACTIVE
Authorised Purpose(s): MONITORING BORE Intended Purpose(s): MONITORING BORE	
Work Type: Bore	
Work Status: Equipped	
Construct.Method: Auger - Solid	
Owner Type: Other Govt	
Commenced Date:	Final Depth: 2.40 m
Completion Date: 09/11/2011	Drilled Depth: 2.50 m
Contractor Name: (None)	
Driller: Wayne Betts	
Assistant Driller:	
Property: RAIL CORPORATION Railway Land Darley Rd LILYFIELD 2040 NSW	Standing Water Level (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

Site Details

Site Chosen By:	County	Parish	Cadastre
	Form A: CUMBERLAND	PETERSHAM	42/9/2279
	Licensed: CUMBERLA	PETERSHA	Whole Lot 42/9/2279
Region: 10 - Sydney South Coast	CMA Map:		
River Basin: - Unknown	Grid Zone:	Scale:	
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6250135.000	Latitude: 33°52'31.1"S	
Elevation Source: Unknown	Easting: 329146.000	Longitude: 151°09'09.7"E	
GS Map: -	MGA Zone: 56	Coordinate Source: Unknown	

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	2.40	50			Auger - Solid Flight
1		Annulus	Waterworn/Rounded	0.50	2.40				Graded
1	1	Casing	Pvc Class 18	1.00	2.40	40			Seated on Bottom

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.80	2.40	0.60	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.10	0.10	GRAVEL,SAND,CLAY	Gravel	
0.10	0.40	0.30	FILL CLAYEY SAND,ORANGE,WHITE,PINK,SANDSTONE	Fill	
0.40	0.90	0.50	SAND CLAYEY,BROWN,GRAINED GRAVELS	Clayey Sand	
0.90	1.50	0.60	SAND ORANGE,M/GRAINED DRY	Sand	
1.50	1.80	0.30	BECOMING MOIST	Sand	
1.80	2.50	0.70	SAND GREY MOIST TO WET,HARD SANDSTONE	Sand	

*** End of GW111653 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW111654

Licence: 10BL605000

Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore

Work Status: Equipped

Construct.Method:

Owner Type: Other Govt

Commenced Date:

Completion Date: 09/11/2011

Final Depth: 3.00 m

Drilled Depth: 3.00 m

Contractor Name: Macquarie Drilling

Driller: Wayne Betts

Assistant Driller:

Property: RAIL CORPORATION Railway Land 7
Darley Rd LILYFIELD 2040 NSW

GWMA:
GW Zone:

Standing Water Level
(m):

Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

County
Form A: CUMBERLAND
Licensed: CUMBERLA

Parish
PETERSHAM
PETERSHA

Cadastre
4//1014318
Whole Lot 4//1014318

Region: 10 - Sydney South Coast

River Basin: - Unknown
Area/District:

CMA Map:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6250163.000
Easting: 329345.000

Latitude: 33°52'30.3"S
Longitude: 151°09'17.5"E

GS Map: -

MGA Zone: 56

Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	3.00	50			Unknown
1		Annulus	Waterworn/Rounded	0.50	3.00				Graded
1	1	Casing	Pvc Class 18	1.00	3.00	40			Seated on Bottom, Welded - Collar

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.80	3.00	1.20	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.10	0.10	FILL,SANDY GRAVELLY CLAY,BROWN	Fill	
0.10	0.85	0.75	FILL,SAND, PALE BROWN,GRAVELS,SANDSTONES	Fill	
0.85	1.10	0.25	SANDSTONE WEATHERED,ORANGE,BROWN	Sandstone	
1.10	3.00	1.90	SANDSTONE WHITE POWDERY	Sandstone	

*** End of GW111654 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW111663

Licence: 10BL605001

Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore

Work Status: Equipped

Construct.Method: Auger - Solid

Owner Type: Other Govt

Commenced Date:

Completion Date: 09/11/2011

Final Depth: 4.00 m

Drilled Depth: 4.00 m

Contractor Name: Macquarie Drilling

Driller: Wayne Betts

Assistant Driller:

Property: RAIL CORPORATION Railway Land
Walter St LILYFIELD 2040 NSW

GWMA:
GW Zone:

Standing Water Level
(m):

Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

County
Form A: CUMBERLAND
Licensed: CUMBERLA

Parish
PETERSHAM
PETERSHA

Cadastre
39/7/1162
Whole Lot 39/7/1162

Region: 10 - Sydney South Coast

River Basin: - Unknown
Area/District:

CMA Map:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6250138.000
Easting: 329182.000

Latitude: 33°52'31.0"S
Longitude: 151°09'11.1"E

GS Map: -

MGA Zone: 56

Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	4.00	50			Auger - Solid Flight
1		Annulus	Waterworn/Rounded	1.20	4.00				Graded
1	1	Casing	Pvc Class 18	1.50	4.00				Seated on Bottom

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
2.30	4.00	1.70	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
----------	--------	---------------	----------------------	---------------------	----------

0.00	0.10	0.10	ROAD BASE FILL GRAVELLY CLAY GREY,MOIST	Fill	
0.10	1.10	1.00	SANDY CLAY,ORANGE BROWN,MOIST	Sandy Clay	
1.10	2.30	1.20	PALE GREY AND RED HIGH PLASTICITY,SLIGHTLY MOIST	Sandy Clay	
2.30	3.80	1.50	SANDSTONE WHITE	Sandstone	
3.80	4.00	0.20	SANDSTONE ORANGE/GREY AND SATURATED	Sandstone	

*** End of GW111663 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW114003

Licence: 10BL605487

Licence Status: CANCELLED

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore

Work Status: Equipped

Construct.Method:

Owner Type: Private

Commenced Date:

Completion Date: 06/12/2013

Final Depth: 6.15 m

Drilled Depth: 6.15 m

Contractor Name: Terratest

Driller: Wisam Abouchrouche

Assistant Driller:

Property: LEICHHARDT 141 PTY LIMITED 141
Allen St LEICHHARDT 2040 NSW

GWMA:
GW Zone:

Standing Water Level
(m):

Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

County
Form A: CUMBERLAND
Licensed: CUMBERLA

Parish
PETERSHAM
PETERSHA

Cadastre
1//632522
Whole Lot 1//632522

Region: 10 - Sydney South Coast

River Basin: - Unknown
Area/District:

CMA Map:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6249585.000
Easting: 328849.000

Latitude: 33°52'48.7"S
Longitude: 151°08'57.8"E

GS Map: -

MGA Zone: 56

Coordinate Source: Unknown

Remarks

01/08/2014: Nat Carling, 1-Aug-2014; Added status, drill method, depth, updated work type.

*** End of GW114003 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW114004

Licence: 10BL605487

Licence Status: CANCELLED

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore

Work Status: Equipped

Construct.Method:

Owner Type: Private

Commenced Date:

Completion Date: 06/12/2013

Final Depth: 6.20 m

Drilled Depth: 6.20 m

Contractor Name: Terratest

Driller: Wisam Abouchrouche

Assistant Driller:

Property: LEICHHARDT 141 PTY LIMITED 141
Allen St LEICHHARDT 2040 NSW

GWMA:
GW Zone:

Standing Water Level
(m):

Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

County
Form A: CUMBERLAND
Licensed: CUMBERLA

Parish
PETERSHAM
PETERSHA

Cadastre
1//632522
Whole Lot 1//632522

Region: 10 - Sydney South Coast

River Basin: - Unknown
Area/District:

CMA Map:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6249585.000
Easting: 328896.000

Latitude: 33°52'48.8"S
Longitude: 151°08'59.6"E

GS Map: -

MGA Zone: 56

Coordinate Source: Unknown

Remarks

01/08/2014: Nat Carling, 1-Aug-2014; Added status, drill method, depth, updated work type.

*** End of GW114004 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW114005

Licence: 10BL605487

Licence Status: CANCELLED

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore

Work Status: Equipped

Construct.Method:

Owner Type: Private

Commenced Date:

Completion Date: 06/12/2013

Final Depth: 8.00 m

Drilled Depth: 8.00 m

Contractor Name: Terratest

Driller: Wisam Abouchrouche

Assistant Driller:

Property: LEICHHARDT 141 PTY LIMITED 141
Allen St LEICHHARDT 2040 NSW

GWMA:
GW Zone:

Standing Water Level
(m):

Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

County
Form A: CUMBERLAND
Licensed: CUMBERLA

Parish
PETERSHAM
PETERSHA

Cadastre
1//632522
Whole Lot 1//632522

Region: 10 - Sydney South Coast

River Basin: - Unknown
Area/District:

CMA Map:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6249631.000
Easting: 328865.000

Latitude: 33°52'47.3"S
Longitude: 151°08'58.4"E

GS Map: -

MGA Zone: 56

Coordinate Source: Unknown

Remarks

01/08/2014: Nat Carling, 1-Aug-2014; Added status, drill method, depth, updated work type.

*** End of GW114005 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix F – Borehole Logs

MONITORING WELL LOG

BH ID: BH101M

Location	40-76 William Street, Leichhardt, NSW	Started	15 August 2025
Client	Ceerose	Completed	15 August 2025
Job No.	E24470.G03	Logged By	LL Date 15 August 2025
Sheets	1 of 2	Review By	GP Date 17 September 2025
Drilling Contractor	Geosense Drilling Engineers	Surface RL	≈8.75 m (AHD)
Plant	Hanjin D&B 8-D	Inclination	90°
		Northing	6249839.0 (MGA 2020 Zone 56)
		Easting	329278.0 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	BACKFILL DETAILS	STANDPIPE DETAILS
		0.00		8.75	CONCRETE: 240mm thick	-		Well Stickup =0.0m (RL 8.75m)
	BH101M_0.50-0.95 SPT 0.50-0.95 2.2,6 N=8	0.24		8.51	FILL: Sandy GRAVEL: gravels are grained, dark grey	M		
	BH101M_1.20-1.30	1.00		7.75	FILL: Clayey SAND: fine grained, dark brown, trace brick fragments			
	BH101M_1.50-1.95 SPT 1.50-1.95 RW/450 mm N=0	2.00				M > PL	Grout 0.00m - 4.00m	
	BH101M_2.50-2.60	2.50		6.25	From 2.50m, dark grey			0.0m - 5.0m PVC casing (50mm Ø)
	BH101M_3.00-3.03 SPT 3.00-3.03 3/30 mm HB N=R	3.03		5.72	SANDSTONE: fine to medium grained, pale grey / dark red / yellow brown, with iron staining			
50%		4.00					Bentonite 4.00m - 4.50m	
		5.00						
		6.00						
		7.00					Sand 4.50m - 9.00m	5.0m - 8.0m PVC screen (50mm Ø)
		8.00						PVC end cap
10%		9.00						
		10.00						

This log should be read in conjunction with EI Australia's accompanying explanatory notes.



MONITORING WELL LOG

BH ID: BH101M

Location	40-76 William Street, Leichhardt, NSW			Started	15 August 2025		
Client	Ceeroose			Completed	15 August 2025		
Job No.	E24470.G03			Logged By	LL	Date	15 August 2025
Sheets	2 of 2			Review By	GP	Date	17 September 2025
Drilling Contractor	Geosense Drilling Engineers			Surface RL	≈8.75 m (AHD)		
Plant	Hanjin D&B 8-D			Inclination	90°		
				Northing	6249839.0 (MGA 2020 Zone 56)		
				Easting	329278.0 (MGA 2020 Zone 56)		

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	BACKFILL DETAILS	STANDPIPE DETAILS
10%		11			SANDSTONE: fine to medium grained, pale grey / dark red / yellow brown, with iron staining		Bentonite 9.00m - 15.56m	
		12						
		13						
		14						
		15						
		16			Terminated at 15.56m. Target Depth Reached.			
		17						
		18						
		19						
		20						

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

MONITORING WELL LOG

MW NO. BH1M

Project	Proposed Development	Sheet	1 of 2
Location	40-76 William Street, Leichhardt NSW	Date Started	16/12/2019
Position	Refer to Figure 2	Date Completed	16/12/2019
Job No.	E24470.G03	Logged By	DS
Client	Anprisa Pty Ltd	Date	16/12/2019
		Reviewed By	BL
		Date	22/01/2020

Drilling Contactor	BG Drilling	Surface RL	≈9.50 m AHD
Drill Rig	Hanjin DB8	Inclination	-90°

METHOD	WATER	DEPTH (m)	RL (m AHD)	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION
DT		0		FILL/CONCRETE; 210 mm thick.	
				FILL: SAND; fine to medium grained, dark grey, with fine to coarse gravels, trace slag and silt, with slight hydrocarbon odour. From 0.8 m, moderate hydrocarbon odour.	
AD/T	1001/20	2		Gravelly SAND; fine to medium grained, dark grey, with fine to coarse, red-brown to pale grey sandstone gravels, with moderate hydrocarbon odour.	
				SANDSTONE; fine to medium grained, red-brown, very low strength, distinctly weathered. From 3.2 m, pale grey to red-brown, very low to low strength.	
NMLC	100% RETURN	4		SANDSTONE; fine to medium grained, pale grey to orange-brown, thinly to medium bedded, sub-horizontal bedding, with ironstaining.	
				From 5.9 m, fine to medium grained, pale grey, medium to thickly bedded, with sub-horizontal grey clay laminations.	
		12		Borehole Terminated at 11.23 m, Target Depth Reached.	

PIEZOMETER CONSTRUCTION DETAILS

ID	Type	Stick Up & RL	Tip Depth & RL	Installation Date	Static Water Level
BH1M	Standpipe	0.10 m 9.40 m	11.23 m -1.73 m		

This well log should be read in conjunction with EI Australia's accompanying standard notes.

MONITORING WELL LOG

MW NO. BH3M

Project Proposed Development
Location 40-76 William Street, Leichhardt NSW
Position Refer to Figure 2
Job No. E24470.G03
Client Anprisa Pty Ltd

Sheet 1 of 2
Date Started 18/12/2019
Date Completed 18/12/2019
Logged By DS **Date** 18/12/2019
Reviewed By BL **Date** 22/01/2020

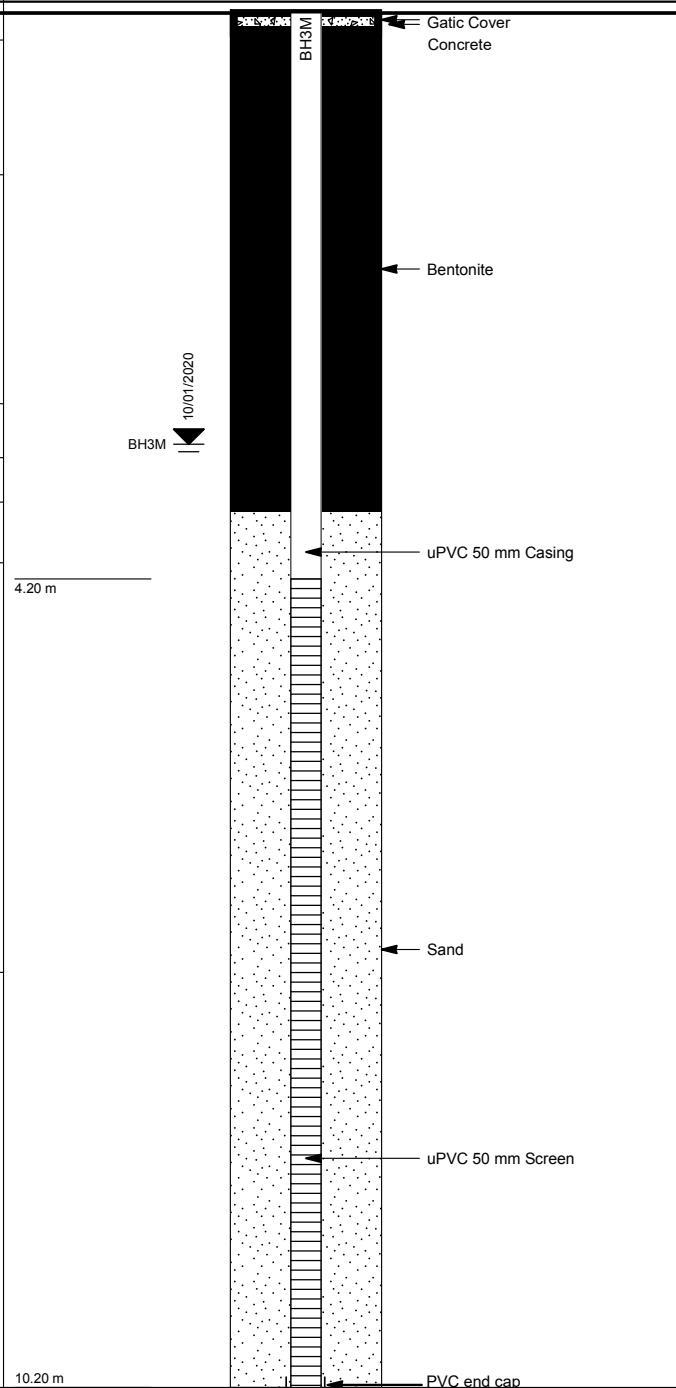
Drilling Contactor BG Drilling **Surface RL** ≈8.10 m AHD
Drill Rig Christie (Rig 16) **Inclination** -90°

PIEZOMETER CONSTRUCTION DETAILS

ID BH3M Type Standpipe Stick Up & RL 0.08 m 8.02 m Tip Depth & RL 10.20 m -2.10 m Installation Date Static Water Level

SOIL/ROCK MATERIAL DESCRIPTION

METHOD	WATER	DEPTH (m)	RL (m AHD)	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION
DT		0	8		FILL/CONCRETE; 200 mm thick.
		1	7		FILL: SAND; fine to medium grained, yellow-brown, with fine to coarse and angular to sub-angular sandstone gravels, red-brown.
		2	6		From 1.2 m, with sandstone cobbles.
		3	5		SANDSTONE; fine to medium grained, red-brown, low strength, distinctly weathered.
		4	4		SANDSTONE; fine to medium grained, pale grey to orange-brown, medium to thickly bedded, with ironstaining.
		5			NO CORE; 450 mm thick.
		6	2		
		7	1		From 7.12 m, pale grey, with sub-horizontal laminations.
		8	0		
		9	-1		
		10	-2		
		11	-3		Borehole Terminated at 10.20 m, Target Depth Reached.



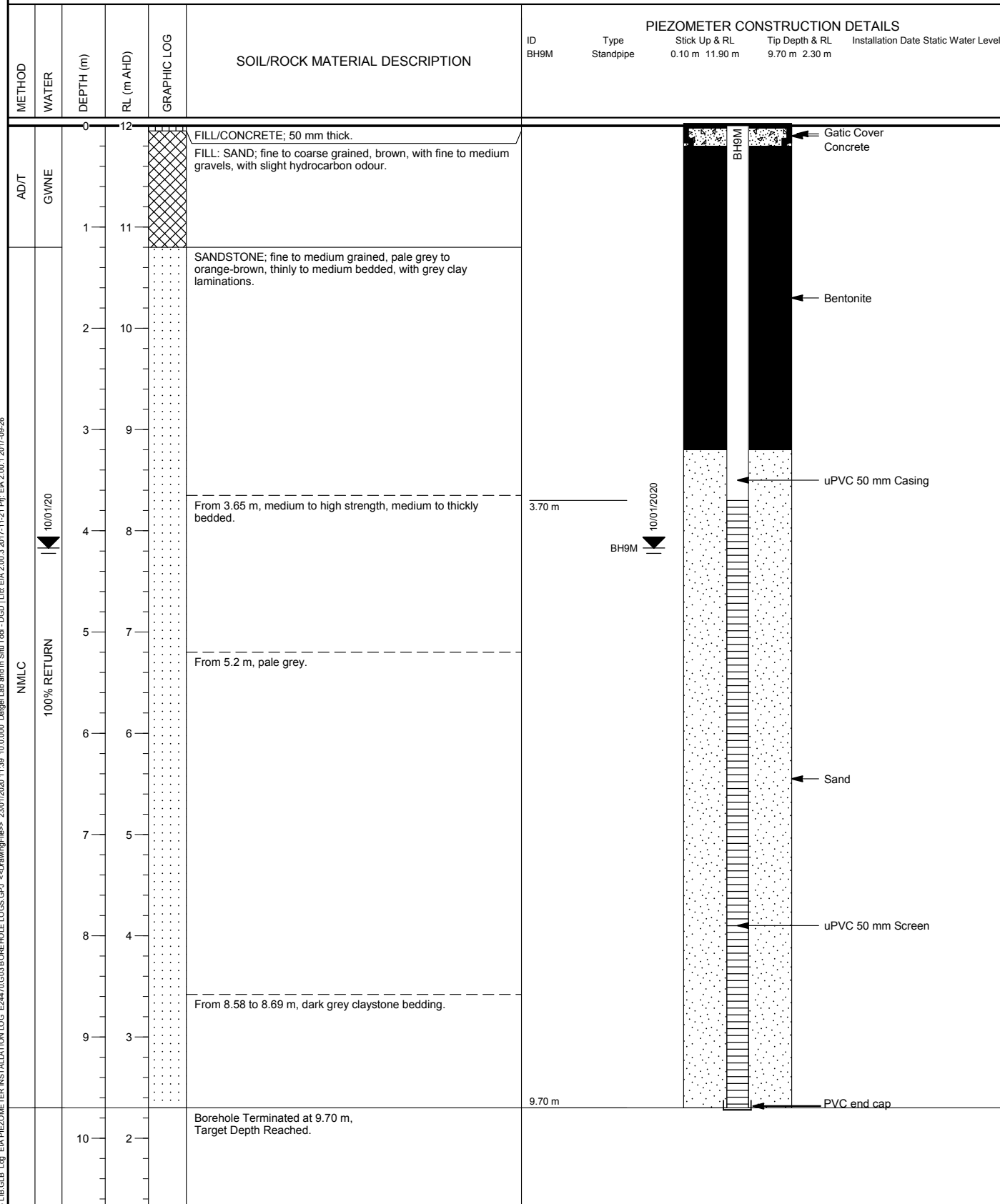
This well log should be read in conjunction with EIA Australia's accompanying standard notes.

