

11 September 2025
E26491.G12_Rev2

Wayne Xiong
Aqualand Prestige 2 Pty Ltd
Level 37, 264 George Street
SYDNEY 2000

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW 2009

ABN 42 909 129 957

E service@eiaustralia.com.au

W www.eiaustralia.com.au

T 02 9516 0722

Groundwater Seepage Analysis Proposed Residential Development Site B, 2-16 Pockley Avenue, Roseville NSW

1. INTRODUCTION

At the request of Aqualand Prestige 2 Pty Ltd (the Client), EI Australia (EI) has prepared this Groundwater Seepage Analysis (GSA) for the proposed development at Site B, 2-16 Pockley Avenue, Roseville NSW (the Site).

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

- Architectural drawings prepared by Woods Bagot, Project No. 122021, Sheet Nos. DA-ARB-22-094 to DA-AR-B-22-1.9, DA-AR-B-22-190 , DA-AR-B-32-001 to DA-AR-B-32-003, DAAR-B-32-101 to DA-AR-B-32-103, latest revision B, latest dated 9 April 2025; and
- Preliminary Survey drawings by Rygate & Company Pty Ltd, Plan Showing Details and Levels, Sheets 1 to 7, Rev. A, Dated 3 September 2024.

EI has previously prepared the following relevant reports for this site:

- Geotechnical Investigation (GI) Report, Report No. E26491.G03_Rev2, dated 16 April 2025; and
- Groundwater Level Monitoring Report No.2, Report No. E26491.G11.GW1, dated 11 September 2025.

Based on the provided documents, EI understands that the proposed development involves the demolition of the existing site structures and the construction of three multi-storey residential developments overlying a stepped shared basement. The lowest basement level is proposed to have a Finished Floor Level (FFL) RL 78.0m AHD at the north-eastern site boundary (adjacent to Larkin Street) and RL 69.0m AHD at the south-western site boundary (adjacent to Pockley Avenue). A Bulk Excavation Level (BEL) ranging between RL 68.7m AHD and 77.7m AHD is assumed, which includes allowance for the construction of the basement slab. To achieve the BEL, excavation depths from approximately 10m to 20m Below Existing Ground Level (BEGL) have been estimated. Locally deeper excavations may be required for footings, lift overrun pits, crane pads, and service trenches.

1.1. 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 stages of the development with estimation of the groundwater drawdown and drawdown settlement as a result of the excavation dewatering.

2. SITE MODEL

2.1. MODELLED SECTIONS

One section was prepared and analysed as part of the GSA report to account for the sloping topography, the location of this section is shown in the attached **Figure 1**:

- **Section A-A:** Running through the excavation in north-east to south-west direction of the proposed basement, following the site topography.

2.2. SUBSURFACE CONDITIONS

The subsurface conditions outlined in our GI reports were utilised in this analysis to model the geological subsurface conditions for the modelled section.

A summary of the permeability values which were adopted for the assessment of groundwater take volumes is presented in **Table 1**.

Table 1 Summary of Subsurface Conditions and Adopted Design Parameters

Material ¹	Adopted RL of Top of Unit (m AHD) ²		Adopted Permeability (m/s)	Anisotropy ky'/kx'
	Southwest	Northeast		
Fill ³	78.7	97.0	1.0 x 10 ⁻⁵	1.0
Residual Soil ³	77.0	96.1	1.0 x 10 ⁻⁸	1.0
Class V/IV Shale ⁴	- ⁶	93.0	5.0 x 10 ⁻⁸	1.0
Class III/II Shale or Class IV/III/II Sandstone ⁵	75.2	89.2	1.6 x 10 ⁻⁷	0.5

Notes:

- 1 For more detailed descriptions of subsurface conditions reference should be made to our GI report.
- 2 Minor idealisations have been made to the adopted ground profile based on borehole logs.
- 3 Permeability value has been correlated for materials encountered during the GI using Look (2014).
- 4 Permeability value was adopted based on the calculated value of rising head tests carried out by EI encountered in BH1M.
- 5 Permeability value was adopted based on the average value of rising head tests carried out by EI encountered in BH2.1M, BH4M, and BH4.1M.
- 6 Class V/IV Shale does not encounter during the Geotechnical Investigation in the western site boundary.

2.3. GROUNDWATER LEVEL OBSERVATIONS

Rising Head tests were undertaken by EI on 21 February 2025 in the three monitoring wells and on 24 February 2025 in the two monitoring wells to estimate the rock mass hydraulic conductivity (or permeability). The test involves removing the water from the well and measuring the rise in water level within the well at regular time intervals. The data was then used to calculate the hydraulic conductivity of the material screened by each well using the Hvorslev method (results are presented graphically in **Appendix B**).

A summary of the rising head test results for each monitoring well are presented in **Table 2** Below.

Table 2 Summary of Monitoring Well Details and Rising Head Test Results

Monitoring Well ID	Total Well Depth (m BEGL)	Screen Length (m)	Screened Section	Date of Test	Approximate RL of Groundwater Level (m AHD)	Calculated Permeability (m/s)
BH1M	7.03	3	Class V/IV Shale	21 February 2025	87.89	4.63×10^{-8}
BH2.1M	18.00	6	Class III/II Shale or Class IV/III/II Sandstone	21 February 2025	84.16	4.68×10^{-8}
BH4M	7.00	3	Class IV and III Sandstone	21 February 2025 24 February 2025	76.22 76.80	1.91×10^{-7} 1.90×10^{-7}
BH4.1M	15.00	6	Class II Sandstone	21 February 2025	76.90	2.52×10^{-7}

The groundwater levels observed within all monitoring wells during various site visits are summarised in **Table 3**.

Table 3 Summary of Groundwater Levels

Monitoring Well ID	Date of Observation	Approximate Depth to Groundwater Level (m BEGL)	Approximate RL of Groundwater Level (m AHD)
BH1M	19 February 2025	7.09	87.41
	21 February 2025	6.61	87.89
	14 July 2025	6.75	87.75
BH2M	19 February 2025	6.78	91.22
	21 February 2025	6.11	91.89
BH2.1M	21 February 2025	13.84	84.16
	14 July 2025	14.28	83.72
BH4M	21 February 2025	4.03	76.22
	24 February 2025	3.45	76.80
	14 July 2025	3.35	76.90
BH4.1M	21 February 2025	3.35	76.90
	14 July 2025	3.35	76.90

Long-term continuous groundwater monitoring was completed in BH1M, BH2M, BH2.1M and BH4.1M from 18 December 2024 to 13 March 2025. A summary of the groundwater levels is provided in the **Table 4** below:

Table 4 Summary of Long-term Groundwater Monitoring

Monitoring Well ID	Average Groundwater RL (m AHD)	Highest Groundwater RL (m AHD)	Lowest Groundwater RL (m AHD)
BH1M	88.20	89.31	87.83
BH2M	91.90	92.01	91.71
BH2.1M	84.50	84.68	84.08
BH4.1M	76.99	78.30	76.06

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

- **Section A-A:** At the site boundaries, design groundwater levels of RL 93.0m AHD and 77.9m AHD was adopted for the north-eastern and south-western ends, respectively, incorporating a 1m increase above the observed levels to account for possible seasonal variation. For the model, the groundwater levels are modelled 25m away from the basement boundaries at RL 97.0m AHD and 77.9m AHD for the north-eastern and south-western ends, respectively. The water levels beyond the site were linearly extrapolated matching the topography slope of about 16.0% beyond the north-eastern boundary, while the south-western end (located at the base of the slope) is assumed to continue horizontally beyond the site boundary.

2.4. SHORING SYSTEM

At the time of this analysis, no detailed structural design was available. However, the system was assumed to be soldier pile wall socketed below BEL. During excavation and in the long-term, seepage will be freely allowed to enter the basement.

This analysis does not assess the overall stability of the shoring system. Once the designs relating to the adopted shoring system are updated, this analysis should be revised accordingly.

3. GROUNDWATER TAKE ASSESSMENT

3.1. GROUNDWATER SEEPAGE VOLUMES DURING CONSTRUCTION PHASE

Groundwater seepage analysis for flow through and beneath the excavation face during construction has been undertaken using three sections of PLAXIS 2D (Version 2024.1.0.1060). PLAXIS 2D is a commercially available finite element package intended for the two dimensional analysis in geotechnical engineering. It is equipped with features to deal with various aspects of geotechnical structures and construction processes using robust and theoretically sound computational procedures. PLAXIS 2D estimates the seepage rate of water entering the excavation through and beneath excavation face. 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.

