Pacific Geotech
Consulting Geotechnical Engineers

DEWATERING MANAGEMENT PLAN: VERSION 2

Proposed High Rise Development

19-21 Anne Avenue

Broadbeach

Maryanne Developments Pty Ltd

March 2026

PG-13778

P: (07) 5636 4680 | **F:** (07) 5636 0286
E: info@pacgeo.com.au
A: 3 Jowett Street, Coomera QLD 4209
Postal: PO Box 499, Paradise Point QLD 4216
www.pacgeo.com.au ABN: 62 615 248 952

Pacific Geotech
Consulting Geotechnical Engineers

Ref: PG-13778, 2025-11-27, DMP VER 2
Author: Peter Elkington

11th March, 2026

Maryanne Developments Pty Ltd
Email: leo@bassargroup.com
CC: kyle.patience@hutchinsonbuilders.com.au

ATTENTION: LEO SARRIS

Dear Sir,

DEWATERING MANAGEMENT PLAN – PROPOSED HIGH RISE DEVELOPMENT
19-21 ANNE AVENUE, BROADBEACH

1.0 INTRODUCTION

A Dewatering Management Plan (DMP) is required for the proposed high rise development located at 19-21 Anne Avenue, Broadbeach, to satisfy the Gold Coast City Council's environmental criteria, and to ensure the development is undertaken in an environmentally responsible manner.

2.0 PROPOSED DEVELOPMENT

It is understood that the proposed development is to comprise the construction of a 32 storey tower over a double level basement. Earthworks are envisaged to consist of cuts of up to 6m for the basement with some over-excavation of up to 1m expected for the raft foundation.

The DMP relates specifically to the excavation of the proposed double level basement below the existing ground surface. Dewatering will be required during construction only. Permanent dewatering of the site is not required and no inflow to the basement or on-going dewatering will be required.

Based on the findings of the Geotechnical Investigation, groundwater levels are expected to be within the proposed basement excavation level, i.e. a basement slab of approximately 7m BGL has been indicated. Dewatering, approximately 1m below excavation level (or 8m BGL), is required for basement construction.

3.0 BACKGROUND

3.1 Investigations

A geotechnical investigation and an acid sulfate soil assessment (ASS) of the site have been undertaken by Pacific Geotech and the results are given in the following reports:

Geotechnical Investigation –
Proposed High Rise Development
19-21 Anne Avenue, Broadbeach
Project No.: PG-13778, Version 1 dated August 2025

Acid Sulfate Soil Management Plan –
Proposed High Rise Development
19-21 Anne Avenue, Broadbeach
Project No.: PG-13778, Version 1 dated August 2025

3.2 Subsurface Conditions

The general subsurface profile encountered on the site comprised fill material overlying a natural sand profile that was initially loose and medium dense and increase in density to become dense with depth.

Table 1 presents a summary of the encountered subsurface profile. Detailed borehole record sheets are appended to this report.

TABLE 1 SUBSURFACE PROFILE SUMMARY

BH No.	NATURAL						BH TD
	SAND			CLAY		META-SILTSTONE	
	Loose	Medium Dense	Dense to Very Dense	Stiff to Very Stiff	Hard		
BH01	0.0-4.1	4.1-5.5 19.8-22.7 32.7-34.1	5.5-19.8 34.1-39.6	22.7-27.2	27.2-32.7	39.6-TD	41.0
BH02	0.0-3.1	3.1-5.6	5.6-TD	NE	NE	NE	9.0

Notes:
1. All depths in metres below ground level at time of investigation.
2. NE - Not Encountered; TD - Termination Depth.

Groundwater was encountered in the borehole at a depth of 5.6m at the time of drilling. A groundwater monitoring well was installed in BH02 to allow for ongoing groundwater monitoring.

Typically the groundwater levels in the area are encountered at levels of approximately RL 0.5m to RL 1.0m. Fluctuations of +/- 0.5m are typically noted in the area.

Increases in the groundwater levels often occur following significant rainfall events (floods) with the groundwater levels to as much as RL 1.5m to RL 2.0m being noted in the area.

3.3 Acid Sulfate Soils

Based on the results of ASS testing of selected samples, all soil expected to be disturbed will provide ASS results below the action criteria. ASS at the site will therefore not be exposed as a result of the dewatering on-site.

4.0 DEWATERING

4.1 Background Monitoring

To allow existing/baseline monitoring to be undertaken, as well as on-going monitoring during the dewatering operation to be undertaken, piezometers will be installed as part of the dewatering process to monitor the water level and allow sampling to be undertaken.

The suggested/preliminary location of the wells are indicated on the attached Piezometer Installation Plan (attached to this report).