MONITORING WELL LOG

MW NO. BH9M

Project	Proposed Development	Sheet	1 of 2
Location	40-76 William Street, Leichhardt NSW	Date Started	17/12/2019
Position	Refer to Figure 2	Date Completed	17/12/2019
Job No.	E24470.G03	Logged By	DS
Client	Anprisa Pty Ltd	Reviewed By	BL
		Date	17/12/2019
		Date	22/01/2020

Drilling Contactor	BG Drilling	Surface RL	≈12.00 m AHD
Drill Rig	Hanjin DB8	Inclination	-90°



This well log should be read in conjunction with EI Australia's accompanying standard notes.

Appendix G – Laboratory Certificates and Analytical Reports



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Contaminants | Resources | EIA



SAMPLE RECEIPT ADVICE

SE223412

CLIENT DETAILS

Contact **Nikolce Aleksieski**
Client **EI AUSTRALIA**
Address **SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009**

Telephone **61 2 9516 0722**
Facsimile **(Not specified)**
Email **nikolce.aleksieski@eiaustralia.com.au**

Project **E24470 40-76 William St, Leichhardt NSW**
Order Number **E24470**
Samples **2**

LABORATORY DETAILS

Manager **Huong Crawford**
Laboratory **SGS Alexandria Environmental**
Address **Unit 16, 33 Maddox St
Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
Facsimile **+61 2 8594 0499**
Email **au.environmental.sydney@sgs.com**

Samples Received **Fri 3/9/2021**
Report Due **Tue 14/9/2021**
SGS Reference **SE223412**

SUBMISSION DETAILS

This is to confirm that 2 samples were received on Friday 3/9/2021. Results are expected to be ready by COB Tuesday 14/9/2021. Please quote SGS reference SE223412 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	2 Water
Date documentation received	09/09/2021 @1:10PM	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	13°C	Sufficient sample for analysis	Yes
Turnaround time requested	Three Days		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

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SAMPLE RECEIPT ADVICE

SE223412

CLIENT DETAILS

Client **EI AUSTRALIA**

Project **E24470 40-76 William St, Leichhardt NSW**

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	pH in water	Total Dissolved Solids (TDS) in water	TRH (Total Recoverable Hydrocarbons) in Water	Turbidity	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	BH3M-1	1	23	1	1	9	1	11	7
002	BH9M-1	1	23	1	1	9	1	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE223412

CLIENT DETAILS

Client **EI AUSTRALIA**

Project **E24470 40-76 William St, Leichhardt NSW**

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Metals in Water (Dissolved) by ICP-OES	Total Cyanide in water by Discrete Analyser	Trace Metals (Dissolved) in Water by ICP-MS
001	BH3M-1	1	3	1	8
002	BH9M-1	1	3	1	8

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details . Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Contact **Nikolce Aleksieski**
 Client **EI AUSTRALIA**
 Address **SUITE 6.01
 55 MILLER STREET
 PYRMONT NSW 2009**

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 Order Number **E24470**
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Manager **Huong Crawford**
 Laboratory **SGS Alexandria Environmental**
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 Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
 Facsimile **+61 2 8594 0499**
 Email **au.environmental.sydney@sgs.com**

SGS Reference **SE223412 R0**
 Date Received **3/9/2021**
 Date Reported **14/9/2021**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



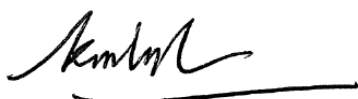
Bennet LO
Senior Chemist



Dong LIANG
Metals/Inorganics Team Leader



Kamrul AHSAN
Senior Chemist



Ly Kim HA
Organic Section Head



Shane MCDERMOTT
Inorganic/Metals Chemist



Teresa NGUYEN
Organic Chemist

VOCs in Water [AN433] Tested: 9/9/2021

PARAMETER	UOM	LOR	BH3M-1	BH9M-1
			WATER - 3/9/2021 SE223412.001	WATER - 3/9/2021 SE223412.002
Benzene	µg/L	0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3
Naphthalene	µg/L	0.5	<0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 9/9/2021

PARAMETER	UOM	LOR	BH3M-1	BH9M-1
			WATER - 3/9/2021 SE223412.001	WATER - 3/9/2021 SE223412.002
TRH C6-C9	µg/L	40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 13/9/2021

PARAMETER	UOM	LOR	BH3M-1	BH9M-1
			WATER - 3/9/2021 SE223412.001	WATER - 3/9/2021 SE223412.002
TRH C10-C14	µg/L	50	<50	<50
TRH C15-C28	µg/L	200	<200	<200
TRH C29-C36	µg/L	200	<200	<200
TRH C37-C40	µg/L	200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500
TRH C10-C40	µg/L	320	<320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 13/9/2021

PARAMETER	UOM	LOR	BH3M-1	BH9M-1
			WATER - 3/9/2021 SE223412.001	WATER - 3/9/2021 SE223412.002
Naphthalene	µg/L	0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1

pH in water [AN101] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
			SE223412.001	SE223412.002
PARAMETER	UOM	LOR		
pH**	pH Units	0.1	4.3	5.1



ANALYTICAL RESULTS

SE223412 R0

Conductivity and TDS by Calculation - Water [AN106] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
			SE223412.001	SE223412.002
PARAMETER	UOM	LOR		
Conductivity @ 25 C	µS/cm	2	450	270



ANALYTICAL RESULTS

SE223412 R0

Total Dissolved Solids (TDS) in water [AN113] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
			SE223412.001	SE223412.002
PARAMETER	UOM	LOR		
Total Dissolved Solids Dried at 175-185°C	mg/L	10	380	270



ANALYTICAL RESULTS

SE223412 R0

Turbidity [AN119] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
PARAMETER	UOM	LOR	SE223412.001	SE223412.002
Turbidity	NTU	0.5	89	340

Total Cyanide in water by Discrete Analyser (Aquakem) [AN077/AN287] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
PARAMETER	UOM	LOR	SE223412.001	SE223412.002
Total Cyanide	mg/L	0.004	<0.004	<0.004



ANALYTICAL RESULTS

SE223412 R0

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
			SE223412.001	SE223412.002
PARAMETER	UOM	LOR		
Calcium, Ca	mg/L	0.2	0.9	13
Magnesium, Mg	mg/L	0.1	6.6	4.2
Total Hardness by Calculation	mg CaCO3/L	1	30	50

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 10/9/2021

PARAMETER	UOM	LOR	BH3M-1	BH9M-1
			WATER - 3/9/2021 SE223412.001	WATER - 3/9/2021 SE223412.002
Aluminium, Al	µg/L	5	49	66
Arsenic, As	µg/L	1	<1	<1
Cadmium, Cd	µg/L	0.1	<0.1	<0.1
Chromium, Cr	µg/L	1	<1	<1
Copper, Cu	µg/L	1	<1	2
Lead, Pb	µg/L	1	<1	<1
Nickel, Ni	µg/L	1	5	2
Zinc, Zn	µg/L	5	24	37

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 10/9/2021

			BH3M-1	BH9M-1
			WATER	WATER
			-	-
			3/9/2021	3/9/2021
PARAMETER	UOM	LOR	SE223412.001	SE223412.002
Mercury	mg/L	0.0001	<0.0001	<0.0001

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN077	Hydrogen cyanide is liberated from an acidified sample by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN113	Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available. Reference APHA 2540 C.
AN113	The Total Dissolved Solids residue may also be ignited at 550 C and volatile TDS (Organic TDS) and non-volatile TDS (Inorganic) can be determined.
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN287	A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by Aquakem DA.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received. Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE223412 R0

CLIENT DETAILS

Contact **Nikolce Aleksieski**
Client **EI AUSTRALIA**
Address **SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009**

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Facsimile **(Not specified)**
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Order Number **E24470**
Samples **2**

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Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
Facsimile **+61 2 8594 0499**
Email **au.environmental.sydney@sgs.com**

SGS Reference **SE223412 R0**
Date Received **03 Sep 2021**
Date Reported **14 Sep 2021**

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	PAH (Polynuclear Aromatic Hydrocarbons) in Water	2 items
	pH in water	2 items
	TRH (Total Recoverable Hydrocarbons) in Water	2 items
	Turbidity	2 items
Analysis Date	pH in water	2 items
	Total Dissolved Solids (TDS) in water	2 items
	Turbidity	2 items
Surrogate	PAH (Polynuclear Aromatic Hydrocarbons) in Water	1 item

SAMPLE SUMMARY

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232380	03 Sep 2021	03 Sep 2021	01 Oct 2021	10 Sep 2021	01 Oct 2021	10 Sep 2021
BH9M-1	SE223412.002	LB232380	03 Sep 2021	03 Sep 2021	01 Oct 2021	10 Sep 2021	01 Oct 2021	10 Sep 2021

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Parth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232378	03 Sep 2021	03 Sep 2021	01 Oct 2021	10 Sep 2021	01 Oct 2021	10 Sep 2021
BH9M-1	SE223412.002	LB232378	03 Sep 2021	03 Sep 2021	01 Oct 2021	10 Sep 2021	01 Oct 2021	10 Sep 2021

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232377	03 Sep 2021	03 Sep 2021	02 Mar 2022	10 Sep 2021	02 Mar 2022	10 Sep 2021
BH9M-1	SE223412.002	LB232377	03 Sep 2021	03 Sep 2021	02 Mar 2022	10 Sep 2021	02 Mar 2022	10 Sep 2021

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232486	03 Sep 2021	03 Sep 2021	10 Sep 2021	13 Sep 2021†	23 Oct 2021	13 Sep 2021
BH9M-1	SE223412.002	LB232486	03 Sep 2021	03 Sep 2021	10 Sep 2021	13 Sep 2021†	23 Oct 2021	14 Sep 2021

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232380	03 Sep 2021	03 Sep 2021	04 Sep 2021	10 Sep 2021†	04 Sep 2021	10 Sep 2021†
BH9M-1	SE223412.002	LB232380	03 Sep 2021	03 Sep 2021	04 Sep 2021	10 Sep 2021†	04 Sep 2021	10 Sep 2021†

Total Cyanide in water by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN077/AN287

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232405	03 Sep 2021	03 Sep 2021	17 Sep 2021	10 Sep 2021	17 Sep 2021	10 Sep 2021
BH9M-1	SE223412.002	LB232405	03 Sep 2021	03 Sep 2021	17 Sep 2021	10 Sep 2021	17 Sep 2021	10 Sep 2021

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232382	03 Sep 2021	03 Sep 2021	10 Sep 2021	10 Sep 2021	10 Sep 2021	13 Sep 2021†
BH9M-1	SE223412.002	LB232382	03 Sep 2021	03 Sep 2021	10 Sep 2021	10 Sep 2021	10 Sep 2021	13 Sep 2021†

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232398	03 Sep 2021	03 Sep 2021	02 Mar 2022	10 Sep 2021	02 Mar 2022	10 Sep 2021
BH9M-1	SE223412.002	LB232398	03 Sep 2021	03 Sep 2021	02 Mar 2022	10 Sep 2021	02 Mar 2022	10 Sep 2021

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232486	03 Sep 2021	03 Sep 2021	10 Sep 2021	13 Sep 2021†	23 Oct 2021	14 Sep 2021
BH9M-1	SE223412.002	LB232486	03 Sep 2021	03 Sep 2021	10 Sep 2021	13 Sep 2021†	23 Oct 2021	14 Sep 2021

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232408	03 Sep 2021	03 Sep 2021	04 Sep 2021	10 Sep 2021†	04 Sep 2021	10 Sep 2021†
BH9M-1	SE223412.002	LB232408	03 Sep 2021	03 Sep 2021	04 Sep 2021	10 Sep 2021†	04 Sep 2021	10 Sep 2021†

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232346	03 Sep 2021	03 Sep 2021	10 Sep 2021	09 Sep 2021	23 Sep 2021	13 Sep 2021
BH9M-1	SE223412.002	LB232346	03 Sep 2021	03 Sep 2021	10 Sep 2021	09 Sep 2021	23 Sep 2021	13 Sep 2021

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3M-1	SE223412.001	LB232346	03 Sep 2021	03 Sep 2021	10 Sep 2021	09 Sep 2021	23 Sep 2021	13 Sep 2021
BH9M-1	SE223412.002	LB232346	03 Sep 2021	03 Sep 2021	10 Sep 2021	09 Sep 2021	23 Sep 2021	13 Sep 2021

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	42
	BH9M-1	SE223412.002	%	40 - 130%	50
d14-p-terphenyl (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	50
	BH9M-1	SE223412.002	%	40 - 130%	62
d5-nitrobenzene (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	32 ①
	BH9M-1	SE223412.002	%	40 - 130%	40

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	100
	BH9M-1	SE223412.002	%	40 - 130%	99
d4-1,2-dichloroethane (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	104
	BH9M-1	SE223412.002	%	40 - 130%	106
d8-toluene (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	100
	BH9M-1	SE223412.002	%	40 - 130%	101

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	100
	BH9M-1	SE223412.002	%	40 - 130%	99
d4-1,2-dichloroethane (Surrogate)	BH3M-1	SE223412.001	%	60 - 130%	104
	BH9M-1	SE223412.002	%	60 - 130%	106
d8-toluene (Surrogate)	BH3M-1	SE223412.001	%	40 - 130%	100
	BH9M-1	SE223412.002	%	40 - 130%	101

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB232380.001	Conductivity @ 25 C	µS/cm	2	<2

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB232378.001	Mercury	mg/L	0.0001	<0.0001

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

Sample Number	Parameter	Units	LOR	Result
LB232377.001	Calcium, Ca	mg/L	0.2	<0.2
	Magnesium, Mg	mg/L	0.1	<0.1

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB232486.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1
Surrogates	d5-nitrobenzene (Surrogate)	%	-	54
	2-fluorobiphenyl (Surrogate)	%	-	56
	d14-p-terphenyl (Surrogate)	%	-	66

Total Cyanide in water by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result
LB232405.001	Total Cyanide	mg/L	0.004	<0.004

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result
LB232382.001	Total Dissolved Solids Dried at 175-185°C	mg/L	10	<10

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB232398.001	Aluminium, Al	µg/L	5	<5
	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR
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Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB232486.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Number	Parameter	Units	LOR	Result
LB232408.001	Turbidity	NTU	0.5	<0.5

VOCs in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB232346.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	97
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	87

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB232346.001	TRH C6-C9	µg/L	40	<40
	Surrogates			
	d4-1,2-dichloroethane (Surrogate)	%	-	97
	d8-toluene (Surrogate)	%	-	97
	Bromofluorobenzene (Surrogate)	%	-	87

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223392.007	LB232380.018	Conductivity @ 25 C	µS/cm	2	1700	1700	15	1

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223392.005	LB232377.014	Calcium, Ca	mg/L	0.2	250	240	15	1
		Magnesium, Mg	mg/L	0.1	240	240	15	0
SE223421.002	LB232377.021	Calcium, Ca	mg/L	0.2	29	29	16	0
		Magnesium, Mg	mg/L	0.1	2.3	2.3	19	0

pH in water

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223392.007	LB232380.018	pH**	pH Units	0.1	7.7	7.6	16	1

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223374.003	LB232382.010	Total Dissolved Solids Dried at 175-185°C	mg/L	10	26000	26000	15	1

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223393.001	LB232398.014	Aluminium, Al	µg/L	5	30	30	32	0
		Copper, Cu	µg/L	1	6	7	30	4
		Lead, Pb	µg/L	1	<1	<1	200	0
		Zinc, Zn	µg/L	5	100	97	20	6

Turbidity

Method: ME-(AU)-[ENV]AN119

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223421.002	LB232408.009	Turbidity	NTU	0.5	520	520	15	0

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223412.001	LB232346.023	Monocyclic Aromatic	Benzene	µg/L	<0.5	<0.5	200	0
			Toluene	µg/L	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	<0.5	<0.5	200	0
			m/p-xylene	µg/L	<1	<1	200	0
			o-xylene	µg/L	<0.5	<0.5	200	0
		Polycyclic	Naphthalene	µg/L	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	30	2
			d8-toluene (Surrogate)	µg/L	-	10	9.8	3
			Bromofluorobenzene (Surrogate)	µg/L	-	10	30	4
SE223421.002	LB232346.024	Monocyclic Aromatic	Benzene	µg/L	<0.5	<0.5	200	0
			Toluene	µg/L	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	<0.5	<0.5	200	0
			m/p-xylene	µg/L	<1	<1	200	0
			o-xylene	µg/L	<0.5	<0.5	200	0
		Polycyclic	Naphthalene	µg/L	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11	30	1
			d8-toluene (Surrogate)	µg/L	-	10	9.7	3
			Bromofluorobenzene (Surrogate)	µg/L	-	10	30	3

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223412.001	LB232346.023	TRH C6-C10	µg/L	50	<50	<50	200	0
		TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	30	2
			d8-toluene (Surrogate)	µg/L	-	10	9.8	3

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Volatile Petroleum Hydrocarbons in Water (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE223412.001	LB232346.023	Surrogates	Bromofluorobenzene (Surrogate)	µg/L	-	10	10	30	4
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
			TRH C6-C10	µg/L	50	<50	<50	200	0
SE223421.002	LB232346.024		TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11	10	30	1
			d8-toluene (Surrogate)	µg/L	-	10	9.7	30	3
			Bromofluorobenzene (Surrogate)	µg/L	-	10	10	30	3
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232380.002	Conductivity @ 25 C	µS/cm	2	300	303	90 - 110	99

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232377.002	Calcium, Ca	mg/L	0.2	49	50.5	80 - 120	98
	Magnesium, Mg	mg/L	0.1	48	50.5	80 - 120	95

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232486.002	Naphthalene	µg/L	0.1	29	40	60 - 140	74
	Acenaphthylene	µg/L	0.1	33	40	60 - 140	83
	Acenaphthene	µg/L	0.1	33	40	60 - 140	82
	Phenanthrene	µg/L	0.1	33	40	60 - 140	83
	Anthracene	µg/L	0.1	33	40	60 - 140	82
	Fluoranthene	µg/L	0.1	34	40	60 - 140	84
	Pyrene	µg/L	0.1	35	40	60 - 140	88
	Benzo(a)pyrene	µg/L	0.1	36	40	60 - 140	89
	Surrogates						
	d5-nitrobenzene (Surrogate)	µg/L	-	0.28	0.5	40 - 130	56
	2-fluorobiphenyl (Surrogate)	µg/L	-	0.31	0.5	40 - 130	62
	d14-p-terphenyl (Surrogate)	µg/L	-	0.34	0.5	40 - 130	68

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232380.003	pH**	pH Units	0.1	7.4	7.415	98 - 102	100

Total Cyanide in water by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232405.002	Total Cyanide	mg/L	0.004	0.023	0.025	80 - 120	92

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232382.002	Total Dissolved Solids Dried at 175-185°C	mg/L	10	250	293	81 - 119	86