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

- The subsurface conditions from **Table 1** were modelled horizontally beyond the site boundary to the southwest, and modelled to extrapolate linearly following the site topography beyond the northeast.
- The permeability values presented in **Table 1** above were adopted for each unit.
- The excavation face is assumed to be permeable and free to drain as per Section 2.4 of this report.
- The base of the basement excavation is assumed to be drained and temporary dewatering will be undertaken within the basement perimeter to the proposed BEL.
- The external design groundwater levels for each section were assumed to be constant at the specified distances from the excavation faces as provided in Section 2.3 of this report.
- Section A-A has a width of 36m in to the page.

The PLAXIS 2D models are presented in **Appendix A. Table 5** provides the estimated groundwater inflow rate into the proposed excavation and maximum drawdown depths.

Table 5 Summary of Analysis Results

Analysed Section	Inflow into excavation (m ³ /day) per m length	Inflow into excavation (m ³ /day)	Total Inflow per year (ML/year)
Section A-A	0.38	13.52	4.94

3.2. ASSESSMENT OF GROUNDWATER TAKE DURING OPERATIONAL PHASE

Based on the PLAXIS 2D results, the estimated total inflow during the operational phase of the development is expected to remain the same as during construction, at 4.94 ML per year. This estimate assumes a permeable shoring system with a drained basement, utilizing sub-soil drainage and a sump-and-pump system.

3.3. GROUNDWATER DRAWDOWN INDUCED SETTLEMENT

EI utilised PLAXIS 2D to estimate the potential drawdown-induced settlements as a result of dewatering. The maximum predicted groundwater drawdown and its associated maximum ground settlement surrounding the basement boundary is summarised in **Table 6**. It should be noted that these predicted settlements accounts **only for water drawdown** and does not consider other factors, such as shoring wall deflection, surcharge loading, relaxation of the bedrock or other construction-related influences. Figures illustrating the estimated drawdown-induced settlement are provided in **Figure 2** and **Appendix A**.

Table 6 Summary of Maximum Groundwater Drawdown and Associated Maximum Ground Settlement

Boundary	Maximum Drawdown	Maximum Ground Settlement (mm)
North-East (Larkin Street)	12.0	6
South-West (Pockley Avenue)	8.7	4

Based on the estimated settlements, the ground outside the shoring wall is expected to experience a maximum settlement of up to 6mm, which gradually decreased to be negligible at a distance of approximately 25m from the shoring wall. 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), as shown in the excerpt in **Plate 1**.

Although the PLAXIS 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.

Risk category ^a	Maximum settlement (mm) ^b	Building tilt ^c	Anticipated effects
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 groundwater take during the construction and operational phases is estimated to be approximately 4.94ML per year.
- The above estimate is based on the following assumptions:
 - ▶ The modelled excavation is fully permeable to the BEL.
 - ▶ Continuous dewatering in order to maintain the groundwater at BEL during construction and operational phases.
 - ▶ This assessment does not take into consideration any excavation that may be required for landscape, footings, lift overrun pits, crane pads, and service trenches. This additional excavation, if required, is not expected to affect the retention or the dewatering system.
- Due to the predicted water drawdown occurring within the bedrock, EI is of the opinion that the drawdown settlement resulting from dewatering of the site will have a negligible effect, however, drawdown induced settlement behind the shoring wall within the soil profile outside the excavation outline was predicted in the order of up to 6mm. These settlements fall within the 'negligible' risk category of 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.
- Based on our assessment, the groundwater volumes expected per year appear to be manageable using a drained basement system for its lifetime. Hence in our opinion "tanking" of the basement is unwarranted for this development.
- 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 Aqualand Prestige 2 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 Aqualand Prestige 2 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



Kiengseng Pung
Geotechnical Engineer

James Brooker
Senior Geotechnical Engineer

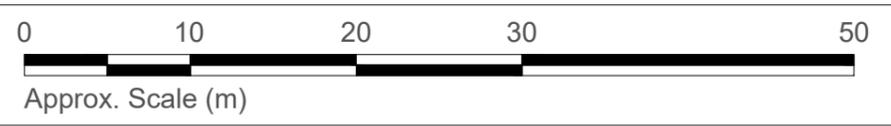
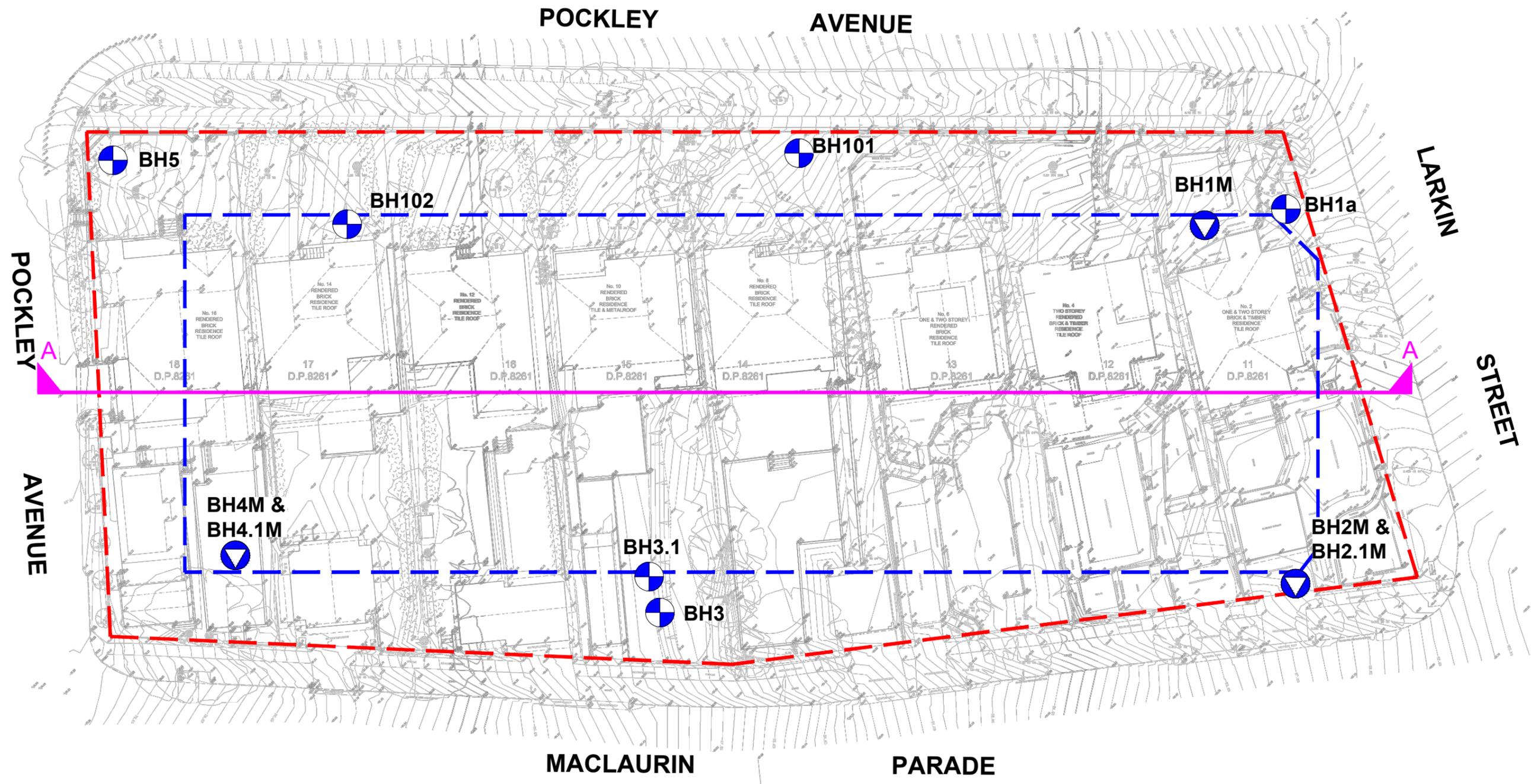
APPENDICES:

- Figure 1** – Analysed Sections Plan
- Figure 2** – Dewatering Drawdown Contour Plan
- Appendix A** – PLAXIS 2D Model and Results (Section A-A)
- Appendix B** – Rising Head Permeability Tests
- Appendix C** – Groundwater Level Monitoring Report No.1
- Appendix D** – Important Information
- Appendix E** – SEARs Requirement Declaration Form