Background testing will be undertaken on samples collected from the monitoring wells. The background testing will include the collection and testing of 4 samples over a period of not less than 4 weeks and testing will be undertaken on the parameters indicated in Section 5.4 of this plan.

4.2 Dewatering Methods

The timeframe for the construction of the basement and temporary dewatering works at the site is expected to be 6 months. The following works are proposed to facilitate site dewatering:

- Baseline sampling of water for characterisation to allow planning for discharge to stormwater drains.
- Installation of dewatering wells within the excavation.
- Collection, treatment and testing of extracted water prior to discharge. The viability and suitability of the adopted treatment methods will be dependent on the specific methodology adopted by the dewatering contractor but experience in the immediate area indicates that successful treatment of the discharge water can be readily achieved.
- Discharge of extracted water during the construction dewatering phase to the adjacent stormwater system.
- The treatment systems will be self-contained and comprise a series of tanks. The tanks will be located within the site, but the actual location within the site

is not considered relevant as all discharge will be piped to the nominated release point.

A system of wells will be used to lower the water table on the site to a nominal depth of 1.0m below proposed basement excavation, i.e. ~8m BGL. Controlled pumping will be undertaken from the dewatering system, as required, to maintain the water levels below the development.

Flow Rates and Duration

The pumping systems required to maintain the dewatering across the site will be dependent upon the groundwater inflows and are envisaged to vary during the construction period as the excavation level increases and possibly depending upon natural tidal and weather-related fluctuations.

Using the subsurface profile information from the site investigation, proposed basement geometry and adopted permeability values, approximate flow rates were estimated.

These values will obviously change in the short term following the initial dewatering and variations in the weather conditions and rainfall.

A preliminary hydrological study of the proposed retention system and dewatering requirements has been undertaken.

The analysis undertaken indicates that a total volume of water to be extracted from the site during the longer term dewatering operation may initially be in the order of 60 to 80L/s. The volume of water could be expected to vary over time with an initially larger volume of water, and a reduction in the volume of discharge expected over time. The dewatering designer should verify these dewatering rates at the time the dewatering design is undertaken.

Given the groundwater levels in the region typically do not fluctuate on a seasonal cycle and instead fluctuate in response to rainfall events, there will be no seasonal variability in water quality at the site.

The abovementioned volumes are estimates only, based on the on-going dewatering requirements during the structural construction (i.e. after foundations have been poured). Higher discharge rates may be required to achieve the initial drawdown of the groundwater and should be determined by the dewatering contractor based on his dewatering system design. It is recommended that the dewatering contractor makes their own assessment of extraction volumes prior to installing the dewatering system.

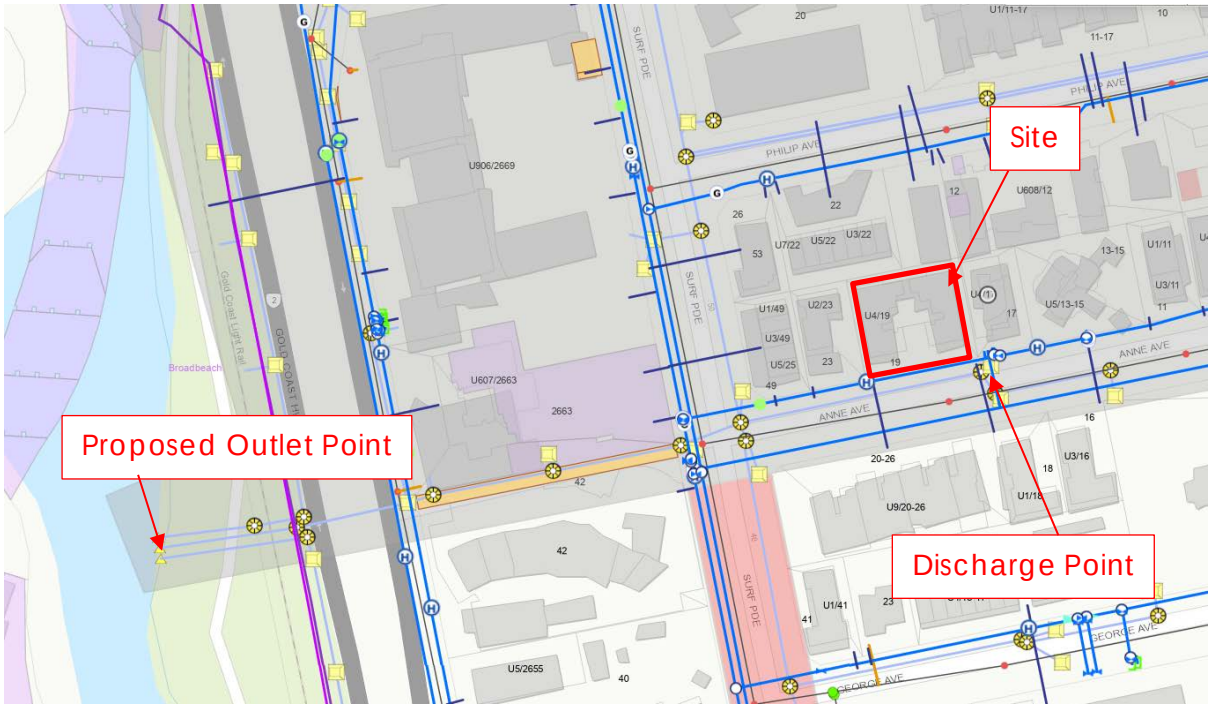
Water collected from the proposed dewatering system shall be directed towards a holding tank prior to release into the environment. The tank is to be located within the property boundary on site, near the water discharge points on the northern areas of