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232398.002	Aluminium, Al	µg/L	5	20	20	80 - 120	98
	Arsenic, As	µg/L	1	19	20	80 - 120	94
	Cadmium, Cd	µg/L	0.1	19	20	80 - 120	96
	Chromium, Cr	µg/L	1	20	20	80 - 120	101
	Copper, Cu	µg/L	1	20	20	80 - 120	100
	Lead, Pb	µg/L	1	18	20	80 - 120	92
	Nickel, Ni	µg/L	1	20	20	80 - 120	98
	Zinc, Zn	µg/L	5	20	20	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232486.002	TRH C10-C14	µg/L	50	970	1200	60 - 140	81
	TRH C15-C28	µg/L	200	1200	1200	60 - 140	97
	TRH C29-C36	µg/L	200	1200	1200	60 - 140	102
	TRH F Bands						
	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	88
	TRH >C16-C34 (F3)	µg/L	500	1300	1200	60 - 140	105
	TRH >C34-C40 (F4)	µg/L	500	600	600	60 - 140	100

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR
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Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232346.002	Monocyclic	Benzene	µg/L	0.5	48	45.45	60 - 140
	Aromatic	Toluene	µg/L	0.5	49	45.45	60 - 140
		Ethylbenzene	µg/L	0.5	49	45.45	60 - 140
		m/p-xylene	µg/L	1	98	90.9	60 - 140
		o-xylene	µg/L	0.5	49	45.45	60 - 140
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	10	60 - 140
		d8-toluene (Surrogate)	µg/L	-	9.7	10	70 - 130
		Bromofluorobenzene (Surrogate)	µg/L	-	9.7	10	70 - 130

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB232346.002	TRH C6-C10	µg/L	50	930	946.63	60 - 140	98
	TRH C6-C9	µg/L	40	570	818.71	60 - 140	70
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	10	60 - 140
		d8-toluene (Surrogate)	µg/L	-	9.7	10	70 - 130
		Bromofluorobenzene (Surrogate)	µg/L	-	9.7	10	70 - 130
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	640	639.67	60 - 140

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Porth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE223382.019	LB232378.004	Mercury	mg/L	0.0001	0.0019	0.00424	0.008	93

Total Cyanide in water by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN077/AN287

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE223412.002	LB232405.006	Total Cyanide	mg/L	0.004	0.026	<0.004	0.025	103

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE223328.037	LB232346.025	Monocyclic	Benzene	µg/L	0.5	0	45.45	118
		Aromatic	Toluene	µg/L	0.5	0.12041798324	45.45	117
			Ethylbenzene	µg/L	0.5	0.00861738804	45.45	117
			m/p-xylene	µg/L	1	0.02447036590	90.9	118
			o-xylene	µg/L	0.5	0.00713042882	45.45	119
		Polycyclic	Naphthalene	µg/L	0.5	0.01124002275	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0689979568	-	105
			d8-toluene (Surrogate)	µg/L	-	9.91880402214	-	103
			Bromofluorobenzene (Surrogate)	µg/L	-	9.32670039043	-	100

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%	
SE223328.037	LB232346.025	TRH C6-C10	µg/L	50	0	946.63	78	
		TRH C6-C9	µg/L	40	0	818.71	79	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0689979568	-	105
		d8-toluene (Surrogate)	µg/L	-	9.91880402214	-	103	
		Bromofluorobenzene (Surrogate)	µg/L	-	9.32670039043	-	100	
		VPH F	Benzene (F0)	µg/L	0.5	0	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	0	639.67	65

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service.
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.

Sheet 1 of 1				Sample Matrix		Analysis										Comments												
Site:		Project No:																										
40-76 William Street Reichardt, NSW		E288193																										
Laboratory:				SGS Australia Unit 16, 33 Maddox Street, ALEXANDRIA NSW 2015 P: 02 8594 0400 F: 02 8594 0499																								
Sample ID	Laboratory ID	Container Type	Sampling Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^A /TRH (including F1, F2, F3, F4)/BTEX/PAHs/ OCP/OP/PCB/Asbestos	HM ^A /TRH (including F1, F2, F3, F4)/BTEX/PAHs	HM ^A /TRH (including F1, F2, F3, F4)/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	Chromium Reducible Sulfur (CrS)	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	TCLP HM ^B / PAH		
BH10M	1		22/01/25	AM		X							X															
BH3M	2			AM		X																						
BH9M	3			PM		X																						
QD2	4			PM		X																						
QR2	3			PM		X																						
QR52	6			PM		X																						
WTS	6			AM		X																						
WTB	7			AM		X																						
Container Type:																												
J = solvent washed, acid rinsed, Teflon sealed glass jar																												
S = solvent washed, acid rinsed glass bottle																												
P = natural HDPE plastic bottle																												
VC = glass vial, Teflon Septum																												
ZLB = Zip-Lock Bag																												
BB = Bulk Bag																												
Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.																												
Sampler's Name (EI):																												
Print																												
Signature																												
Date																												
22/01/25																												
IMPORTANT: Please e-mail laboratory results to: lab@eiaustralia.com.au																												
Received by (SGS):																												
Print																												
Signature																												
Date																												
22/18 2:45pm																												
Report with EI Waste Classification Table																												
Sampler's Comments:																												
Please cc Morana and Morana in Results. Microbiology and pH in 24h. Please forward Q12 to enviro@lab																												
LABORATORY TURNAROUND																												
Standard																												
24 Hours																												
48 Hours																												
72 Hours																												
Other																												

SGS EHS Sydney COC
SE288193





SAMPLE RECEIPT ADVICE

SE288193

CLIENT DETAILS

Contact Marina Deza
Client EIA AUSTRALIA
Address SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email marina.deza@eiaustralia.com.au

Project **E24470 40-76 William St, Leichhardt, NSW**
Order Number **E24470**
Samples 7

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Fri 22/8/2025
Report Due Fri 29/8/2025
SGS Reference **SE288193**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Friday 22/8/2025. Results are expected to be ready by COB Friday 29/8/2025. Please quote SGS reference SE288193 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	7 Water	Type of documentation received	COC
Date documentation received	22/8/2025	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	12.2°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

Microbiology and pH reported to SE288193A.
QRB2; Sample on Hold (W295)
QT2 forwarded to Envirolab.

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SAMPLE RECEIPT ADVICE

SE288193

CLIENT DETAILS

Client **EI AUSTRALIA**

Project **E24470 40-76 William St, Leichhardt, NSW**

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Water	OP Pesticides in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	PCBs in Water	Total Phenolics in Water	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	BH101M	25	13	22	9	1	9	85	6
002	BH3M	-	-	23	-	1	9	11	7
003	BH9M	-	-	23	-	1	9	11	7
004	QD2	-	-	-	-	-	9	11	7
005	QR2	-	-	-	-	-	9	11	7
006	WTS	-	-	-	-	-	-	9	-
007	WTB	-	-	-	-	-	-	11	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE288193

CLIENT DETAILS

Client EI AUSTRALIA

Project E24470 40-76 William St, Leichhardt, NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Alkalinity	Anions by Ion Chromatography in Water	Conductivity and TDS by Calculation - Water	Dissolved Oxygen by Membrane Electrode	Forms of Carbon	Full 8270 SVOC in Water	Total and Volatile Suspended Solids (TSS /	Total Cyanide in water by Discrete Analyser	Total Dissolved Solids (TDS) in water	Turbidity
001	BH101M	8	5	1	3	1	167	1	1	1	1
002	BH3M	-	-	1	-	-	-	-	1	1	1
003	BH9M	-	-	1	-	-	-	-	1	1	1

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE288193

CLIENT DETAILS

Client **EI AUSTRALIA**

Project **E24470 40-76 William St, Leichhardt, NSW**

SUMMARY OF ANALYSIS

No.	Sample ID	Ammonia Nitrogen by Discrete Analyser	Calculation of Anion-Cation Balance	Filterable Reactive Phosphorus (FRP)	Mercury (dissolved) in Water	Nitrite in Water	Per- and Polyfluoroalkyl Substances (PFAS) in	Redox Potential (Eh) in water	TKN Kjeldahl Digestion by Discrete Analyser	Total Phosphorus by Kjeldahl Digestion DA in
001	BH101M	1	4	1	1	2	60	2	2	1
002	BH3M	-	-	-	1	-	-	-	-	-
003	BH9M	-	-	-	1	-	-	-	-	-
004	QD2	-	-	-	1	-	-	-	-	-
005	QR2	-	-	-	1	-	-	-	-	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE288193

CLIENT DETAILS

Client EI AUSTRALIA

Project E24470 40-76 William St, Leichhardt, NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in Water (Dissolved) by ICP-OES	Trace Metals (Dissolved) in Water by ICP-MS
001	BH101M	9	21
002	BH3M	3	8
003	BH9M	3	8
004	QD2	-	7
005	QR2	-	7

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Contact **Marina Deza**
 Client **EI AUSTRALIA**
 Address **SUITE 6.01
 55 MILLER STREET
 PYRMONT NSW 2009**

Telephone **61 2 95160722**
 Facsimile **(Not specified)**
 Email **marina.deza@eiaustralia.com.au**

Project **E24470 40-76 William St, Leichhardt, NSW**
 Order Number **E24470**
 Samples **7**

LABORATORY DETAILS

Manager **Shane McDermott**
 Laboratory **SGS Alexandria Environmental**
 Address **Unit 16, 33 Maddox St
 Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
 Facsimile **+61 2 8594 0499**
 Email **au.environmental.sydney@sgs.com**

SGS Reference **SE288193 R0**
 Date Received **22/8/2025**
 Date Reported **29/8/2025**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

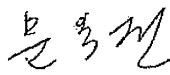
SIGNATORIES



Akheeqar BENIAMREEN
 Chemist



Bennet LO
 Senior Chemist



Gemma MOON
 Organic Chemist



Kamrul AHSAN
 Senior Chemist



Ly Kim HA
 Organic Section Head



Ying Ying ZHANG
 Laboratory Technician

VOCs in Water [AN433] Tested: 25/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M	QD2	QR2
			WATER - 22/8/2025 SE288193.001	WATER - 22/8/2025 SE288193.002	WATER - 22/8/2025 SE288193.003	WATER - 22/8/2025 SE288193.004	WATER - 22/8/2025 SE288193.005
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	0.5	<0.5	<0.5	0.6	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3	<3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	1.6	<0.5	<0.5	1.4	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	-	-	-	-
Chloromethane	µg/L	5	<5	-	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	-	-	-	-
Bromomethane	µg/L	10	<10	-	-	-	-
Chloroethane	µg/L	5	<5	-	-	-	-
Trichlorofluoromethane	µg/L	1	<1	-	-	-	-
Acetone (2-propanone)	µg/L	10	<10	-	-	-	-
Iodomethane	µg/L	5	<5	-	-	-	-
1,1-dichloroethene	µg/L	0.5	<0.5	-	-	-	-
Acrylonitrile	µg/L	0.5	<0.5	-	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	<5	-	-	-	-
Allyl chloride	µg/L	2	<2.0	-	-	-	-
Carbon disulfide	µg/L	2	<2.0	-	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	-	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	0.5	<0.5	-	-	-	-
1,1-dichloroethane	µg/L	0.5	<0.5	-	-	-	-
Vinyl acetate*	µg/L	10	<10	-	-	-	-
MEK (2-butanone)	µg/L	10	<10	-	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	-	-	-	-
Bromochloromethane	µg/L	0.5	<0.5	-	-	-	-
Chloroform (THM)	µg/L	0.5	<0.5	-	-	-	-
2,2-dichloropropane	µg/L	0.5	<0.5	-	-	-	-
1,2-dichloroethane	µg/L	0.5	<0.5	-	-	-	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	-	-	-	-
1,1-dichloropropene	µg/L	0.5	<0.5	-	-	-	-
Carbon tetrachloride	µg/L	0.5	<0.5	-	-	-	-
Dibromomethane	µg/L	0.5	<0.5	-	-	-	-
1,2-dichloropropane	µg/L	0.5	<0.5	-	-	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	-	-	-	-
2-nitropropane	µg/L	100	<100	-	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	<0.5	-	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	-	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	-	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	-	-	-	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	-	-	-	-
1,3-dichloropropane	µg/L	0.5	<0.5	-	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	<0.5	-	-	-	-
2-hexanone (MBK)	µg/L	5	<5	-	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	-	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	-	-	-	-
Chlorobenzene	µg/L	0.5	<0.5	-	-	-	-
Bromoform (THM)	µg/L	0.5	<0.5	-	-	-	-
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	-	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	-	-	-	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	-	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	-	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	0.8	-	-	-	-

VOCs in Water [AN433] Tested: 25/8/2025 (continued)

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M	QD2	QR2
			WATER	WATER	WATER	WATER	WATER
			- 22/8/2025 SE288193.001	- 22/8/2025 SE288193.002	- 22/8/2025 SE288193.003	- 22/8/2025 SE288193.004	- 22/8/2025 SE288193.005
Bromobenzene	µg/L	0.5	<0.5	-	-	-	-
n-propylbenzene	µg/L	0.5	<0.5	-	-	-	-
2-chlorotoluene	µg/L	0.5	<0.5	-	-	-	-
4-chlorotoluene	µg/L	0.5	<0.5	-	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	1.8	-	-	-	-
tert-butylbenzene	µg/L	0.5	<0.5	-	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	2.9	-	-	-	-
sec-butylbenzene	µg/L	0.5	<0.5	-	-	-	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	-	-	-	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	-	-	-	-
p-isopropyltoluene	µg/L	0.5	<0.5	-	-	-	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	-	-	-	-
n-butylbenzene	µg/L	0.5	<0.5	-	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	-	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	-	-	-	-
Hexachlorobutadiene	µg/L	0.5	<0.5	-	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	-	-	-	-
Total VOC	µg/L	10	<10	-	-	-	-
Total Halogenated Hydrocarbons	µg/L	10	<10	-	-	-	-
Total Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	0.7	-	-	-	-
Total MAH	µg/L	0.5	6.1	-	-	-	-
Total Chlorinated Hydrocarbons	µg/L	10	<10	-	-	-	-
Total Other Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	0.6	-	-	-	-
Total THM	µg/L	2	<2	-	-	-	-
Total MAH VIC EPA (BTEX+Styrene)	µg/L	0.5	0.5	-	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	<1	-	-	-	-

VOCs in Water [AN433] Tested: 25/8/2025 (continued)

PARAMETER	UOM	LOR	WTS	WTB
			WATER - 22/8/2025 SE288193.006	WATER - 22/8/2025 SE288193.007
Benzene	µg/L	0.5	[99%]	<0.5
Toluene	µg/L	0.5	[97%]	<0.5
Ethylbenzene	µg/L	0.5	[100%]	<0.5
m/p-xylene	µg/L	1	[100%]	<1
o-xylene	µg/L	0.5	[101%]	<0.5
Total Xylenes	µg/L	1.5	-	<1.5
Total BTEX	µg/L	3	-	<3
Naphthalene (VOC)*	µg/L	0.5	[101%]	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-
Chloromethane	µg/L	5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-
Bromomethane	µg/L	10	-	-
Chloroethane	µg/L	5	-	-
Trichlorofluoromethane	µg/L	1	-	-
Acetone (2-propanone)	µg/L	10	-	-
Iodomethane	µg/L	5	-	-
1,1-dichloroethene	µg/L	0.5	-	-
Acrylonitrile	µg/L	0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-
Allyl chloride	µg/L	2	-	-
Carbon disulfide	µg/L	2	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	0.5	-	-
1,1-dichloroethane	µg/L	0.5	-	-
Vinyl acetate*	µg/L	10	-	-
MEK (2-butanone)	µg/L	10	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-
Bromochloromethane	µg/L	0.5	-	-
Chloroform (THM)	µg/L	0.5	-	-
2,2-dichloropropane	µg/L	0.5	-	-
1,2-dichloroethane	µg/L	0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-
1,1-dichloropropene	µg/L	0.5	-	-
Carbon tetrachloride	µg/L	0.5	-	-
Dibromomethane	µg/L	0.5	-	-
1,2-dichloropropane	µg/L	0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-
2-nitropropane	µg/L	100	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-
1,3-dichloropropane	µg/L	0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-
2-hexanone (MBK)	µg/L	5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-
Chlorobenzene	µg/L	0.5	-	-
Bromoform (THM)	µg/L	0.5	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-

VOCs in Water [AN433] Tested: 25/8/2025 (continued)

PARAMETER	UOM	LOR	WTS	WTB
			WATER - 22/8/2025 SE288193.006	WATER - 22/8/2025 SE288193.007
Bromobenzene	µg/L	0.5	-	-
n-propylbenzene	µg/L	0.5	-	-
2-chlorotoluene	µg/L	0.5	-	-
4-chlorotoluene	µg/L	0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-
tert-butylbenzene	µg/L	0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-
sec-butylbenzene	µg/L	0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-
p-isopropyltoluene	µg/L	0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-
n-butylbenzene	µg/L	0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-
Hexachlorobutadiene	µg/L	0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-
Total VOC	µg/L	10	-	-
Total Halogenated Hydrocarbons	µg/L	10	-	-
Total Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	-	-
Total MAH	µg/L	0.5	-	-
Total Chlorinated Hydrocarbons	µg/L	10	-	-
Total Other Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	-	-
Total THM	µg/L	2	-	-
Total MAH VIC EPA (BTEX+Styrene)	µg/L	0.5	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 25/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M	QD2	QR2
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			22/8/2025 SE288193.001	22/8/2025 SE288193.002	22/8/2025 SE288193.003	22/8/2025 SE288193.004	22/8/2025 SE288193.005
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 25/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M	QD2	QR2
			WATER	WATER	WATER	WATER	WATER
			- 22/8/2025 SE288193.001	- 22/8/2025 SE288193.002	- 22/8/2025 SE288193.003	- 22/8/2025 SE288193.004	- 22/8/2025 SE288193.005
TRH C10-C14	µg/L	50	350	<50	<50	210	<50
TRH C15-C28	µg/L	200	680	<200	<200	290	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16	µg/L	60	490	<60	<60	250	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	480	<60	<60	250	<60
TRH >C16-C34 (F3)	µg/L	500	590	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C40	µg/L	320	1100	<320	<320	560	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 25/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M
			WATER - 22/8/2025 SE288193.001	WATER - 22/8/2025 SE288193.002	WATER - 22/8/2025 SE288193.003
Naphthalene	µg/L	0.1	0.5	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	0.2	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	0.8	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	0.3	<0.1	<0.1
Fluorene	µg/L	0.1	0.3	<0.1	<0.1
Phenanthrene	µg/L	0.1	0.2	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	-	<1	<1

OC Pesticides in Water [AN420] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
Alpha BHC	µg/L	0.1	<0.1
Lindane (gamma BHC)	µg/L	0.1	<0.1
Heptachlor	µg/L	0.1	<0.1
Aldrin	µg/L	0.1	<0.1
Beta BHC	µg/L	0.1	<0.1
Delta BHC	µg/L	0.1	<0.1
Heptachlor epoxide	µg/L	0.1	<0.1
Alpha Endosulfan	µg/L	0.1	<0.1
Gamma Chlordane	µg/L	0.1	<0.1
Alpha Chlordane	µg/L	0.1	<0.1
p,p'-DDE	µg/L	0.1	<0.1
Dieldrin	µg/L	0.1	<0.1
Endrin	µg/L	0.1	<0.1
Beta Endosulfan	µg/L	0.1	<0.1
p,p'-DDD	µg/L	0.1	<0.1
p,p'-DDT	µg/L	0.1	<0.1
Endosulfan sulphate	µg/L	0.1	<0.1
Endrin aldehyde	µg/L	0.1	<0.1
Methoxychlor	µg/L	0.1	<0.1
Endrin ketone	µg/L	0.1	<0.1
Mirex	µg/L	0.1	<0.1
Total OC	µg/L	1	<1
Total OC	µg/L	1	<1

OP Pesticides in Water [AN420] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Dichlorvos	µg/L	0.5	<0.5
Dimethoate	µg/L	0.5	<0.5
Diazinon (Dimpylate)	µg/L	0.5	<0.5
Fenitrothion	µg/L	0.2	<0.2
Malathion	µg/L	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
Bromophos Ethyl	µg/L	0.2	<0.2
Methidathion	µg/L	0.5	<0.5
Ethion	µg/L	0.2	<0.2
Azinphos-methyl	µg/L	0.2	<0.2

PCBs in Water [AN420] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Arochlor 1016	µg/L	1	<1
Arochlor 1221	µg/L	1	<1
Arochlor 1232	µg/L	1	<1
Arochlor 1242	µg/L	1	<1
Arochlor 1248	µg/L	1	<1
Arochlor 1254	µg/L	1	<1
Arochlor 1260	µg/L	1	<1
Total Arochlors*	µg/L	5	<5