Figures

Figure 1 Analysed Section Plan

Figure 2 Dewatering Drawdown Contour Plan



Map Source: Rygate&Company Pty Ltd - Reference No. 80598, Sheet 2-7 of 7, Revision. A, Dated 3 September 2024

LEGEND (All Locations are Approximate)
 - - - Site boundary
 - - - Basement outline
 ⊕ Borehole location
 ⊙ Monitoring well location



Drawn:	K.P.
Approved:	S.K.
Date:	1 - -25

Aqualand Prestige Pty Ltd
 Groundwater Seepage Analysis
 Site B, 2-16 Pockley Avenue, Roseville, NSW
 Analysed Section Plan

Figure:
1
 Project: E26491.G12 1



Map Source: Aerial imagery from metromap, dated 1 September 2025

LEGEND

- - - Site boundary
- - - Basement boundary
- Predicted drawdown contour (m)



Drawn:	E.W.
Approved:	S.K.
Date:	1/9/25

Aqualand Prestige 2 Pty Ltd
 Groundwater Seepage Analysis
 Site B, 2-16 Pockley Avenue, Roseville, NSW
 Dewatering Drawdown Contour Plan

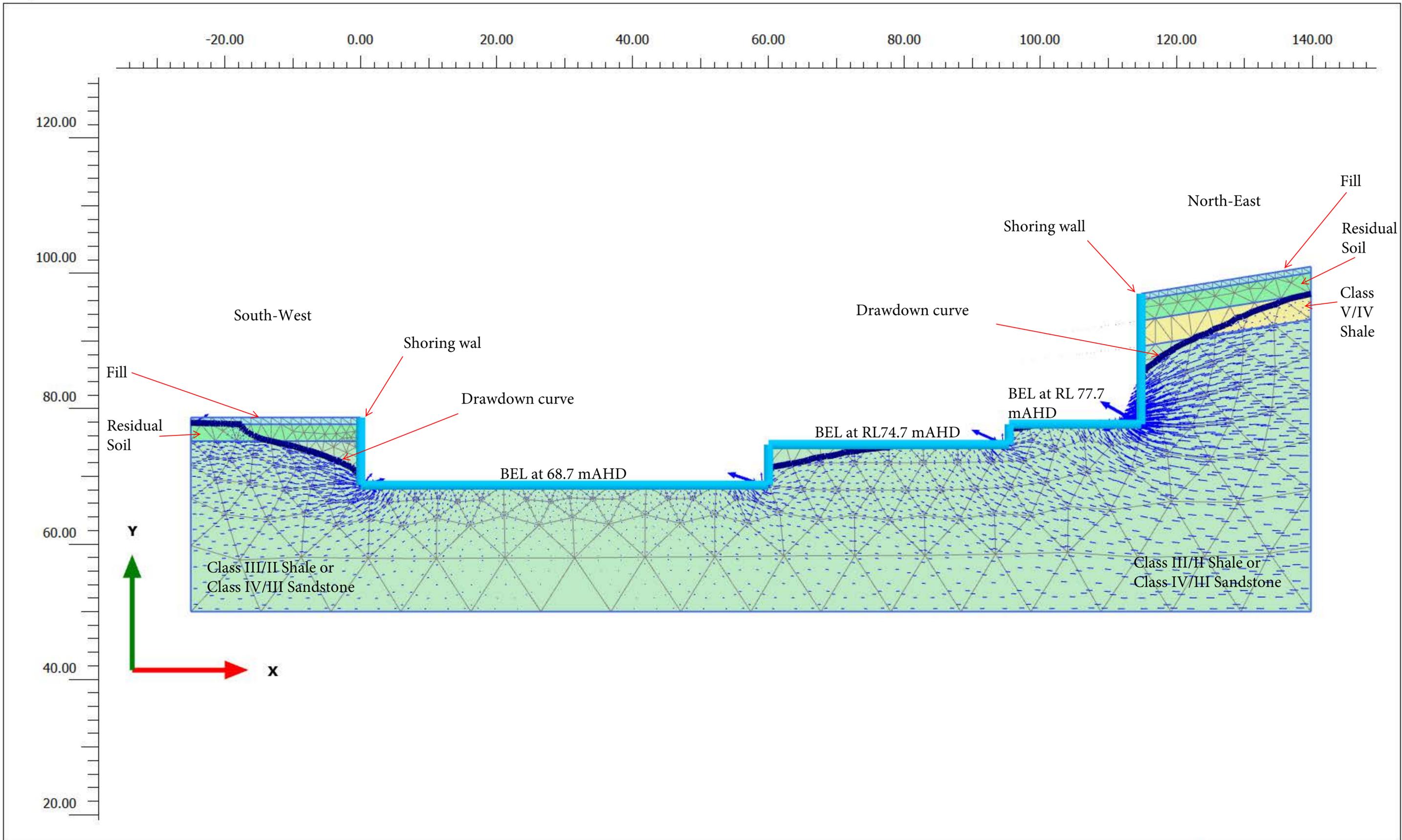
Figure:

2

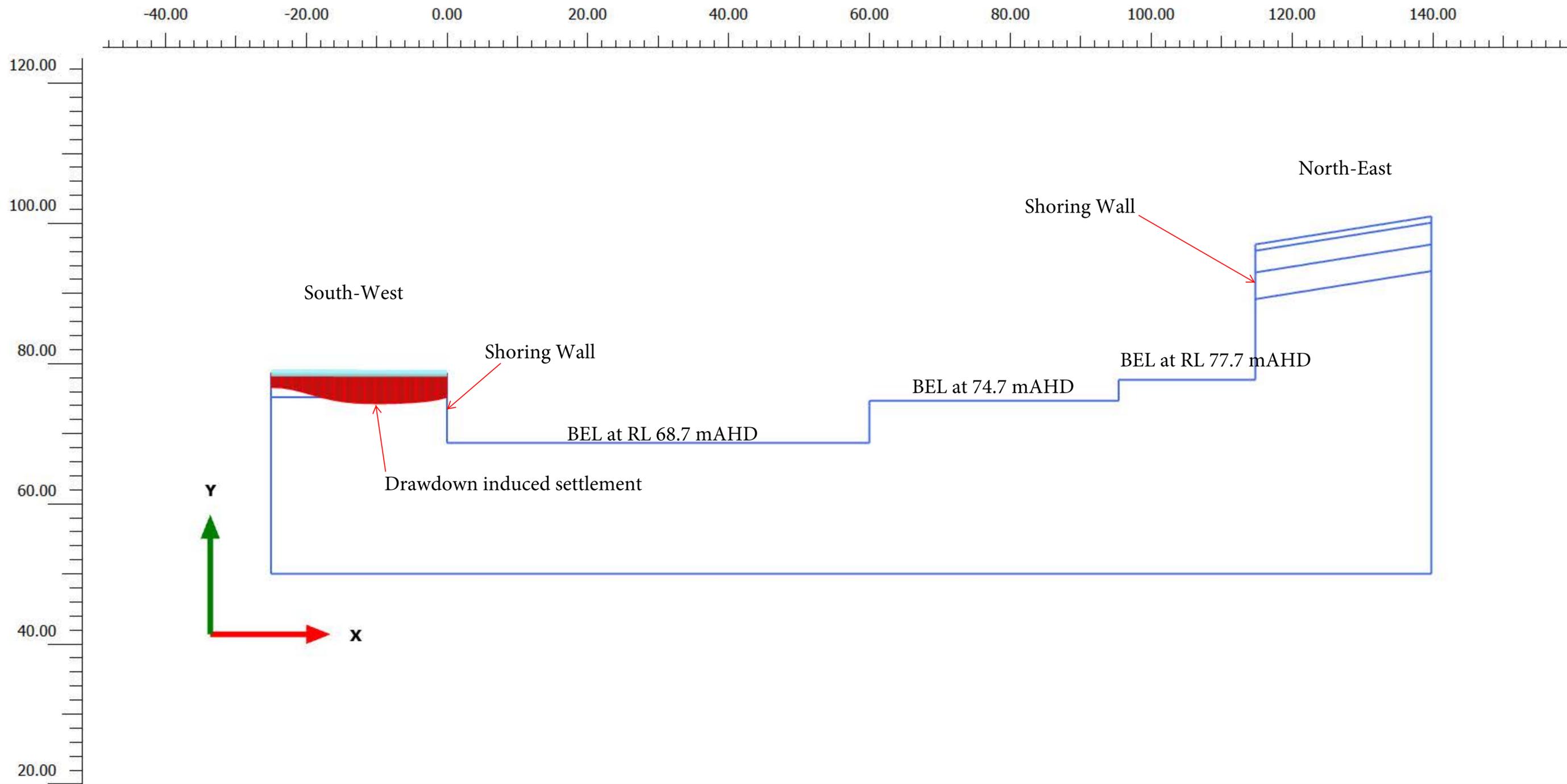
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Appendix A – PLAXIS 2D Model and Results