ANALYTICAL RESULTS

SE288193 R0

Total Phenolics in Water [AN295] Tested: 27/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
PARAMETER	UOM	LOR	SE288193.001	SE288193.002	SE288193.003
Total Phenols	mg/L	0.05	<0.05	<0.05	<0.05



ANALYTICAL RESULTS

SE288193 R0

Conductivity and TDS by Calculation - Water [AN106] Tested: 22/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
			SE288193.001	SE288193.002	SE288193.003
PARAMETER	UOM	LOR			
Conductivity @ 25 C	µS/cm	2	500	350	270



ANALYTICAL RESULTS

SE288193 R0

Total Cyanide in water by Discrete Analyser [AN077/AN287] Tested: 25/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
PARAMETER	UOM	LOR	SE288193.001	SE288193.002	SE288193.003
Total Cyanide	mg/L	0.004	<0.004	<0.004	<0.004



ANALYTICAL RESULTS

SE288193 R0

Total Dissolved Solids (TDS) in water [AN113] Tested: 26/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
			SE288193.001	SE288193.002	SE288193.003
PARAMETER	UOM	LOR			
Total Dissolved Solids Dried at 175-185°C	mg/L	10	260	200	180



ANALYTICAL RESULTS

SE288193 R0

Turbidity [AN119] Tested: 22/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
PARAMETER	UOM	LOR	SE288193.001	SE288193.002	SE288193.003
Turbidity	NTU	0.5	180	32	85



ANALYTICAL RESULTS

SE288193 R0

Total and Volatile Suspended Solids (TSS / VSS) [AN114] Tested: 26/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Total Suspended Solids Dried at 103-105°C	mg/L	5	110

Full 8270 SVOC in Water [AN420] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Acenaphthene	µg/L	0.1	0.3
Acenaphthylene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	0.2
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	0.7
2-methylnaphthalene	µg/L	0.1	0.2
Naphthalene	µg/L	0.1	0.4
Phenanthrene	µg/L	0.1	0.2
Pyrene	µg/L	0.1	<0.1
2-acetylaminofluorene	µg/L	0.5	<0.5
7,12-dimethyl-benz(a)anthracene	µg/L	0.5	<0.5
3-methylcholanthrene	µg/L	0.5	<0.5
Aldrin	µg/L	0.1	<0.1
Alpha-BHC	µg/L	0.1	<0.1
Beta-BHC	µg/L	0.1	<0.1
Delta-BHC	µg/L	0.1	<0.1
Gamma-BHC (Lindane)	µg/L	0.1	<0.1
p,p-DDD	µg/L	0.1	<0.1
p,p-DDE	µg/L	0.1	<0.1
p,p-DDT	µg/L	0.1	<0.1
Dieldrin	µg/L	0.1	<0.1
Alpha-endosulfan	µg/L	0.1	<0.1
Beta-endosulfan	µg/L	0.1	<0.1
Endosulfan sulphate	µg/L	0.1	<0.1
Endrin	µg/L	0.1	<0.1
Heptachlor	µg/L	0.1	<0.1
Heptachlor epoxide	µg/L	0.1	<0.1
Methoxychlor	µg/L	0.1	<0.1
Mirex	µg/L	0.1	<0.1
Alpha-chlordane	µg/L	0.1	<0.1
Gamma-chlordane	µg/L	0.1	<0.1
Endrin ketone	µg/L	0.1	<0.1
Azinphos-methyl (Guthion)	µg/L	0.2	<0.2
Bromophos ethyl	µg/L	0.2	<0.2
Carbophenothion	µg/L	0.5	<0.5
Chlorfenvinphos-cis	µg/L	5	<5
Chlorfenvinphos-trans	µg/L	0.5	<0.5
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
Chlorpyrifos-methyl	µg/L	0.5	<0.5
Co-Ral (Coumaphos)	µg/L	0.5	<0.5
Diazinon (Dimpylate)	µg/L	0.5	<0.5
Dichlorvos	µg/L	0.5	<0.5
Demeton-S-methyl	µg/L	0.5	<0.5
Dimethoate	µg/L	0.5	<0.5
Disulfoton (Di-syston)	µg/L	0.5	<0.5
EPN*	µg/L	0.5	<0.5

Full 8270 SVOC in Water [AN420] Tested: 25/8/2025 (continued)

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Ethion	µg/L	0.2	<0.2
Ethoprophos (ethoprop or prophos)	µg/L	0.5	<0.5
Famphur (Famophos)	µg/L	0.5	<0.5
Fenamiphos (Phenamiphos)	µg/L	0.5	<0.5
Fenchlorophos (Ronne)	µg/L	0.5	<0.5
Fenitrothion	µg/L	0.2	<0.2
Fenthion	µg/L	0.5	<0.5
Malathion (Maldison)	µg/L	0.2	<0.2
Methidathion	µg/L	0.5	<0.5
Mevinphos-cis/trans	µg/L	1	<1
o,o,o-triethyl phosphorothioate	µg/L	0.5	<0.5
Parathion ethyl (Parathion)	µg/L	0.2	<0.2
Parathion methyl	µg/L	0.5	<0.5
Phorate	µg/L	0.5	<0.5
Pirimiphos-ethyl	µg/L	0.5	<0.5
Pirimiphos-methyl	µg/L	0.5	<0.5
Profenofos	µg/L	0.5	<0.5
Prothiophos (Tokuthion)*	µg/L	0.5	<0.5
Sulfotepp	µg/L	0.5	<0.5
Tetrachlorvinphos (Stiophos)*	µg/L	0.5	<0.5
PCB Congener C28	µg/L	0.1	<0.1
PCB Congener C52	µg/L	0.1	<0.1
PCB Congener C101	µg/L	0.1	<0.1
PCB Congener C118	µg/L	0.1	<0.1
PCB Congener C138	µg/L	0.1	<0.1
PCB Congener C153	µg/L	0.1	<0.1
PCB Congener C180	µg/L	0.1	<0.1
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
1,2-dichlorobenzene	µg/L	0.5	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5
1,4-dichlorobenzene	µg/L	0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5
Hexachlorocyclopentadiene	µg/L	2	<2
Hexachloroethane	µg/L	0.5	<0.5
Hexachloropropene	µg/L	0.5	<0.5
Pentachlorobenzene	µg/L	0.5	<0.5
Pentachloroethane	µg/L	0.5	<0.5
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	µg/L	1	<1
1,2,3,4-tetrachlorobenzene	µg/L	0.5	<0.5
1/2-Chloronaphthalene	µg/L	1	<1
1,2,4-trichlorobenzene	µg/L	0.5	<0.5
Bis(2-ethylhexyl)phthalate	µg/L	10	<10
Bis(2-ethylhexyl)adipate	µg/L	1	<1
Butyl benzyl phthalate	µg/L	1	<1
Di-n-butyl phthalate	µg/L	10	<10
Diethyl phthalate	µg/L	5	<5
Dimethyl phthalate	µg/L	1	<1
Di-n-octyl phthalate	µg/L	1	<1
Carbofuran	µg/L	0.5	<0.5
Carbaryl	µg/L	0.5	<0.5
Trifluralin	µg/L	0.5	<0.5
N-nitroso-di-n-butylamine (NDBA)	µg/L	1	<1
N-nitroso-diethylamine (NDEA)	µg/L	1	<1
N-nitroso-di-n-propylamine (NDPA)	µg/L	1	<1
N-nitroso-morpholine (NMOR)	µg/L	1	<1
N-nitroso-piperidine (NPIP)	µg/L	1	<1

Full 8270 SVOC in Water [AN420] Tested: 25/8/2025 (continued)

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
N-nitroso-pyrrolidine (NPYR)	µg/L	1	<1
4-amino biphenyl	µg/L	1	<1
Acetophenone	µg/L	1	<1
1,3-dinitrobenzene	µg/L	1	<1
2,4-dinitrotoluene	µg/L	1	<1
2,6-dinitrotoluene	µg/L	1	<1
Isophorone	µg/L	1	<1
Nitrobenzene	µg/L	1	<1
p-(dimethylamino) azobenzene	µg/L	1	<1
Phenacetin	µg/L	1	<1
Pentachloronitrobenzene (quintozene)	µg/L	1	<1
Aniline	µg/L	5	<5
4-chloroaniline	µg/L	1	<1
2-nitroaniline	µg/L	1	<1
3-nitroaniline	µg/L	1	<1
4-nitroaniline	µg/L	1	<1
Diphenylamine	µg/L	1	<1
o-toluidine	µg/L	1	<1
5-nitro-o-toluidine	µg/L	1	<1
1-naphthylamine	µg/L	2	<2
2-naphthylamine	µg/L	2	<2
Bis(2-chloroethoxy) methane	µg/L	1	<1
Bis(2-chloroethyl) ether	µg/L	1	<1
Bis(2-chloroisopropyl) ether	µg/L	1	<1
4-chlorophenyl phenyl ether	µg/L	1	<1
4-bromophenyl phenyl ether	µg/L	1	<1
Methyl methanesulfonate	µg/L	1	<1
Ethyl methanesulfonate	µg/L	1	<1
Dibenzofuran	µg/L	1	<1
Benzyl alcohol	µg/L	1	<1
Safrole	µg/L	1	<1
Isosafrole Isomer 1	µg/L	1	<1
Isosafrole Isomer 2	µg/L	1	<1
1,4-naphthoquinone	µg/L	1	<1
Thionazin	µg/L	1	<1
3/4-methyl phenol (m/p-cresol)	µg/L	1	<1
2-methyl phenol (o-cresol)	µg/L	0.5	<0.5
2,6-dichlorophenol	µg/L	0.5	<0.5
2,3,4,6-tetrachlorophenol	µg/L	0.5	<0.5
2,4,5-trichlorophenol	µg/L	0.5	<0.5
4-chloro-3-methylphenol	µg/L	2	<2
2-chlorophenol	µg/L	0.5	<0.5
2,4-dichlorophenol	µg/L	0.5	<0.5
2,4-dimethylphenol	µg/L	0.5	<0.5
2-nitrophenol	µg/L	0.5	<0.5
Phenol	µg/L	0.5	<0.5
2,4,6-trichlorophenol	µg/L	0.5	<0.5
Pentachlorophenol	µg/L	0.5	<0.5
4-nitrophenol	µg/L	1	<1
Total Endosulfan (alpha+beta+sulfate)	µg/L	0.2	<0.2



ANALYTICAL RESULTS

SE288193 R0

Anions by Ion Chromatography in Water [AN245] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Chloride	mg/L	0.05	25
Bromide	mg/L	0.05	<0.05
Fluoride	mg/L	0.1	<0.10
Sulfate, SO4	mg/L	1	5.6
Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.005

Alkalinity [AN135] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	230
Bicarbonate Alkalinity as HCO ₃	mg/L	5	280
Carbonate Alkalinity as CaCO ₃	mg/L	5	<5
Carbonate Alkalinity as CO ₃	mg/L	5	<5
Hydroxide Alkalinity as CaCO ₃	mg/L	5	<5
Hydroxide Alkalinity as OH	mg/L	5	<5
Total Alkalinity as CaCO ₃	mg/L	5	230
Carbonate Hardness as CaCO ₃ *	mg CaCO ₃ /L	2	231.331033333333
Non-Carbonate Hardness as CaCO ₃ *	mg CaCO ₃ /L	2	-
Negative Hardness as CaCO ₃ *	mg CaCO ₃ /L	-100	-



ANALYTICAL RESULTS

SE288193 R0

Dissolved Oxygen by Membrane Electrode [AN176] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Temperature*	°C	-	13.9
Dissolved Oxygen**	mg/L	0.5	3.6
Dissolved Oxygen (percent saturation)**	%	1	34.4



ANALYTICAL RESULTS

SE288193 R0

Forms of Carbon [AN190] Tested: 25/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Total Organic Carbon as NPOC	mg/L	0.2	8.7



ANALYTICAL RESULTS

SE288193 R0

Ammonia Nitrogen by Discrete Analyser [AN291] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Ammonia Nitrogen, NH ₃ as N	mg/L	0.01	7.3

Calculation of Anion-Cation Balance (SAR Calc) [AN121] Tested: 28/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Sum of Ions*	mg/L	10	384
Anion-Cation Balance	%	-100	1.72
TFSS*	mg/L	10	384
Sodium Adsorption Ratio*	No unit	0.1	0.6



ANALYTICAL RESULTS

SE288193 R0

Nitrite in Water [AN277] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005
Total Oxidised Nitrogen, NOx-N	mg/L	0.005	<0.005



ANALYTICAL RESULTS

SE288193 R0

TKN Kjeldahl Digestion by Discrete Analyser [AN281/292] Tested: 26/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Total Kjeldahl Nitrogen	mg/L	0.05	8.6
Total Nitrogen (calc)	mg/L	0.05	8.6



ANALYTICAL RESULTS

SE288193 R0

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293] Tested: 26/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.28

Filterable Reactive Phosphorus (FRP) [AN278] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193.001
PARAMETER	UOM	LOR	
Filterable Reactive Phosphorus as P	mg/L	0.005	<0.005



ANALYTICAL RESULTS

SE288193 R0

Redox Potential (Eh) in water [AN240] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Eh of Sample Relative to Standard H+ Electrode***	mV	-500	144
Temperature of Sample*	°C	0.1	16.4

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples [AN404] Tested: 26/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193.001
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.01
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.01
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.01
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.01
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.01
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.01
Perfluorotridecanoic acid (PFTTrDA)	µg/L	0.01	<0.01
Perfluoropropane sulfonic acid (PFPrS)	µg/L	0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01
Perfluorononane sulfonic acid (PFNS)	µg/L	0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.01
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	µg/L	0.01	<0.01
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	µg/L	0.01	<0.01
Perfluorooctane sulfonamide (FOSA)	µg/L	0.01	<0.01
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01
N-Methylperfluorooctanesulfonamidoacetic acid	µg/L	0.05	<0.05
N-Ethylperfluorooctanesulfonamidoacetic acid	µg/L	0.05	<0.05
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	µg/L	0.05	<0.05
2-(N-Methylperfluorooctane sulfonamido)-ethanol	µg/L	0.05	<0.05
Sum of PFOS and PFHxS	µg/L	0.01	<0.01
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	µg/L	0.01	<0.01
Sum of US EPA PFAS (PFOS+PFOA)	µg/L	0.01	<0.01
Sum of PFAS A	µg/L	0.01	<0.01
Sum of PFAS B	µg/L	0.01	<0.01
Sum of PFAS C	µg/L	0.01	<0.01
Sum of Positive PFAS	µg/L	0.01	<0.01



ANALYTICAL RESULTS

SE288193 R0

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 25/8/2025

			BH101M	BH3M	BH9M	QD2	QR2
			WATER	WATER	WATER	WATER	WATER
			-	-	-	-	-
			22/8/2025	22/8/2025	22/8/2025	22/8/2025	22/8/2025
PARAMETER	UOM	LOR	SE288193.001	SE288193.002	SE288193.003	SE288193.004	SE288193.005
Mercury, Hg	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 26/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M
			WATER - 22/8/2025 SE288193.001	WATER - 22/8/2025 SE288193.002	WATER - 22/8/2025 SE288193.003
Calcium, Ca	mg/L	0.2	49	1.6	22
Magnesium, Mg	mg/L	0.1	12	4.9	3.5
Total Hardness by Calculation	mg CaCO ₃ /L	1	170	24	70
Sodium Adsorption Ratio	No unit	0.2	0.6	-	-
Sodium, Na	mg/L	0.5	18	-	-
Potassium, K	mg/L	0.1	15	-	-
Lithium, Li	mg/L	0.005	<0.005	-	-
Silicon, Si*	mg/L	0.05	9.6	-	-
Soluble Silicon as Silica, SiO ₂ *	mg/L	0.1	21	-	-

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 26/8/2025

PARAMETER	UOM	LOR	BH101M	BH3M	BH9M	QD2	QR2
			WATER	WATER	WATER	WATER	WATER
			- 22/8/2025 SE288193.001	- 22/8/2025 SE288193.002	- 22/8/2025 SE288193.003	- 22/8/2025 SE288193.004	- 22/8/2025 SE288193.005
Aluminium	µg/L	5	<5	68	7	-	-
Arsenic	µg/L	1	2	<1	<1	2	<1
Cadmium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	1	<1	<1	<1	<1	<1
Copper	µg/L	1	<1	2	3	1	2
Lead	µg/L	1	<1	<1	<1	<1	<1
Nickel	µg/L	1	<1	3	2	1	<1
Zinc	µg/L	5	20	33	7	20	<5
Silver	µg/L	1	<1	-	-	-	-
Antimony	µg/L	1	<1	-	-	-	-
Barium	µg/L	1	220	-	-	-	-
Beryllium	µg/L	1	<1	-	-	-	-
Boron	µg/L	5	280	-	-	-	-
Cobalt	µg/L	1	<1	-	-	-	-
Iron	µg/L	5	29000	-	-	-	-
Manganese	µg/L	1	210	-	-	-	-
Molybdenum	µg/L	1	<1	-	-	-	-
Selenium	µg/L	1	<1	-	-	-	-
Strontium	µg/L	1	370	-	-	-	-
Uranium	µg/L	1	<1	-	-	-	-
Vanadium	µg/L	1	<1	-	-	-	-

METHOD

METHODOLOGY SUMMARY

- AN020** Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
- AN077** Hydrogen cyanide is liberated from an acidified sample by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method.
- AN106** Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
- AN106** Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
- AN113** Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available. Reference APHA 2540 C.
- AN113** The Total Dissolved Solids residue may also be ignited at 550 C and volatile TDS (Organic TDS) and non-volatile TDS (Inorganic) can be determined.
- AN114** Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
- AN119** Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
- AN121** This method is used to calculate the balance of major Anions and Cations in water samples and converts major ion concentration to milliequivalents and then summed. Anions sum and Cation sum is calculated as a difference and expressed as a percentage.
- AN135** Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
- AN176** Dissolved Oxygen: DO can also be measured directly using an oxygen permeable membrane electrode and meter. Under steady state conditions the current is directly proportional to the DO conc. DO can also be measured via Luminescent dissolved oxygen probes (LDO) which also operates using an oxygen permeable membrane with an oxygen sensitive luminescent dye making up the second probe layer. The presence of oxygen causes changes in the lifetime and intensity of luminescence, which are then quantified. Zero headspace is required for sample analysis, if headspace is observed report comment will be recorded. Reference APHA 4500-C, G & O.
- AN190** TOC and DOC in Water: A homogenised micro portion of sample is injected into a heated reaction chamber packed with an oxidative catalyst that converts organic carbon to carbon dioxide. The CO₂ is measured using a non-dispersive infrared detector. The process is fully automated in a commercially available analyser. If required a sugar value can be calculated from the TOC result. Reference APHA 5310 B.
- AN190** Chemical oxygen demand can be calculated/estimated based on the O₂/C relation as 2.67*NPOC (TOC). This is an estimate only and the factor will vary with sample matrix so results should be interpreted with caution.
- AN240** Oxidation-Reduction Potential (Eh): Electrometric measurements are made by potentiometric determination of electron activity (or intensity) with an inert indicator electrode and a suitable reference electrode. At redox equilibrium, the potential difference between the two electrodes equals the redox potential of the system. This measurement is then corrected for the difference between the potential of the reference electrode and that of the standard hydrogen electrode.
- AN245** Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO₂, NO₃ and SO₄ are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
- AN277** Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
- AN278** Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F

AN279/AN293(Sydney)

The sample is digested with Sulphuric acid, K₂SO₄ and CuSO₄. All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.

AN281

An unfiltered water or soil sample is first digested in a block digester with sulfuric acid, K₂SO₄ and CuSO₄. The ammonia produced following digestion is then measured colourimetrically using the Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.

AN287

A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by DA.

AN291

Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 660 nm by Discrete Analyser.

AN295

The water sample or extract of sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate(III) and 4-Amino-2,3-dimethyl-5-pyrazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.

AN311(Perth)/AN312

Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

AN318

Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).

AN320

Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .

AN320

Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

AN403

Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.

AN403

Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.

AN403

The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.

AN404

This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts. After spiking with isotopically labelled quantification surrogates and sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. PFOS and PFHXS are determined as the total of linear and branched isomers.

AN420

(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .

AN420

SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

Calculation

Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported . APHA4500CO₂ D.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE288193 R0

CLIENT DETAILS

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Project **E24470 40-76 William St, Leichhardt, NSW**
Order Number **E24470**
Samples 7

LABORATORY DETAILS

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SGS Reference **SE288193 R0**
Date Received 22 Aug 2025
Date Reported 29 Aug 2025

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	7 Water	Type of documentation received	COC
Date documentation received	22/8/2025	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	12.2°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Alkalinity

Method: ME-(AU)-[ENV]AN135

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358457	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	25 Aug 2025

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358328	22 Aug 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358365	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	28 Aug 2025

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358329	22 Aug 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025
BH3M	SE288193.002	LB358329	22 Aug 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025
BH9M	SE288193.003	LB358329	22 Aug 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025

Dissolved Oxygen by Membrane Electrode

Method: ME-(AU)-[ENV]AN176

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358331	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358328	22 Aug 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025	19 Sep 2025	22 Aug 2025

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358368	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	29 Aug 2025	26 Aug 2025

Full 8270 SVOC in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358343	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	25 Aug 2025
BH3M	SE288193.002	LB358343	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	25 Aug 2025
BH9M	SE288193.003	LB358343	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	25 Aug 2025
QD2	SE288193.004	LB358343	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	25 Aug 2025
QR2	SE288193.005	LB358343	22 Aug 2025	22 Aug 2025	19 Sep 2025	25 Aug 2025	19 Sep 2025	25 Aug 2025

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
BH3M	SE288193.002	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
BH9M	SE288193.003	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
QD2	SE288193.004	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
QR2	SE288193.005	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
WTS	SE288193.006	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025
WTB	SE288193.007	LB358520	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	27 Aug 2025

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358328	22 Aug 2025	22 Aug 2025	26 Aug 2025	22 Aug 2025	26 Aug 2025	22 Aug 2025

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

PCBs in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: ME-(AU)-[ENV]AN404

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358647	22 Aug 2025	22 Aug 2025	19 Sep 2025	26 Aug 2025	23 Sep 2025	27 Aug 2025

Redox Potential (Eh) in water

Method: ME-(AU)-[ENV]AN240

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358330	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]AN281/292

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358611	22 Aug 2025	22 Aug 2025	19 Sep 2025	26 Aug 2025	19 Sep 2025	28 Aug 2025

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358584	22 Aug 2025	22 Aug 2025	29 Aug 2025	26 Aug 2025	02 Sep 2025	26 Aug 2025

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358725	22 Aug 2025	22 Aug 2025	05 Sep 2025	27 Aug 2025	05 Sep 2025	27 Aug 2025
BH3M	SE288193.002	LB358377	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	25 Aug 2025
BH9M	SE288193.003	LB358377	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	25 Aug 2025

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358626	22 Aug 2025	22 Aug 2025	29 Aug 2025	26 Aug 2025	29 Aug 2025	27 Aug 2025
BH3M	SE288193.002	LB358626	22 Aug 2025	22 Aug 2025	29 Aug 2025	26 Aug 2025	29 Aug 2025	27 Aug 2025
BH9M	SE288193.003	LB358626	22 Aug 2025	22 Aug 2025	29 Aug 2025	26 Aug 2025	29 Aug 2025	27 Aug 2025

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref
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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Phenolics in Water (continued)

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358733	22 Aug 2025	22 Aug 2025	05 Sep 2025	27 Aug 2025	05 Sep 2025	27 Aug 2025
BH3M	SE288193.002	LB358733	22 Aug 2025	22 Aug 2025	05 Sep 2025	27 Aug 2025	05 Sep 2025	27 Aug 2025
BH9M	SE288193.003	LB358733	22 Aug 2025	22 Aug 2025	05 Sep 2025	27 Aug 2025	05 Sep 2025	27 Aug 2025

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358611	22 Aug 2025	22 Aug 2025	19 Sep 2025	26 Aug 2025	19 Sep 2025	27 Aug 2025

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358603	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	26 Aug 2025
BH3M	SE288193.002	LB358603	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	26 Aug 2025
BH9M	SE288193.003	LB358603	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	26 Aug 2025
QD2	SE288193.004	LB358603	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	26 Aug 2025
QR2	SE288193.005	LB358603	22 Aug 2025	22 Aug 2025	18 Feb 2026	26 Aug 2025	18 Feb 2026	26 Aug 2025

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH3M	SE288193.002	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
BH9M	SE288193.003	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QD2	SE288193.004	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025
QR2	SE288193.005	LB358338	22 Aug 2025	22 Aug 2025	29 Aug 2025	25 Aug 2025	04 Oct 2025	29 Aug 2025

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358332	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025
BH3M	SE288193.002	LB358332	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025
BH9M	SE288193.003	LB358332	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
BH3M	SE288193.002	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
BH9M	SE288193.003	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
QD2	SE288193.004	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
QR2	SE288193.005	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
WTS	SE288193.006	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
WTB	SE288193.007	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193.001	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	27 Aug 2025
BH3M	SE288193.002	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
BH9M	SE288193.003	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
QD2	SE288193.004	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
QR2	SE288193.005	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	26 Aug 2025
WTS	SE288193.006	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	28 Aug 2025
WTB	SE288193.007	LB358405	22 Aug 2025	22 Aug 2025	05 Sep 2025	25 Aug 2025	05 Sep 2025	28 Aug 2025

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Full 8270 SVOC in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH101M	SE288193.001	%	40 - 130%	76
2-fluorobiphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	72
d14-p-terphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	72
d5-nitrobenzene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	60
d5-phenol (Surrogate)	BH101M	SE288193.001	%	20 - 130%	62

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH101M	SE288193.001	%	40 - 130%	109

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	68
d14-p-terphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	66

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	68
	BH3M	SE288193.002	%	40 - 130%	66
	BH9M	SE288193.003	%	40 - 130%	73
d14-p-terphenyl (Surrogate)	BH101M	SE288193.001	%	40 - 130%	66
	BH3M	SE288193.002	%	40 - 130%	66
	BH9M	SE288193.003	%	40 - 130%	76
d5-nitrobenzene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	66
	BH3M	SE288193.002	%	40 - 130%	67
	BH9M	SE288193.003	%	40 - 130%	74

PCBs in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH101M	SE288193.001	%	40 - 130%	109

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: ME-(AU)-[ENV]AN404

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	75
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 300%	85
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 300%	90
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 300%	276
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	80
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	95
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	97
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	96
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	5 - 150%	67
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	96
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	90
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	35 - 150%	81
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	78
(13C7-PFUDa) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	30 - 150%	58
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	79
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	20 - 150%	56
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	40 - 150%	100
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	33
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	30 - 170%	60
(D5-N-EiFOSA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	42
(D5-N-EiFOSAA) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	20 - 150%	45
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	23
(D9-N-EiFOSE) Isotopically Labelled Internal Recovery Standard	BH101M	SE288193.001	%	10 - 150%	23

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units
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Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	96
	BH3M	SE288193.002	%	40 - 130%	91
	BH9M	SE288193.003	%	40 - 130%	93
	QD2	SE288193.004	%	40 - 130%	93
	QR2	SE288193.005	%	40 - 130%	90
	WTS	SE288193.006	%	40 - 130%	89
	WTB	SE288193.007	%	40 - 130%	89
d4-1,2-dichloroethane (Surrogate)	BH101M	SE288193.001	%	40 - 130%	82
	BH3M	SE288193.002	%	40 - 130%	83
	BH9M	SE288193.003	%	40 - 130%	87
	QD2	SE288193.004	%	40 - 130%	89
	QR2	SE288193.005	%	40 - 130%	84
	WTS	SE288193.006	%	40 - 130%	93
	WTB	SE288193.007	%	40 - 130%	83
d8-toluene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	80
	BH3M	SE288193.002	%	40 - 130%	79
	BH9M	SE288193.003	%	40 - 130%	80
	QD2	SE288193.004	%	40 - 130%	79
	QR2	SE288193.005	%	40 - 130%	79
	WTS	SE288193.006	%	40 - 130%	89
	WTB	SE288193.007	%	40 - 130%	78

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	96
	BH3M	SE288193.002	%	40 - 130%	91
	BH9M	SE288193.003	%	40 - 130%	93
	QD2	SE288193.004	%	40 - 130%	93
	QR2	SE288193.005	%	40 - 130%	90
d4-1,2-dichloroethane (Surrogate)	BH101M	SE288193.001	%	60 - 130%	82
	BH3M	SE288193.002	%	60 - 130%	83
	BH9M	SE288193.003	%	60 - 130%	87
	QD2	SE288193.004	%	60 - 130%	89
	QR2	SE288193.005	%	60 - 130%	84
d8-toluene (Surrogate)	BH101M	SE288193.001	%	40 - 130%	80
	BH3M	SE288193.002	%	40 - 130%	79
	BH9M	SE288193.003	%	40 - 130%	80
	QD2	SE288193.004	%	40 - 130%	79
	QR2	SE288193.005	%	40 - 130%	79

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Alkalinity

Method: ME-(AU)-[ENV]AN135

Sample Number	Parameter	Units	LOR	Result
LB358457.001	Bicarbonate Alkalinity as CaCO ₃	mg/L	5	<5
	Carbonate Alkalinity as CaCO ₃	mg/L	5	<5
	Total Alkalinity as CaCO ₃	mg/L	5	<5

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result
LB358328.001	Ammonia Nitrogen, NH ₃ as N	mg/L	0.01	<0.01

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result
LB358365.001	Fluoride	mg/L	0.1	<0.10
	Chloride	mg/L	0.05	<0.05
	Bromide	mg/L	0.05	<0.05
	Nitrate Nitrogen, NO ₃ -N	mg/L	0.005	<0.005
	Sulfate, SO ₄	mg/L	1	<1.0

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB358329.001	Conductivity @ 25 C	µS/cm	2	<2

Dissolved Oxygen by Membrane Electrode

Method: ME-(AU)-[ENV]AN176

Sample Number	Parameter	Units	LOR	Result
LB358331.001	Dissolved Oxygen**	mg/L	0.5	<0.5

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Number	Parameter	Units	LOR	Result
LB358328.001	Filterable Reactive Phosphorus as P	mg/L	0.005	<0.005

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Number	Parameter	Units	LOR	Result
LB358368.001	Total Organic Carbon as NPOC	mg/L	0.2	<0.2

Full 8270 SVOC in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB358338.001	01-PAHs	Acenaphthene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		Naphthalene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		2-acetylaminofluorene	µg/L	0.5	<0.5
		7,12-dimethyl-benz(a)anthracene	µg/L	0.5	<0.5
		3-methylcholanthrene	µg/L	0.5	<0.5
	02-OCs	Aldrin	µg/L	0.1	<0.1
		Alpha-BHC	µg/L	0.1	<0.1

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Full 8270 SVOC in Water (continued)

Method: ME-(AU)-ENVJAN420

Sample Number		Parameter	Units	LOR	Result	
LB358338.001	02-OCs	Beta-BHC	µg/L	0.1	<0.1	
		Delta-BHC	µg/L	0.1	<0.1	
		Gamma-BHC (Lindane)	µg/L	0.1	<0.1	
		p,p-DDD	µg/L	0.1	<0.1	
		p,p-DDE	µg/L	0.1	<0.1	
		p,p-DDT	µg/L	0.1	<0.1	
		Dieldrin	µg/L	0.1	<0.1	
		Alpha-endosulfan	µg/L	0.1	<0.1	
		Beta-endosulfan	µg/L	0.1	<0.1	
		Endosulfan sulphate	µg/L	0.1	<0.1	
		Endrin	µg/L	0.1	<0.1	
		Heptachlor	µg/L	0.1	<0.1	
		Heptachlor epoxide	µg/L	0.1	<0.1	
		Methoxychlor	µg/L	0.1	<0.1	
		Mirex	µg/L	0.1	<0.1	
		Alpha-chlordane	µg/L	0.1	<0.1	
		Gamma-chlordane	µg/L	0.1	<0.1	
		Endrin ketone	µg/L	0.1	<0.1	
		03-OPs	Azinphos-methyl (Guthion)	µg/L	0.2	<0.2
			Bromophos ethyl	µg/L	0.2	<0.2
			Carbophenothion	µg/L	0.5	<0.5
	Chlorfenvinphos-cis		µg/L	5	<5	
	Chlorfenvinphos-trans		µg/L	0.5	<0.5	
	Chlorpyrifos (Chlorpyrifos Ethyl)		µg/L	0.2	<0.2	
	Chlorpyrifos-methyl		µg/L	0.5	<0.5	
	Co-Ral (Coumaphos)		µg/L	0.5	<0.5	
	Diazinon (Dimpylate)		µg/L	0.5	<0.5	
	Dichlorvos		µg/L	0.5	<0.5	
	Demeton-S-methyl		µg/L	0.5	<0.5	
	Dimethoate		µg/L	0.5	<0.5	
	Disulfoton (Di-syston)		µg/L	0.5	<0.5	
	EPN*		µg/L	0.5	<0.5	
	Ethion		µg/L	0.2	<0.2	
	Ethoprophos (ethoprop or prophos)		µg/L	0.5	<0.5	
	Famphur (Famophos)		µg/L	0.5	<0.5	
	Fenamiphos (Phenamiphos)		µg/L	0.5	<0.5	
	Fenchlorophos (RonneI)		µg/L	0.5	<0.5	
	Fenitrothion		µg/L	0.2	<0.2	
	Fenthion		µg/L	0.5	<0.5	
	Malathion (Maldison)		µg/L	0.2	<0.2	
	Methidathion		µg/L	0.5	<0.5	
	Mevinphos-cis/trans		µg/L	1	<1	
	o,o,o-triethyl phosphorothioate		µg/L	0.5	<0.5	
	Parathion ethyl (Parathion)		µg/L	0.2	<0.2	
	Parathion methyl		µg/L	0.5	<0.5	
	Phorate		µg/L	0.5	<0.5	
	Pirimiphos-ethyl		µg/L	0.5	<0.5	
	Pirimiphos-methyl	µg/L	0.5	<0.5		
	Profenofos	µg/L	0.5	<0.5		
	Prothiophos (Tokuthion)*	µg/L	0.5	<0.5		
	Sulfotepp	µg/L	0.5	<0.5		
04-PCB UPAC(7) Congeners	PCB Congener C28	µg/L	0.1	<0.1		
	PCB Congener C52	µg/L	0.1	<0.1		
	PCB Congener C101	µg/L	0.1	<0.1		
	PCB Congener C118	µg/L	0.1	<0.1		
	PCB Congener C138	µg/L	0.1	<0.1		
	PCB Congener C153	µg/L	0.1	<0.1		
	PCB Congener C180	µg/L	0.1	<0.1		
05-SVCH (Cl Benzenes, Hydrocarbons & VOCs)	Hexachlorobenzene (HCB)	µg/L	0.1	<0.1		
	1,2-dichlorobenzene	µg/L	0.5	<0.5		
	1,3-dichlorobenzene	µg/L	0.5	<0.5		

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Full 8270 SVOC in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB358338.001	05-SVCH (CI Benzenes, Hydrocarbons & VOCs)	1,4-dichlorobenzene	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
		Hexachlorocyclopentadiene	µg/L	2	<2
		Hexachloroethane	µg/L	0.5	<0.5
		Hexachloropropene	µg/L	0.5	<0.5
		Pentachlorobenzene	µg/L	0.5	<0.5
		Pentachloroethane	µg/L	0.5	<0.5
		1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	µg/L	1	<1
		1,2,3,4-tetrachlorobenzene	µg/L	0.5	<0.5
		1/2-Chloronaphthalene	µg/L	1	<1
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
	06-Phthalates	Bis(2-ethylhexyl)phthalate	µg/L	10	<10
		Bis(2-ethylhexyl)adipate	µg/L	1	<1
		Butyl benzyl phthalate	µg/L	1	<1
		Di-n-butyl phthalate	µg/L	10	<10
		Diethyl phthalate	µg/L	5	<5
		Dimethyl phthalate	µg/L	1	<1
		Di-n-octyl phthalate	µg/L	1	<1
	07-Carbamates	Carbofuran	µg/L	0.5	<0.5
		Carbaryl	µg/L	0.5	<0.5
	08-Herbicides (normal)	Trifluralin	µg/L	0.5	<0.5
	09-Nitrosamines	N-nitroso-di-n-butylamine (NDBA)	µg/L	1	<1
		N-nitroso-diethylamine (NDEA)	µg/L	1	<1
		N-nitroso-di-n-propylamine (NDPA)	µg/L	1	<1
		N-nitroso-morpholine (NMOR)	µg/L	1	<1
		N-nitroso-piperidine (NPIP)	µg/L	1	<1
		N-nitroso-pyrrolidine (NPYR)	µg/L	1	<1
		4-amino biphenyl	µg/L	1	<1
	10-Nitroaromatics and Ketones	Acetophenone	µg/L	1	<1
		1,3-dinitrobenzene	µg/L	1	<1
		2,4-dinitrotoluene	µg/L	1	<1
		2,6-dinitrotoluene	µg/L	1	<1
		Isophorone	µg/L	1	<1
		Nitrobenzene	µg/L	1	<1
		p-(dimethylamino) azobenzene	µg/L	1	<1
		Phenacetin	µg/L	1	<1
		Pentachloronitrobenzene (quintozene)	µg/L	1	<1
	11-Anilines and Amines	Aniline	µg/L	5	<5
		4-chloroaniline	µg/L	1	<1
		2-nitroaniline	µg/L	1	<1
		3-nitroaniline	µg/L	1	<1
		4-nitroaniline	µg/L	1	<1
		Diphenylamine	µg/L	1	<1
		o-toluidine	µg/L	1	<1
		5-nitro-o-toluidine	µg/L	1	<1
		1-naphthylamine	µg/L	2	<2
	12-Haloethers	2-naphthylamine	µg/L	2	<2
		Bis(2-chloroethoxy) methane	µg/L	1	<1
		Bis(2-chloroethyl) ether	µg/L	1	<1
		Bis(2-chloroisopropyl) ether	µg/L	1	<1
		4-chlorophenyl phenyl ether	µg/L	1	<1
	13-Other SVOCs	4-bromophenyl phenyl ether	µg/L	1	<1
		Methyl methanesulfonate	µg/L	1	<1
		Ethyl methanesulfonate	µg/L	1	<1
		Dibenzofuran	µg/L	1	<1
		Benzyl alcohol	µg/L	1	<1
		Safrole	µg/L	1	<1
		Isosafrole Isomer 1	µg/L	1	<1
		Isosafrole Isomer 2	µg/L	1	<1
		1,4-naphthoquinone	µg/L	1	<1
		Thionazin	µg/L	1	<1

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Full 8270 SVOC in Water (continued)

Method: ME-(AU)-[ENV]JAN420

Sample Number		Parameter	Units	LOR	Result
LB358338.001	14-Speciated Routine Phenols	3/4-methyl phenol (m/p-cresol)	µg/L	1	<1
		2-methyl phenol (o-cresol)	µg/L	0.5	<0.5
		2,6-dichlorophenol	µg/L	0.5	<0.5
		2,4,5-trichlorophenol	µg/L	0.5	<0.5
		4-chloro-3-methylphenol	µg/L	2	<2
		2-chlorophenol	µg/L	0.5	<0.5
		2,4-dichlorophenol	µg/L	0.5	<0.5
		2,4-dimethylphenol	µg/L	0.5	<0.5
		2-nitrophenol	µg/L	0.5	<0.5
		Phenol	µg/L	0.5	<0.5
		2,4,6-trichlorophenol	µg/L	0.5	<0.5
		Pentachlorophenol	µg/L	0.5	<0.5
	Surrogates	4-nitrophenol	µg/L	1	<1
		d5-phenol (Surrogate)	%	-	107
		d5-nitrobenzene (Surrogate)	%	-	104
		2-fluorobiphenyl (Surrogate)	%	-	106
		2,4,6-Tribromophenol (Surrogate)	%	-	107
		d14-p-terphenyl (Surrogate)	%	-	112

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]JAN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB358343.001	Mercury, Hg	mg/L	0.0001	<0.0001

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]JAN320

Sample Number	Parameter	Units	LOR	Result
LB358520.001	Calcium, Ca	mg/L	0.2	<0.2
	Magnesium, Mg	mg/L	0.1	<0.1
	Potassium, K	mg/L	0.1	<0.1
	Silicon, Si*	mg/L	0.05	<0.05
	Sodium, Na	mg/L	0.5	<0.5

Nitrite in Water

Method: ME-(AU)-[ENV]JAN277

Sample Number	Parameter	Units	LOR	Result
LB358328.001	Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005