(Section A-A)



	<i>Project description</i> 2-16 Pockley Avenue, NSW		Predicted Drawdown results		<i>Date</i> 15/04/2025
	<i>Project filename</i> E26491.G12_Rev1_Rosevill ...	<i>Step</i> 8	<i>Company</i> EI Australia		



Total displacements u_y (scaled up $1.00 \cdot 10^3$ times)

Maximum value = $-2.081 \cdot 10^{-3}$ m

Minimum value = $-4.369 \cdot 10^{-3}$ m



PLAXIS[®] 2D

Project description

2-16 Pockley Avenue, NSW

Induced Drawdown Settlement at South-West Shoring Wall

Date

15/04/2025

Project filename

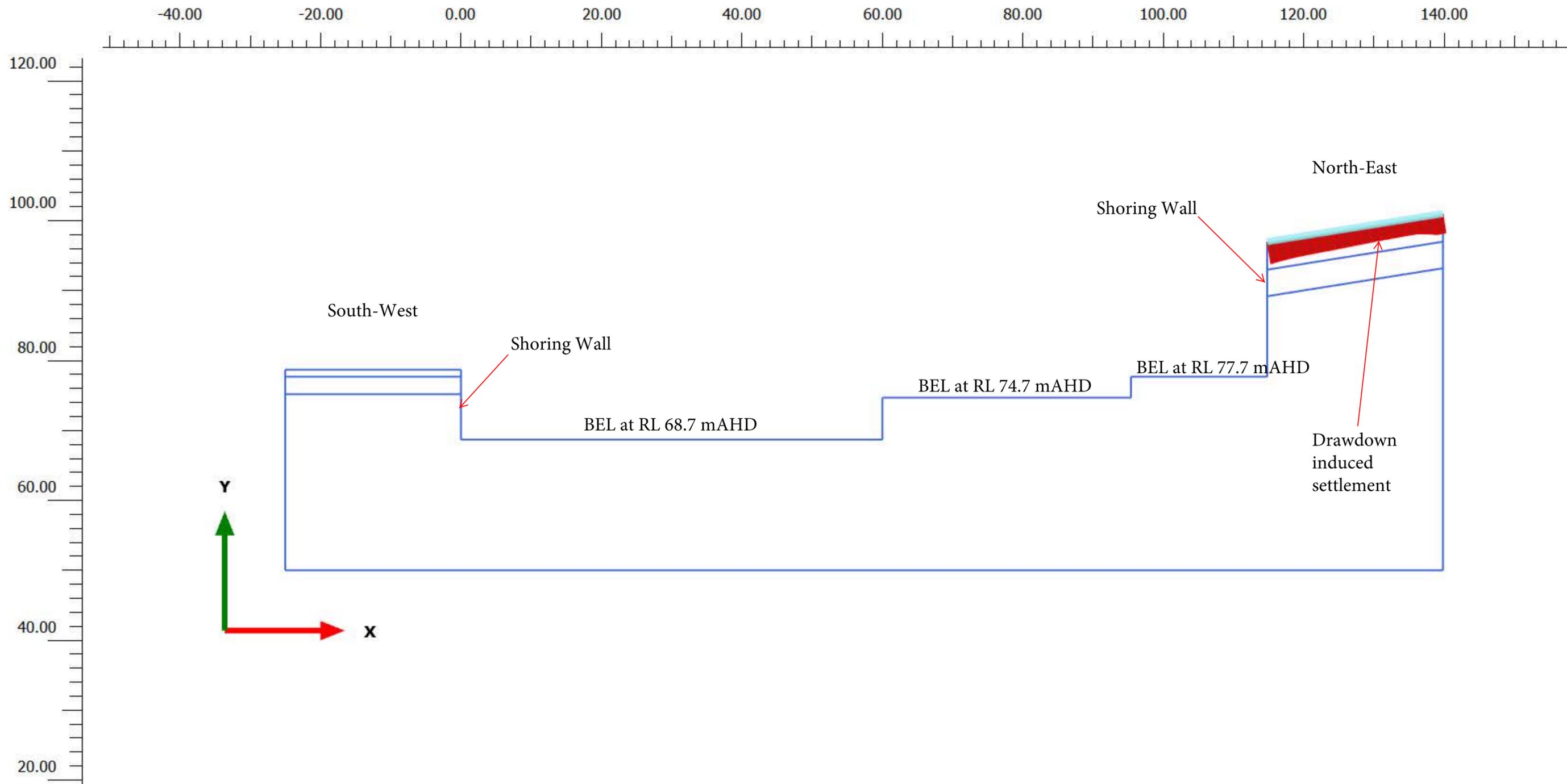
E26491.G12_Rev1_Rosevill ...

Step

8

Company

El Australia



Total displacements u_y (scaled up 500 times)

Maximum value = $-4.551 \cdot 10^{-3}$ m

Minimum value = $-6.382 \cdot 10^{-3}$ m



PLAXIS[®] 2D

Project description

2-16 Pockley Avenue, NSW

Induced Drawdown Settlement at North-East Shoring Wall

Date

15/04/2025

Project filename

E26491.G12_Rev1_Rosevill ...

Step

8

Company

EI Australia

Appendix B – Rising Head Permeability Tests

Rising Head Permeability Test



EI Job No.	E26491.G12	Test Date	21/02/2025
By	JO	Location	2-16 Pockley Ave, Roseville, NSW

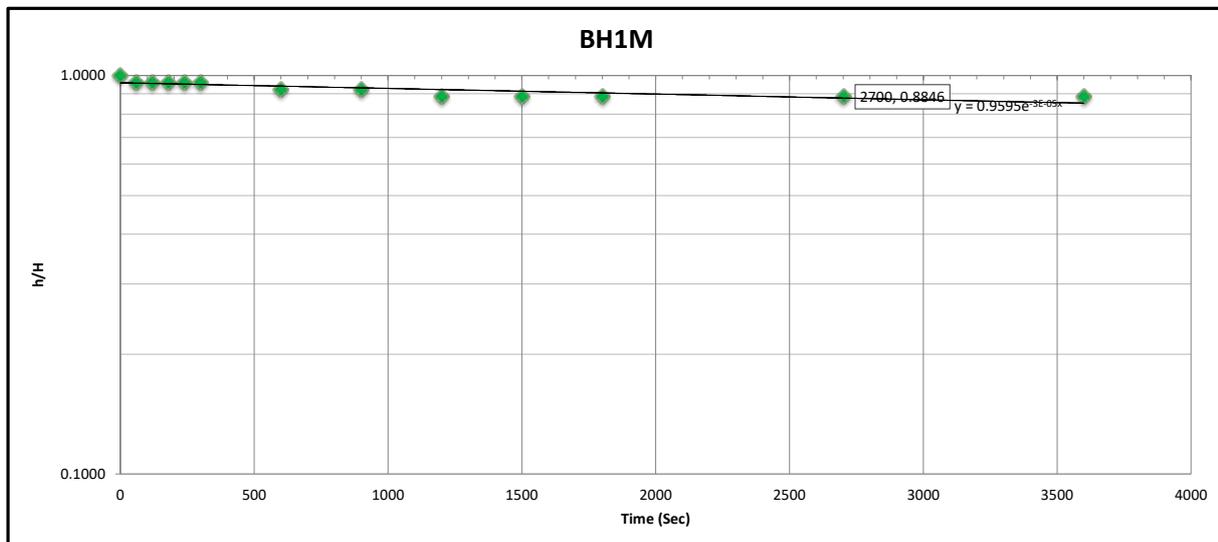
Borehole Detail	
BH No.	BH1M
Casing Stick-up (m)	-0.16
Effective Piezo Screen Length (m)	0.58
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	7.03
Static Water Level (m BToC)	6.45
Lag time T0 (sec)	31738.74

Based on Hvorslev Method

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

Calculated Permeability k **4.63E-08** m/sec

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			6.45		
	0	0	6.71	0.26	1.0000
	1	60	6.7	0.25	0.9615
	2	120	6.7	0.25	0.9615
	3	180	6.7	0.25	0.9615
	4	240	6.7	0.25	0.9615
	5	300	6.7	0.25	0.9615
	10	600	6.69	0.24	0.9231
	15	900	6.69	0.24	0.9231
	20	1200	6.68	0.23	0.8846
	25	1500	6.68	0.23	0.8846
	30	1800	6.68	0.23	0.8846
	45	2700	6.68	0.23	0.8846
	60	3600	6.68	0.23	0.8846



Rising Head Permeability Test



EI Job No.	E26491.G12	Test Date	21/02/2025
By	JO	Location	2-16 Pockley Ave, Roseville, NSW

Borehole Detail	
BH No.	BH2.1M
Casing Stick-up (m)	-0.09
Effective Piezo Screen Length (m)	4.25
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	18
Static Water Level (m BToC)	13.75

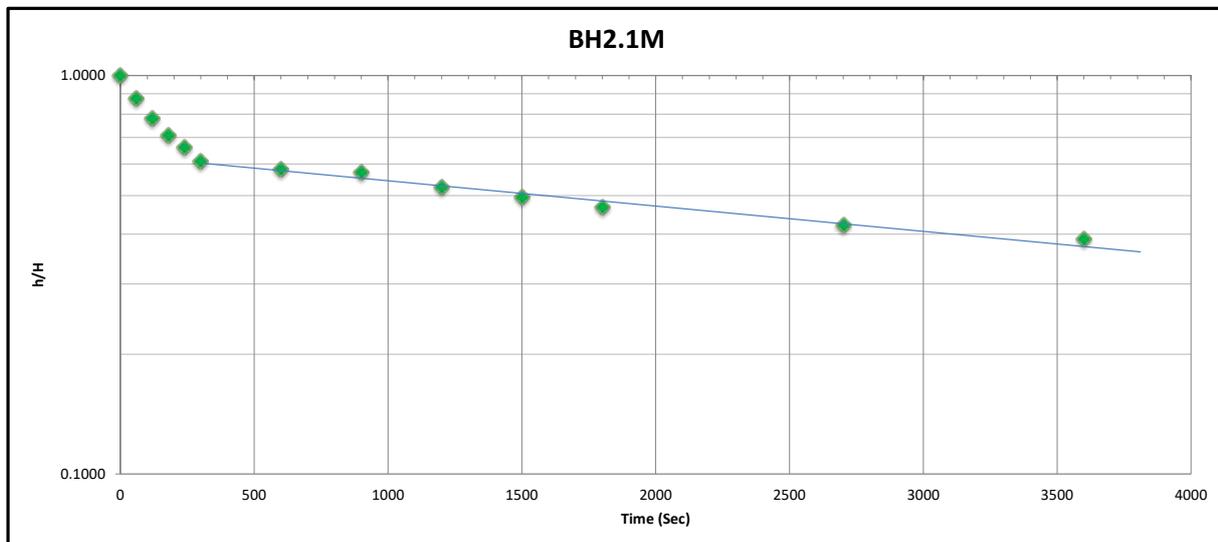
Based on Hvorslev Method

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

t1	300
t2	3600
h1	0.6080
h2	0.3893

Calculated Permeability k	4.68E-08
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Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			13.75		
	0	0	17.5	3.75	1.0000
1	60		17.04	3.29	0.8773
2	120		16.68	2.93	0.7813
3	180		16.4	2.65	0.7067
4	240		16.22	2.47	0.6587
5	300		16.03	2.28	0.6080
10	600		15.93	2.18	0.5813
15	900		15.89	2.14	0.5707
20	1200		15.72	1.97	0.5253
25	1500		15.61	1.86	0.4960
30	1800		15.5	1.75	0.4667
45	2700		15.33	1.58	0.4213
60	3600		15.21	1.46	0.3893



Rising Head Permeability Test



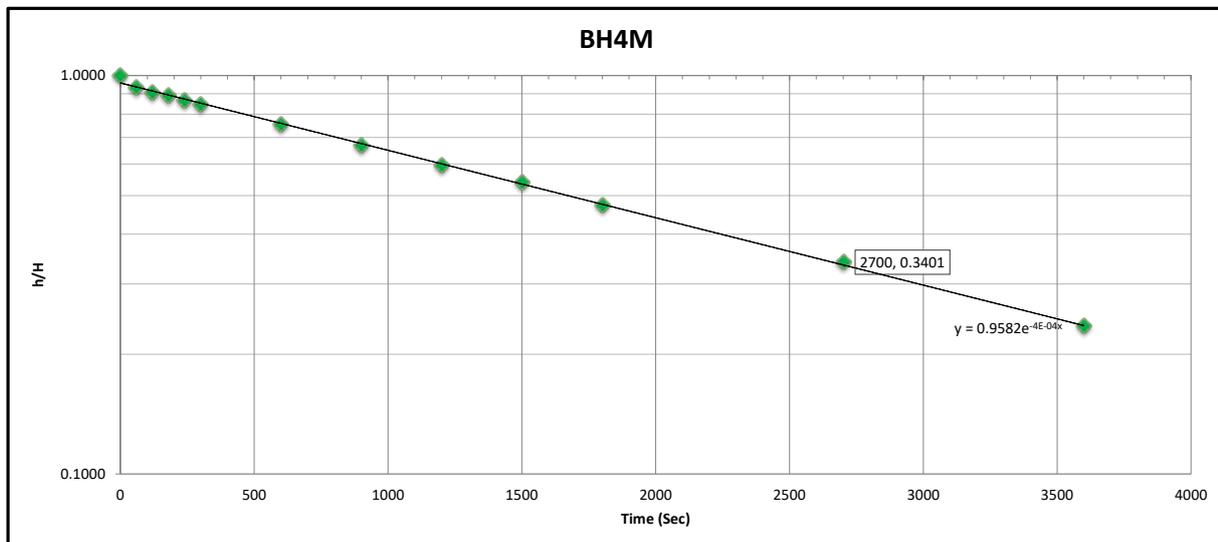
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By	JO	Location	2-16 Pockley Ave, Roseville, NSW

Borehole Detail	
BH No.	BH4M
Casing Stick-up (m)	-0.13
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)	7
Static Water Level (m BToC)	3.9
Lag time T0 (sec)	2382.54
Calculated Permeability k	1.91E-07

Based on Hvorslev Method

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

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			3.90		
	0	0	6.37	2.47	1.0000
1	60		6.2	2.30	0.9312
2	120		6.14	2.24	0.9069
3	180		6.1	2.20	0.8907
4	240		6.04	2.14	0.8664
5	300		5.99	2.09	0.8462
10	600		5.76	1.86	0.7530
15	900		5.55	1.65	0.6680
20	1200		5.37	1.47	0.5951
25	1500		5.23	1.33	0.5385
30	1800		5.07	1.17	0.4737
45	2700		4.74	0.84	0.3401
60	3600		4.48	0.58	0.2348



Rising Head Permeability Test



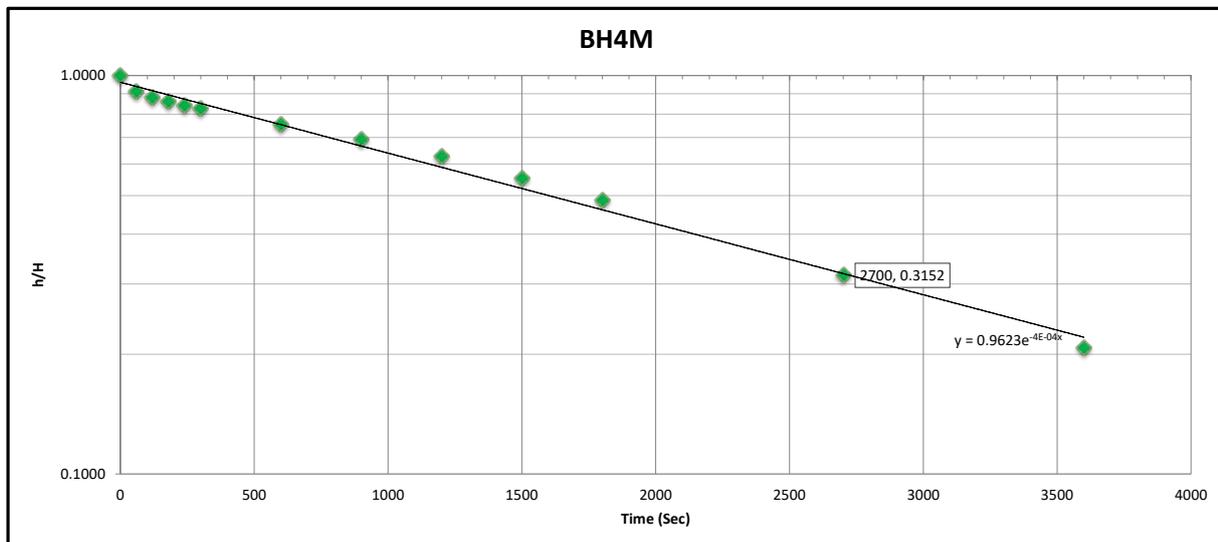
EI Job No.	E26491.G12	Test Date	21/02/2025
By	JO	Location	2-16 Pockley Ave, Roseville, NSW