OC Pesticides in Water

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result
LB358338.001	Alpha BHC	µg/L	0.1	<0.1
	Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
	Beta BHC	µg/L	0.1	<0.1
	Lindane (gamma BHC)	µg/L	0.1	<0.1
	Delta BHC	µg/L	0.1	<0.1
	Heptachlor	µg/L	0.1	<0.1
	Aldrin	µg/L	0.1	<0.1
	Heptachlor epoxide	µg/L	0.1	<0.1
	Gamma Chlordane	µg/L	0.1	<0.1
	Alpha Chlordane	µg/L	0.1	<0.1
	Alpha Endosulfan	µg/L	0.1	<0.1
	p,p'-DDE	µg/L	0.1	<0.1
	Dieldrin	µg/L	0.1	<0.1
	Endrin	µg/L	0.1	<0.1
	Beta Endosulfan	µg/L	0.1	<0.1
	p,p'-DDD	µg/L	0.1	<0.1
	Endrin aldehyde	µg/L	0.1	<0.1
	Endosulfan sulphate	µg/L	0.1	<0.1
	p,p'-DDT	µg/L	0.1	<0.1
	Endrin ketone	µg/L	0.1	<0.1
	Methoxychlor	µg/L	0.1	<0.1
	Mirex	µg/L	0.1	<0.1

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OC Pesticides in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB358338.001	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-
				108

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB358338.001	Azinphos-methyl	µg/L	0.2	<0.2
	Bromophos Ethyl	µg/L	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
	Diazinon (Dimpylate)	µg/L	0.5	<0.5
	Dichlorvos	µg/L	0.5	<0.5
	Dimethoate	µg/L	0.5	<0.5
	Ethion	µg/L	0.2	<0.2
	Fenitrothion	µg/L	0.2	<0.2
	Malathion	µg/L	0.2	<0.2
	Methidathion	µg/L	0.5	<0.5
	Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-
				70
		d14-p-terphenyl (Surrogate)	%	-
				68

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB358338.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-
				70
		2-fluorobiphenyl (Surrogate)	%	-
				70
		d14-p-terphenyl (Surrogate)	%	-
				68

PCBs in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB358338.001	Arochlor 1016	µg/L	1	<1
	Arochlor 1221	µg/L	1	<1
	Arochlor 1232	µg/L	1	<1
	Arochlor 1242	µg/L	1	<1
	Arochlor 1248	µg/L	1	<1
	Arochlor 1254	µg/L	1	<1
	Arochlor 1260	µg/L	1	<1

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result
LB358647.001	Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05
	Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01
	Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.01
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01
	Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01
	Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.01
	Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.01
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.01
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.01
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.01

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Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples (continued)

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result
LB358647.001	Perfluorotridecanoic acid (PFTTrDA)	µg/L	0.01	<0.01
	Perfluoropropane sulfonic acid (PFPrS)	µg/L	0.01	<0.01
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01
	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01
	Perfluorononane sulfonic acid (PFNS)	µg/L	0.01	<0.01
	Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.01
	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01
	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	µg/L	0.01	<0.01
	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01
	1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	µg/L	0.01	<0.01
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.01	<0.01
	N-Methylperfluorooctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01
	N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01
	N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	µg/L	0.05	<0.05
	N-Ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	µg/L	0.05	<0.05
	2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE)	µg/L	0.05	<0.05
	2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE)	µg/L	0.05	<0.05

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Number	Parameter	Units	LOR	Result
LB358584.001	Total Suspended Solids Dried at 103-105°C	mg/L	5	<5

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result
LB358377.001	Total Cyanide	mg/L	0.004	<0.004
LB358725.001	Total Cyanide	mg/L	0.004	<0.004

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result
LB358626.001	Total Dissolved Solids Dried at 175-185°C	mg/L	10	<10

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result
LB358733.001	Total Phenols	mg/L	0.05	<0.05

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293

Sample Number	Parameter	Units	LOR	Result
LB358611.001	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB358603.001	Aluminium	µg/L	5	<5
	Antimony	µg/L	1	<1
	Arsenic	µg/L	1	<1
	Barium	µg/L	1	<1
	Beryllium	µg/L	1	<1
	Boron	µg/L	5	<5
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Cobalt	µg/L	1	<1
	Copper	µg/L	1	<1
	Iron	µg/L	5	<5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB358603.001	Lead	µg/L	1	<1
	Manganese	µg/L	1	<1
	Molybdenum	µg/L	1	<1
	Nickel	µg/L	1	<1
	Selenium	µg/L	1	<1
	Silver	µg/L	1	<1
	Strontium	µg/L	1	<1
	Uranium	µg/L	1	<1
	Vanadium	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB358338.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Number	Parameter	Units	LOR	Result
LB358332.001	Turbidity	NTU	0.5	<0.5

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB358405.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
	Halogenated Aliphatics	1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
		Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
		Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		1,1-dichloroethene	µg/L	0.5	<0.5
		Iodomethane	µg/L	5	<5
		Dichloromethane (Methylene chloride)	µg/L	5	<5
		Allyl chloride	µg/L	2	<2.0
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		cis-1,4-dichloro-2-butene	µg/L	1	<1
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
		Halogenated Aromatics	Chlorobenzene	µg/L	0.5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB358405.001	Halogenated Aromatics	Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		o-xylene	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	0.5	<0.5
		Vinyl acetate*	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2.0
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	77
		d8-toluene (Surrogate)	%	-	77
		Bromofluorobenzene (Surrogate)	%	-	86
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB358405.001	Surrogates	TRH C6-C9	µg/L	40	<40
		d4-1,2-dichloroethane (Surrogate)	%	-	77
		d8-toluene (Surrogate)	%	-	77
		Bromofluorobenzene (Surrogate)	%	-	86

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Alkalinity

Method: ME-(AU)-[ENV]AN135

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288156.001	LB358457.013	Bicarbonate Alkalinity as CaCO ₃	mg/L	5	200	210	17	3
		Carbonate Alkalinity as CaCO ₃	mg/L	5	<1	<1	200	0
		Total Alkalinity as CaCO ₃	mg/L	5	200	210	17	3
SE288193.001	LB358457.017	Bicarbonate Alkalinity as CaCO ₃	mg/L	5	230	230	17	1
		Carbonate Alkalinity as CaCO ₃	mg/L	5	<5	<5	200	0
		Total Alkalinity as CaCO ₃	mg/L	5	230	230	17	1

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.001	LB358328.006	Ammonia Nitrogen, NH ₃ as N	mg/L	0.01	7.3	7.2	15	1

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.001	LB358365.009	Fluoride	mg/L	0.1	<0.10	<0.10	200	0
		Chloride	mg/L	0.05	25	25	15	1
		Bromide	mg/L	0.05	<0.05	<0.05	160	0
		Nitrate Nitrogen, NO ₃ -N	mg/L	0.005	<0.005	<0.005	200	0
		Sulfate, SO ₄	mg/L	1	5.6	5.4	33	4

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.003	LB358329.007	Conductivity @ 25 C	µS/cm	2	270	270	16	0

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.001	LB358328.006	Filterable Reactive Phosphorus as P	mg/L	0.005	<0.005	<0.005	200	0

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288179.003	LB358368.015	Total Organic Carbon as NPOC	mg/L	0.2	3.5	3.4	21	4
SE288193.001	LB358368.018	Total Organic Carbon as NPOC	mg/L	0.2	8.7	9.0	17	4

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.003	LB358343.014	Mercury, Hg	µg/L	0.0001	<0.0001	0.0000	200	29
SE288193.005	LB358343.017	Mercury, Hg	µg/L	0.0001	<0.0001	<0.0001	200	0

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.001	LB358328.006	Nitrite Nitrogen, NO ₂ as N	mg/L	0.005	<0.005	<0.005	200	0

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.003	LB358338.028	Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
		Fluorene	µg/L	0.1	<0.1	<0.1	200	0
		Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
		Anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]JAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.003	LB358338.028	Pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Chrysene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2	<0.2	200	0
		Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		Surrogates						
		d5-nitrobenzene (Surrogate)	µg/L	-	0.37	0.4	30	2
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.37	0.4	30	2
		d14-p-terphenyl (Surrogate)	µg/L	-	0.38	0.4	30	0

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: ME-(AU)-[ENV]JAN404

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288308.001	LB358647.015	Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05	<0.05	200	0
		Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluorohexanoic acid (PFHxA)	µg/L	0.01	0.01	0.01	200	1
		Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluoropropane sulfonic acid (PFPrS)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.06	0.06	200	6
		Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01	<0.01	200	0
		Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.27	0.27	200	2
		Perfluorononane sulfonic acid (PFNS)	µg/L	0.01	<0.01	<0.01	200	0
		1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01	<0.01	200	0
		1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	µg/L	0.01	<0.01	<0.01	200	0
		1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01	<0.01	200	0
		1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2)	µg/L	0.01	<0.01	<0.01	200	0
		Sum of PFOS and PFHxS	µg/L	0.01	0.33	0.33	200	1
		Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	µg/L	0.01	0.33	0.33	200	1
		Sum of US EPA PFAS (PFOS+PFOA)	µg/L	0.01	0.27	0.27	200	2
		(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	63	62	200	2
		(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	88	86	200	2
		(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	91	89	200	2
		(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	99	97	200	2
		(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	93	89	200	4
		(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	96	92	200	4
		(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	97	94	200	3
		(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	103	91	200	13
		(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	86	88	200	3
		(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	87	93	200	6
		(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	292	202	200	36

Redox Potential (Eh) in water

Method: ME-(AU)-[ENV]JAN240

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.001	LB358330.003	Eh of Sample Relative to Standard H+ Electrode***	mV	-500	144	144	15	0

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]JAN281/292

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288205.001	LB358611.014	Total Kjeldahl Nitrogen	mg/L	0.05	25	26	15	5
SE288213.002	LB358611.020	Total Kjeldahl Nitrogen	mg/L	0.05	13	13	15	1

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]JAN114

Original	Duplicate	Parameter	Units	LOR
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Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total and Volatile Suspended Solids (TSS / VSS) (continued)

Method: ME-(AU)-[ENV]AN114

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288184.001	LB358584.013	Total Suspended Solids Dried at 103-105°C	mg/L	5	180	180	18	3
SE288261.001	LB358584.025	Total Suspended Solids Dried at 103-105°C	mg/L	5	<5	<5	158	0
SE288262.001	LB358584.026	Total Suspended Solids Dried at 103-105°C	mg/L	5	26	26	34	2

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288210.001	LB358626.013	Total Dissolved Solids Dried at 175-185°C	mg/L	10	2100	2100	15	1
SE288260.001	LB358626.018	Total Dissolved Solids Dried at 175-185°C	mg/L	10	14000	14000	15	1

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288314.001	LB358733.031	Total Phenols	mg/L	0.05	<0.05	<0.05	166	0
SE288321.002	LB358733.014	Total Phenols	mg/L	0.05	<0.05	<0.05	200	0

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288205.001	LB358611.014	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	2.1	2.1	16	0
SE288213.002	LB358611.020	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	6.4	6.3	15	1

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288178.003	LB358603.014	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	1	1	91	4
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	5	5	35	2
		Zinc	µg/L	5	16	16	46	0
SE288193.005	LB358603.022	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	2	2	80	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288179.004	LB358338.029	TRH C10-C14	µg/L	50	<50	<50	200	0
		TRH C15-C28	µg/L	200	<200	<200	200	0
		TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH C37-C40	µg/L	200	<200	<200	200	0
		TRH C10-C40	µg/L	320	<650	<650	200	0
		TRH >C10-C16	µg/L	60	<60	<60	200	0
		TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
		TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
		TRH C10-C14	µg/L	50	<50	<50	200	0
		TRH C15-C28	µg/L	200	<200	<200	200	0
SE288193.003	LB358338.028	TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH C37-C40	µg/L	200	<200	<200	200	0
		TRH C10-C40	µg/L	320	<320	<320	200	0
		TRH >C10-C16	µg/L	60	<60	<60	200	0
		TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
		TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
		TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
		TRH C10-C14	µg/L	50	<50	<50	200	0
		TRH C15-C28	µg/L	200	<200	<200	200	0
		TRH C29-C36	µg/L	200	<200	<200	200	0

Turbidity

Method: ME-(AU)-[ENV]AN119

Original	Duplicate	Parameter	Units	LOR
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Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Turbidity (continued)

Method: ME-(AU)-[ENV]JAN119

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193.003	LB358332.008	Turbidity	NTU	0.5	85	87	16	2

VOCs in Water

Method: ME-(AU)-[ENV]JAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE288127.002	LB358405.025	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	200	0	
			1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	200	0	
			cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	200	0	
			trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	200	0	
			1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	200	0	
			Halogenated	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	200	0
				Aliphatics	Chloromethane	µg/L	5	<5	<5	200
			Vinyl chloride (Chloroethene)		µg/L	0.3	<0.3	<0.3	200	0
		Bromomethane	µg/L	10	<10	<10	200	0		
		Chloroethane	µg/L	5	<5	<5	200	0		
		Trichlorofluoromethane	µg/L	1	<1	<1	200	0		
		1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	200	0		
		Iodomethane	µg/L	5	<5	<5	200	0		
		Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	200	0		
		Allyl chloride	µg/L	2	<2	<2	200	0		
		trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	200	0		
		1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	200	0		
		Bromochloromethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	200	0		
		Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	200	0		
		Dibromomethane	µg/L	0.5	<0.5	<0.5	200	0		
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	200	0		
		1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	200	0		
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	200	0		
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	200	0		
		1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	200	0		
		trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	200	0		
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	200	0		
		Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	200	0		
		Halogenated	Aromatics	Chlorobenzene	µg/L	0.5	<0.5	<0.5	200	0
				Bromobenzene	µg/L	0.5	<0.5	<0.5	200	0
				2-chlorotoluene	µg/L	0.5	<0.5	<0.5	200	0
				4-chlorotoluene	µg/L	0.5	<0.5	<0.5	200	0
		1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	200	0		
		1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	200	0		
		1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	200	0		
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	200	0		
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	200	0		
		Monocyclic	Aromatic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
				Toluene	µg/L	0.5	<0.5	<0.5	200	0
				Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
				m/p-xylene	µg/L	1	<1	<1	200	0
				Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	200	0
				o-xylene	µg/L	0.5	<0.5	<0.5	200	0
				Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	200	0
				n-propylbenzene	µg/L	0.5	<0.5	<0.5	200	0
				1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
				tert-butylbenzene	µg/L	0.5	<0.5	<0.5	200	0
				1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
				sec-butylbenzene	µg/L	0.5	<0.5	<0.5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288127.002	LB358405.025	Monocyclic	p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	n-butylbenzene	µg/L	0.5	<0.5	<0.5	200	0
		Nitrogenous	Acrylonitrile	µg/L	0.5	<0.5	<0.5	200	0
		Compounds	2-nitropropane	µg/L	100	<100	<100	200	0
		Oxygenated	Acetone (2-propanone)	µg/L	10	<10	<10	200	0
		Compounds	MtBE (Methyl-tert-butyl ether)	µg/L	0.5	<0.5	<0.5	200	0
			Vinyl acetate*	µg/L	10	<10	<10	200	0
			MEK (2-butanone)	µg/L	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	200	0
			2-hexanone (MBK)	µg/L	5	<5	<5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Sulphonated	Carbon disulfide	µg/L	2	<2	<2	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	7.8	30	8
			d8-toluene (Surrogate)	µg/L	-	7.9	7.4	30	6
			Bromofluorobenzene (Surrogate)	µg/L	-	9.1	8.8	30	3
		Totals	Total Chlorinated Hydrocarbons	µg/L	10	<10	<10	200	0
			Total Halogenated Hydrocarbons	µg/L	10	<10	<10	200	0
			Total Other Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	<0.5	<0.5	200	0
			Total THM	µg/L	2	<2	<2	200	0
			Total Chlorinated Hydrocarbons VIC EPA	µg/L	0.5	<0.5	<0.5	200	0
			Total BTEX	µg/L	3	<3	<3	200	0
			Total MAH	µg/L	0.5	<0.5	<0.5	200	0
			Total MAH VIC EPA (BTEX+Styrene)	µg/L	0.5	<0.5	<0.5	200	0
			Total VOC	µg/L	10	<10	<10	200	0
			Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5	<0.5	200
		Bromodichloromethane (THM)		µg/L	0.5	<0.5	<0.5	200	0
		Dibromochloromethane (THM)		µg/L	0.5	<0.5	<0.5	200	0
		Bromoform (THM)		µg/L	0.5	<0.5	<0.5	200	0
SE288193.004	LB358405.024	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	0.6	0.7	104	12
			m/p-xylene	µg/L	1	<1	<1	153	0
			o-xylene	µg/L	0.5	<0.5	<0.5	181	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	1.4	1.5	65	5
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.9	7.8	30	12
			d8-toluene (Surrogate)	µg/L	-	7.9	7.9	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	9.3	9.2	30	1
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE288127.002	LB358405.023	TRH C6-C10	µg/L	50	<50	<50	200	0	
		TRH C6-C9	µg/L	40	<40	<40	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	7.8	30	8
		d8-toluene (Surrogate)	µg/L	-	7.9	7.4	30	6	
		Bromofluorobenzene (Surrogate)	µg/L	-	9.1	8.8	30	3	
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
		TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0	
		TRH C6-C9	µg/L	40	<40	<40	154	0	
SE288193.004	LB358405.024	TRH C6-C10	µg/L	50	<50	<50	152	0	
		TRH C6-C9	µg/L	40	<40	<40	154	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.9	7.8	30	12
		d8-toluene (Surrogate)	µg/L	-	7.9	7.9	30	1	
		Bromofluorobenzene (Surrogate)	µg/L	-	9.3	9.2	30	1	
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
		TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	154	0	
		TRH C6-C9	µg/L	40	<40	<40	154	0	

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358328.002	Ammonia Nitrogen, NH ₃ as N	mg/L	0.01	2.5	2.5	80 - 120	101

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358365.002	Fluoride	mg/L	0.1	2.1	2	80 - 120	103
	Chloride	mg/L	0.05	19	20	80 - 120	96
	Bromide	mg/L	0.05	1.9	2	80 - 120	94
	Nitrate Nitrogen, NO ₃ -N	mg/L	0.005	1.9	2	80 - 120	96
	Sulfate, SO ₄	mg/L	1	19	20	80 - 120	97

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358329.002	Conductivity @ 25 C	µS/cm	2	1000	1015	85 - 115	100

Filterable Reactive Phosphorus (FRP)

Method: ME-(AU)-[ENV]AN278

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358328.002	Filterable Reactive Phosphorus as P	mg/L	0.005	0.10	0.1	80 - 120	104

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358368.002	Total Organic Carbon as NPOC	mg/L	0.2	18	20	80 - 120	88

Full 8270 SVOC in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	01-PAHs	Acenaphthene	µg/L	0.1	37	40	60 - 140	94
		Acenaphthylene	µg/L	0.1	36	40	60 - 140	90
		Anthracene	µg/L	0.1	37	40	60 - 140	91
		Benzo(a)pyrene	µg/L	0.1	42	40	60 - 140	105
		Fluoranthene	µg/L	0.1	34	40	60 - 140	86
		Naphthalene	µg/L	0.1	34	40	60 - 140	86
		Phenanthrene	µg/L	0.1	36	40	60 - 140	90
		Pyrene	µg/L	0.1	33	40	60 - 140	82
	02-OCs	Aldrin	µg/L	0.1	3.2	4	60 - 140	79
		Delta-BHC	µg/L	0.1	4.0	4	60 - 140	101
		p,p-DDT	µg/L	0.1	2.8	4	60 - 140	70
		Dieldrin	µg/L	0.1	4.1	4	60 - 140	103
		Endrin	µg/L	0.1	2.9	4	60 - 140	73
		Heptachlor	µg/L	0.1	3.5	4	60 - 140	88
	03-OPs	Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	9.4	8	60 - 140	118
		Diazinon (Dimpylate)	µg/L	0.5	11	8	60 - 140	138
		Dichlorvos	µg/L	0.5	11	8	60 - 140	136
		Ethion	µg/L	0.2	11	8	60 - 140	135
	05-SVCH (CI Benzenes,	Hexachlorobenzene (HCB)	µg/L	0.1	4.2	4	60 - 140	104
		Hexachlorobutadiene	µg/L	0.5	4.1	4	60 - 140	104
		Hexachloroethane	µg/L	0.5	4.0	4	60 - 140	101
		Pentachlorobenzene	µg/L	0.5	4.0	4	60 - 140	100
		1,2,3,4-tetrachlorobenzene	µg/L	0.5	3.9	4	60 - 140	98
	06-Phthalates	Bis(2-ethylhexyl)phthalate	µg/L	10	<10	8	60 - 140	87
		Butyl benzyl phthalate	µg/L	1	5	8	60 - 140	67
		Di-n-butyl phthalate	µg/L	10	<10	8	60 - 140	79
		Diethyl phthalate	µg/L	5	7	8	60 - 140	90
		Dimethyl phthalate	µg/L	1	6	8	60 - 140	74
		Di-n-octyl phthalate	µg/L	1	6	8	60 - 140	79
	09-Nitrosamine	N-nitroso-di-n-propylamine (NDPA)	µg/L	1	33	32	60 - 140	102
	10-Nitroaromat	Pentachloronitrobenzene (quintozone)	µg/L	1	5	4	60 - 140	125