Borehole Detail	
BH No.	BH4M
Casing Stick-up (m)	-0.13
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)	7
Static Water Level (m BToC)	3.32
Lag time T0 (sec)	2389.58
Calculated Permeability k	1.90E-07

Based on Hvorslev Method

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

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			3.32		
	0	21.45	6.54	3.22	1.0000
1	60	20.52	6.25	2.93	0.9119
2	120	20.2	6.16	2.84	0.8816
3	180	20	6.10	2.78	0.8627
4	240	19.77	6.03	2.71	0.8409
5	300	19.6	5.97	2.65	0.8248
10	600	18.84	5.74	2.42	0.7528
15	900	18.18	5.54	2.22	0.6903
20	1200	17.5	5.33	2.01	0.6259
25	1500	16.72	5.10	1.78	0.5520
30	1800	16.01	4.88	1.56	0.4847
45	2700	14.22	4.33	1.01	0.3152
60	3600	13.08	3.99	0.67	0.2072



Rising Head Permeability Test



EI Job No.	E26491.G12	Test Date	21/02/2025
By	JO	Location	2-16 Pockley Ave, Roseville, NSW

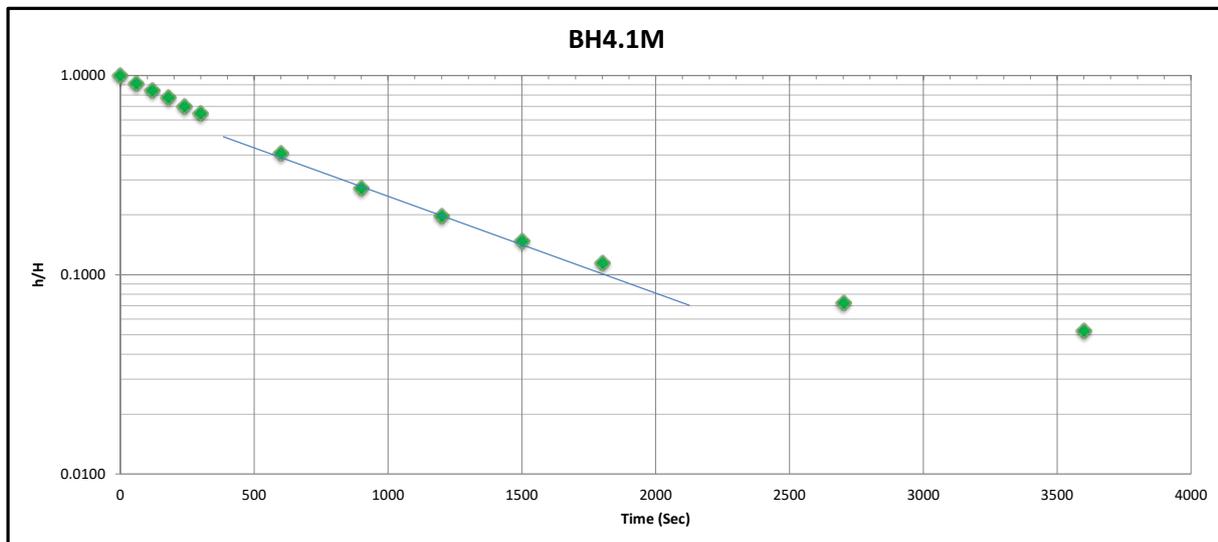
Borehole Detail	
BH No.	BH4M
Casing Stick-up (m)	-0.18
Effective Piezo Screen Length (m)	6
Piezo Radius r (m)	0.025
Bore radius (Auger Radius) (m)	0.038
Depth of the piezometer (m BGL)	15
Static Water Level (m BToC)	3.17
Lag time T0 (sec)	836.65
Calculated Permeability k	3.03E-07

Based on Hvorslev Method

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

t1	300
t2	1800
h1	0.6432
h2	0.1145

Time (mins)	Time (sec)	Depth to water (ft BToC)	Depth to water (m BToC)	Change in Level (m)	h/H
Static			3.17		
	0	45.6	13.90	10.73	1.0000
1	60	42.55	12.97	9.80	0.9134
2	120	40.07	12.21	9.04	0.8429
3	180	37.6	11.46	8.29	0.7727
4	240	34.95	10.65	7.48	0.6974
5	300	33.04	10.07	6.90	0.6432
10	600	24.65	7.51	4.34	0.4048
15	900	19.94	6.08	2.91	0.2710
20	1200	17.34	5.29	2.12	0.1972
25	1500	15.59	4.75	1.58	0.1474
30	1800	14.43	4.40	1.23	0.1145
45	2700	12.93	3.94	0.77	0.0719
60	3600	12.25	3.73	0.56	0.0525



Appendix C – Groundwater Level Monitoring Report No.1

11 September 2025
E26491.G11.GW02

Wayne Xiong
Aqualand Prestige 2 Pty Ltd
Level 37, 264 George Street
SYDNEY NSW 2000

Groundwater Level Monitoring Report No. 2 Site B, 2-16 Pockley Avenue, Roseville, 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 Wednesday 18 December 2024 to Monday 14 July 2025.

Groundwater levels were collected remotely during the monitoring period 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)
BH1M	94.64	94.80	-0.16	7.03	87.91
BH2.1M	97.91	98.00	-0.09	18.00	82.04
BH2M	97.94	98.00	-0.06	8.00	91.15
BH4M & BH4.1M	80.12	80.25	-0.13	7.00	73.32

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)
BH1M	88.87	89.31	87.83	5.49	6.97
BH2.1M	84.18	85.02	83.65	12.98	14.35
BH2M	91.90	92.01	91.71	5.99	6.29
BH4M & BH4.1M	76.99	78.30	76.06	1.95	4.19

During our site visit on 21 February 2025, the data logger from monitoring BH2M was discontinued and relocated to BH2.1M on the same day for the continuation of monitoring groundwater within the site.

During our site visit on 24 February 2025, the data logger from monitoring BH4M was discontinued and relocated to BH4.1M on the same day for the continuation of monitoring groundwater within the site.

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

For and on behalf of:

EI AUSTRALIA

Author



Jacky Ong-Phung
Graduate Geotechnical Engineer

Attachments:

Figure 1:

Figure 2-4:

Important Information

Reviewer



James Brooker
Senior Geotechnical Engineer

Data Logger Location Plan

Groundwater Level, Daily Rainfall vs. Time From 18
December 2024 to 14 July 2025



POCKLEY AVENUE

LARKIN STREET

POCKLEY AVENUE

MACLAURIN PARADE



Map Source: Rygate&Company Pty Ltd - Reference No. 80598, Sheet 2-7 of 7, Revision. A, Dated 3 September 2024

LEGEND (All Locations are Approximate)