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Full 8270 SVOC in Water (continued)

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	14-Speciated Routine	2,4-dichlorophenol	µg/L	0.5	45	40	60 - 140 112
		Phenol	µg/L	0.5	43	40	60 - 140 107
		2,4,6-trichlorophenol	µg/L	0.5	45	40	60 - 140 112
	Surrogates	Pentachlorophenol	µg/L	0.5	47	40	60 - 140 116
		d5-phenol (Surrogate)	µg/L	-	2.3	2	40 - 130 116
		d5-nitrobenzene (Surrogate)	µg/L	-	0.52	0.5	40 - 130 104
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.57	0.5	40 - 130 114
		2,4,6-Tribromophenol (Surrogate)	µg/L	-	6.0	5	40 - 130 120
		d14-p-terphenyl (Surrogate)	µg/L	-	0.51	0.5	40 - 130 102

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]JAN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358520.002	Calcium, Ca	mg/L	0.2	51	50.5	80 - 120	100
	Lithium, Li	mg/L	0.005	0.085	0.1	80 - 120	85
	Magnesium, Mg	mg/L	0.1	52	50.5	80 - 120	102
	Potassium, K	mg/L	0.1	55	55	80 - 120	100
	Silicon, Si*	mg/L	0.05	0.25	0.25	80 - 120	99
	Sodium, Na	mg/L	0.5	51	50.5	80 - 120	101

Nitrite in Water

Method: ME-(AU)-[ENV]JAN277

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358328.002	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.092	0.1	80 - 120	92

OC Pesticides in Water

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	Delta BHC	µg/L	0.1	0.2	0.2	60 - 140	91
	Heptachlor	µg/L	0.1	0.2	0.2	60 - 140	97
	Aldrin	µg/L	0.1	0.2	0.2	60 - 140	95
	Dieldrin	µg/L	0.1	0.2	0.2	60 - 140	99
	Endrin	µg/L	0.1	0.2	0.2	60 - 140	96
	p,p'-DDT	µg/L	0.1	0.2	0.2	60 - 140	114
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	µg/L	-	0.17	0.15	40 - 130 114

OP Pesticides in Water

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	7.5	8	60 - 140	94
	Diazinon (Dimpylate)	µg/L	0.5	7.9	8	60 - 140	99
	Dichlorvos	µg/L	0.5	6.3	8	60 - 140	79
	Ethion	µg/L	0.2	8.4	8	60 - 140	105
	Surrogates	2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130 68
		d14-p-terphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130 68

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	Naphthalene	µg/L	0.1	41	40	60 - 140	103
	Acenaphthylene	µg/L	0.1	42	40	60 - 140	106
	Acenaphthene	µg/L	0.1	44	40	60 - 140	109
	Phenanthrene	µg/L	0.1	43	40	60 - 140	108
	Anthracene	µg/L	0.1	42	40	60 - 140	106
	Fluoranthene	µg/L	0.1	43	40	60 - 140	107
	Pyrene	µg/L	0.1	44	40	60 - 140	111
	Benzo(a)pyrene	µg/L	0.1	49	40	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.33	0.5	40 - 130 66
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.34	0.5	40 - 130 68
		d14-p-terphenyl (Surrogate)	µg/L	-	0.34	0.5	40 - 130 68

PCBs in Water

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	Arochlor 1260	µg/L	1	<1	0.4	60 - 140	120

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358647.002	Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	0.20	0.2	40 - 160	98
	Perfluorooctanoic acid (PFOA)	µg/L	0.01	0.16	0.2	40 - 160	80
	Perfluorononanoic acid (PFNA)	µg/L	0.01	0.18	0.2	40 - 160	91
	Perfluorodecanoic acid (PFDA)	µg/L	0.01	0.17	0.2	40 - 160	87
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	0.19	0.2	40 - 160	93
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	0.19	0.2	40 - 160	93
	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.16	0.2	40 - 160	78
	Perfluorooctane sulfonamide (FOSA)	µg/L	0.01	0.17	0.2	40 - 160	84

Redox Potential (Eh) in water

Method: ME-(AU)-[ENV]AN240

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358330.001	Eh of Sample Relative to Standard H+ Electrode***	mV	-500	436	428	90 - 110	102

Total and Volatile Suspended Solids (TSS / VSS)

Method: ME-(AU)-[ENV]AN114

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358584.002	Total Suspended Solids Dried at 103-105°C	mg/L	5	96	100	80 - 120	96

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358377.002	Total Cyanide	mg/L	0.004	0.025	0.025	80 - 120	100
LB358725.002	Total Cyanide	mg/L	0.004	0.021	0.025	80 - 120	84

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358733.002	Total Phenols	mg/L	0.05	0.19	0.2	80 - 120	97

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358611.002	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	1.0	1	80 - 120	104

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358603.002	Aluminium	µg/L	5	20	20	80 - 120	101
	Antimony	µg/L	1	19	20	80 - 120	95
	Arsenic	µg/L	1	18	20	80 - 120	91
	Barium	µg/L	1	20	20	80 - 120	98
	Beryllium	µg/L	1	18	20	80 - 120	89
	Boron	µg/L	5	18	20	80 - 120	89
	Cadmium	µg/L	0.1	20	20	80 - 120	100
	Chromium	µg/L	1	20	20	80 - 120	100
	Cobalt	µg/L	1	20	20	80 - 120	100
	Copper	µg/L	1	21	20	80 - 120	103
	Iron	µg/L	5	20	20	80 - 120	100
	Lead	µg/L	1	21	20	80 - 120	104
	Manganese	µg/L	1	20	20	80 - 120	101
	Molybdenum	µg/L	1	20	20	80 - 120	98
	Nickel	µg/L	1	20	20	80 - 120	102
	Selenium	µg/L	1	18	20	80 - 120	92
	Silver	µg/L	1	17	20	80 - 120	86
	Strontium	µg/L	1	20	20	80 - 120	101
	Uranium	µg/L	1	22	20	80 - 120	108
	Vanadium	µg/L	1	20	20	80 - 120	99
	Zinc	µg/L	5	20	20	80 - 120	98

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358338.002	TRH C10-C14	µg/L	50	780	1000	60 - 140	78
	TRH F Bands	µg/L	60	790	1000	60 - 140	79

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter		Units	LOR	Result	Expected	Criteria %	Recovery %
LB358405.002	Halogenated	1,1-dichloroethene	µg/L	0.5	63	45.45	60 - 140	140
	Aliphatics	1,2-dichloroethane	µg/L	0.5	48	45.45	60 - 140	105
		Trichloroethene (Trichloroethylene,TCE)		µg/L	0.5	51	45.45	60 - 140
	Halogenated	Chlorobenzene	µg/L	0.5	39	45.45	60 - 140	85
	Monocyclic	Benzene	µg/L	0.5	30	25	60 - 140	119
	Aromatic	Toluene	µg/L	0.5	29	25	60 - 140	117
		Ethylbenzene	µg/L	0.5	27	25	60 - 140	108
		m/p-xylene	µg/L	1	55	50	60 - 140	110
		o-xylene	µg/L	0.5	28	25	60 - 140	111
	Trihalomethan	Chloroform (THM)	µg/L	0.5	56	45.45	60 - 140	124

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358405.002	TRH C6-C10	µg/L	50	450	400	60 - 140	113
	TRH C6-C9	µg/L	40	410	350	60 - 140	118

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Forms of Carbon

Method: ME-(AU)-[ENV]AN190

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE288160.001	LB358368.005	Total Organic Carbon as NPOC	mg/L	0.2	61	20	50	83

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE288175.019	LB358343.004	Mercury, Hg	mg/L	0.0001	0.0017	<0.0001	0.008	86

Metals in Water (Dissolved) by ICPOES

Method: ME-(AU)-[ENV]AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE288156.001	LB358520.004	Calcium, Ca	mg/L	0.2	180	140	50.5	86
		Potassium, K	mg/L	0.1	78	13	55	118
		Sodium, Na	mg/L	0.5	250	200	50.5	111

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE288193.003	LB358377.010	Total Cyanide	mg/L	0.004	0.024	<0.004	0.025	96
SE288311.001	LB358725.015	Total Cyanide	mg/L	0.004	0.029	<0.004	0.025	105

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE288156.001	LB358733.004	Total Phenols	mg/L	0.05	0.19	<0.05	0.2	93

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE287993A.001	LB358603.004	Arsenic	µg/L	1	20	<1	20	100
		Cadmium	µg/L	0.1	20	<0.1	20	101
		Chromium	µg/L	1	20	<1	20	100
		Copper	µg/L	1	33	14	20	97
		Iron	µg/L	5	19	<5	20	95
		Lead	µg/L	1	21	<1	20	102
		Manganese	µg/L	1	20	<1	20	101
		Nickel	µg/L	1	20	<1	20	97
		Zinc	µg/L	5	28	8	20	99

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%	
SE288193.002	LB358405.022	Monocyclic	Benzene	µg/L	0.5	<0.5	25	121	
			Aromatic	Toluene	µg/L	0.5	<0.5	25	120
			Ethylbenzene	µg/L	0.5	<0.5	25	118	
			m/p-xylene	µg/L	1	<1	50	125	
			o-xylene	µg/L	0.5	<0.5	25	124	
			Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)		µg/L	-	8.3	-	91
			d8-toluene (Surrogate)		µg/L	-	7.9	-	90
			Bromofluorobenzene (Surrogate)		µg/L	-	9.1	-	89
		Totals	Total BTEX		µg/L	3	<3	-	-

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%	
SE288193.002	LB358405.022	TRH C6-C10	µg/L	50	<50	400	109	
		TRH C6-C9	µg/L	40	<40	350	114	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.3	-	91
			d8-toluene (Surrogate)	µg/L	-	7.9	-	90
			Bromofluorobenzene (Surrogate)	µg/L	-	9.1	-	89
		VPH F	Benzene (F0)	µg/L	0.5	<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	-	-

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

QC Sample	Sample Number	Parameter	Units	LOR	Duplicate
SE288179.001	LB358365.010	Fluoride	mg/L	0.1	2.5
		Nitrate Nitrogen, NO3-N	mg/L	0.005	2.1

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service.
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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Sheet 1 of 1				Sample Matrix		Analysis												Comments										
Site:		Project No:																										
40-76 William Street Leichhardt NSW		E288193A																										
Laboratory:				SGS Australia Unit 16, 33 Maddox Street, ALEXANDRIA NSW 2015 P: 02 8594 0400 F: 02 8594 0499																								
Sample ID	Laboratory ID	Container Type	Sampling Date	Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^A /TRH (including F1, F2, F3, F4)/BTEX/PAHs/ OCP/OP/PCB/Asbestos	HM ^A /TRH (including F1, F2, F3, F4)/BTEX/PAHs	HM ^A /TRH (including F1, F2, F3, F4)/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification (500ml)	Asbestos 10L field screening	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	Chromium Reducible Sulfur (CrS)	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	TCLP HM ^B / PAH		
BH101M	1		22/01/25	AM		X	X						X	X														
BH3M	2			AM		X	X																					
BH9M	3			PM		X	X																					
QD2	4			PM		X	X																					
QR2	3			PM		X																						
QR52				PM		X																						
WTS	6			AM		X																						
WTS	6			AM		X																						
WTS	7			AM		X																						
Container Type:																												
J = solvent washed, acid rinsed, Teflon sealed glass jar																												
S = solvent washed, acid rinsed glass bottle																												
P = natural HDPE plastic bottle																												
VC = glass vial, Teflon Septum																												
ZLB = Zip-Lock Bag																												
BB = Bulk Bag																												
Investigator: latest that these samples were collected in accordance with standard EI field sampling procedures.																												
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Please e-mail laboratory results to: lab@eiaustralia.com.au																												



SAMPLE RECEIPT ADVICE

SE288193A

CLIENT DETAILS

Contact Marina Deza
Client EIA AUSTRALIA
Address SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email marina.deza@eiaustralia.com.au

Project **E24470 40-76 William St, Leichhardt, NSW**
Order Number **E24470**
Samples 7

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Fri 22/8/2025
Report Due Mon 25/8/2025
SGS Reference **SE288193A**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Friday 22/8/2025. Results are expected to be ready by COB Monday 25/8/2025. Please quote SGS reference SE288193A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	3 Water	Type of documentation received	COC
Date documentation received	22/8/2025	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	12.2°C
Sample container provider	SGS	Turnaround time requested	Next Day
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

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SAMPLE RECEIPT ADVICE

SE288193A

CLIENT DETAILS

Client EI AUSTRALIA

Project E24470 40-76 William St, Leichhardt, NSW

SUMMARY OF ANALYSIS

No.	Sample ID	E. coli and Thermotolerant coliforms in Water (CFU)	Enterococci in Water	pH in water
001	BH101M	3	2	1
002	BH3M	-	-	1
003	BH9M	-	-	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Contact Marina Deza
Client EI AUSTRALIA
Address SUITE 6.01
 55 MILLER STREET
 PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email marina.deza@eiaustralia.com.au

Project **E24470 40-76 William St, Leichhardt, NSW**
Order Number **E24470**
Samples 7

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
 Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

SGS Reference **SE288193A R0**
Date Received 22/8/2025
Date Reported 26/8/2025

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



Tim MEEYAN
 Microbiologist



Ying Ying ZHANG
 Laboratory Technician



ANALYTICAL RESULTS

SE288193A R0

pH in water [AN101] Tested: 25/8/2025

			BH101M	BH3M	BH9M
			WATER	WATER	WATER
			-	-	-
			22/8/2025	22/8/2025	22/8/2025
PARAMETER	UOM	LOR	SE288193A.001	SE288193A.002	SE288193A.003
pH**	No unit	-	6.9	5.5	6.2

E. coli and Thermotolerant coliforms in Water (CFU) [AN703] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
			SE288193A.001
PARAMETER	UOM	LOR	
Date & Time Processed*	No unit	-	2025-08-22 17:42
E. coli	CFU/100mL	1	380
Thermotolerant Coliforms	CFU/100mL	1	380
Notes for E. coli*	No unit	-	-
Notes for Thermotolerant coliforms*	No unit	-	-



ANALYTICAL RESULTS

SE288193A R0

Enterococci in Water [AN705] Tested: 22/8/2025

			BH101M
			WATER
			-
			22/8/2025
PARAMETER	UOM	LOR	SE288193A.001
Date & Time Processed*	No unit	-	2025-08-22 17:42
Intestinal Enterococci*	CFU/100mL	1	10
Notes*	No unit	-	-

METHOD

METHODOLOGY SUMMARY

AN101

pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.

AN703

A known volume of water is passed through a membrane of known pore size. The membrane is placed on a selective agar plate and incubated. The volume of sample filtered depends upon the expected count. Referenced to AS4276.5.

AN705

A known volume of water is passed through a membrane of known pore size. The membrane is placed on a selective agar plate and incubated. The volume of sample filtered depends upon the expected count. Referenced to AS/NZS4276.9 (ISO 7899-2:2000 MOD).

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE288193A R0

CLIENT DETAILS

Contact Marina Deza
Client EI AUSTRALIA
Address SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email marina.deza@eiaustralia.com.au

Project **E24470 40-76 William St, Leichhardt, NSW**
Order Number **E24470**
Samples 7

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

SGS Reference **SE288193A R0**
Date Received 22 Aug 2025
Date Reported 26 Aug 2025

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in water	3 items
Analysis Date	pH in water	3 items

SAMPLE SUMMARY

Sample counts by matrix	3 Water	Type of documentation received	COC
Date documentation received	22/8/2025	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	12.2°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

E. coli and Thermotolerant coliforms in Water (CFU)

Method: ME-(AU)-[ENV]AN703

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193A.001	LB358406	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	25 Aug 2025	22 Aug 2025

Enterococci in Water

Method: ME-(AU)-[ENV]AN705

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193A.001	LB358406	22 Aug 2025	22 Aug 2025	23 Aug 2025	22 Aug 2025	25 Aug 2025	22 Aug 2025

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH101M	SE288193A.001	LB358432	22 Aug 2025	22 Aug 2025	23 Aug 2025	25 Aug 2025†	23 Aug 2025	25 Aug 2025†
BH3M	SE288193A.002	LB358432	22 Aug 2025	22 Aug 2025	23 Aug 2025	25 Aug 2025†	23 Aug 2025	25 Aug 2025†
BH9M	SE288193A.003	LB358432	22 Aug 2025	22 Aug 2025	23 Aug 2025	25 Aug 2025†	23 Aug 2025	25 Aug 2025†

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

No method blanks were required for this job.



DUPLICATES

SE288193A R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

pH in water

Method: ME-(AU)-ENVJAN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE288193A.003	LB358432.007	pH**	pH Units	-	6.2	6.2	17	0



Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB358432.003	pH**	No unit	-	7.5	7.415	98 - 102	101

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service.
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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GC 25/8/25 1219

Sheet <u>1</u> of <u>1</u>					Sample Matrix				Analysis																Comments				
Site: 40-79 William Street, Leichhardt NSW			Project No: E24470		SOIL	WATER	0.45 µm filtered	OTHER	HM ^A /TRH/BTEX/PAHs OCF/OP/PCB/Asbestos	HM ^A /TRH/BTEX/PAHs	HM ^A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	Dewatering Suite	pH / pH peroxide	SPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	HOLD	Lead	TCLP HM ^B / PAH	HM ^A Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc HM ^B Arsenic Cadmium Chromium Lead Mercury Nickel	
Sample ID	Laboratory ID	Container Type	Sampling																										
			Date	Time																									
QT2	1	S,P,vc	22/08/2025	am		X	X			X																	Dewatering Suite pH & EC TDS / TDU Hardness Total Cyanide Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) TRH (F1, F2, F3, F4) BTEX PAH		
																											LABORATORY TURNAROUND ☒ Standard ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ Other _____		
Container Type: J = solvent washed, acid rinsed, Teflon sealed glass jar S = solvent washed, acid rinsed glass bottle P = natural HDPE plastic bottle VC = glass vial, Teflon Septum ZLB = Zip-Lock Bag					Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.											Report with EI Waste Classification Table ☐													
 Suite 6.01, 55 Miller Street, PYRMONT NSW 2009 Ph: 9516 0722 lab@eiaustralia.com.au COC June 2021 FORM v.5 - Envirolab					Sampler's Name (EI): Mariana Barbosa Print Marina Deza					Received by (Envirolab): Print <i>Mariana Barbosa</i>					Sampler's Comments: Please cc: mariana.barbosa marina.deza  Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 5253 Job No: 389251														
					Signature <i>[Signature]</i>					Signature <i>[Signature]</i>																			
					Date 25/05/2025					Date 25/8/25																			
					IMPORTANT: Please e-mail laboratory results to: lab@eiaustralia.com.au																								

Date Received: 25/8/25
 Time Received: 1720
 Received By: 24
 Temp: 24/Ambient
 Cooling: Ice/icepack
 Security: Intact/Broken/None

[illegible]

389251
25 | 8 | 25
12 11

SAMPLE RECEIPT ADVICE

Client Details

Client	EI Australia
Attention	Lab Email

Sample Login Details

Your reference	E24470 40-49 William Street, Leichhardt NSW
Envirolab Reference	389251
Date Sample Received	25/08/2025
Date Instructions Received	25/08/2025
Date Results Expected to be Reported	01/09/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolab.com.au	Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

**Envirolab Services Pty Ltd**

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved
QT2	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

CERTIFICATE OF ANALYSIS 389251

Client Details

Client	El Australia
Attention	Lab Email
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	<u>E24470 40-49 William Street, Leichhardt NSW</u>
Number of Samples	1 Water
Date samples received	25/08/2025
Date completed instructions received	25/08/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	01/09/2025
Date of Issue	29/08/2025

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Results Approved By

Loren Bardwell, Development Chemist
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		389251-1
Your Reference	UNITS	QT2
Date Sampled		22/08/2025
Type of sample		Water
Date extracted	-	26/08/2025
Date analysed	-	27/08/2025
TRH C ₆ - C ₉	µg/L	<10
TRH C ₆ - C ₁₀	µg/L	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	101
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	103

svTRH (C10-C40) in Water		
Our Reference		389251-1
Your Reference	UNITS	QT2
Date Sampled		22/08/2025
Type of sample		Water
Date extracted	-	26/08/2025
Date analysed	-	26/08/2025
TRH C ₁₀ - C ₁₄	µg/L	240
TRH C ₁₅ - C ₂₈	µg/L	260
TRH C ₂₉ - C ₃₆	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	500
TRH >C ₁₀ - C ₁₆	µg/L	270
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	270
TRH >C ₁₆ - C ₃₄	µg/L	240
TRH >C ₃₄ - C ₄₀	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	510
Surrogate o-Terphenyl	%	95

HM in water - dissolved		
Our Reference		389251-1
Your Reference	UNITS	QT2
Date Sampled		22/08/2025
Type of sample		Water
Date prepared	-	26/08/2025
Date analysed	-	26/08/2025
Arsenic-Dissolved	µg/L	2
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	7
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	1
Zinc-Dissolved	µg/L	22

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			26/08/2025	[NT]	[NT]	[NT]	[NT]	26/08/2025	[NT]
Date analysed	-			27/08/2025	[NT]	[NT]	[NT]	[NT]	27/08/2025	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	83	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	84	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate Toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			26/08/2025	1	26/08/2025	26/08/2025		26/08/2025	[NT]
Date analysed	-			26/08/2025	1	26/08/2025	26/08/2025		26/08/2025	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	1	240	260	8	93	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	1	260	210	21	100	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	1	<100	<100	0	86	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	1	270	300	11	93	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	1	240	180	29	100	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	1	<100	<100	0	86	[NT]
Surrogate o-Terphenyl	%		Org-020	78	1	95	106	11	102	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date prepared	-			26/08/2025	[NT]	[NT]	[NT]	[NT]	26/08/2025	[NT]
Date analysed	-			26/08/2025	[NT]	[NT]	[NT]	[NT]	26/08/2025	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	97	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Appendix H – QA/QC Assessment

H1 QUALITY ASSURANCE / QUALITY CONTROL PROGRAM

Quality assurance comprises an assessment of the reliability of the field procedures and laboratory results against standard industry practices and the SAQP. A summary of the project QA/QC measures incorporated into this investigation is presented in **Table H-1**.

Table H-1 Project QC Measures

Task	Description	Project
Field QA/QC		
General	Work was to be undertaken following standard field procedures which are based on industry accepted standard practice.	Groundwater samples were obtained using sample bottles/vials provided by the laboratory.
	All fieldwork was supervised by a suitably qualified and experienced scientist or engineer.	Yes
Soil Screening with PID	The PID was serviced and calibrated as per manufacturer requirements. PID calibrated at the beginning of each day of fieldwork.	Yes
Equipment Decontamination	Sampling equipment to be decontaminated after the collection of each soil sample by washing with phosphate-free detergent and potable water, followed by a final distilled water rinse. One rinsate blank would be collected and analysed for the primary contaminants. All results should be non-detect.	All concentrations were reported as below the detection limits.
Transport	Samples stored in a chilled cooler box and transported to the laboratories. To ensure the integrity of the samples from collection to receipt by the analytical laboratory, samples were sent by courier to the laboratories under 'chain of custody' describing sample preservation and transport duration.	Yes
Trip Blanks	Trip blank samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results to be below the laboratory LOR, indicating satisfactory sample transport and handling conditions were achieved.	Yes
Trip Spikes	Trip spike samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results to be within 80-120% recovery, indicating satisfactory sample transport and handling conditions were achieved.	Yes

Task	Description	Project
Field Duplicates	Field duplicate samples were to be analysed as follows (as per NEPM): - intra-laboratory duplicates at a rate of 1 in 20 primary samples; and - inter-laboratory duplicates at a rate of 1 in 20 primary samples. Field and laboratory acceptable limits between 30-50% RPD as stated by AS4482.1-2005. RPDs that exceed this range may be considered acceptable where: - Results are less than 10 times the limits of reporting (LOR); - Results are less than 20 times the LOR and the RPD is less than 50%; or - Heterogeneous materials or volatile compounds are encountered. Non-compliance is to be documented in the report and the sample re-analysed or a higher level conservatively adopted.	Laboratory duplicates prepared and analysed. Minor non-conformance, with negligible effects on data use for interpretative purposes. Non-conformance included: - Copper for samples BH101M and QT2. - TRH F2 for samples BH101M, QD2 and QT2. - TRH F3 for samples BH101M and QT2. Field QC samples and calculated RPD values are presented in Table H-5 at the end of this Appendix. Copies of laboratory reports are included in Appendix G.
<u>Laboratory QA/QC</u>		
Laboratory Analysis	The laboratories selected are NATA accredited for the analytes selected and perform their own internal QA/QC programs. Appropriate detection limits were used for the analyses to be undertaken.	Yes SGS - primary laboratory Envirolab - secondary laboratory Laboratory QA/QC analyses are included in Appendix G. Practical Quantitation Limits for all tested parameters during the investigation are presented in laboratory analytical reports in Appendix G.
Holding Times	Holding times are the maximum permissible elapsed time in days from the collection of the sample to its extraction and/or analysis. All extraction and analyses should be completed within standard guidelines.	Yes
Method Blanks	A method blank contains the reagents used to prepare the sample for final analysis. The purpose of this procedure is to identify contamination in the reagent materials and assess potential bias in the sample analysis due to contaminated reagents. The QC criterion aims to find no detectable contamination in the reagents. Each analysis procedure should be subject to a method blank analysis. The results of each should indicate that contaminants were not detected.	Yes

Task	Description	Project
Laboratory Duplicates	Laboratory duplicates are field samples that are split in the laboratory and subsequently analysed a number of times in the same batch. These sub-samples are selected by the laboratory to assess the accuracy and precision of the analytical method. The selected laboratories should undertake QA/QC procedures such as calibration standards, laboratory control samples, surrogates, reference materials, sample duplicates and matrix spikes. Intra-laboratory duplicates should be performed at a frequency of 1 per 10 samples.	Assessment of laboratory duplicates has been undertaken by the laboratory. All laboratory control standards were within acceptable ranges.
Laboratory Control Standard	A laboratory control standard is a standard reference material used in preparing primary standards. The concentration should be equivalent to a mid-range standard to confirm the primary calibration. Laboratory control samples should be performed on a frequency of 1 per 20 samples or at least one per analytical run.	Assessment of laboratory control standard has been undertaken by the laboratory. All laboratory control standards were within acceptable ranges.
Matrix Spikes	Matrix spikes are field samples to which a predetermined stock solution of known concentration has been added. The samples are then analysed for recovery of the known addition. Recoveries should be within the stated laboratory control limits of 70 to 130% and duplicates should have RPDs of less than 50%.	Assessment of matrix spikes has been undertaken by the laboratory. All laboratory control standards were within acceptable ranges.
Surrogate Spikes	Surrogate spikes provide a means of checking, for every analysis that no gross errors have occurred at any stage of the procedure leading to significant analyte loss. Recoveries should be within the stated laboratory control limits of 70 to 130%.	Assessment of surrogate spikes has been undertaken by the laboratory. All data quality objectives were met.
Conclusion	The QA/QC indicators should either all comply with the required standards or showed no variations that would have no significant effect on the quality of the data.	Assessment of the investigation QA/QC is presented in the following sections.

H2 RELATIVE PERCENTAGE DIFFERENCE (RPD) CALCULATION

The RPD values were calculated using the following equation:

$$RPD = \frac{|C_O - C_R|}{[(C_O + C_R)/2]} \times 100$$

Where:

C_O = Concentration obtained for the primary sample; and

C_R = Concentration obtained for the blind replicate or split duplicate sample.

H3 FIELD QA/QC

H3.1 Field QC Samples

The field (intra- / inter- laboratory) duplicate samples collected during the investigation are summarised in **Table H-2**. Inter-laboratory duplicates were analysed by the secondary laboratory, Envirolab.

Table H-2 Field QC Sampling Program

Matrix	Primary QA Sample	Duplicate (Primary Lab)	Triplicate (Secondary Lab)	Total Duplicates
Groundwater	BH101M	QD2	QT2	2

H3.2 Field QC Summary

Review of the field data quality indicators is presented in **Table H-3** below.

Table H-3 Field Data Quality Indicators

QA Component	Data Quality Indicator(s)	Conformance
Accuracy – a quantitative measure of the closeness of reported data to the “true” value	SOPs appropriate and complied with	Yes
	Results for inter-laboratory (split field) duplicates acceptable	Yes
Precision – A quantitative measure of the variability (or reproducibility) of data	SOPs appropriate and complied with	Yes
	Results for intra-laboratory (blind field) duplicates acceptable	Yes
Completeness – A measure of the amount of useable data from a data collection activity	Each critical location sampled	Yes
	Samples collected at targeted locations and depth	Yes
	SAQP appropriate and complied with	Yes
	Experienced sampler	Yes
	Field documentation correct	Yes

QA Component	Data Quality Indicator(s)	Conformance
Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Same sampling method used on each occasion/location	Yes
	Experienced sampler	Yes
	Same type of samples collected (filtered, size, fractions)	Yes
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present onsite	Appropriate media sampled according to SAQP	Yes
	Each media identified in SAQP sampled	Yes
	Appropriate sample collection methodologies, handling, storage and preservation techniques used	Yes

H3.3 Conclusion for the Field QA/QC

All field work, including equipment decontamination and sample preservation and transport, was conducted in general accordance with the SAQP, which were devised with reference to industry-approved guidelines. Appropriate QC measures were integrated into each sampling event and the DQIs were met.

All samples, including field QC samples, were transported to the primary and secondary laboratories under refrigerated conditions, using strict COC procedures. Relevant documents (COC forms) were presented with the samples at the times of delivery. All supporting documents (COCs and SRAs) were completed in full and signed, where appropriate. EI considered the field QA/QC program carried out during this investigation to be appropriate.

H4 LABORATORY QA/QC

H4.1 Laboratory Accreditation

Primary and intra-laboratory duplicate samples were analysed by SGS (located in Alexandria NSW), with inter-laboratory duplicate samples analysed by Envirolab (located in Chatswood NSW). All laboratories are accredited by NATA for the analyses undertaken.

H4.2 Laboratory QC Summary

Review of the laboratory data quality indicators is presented in **Table H-4** below.

Table H-4 Laboratory Data Quality Indicators

DQI	Item	Conformance
Completeness A measure of the amount of useable data (expressed as %) from a data collection activity	All critical samples analysed according to SAQP and proposal	Yes
	All analytes analysed according to SAQP in proposal	Yes
	Appropriate methods and PQLs	Yes
	Sample documentation complete	Yes

DQI	Item	Conformance
	Sample holding times complied with	Yes
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Sample analytical methods used (including clean-up)	Yes
	Sample PQLs (justify/ quantify if different)	Yes
	Same laboratories (justify/ quantify if different)	Yes
	Same units (justify/ quantify if different)	Yes
Representativeness Confidence that data are representative of each media	All key samples analysed according to SAQP in the proposal	Yes
Precision A quantitative measure of the variability (or reproducibility) of data	Analysis of laboratory duplicates	Yes
	Analysis of field duplicates	Yes
	Analysis of laboratory-prepared volatile trip spikes	No
Accuracy A quantitative measure of the closeness of reported data to the true value	Analysis of field blanks	Yes
	Analysis of rinsate / rinsate blanks	Yes
	Analysis of method blanks	Yes
	Analysis of matrix spikes (MS)	Yes
	Analysis of surrogate spikes	Yes
	Analysis of reference materials	Not applicable
	Analysis of laboratory control samples	Yes

H4.3 Conclusion for the Laboratory QA/QC

All contracted laboratories (SGS and Envirolab) were accredited by NATA for the analyses undertaken. All analytical procedures used were industry recognised and endorsed standard methods. Appropriate QC measures were integrated into each testing batch and the DQIs were met, or if not, the variability was suitably justified.

All final reports were submitted in full and included all requested analyses, as per the signed COC forms. EI considered the laboratory QA/QC programs carried out during this investigation to be appropriate.

H5 SUMMARY OF PROJECT QA/QC

The sampling (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation were consistent with EI protocols. The project DQOs specified in **Section 3.4.1** were considered to have been achieved. The adopted QA/QC program ensured that the data collated during the GME were accurate, precise and representative of the site condition. It was therefore considered that the data were sufficiently precise and accurate and that the results could be used for interpretative purposes.

Appendix I – DCR and Works Surrender Form

Completion report for dewatering work

Providing a completion report is a condition of the approval and a copy of the completed form **must** be supplied **when or before you surrender the approval** to finalise the dewatering activity. You cannot surrender the approval without it.

All the information to be supplied is specified within this form.



To complete the form, you will be required to gather data at the commencement of works and during the dewatering activity.

How to use this form

Use this form to record and report groundwater taken by aquifer interference activities¹

Section A to E:

These sections require information on the following:

Approval held, dewatering duration/groundwater source, details of person taking water, activity description and location.

Section F to I:

For these sections you will be required to gather data at the commencement of works and during the dewatering activity.

Information to enter includes:

Summary of total water taken, record of metered volumes taken, summary of water level measurements from monitoring bores and water testing undertaken.

Note:

- Information must be supplied in accordance with approval held, refer to approval.
- To measure volumes, a meter must be used⁷.
- Excel soft copies of measurement data may also be required. Please ensure these are provided in accordance with the instructions shown in that section.

Section J:

Complete form declaration.

Refer to the end of the form for information on:

- Returning completed forms and any attachments
- Where to get help
- Privacy Statement
- Notes section

Section A: Approval held

Report submission date	
Dewatering approval number	
Approval expiry date	
Date received (Office use only)	

Section B: Dewatering duration / groundwater source

Dewatering duration	Days/Weeks/Months/Years
Dewatering start date	
Dewatering end date	
Groundwater source ²	

Section C: Details of person taking water³

Full name		
Company/organisation (including ACN/ABN)		
Postal address		
Suburb	State	Postcode
Phone number		
Email		

Section D: Activity description

Project name
Describe the activity/s resulting in groundwater being taken ⁴
Describe the means by which the groundwater is being taken ⁵
Is your dewatering activity exempt from obtaining a water access licence under the Water Management (General) Regulation 2018 ☐ Yes ☐ No
If no, please provide your water access licence number

Section E: Activity location

Address		
Suburb	State	Postcode
or		
Lot / Deposited Plan / Section		
or		
GPS coordinates ⁶ (for example, 32.25316 S 148.60022 E)		

Section F: Summary of total water taken

Provide the below in accordance to approval held. **Important:** a meter must be used to measure volumes⁷.

1. Duration of dewatering (pumping) ⁸ either a) or b):		
a) ☐ for water year	1 July	to 30 June
b) ☐ during dewatering period	From	to
2. Total volume pumped in either a), b) or c) units ⁹		
a) ☐ in Litres		L
b) ☐ in Kilolitres		kL
c) ☐ in Megalitres		ML

Section G: Record of metered volumes taken

Complete this section to record **metered** volumes taken. Either **daily** or **weekly** readings are required.

Refer to the conditions of your approval and the exemption (if applicable) to determine the reading frequency you need to provide.

Notes:

- A meter must be used to measure volumes⁷.
- Please update the table required.
- If entries are longer than 5 lines, provide an Excel spreadsheet soft copy with the data. If a soft copy is provided - use the same headings and naming conventions as per the required daily or weekly table following.

Daily

Are any attachments included? ☐ Yes ☐ No
If yes, provide attachment name/s

Meter brand type		Meter serial number	
------------------	--	---------------------	--

Start date and time	Start meter reading	End date and time	End meter reading	Volume taken	Units (L, kL, ML)	Date and time record made

Weekly

If entries are longer than 5 lines, provide an Excel spreadsheet soft copy with the data. If provided in soft copy - use the same headings and naming conventions as per the table below.

Are any attachments included? ☐ Yes ☐ No
If yes, provide attachment name/s

Meter brand type		Meter serial number	
------------------	--	---------------------	--

Week ending	Start date and time	Start meter reading	End date and time	End meter reading	Volume taken	Units (L, kL, ML)	Date and time record made

Section H: Summary of water level measurements from monitoring bores

Refer to the approval you hold to determine if required. If required, enter information in the table below and provide all measurement data separately in an Excel spreadsheet (soft copy).

If automatic loggers are used, the default Excel output soft copy, will be accepted provided it includes all the relevant measurement data and units.

If automatic loggers are not used, the Excel output soft copy must include as a minimum the following:

- Bore ID
- Date
- Time
- Water level measurement (m below MP)
- Measuring point description
- Measuring point RL (m AHD)
- Comments.

Are any attachments included? ☐ Yes ☐ No
If yes, provide attachment name/s

Bore ID	Measuring point RL (m AHD)	Depth to water before dewatering (m)	Depth to water during dewatering (m)	Depth to water after dewatering (m)	File name of measurements spreadsheet attached
<i>For Example: MB1</i>	<i>1.000</i>	<i>0.5</i>	<i>4.0</i>	<i>0.6</i>	<i>MB1.xlsx</i>

Section I: Water testing undertaken

Information supporting these entries must be captured and supplied as an attachment in Excel soft copy form:

Are any attachments included?	☐ Yes	☐ No
If yes, provide attachment name/s		

a) Range in pH measured	
b) Range in electrical conductivity (Salinity) in ($\mu\text{S}/\text{cm}$)	
c) Any other exceedance of water quality criteria?	☐ Yes (specify below) ☐ No

Exceedance(s)

Section J: Declaration

I declare all information contained in this record is accurate, true and complete.

Signature		Date	
Name/Company officeholder			
Position		Phone	
Address			
Suburb		State	Postcode
Email			

Giving false or misleading information is a serious offence under Part 5A of the *Crimes Act 1900*. It is an offence under section 91J of the *Water Management Act 2000* for a person to make a statement or furnish information in or in connection with a metering record required to be kept that the person knows to be false or misleading in a material particular.

Privacy statement

The personal information that is provided in this form will be managed by WaterNSW in accordance with its Privacy Procedure, or other such Policy document as updated from time to time. The information provided in this form is being collected and used for purposes relating to the Record confirmation of specified matters before water is taken described in this form to the *Water Management Act 2000* (NSW). The information provided in this form may be disclosed to public authorities and other authorised parties as required.

If you choose not to provide the requested information in this form, you may not be able to take water and you may be in breach of the *Water Management Act 2000*. You have the right to request access to, and correct details of, your personal information held by WaterNSW. Further information regarding privacy can be obtained from waternsw.com.au/privacy.

Returning completed forms

Please return your completed form/s and any attachments to:

Customer.Helpdesk@waternsw.com.au

In the subject line: Dewatering completion report - Approval (Approval reference number)
or

WaterNSW
PO Box 398
Parramatta NSW 2124

Where to get help

Further information is available at:

waternsw.com.au/dewatering | 1300 662 077 | Customer.Helpdesk@waternsw.com.au

Notes

1. **Aquifer interference activity** has the same meaning as set out in the Dictionary to the *Water Management Act 2000* which is an activity involving any of the following:
 - a. the penetration of an aquifer,
 - b. the interference with water in an aquifer,
 - c. the obstruction of the flow of water in an aquifer,
 - d. the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations,
 - e. the disposal of water taken from an aquifer as referred to in paragraph d).
2. Refer to your approval for the **groundwater source** you are taking water from.
3. For infrastructure or construction projects this may be the **applicants' representative** for example a contractor.
4. **Describe the activity/s taking groundwater** while conducting the aquifer interference activity, and the number of works involved.
For example:
 - extraction using a battery of 15 spear points to dewater a building construction site
 - groundwater extracted from a permanent sump in a building basement
 - groundwater extracted from a trench or excavation
5. Examples of the **means by which the groundwater is taken** include surface pump, airlift, downhole/submersible pump, bailer, water removed with ground materials, water freely draining from a cutting, pit seepage / inflow, evaporation from artificial lake that has filled from groundwater. Where several means of take are involved please identify the number and type of each.
6. Please provide GPS coordinates as longitude and latitude in decimal degrees.
7. Metering equipment must be used to measure volumes. Metering equipment consists of a meter and a data logger. **Telemetry is not required.** However, other metering equipment and standards may be specified by a condition of the water supply work approval.
In the **event metering equipment becomes faulty**, you must report within 24 hours to WaterNSW at waternsw.com.au/s91i. An offence applies under section 91A of the *Water Management Act 2000* for failing to report faulty metering equipment within 24 hours.
8. For Section F - I: Duration of dewatering (pumping) is elapsed time between the start and end dates for a period of continuous take. If the period of take extends over more than one water year, annual reporting may be required. This record must be retained for five years.
9. Record the **total volume of groundwater taken** in the water year/s for the groundwater source in either litres (L), kilolitres (kL) or megalitres (ML).