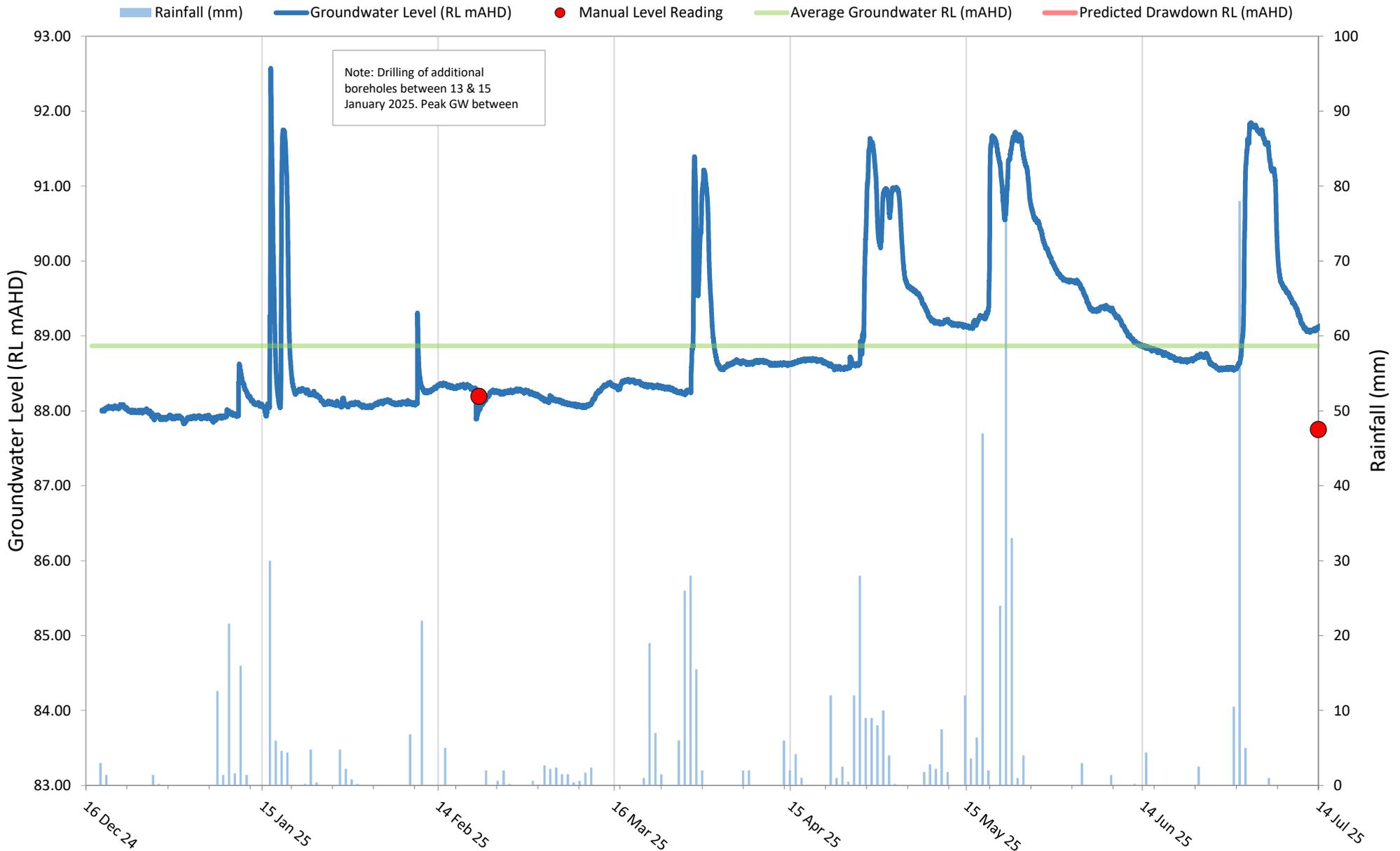
- - - Site boundary
- - - Basement outline
- o Data logger location plan



Drawn:	K.P.
Approved:	J.B.
Date:	28-03-2025

Aqualand Prestige 2 Pty Ltd
 Groundwater Monitoring
 Site B, 2-16 Pockley Avenue, Roseville, NSW
 Data Logger Location Plan

Figure:	1
Project:	E26491.G11.GW1



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

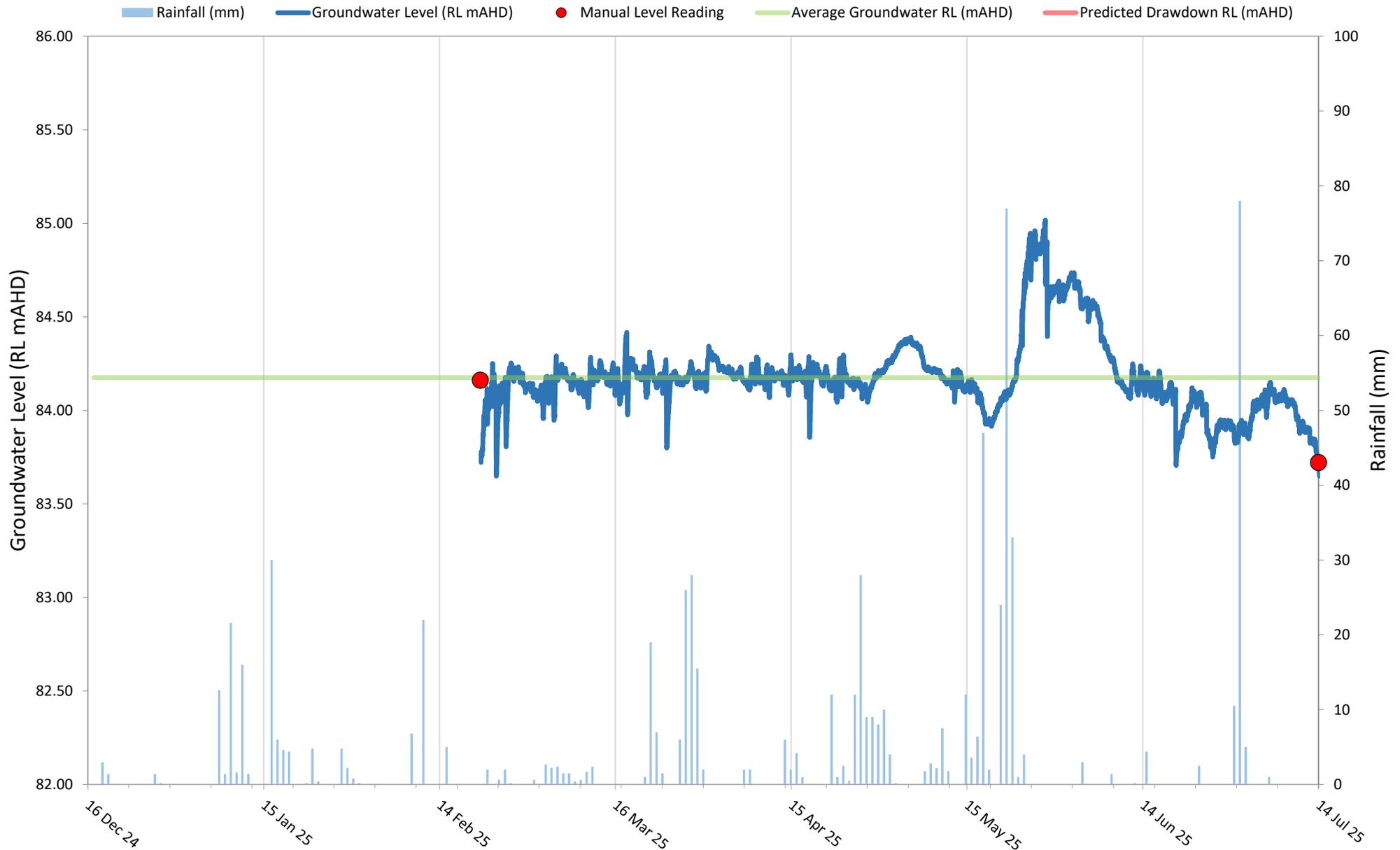
Drawn:	JO
Approved:	JB
Date:	11/09/2025

Aqualand Prestige 2 Pty Ltd
Groundwater Level Monitoring
Site B, 2-16 Pockley Avenue, Roseville, NSW
BH1M

Figure:

2

Project: E26491.G11.GW02



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

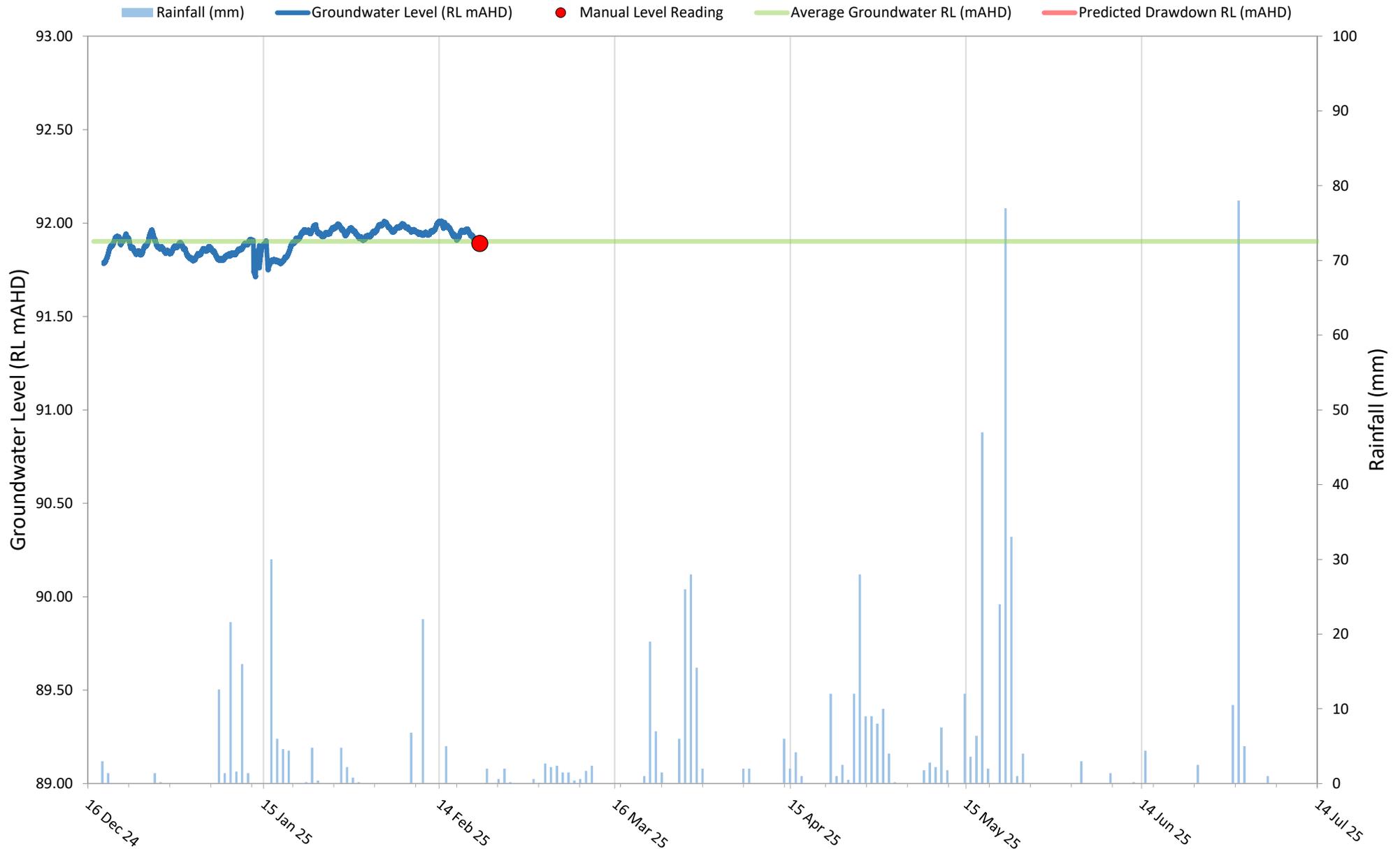
Drawn:	JO
Approved:	JB
Date:	11/09/2025

Aqualand Prestige 2 Pty Ltd
Groundwater Level Monitoring
Site B, 2-16 Pockley Avenue, Roseville, NSW
BH2.1M

Figure:

3

Project: E26491.G11.GW02



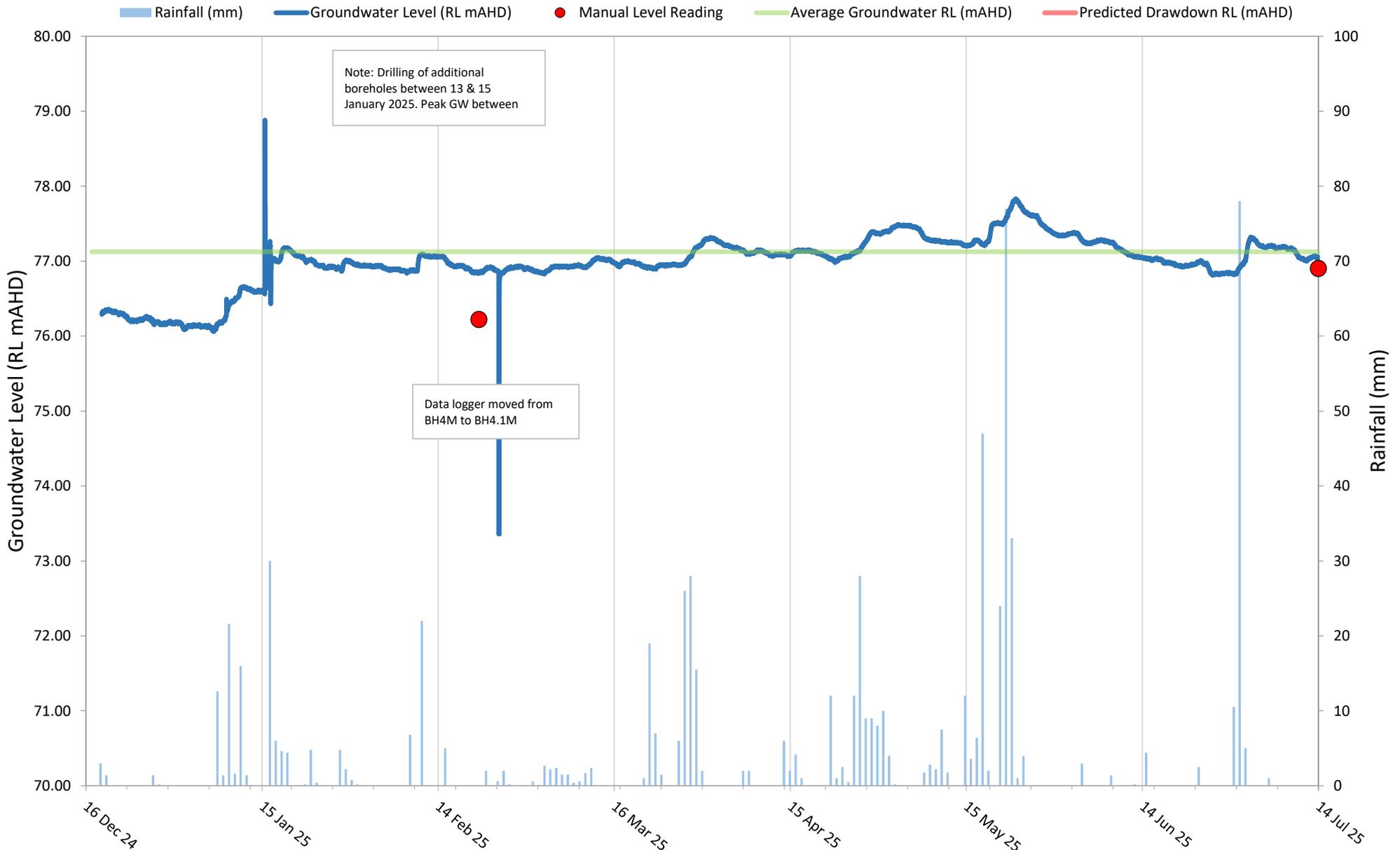

Contamination | Remediation | Geotechnical

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

Drawn:	JO
Approved:	JB
Date:	11/09/2025

Aqualand Prestige 2 Pty Ltd
 Groundwater Level Monitoring
 Site B, 2-16 Pockley Avenue, Roseville, NSW
 BH2M

Figure:
4
 Project: E26491.G11.GW02



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

Drawn:	JO
Approved:	JB
Date:	11/09/2025

Aqualand Prestige 2 Pty Ltd
Groundwater Level Monitoring
Site B, 2-16 Pockley Avenue, Roseville, NSW
BH4M & BH4.1M

Figure:

5

Project: E26491.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 – SEARs Requirement Declaration Form

SEARs Requirements Declaration: Larkin Street

Declaration		
Name	Stephen Kim	James Brooker
Qualifications	Senior Geotechnical Engineer BEng (Hons), MEng (structural)	Senior Geotechnical Engineer BEng (Civil)
The undersigned declares that this E26491.G12_Rev2 Groundwater Seepage Analysis Report has been prepared in response to the following SEARs requirements issued for the Project on 15/11/2025 for SSD-77825469:		
SEARs item no.	SEARs Requirement	Relevant Section of this Report
13. Ground and Water Conditions (partial)	This report addresses part of: - Assess potential impacts on related infrastructure. - Provide a Surface and Groundwater Impact Assessment that assesses potential impacts on related infrastructure and groundwater resources in accordance with the relevant Groundwater Guidelines.	All sections
Signed		
Dated	11/09/2025	11/09/2025