the site. Monitoring/testing of water within the tank/pit, will be undertaken, possibly followed by treatment of the water if results are outside acceptable discharge quality limits.

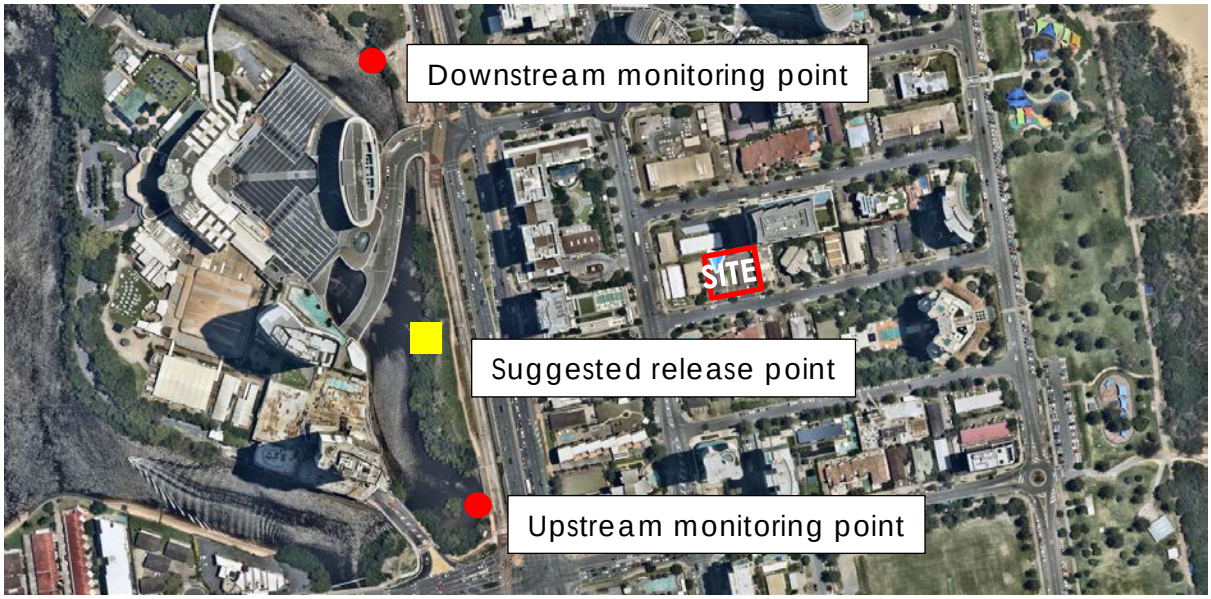
The duration of dewatering will be approximately 6 months from the point of excavation beginning, subject to the construction program. The dewatering will be ceased when sufficient building has been constructed to resist the hydrostatic uplift pressures.

4.3 Discharge Locations

The nominated location to discharge is the gully pit located on Anne Avenue as indicated below, which will flow to the adjacent Nerang River, following suitable treatment on-site of the water and confirmation the release water complies with the discharge criteria. Monitoring of the receiving water in the Nerang River and the discharge location shall be undertaken to confirm the satisfactory performance of the treatment and release operation is being achieved.



The suggested monitoring point locations are indicated below.



The dewatering from the site will be directed into the nominated discharge location.

It is understood that the predicted flow rate of up to 80L/s is well within the capacity of the stormwater network (capacity is expected to exceed 150L/s).

Pipes connecting to the gully pits will be installed as to not pose any risk to pedestrians or the road users. The pipes will be buried under the ground or below temporary covers and the pipes will be positioned as to flow into the gully pits. Temporary traffic management and permanent engineered solutions to ensure the pipes are not posing any risk will be implemented.

Specific details are to be finalised by the dewatering contractor and approved by council at the prestart meeting.

4.4 Legislative Responsibility

- City of Gold Coast, Guidelines for Dewatering Management Plan, May 2016, City Development, Planning and environment Directorate.
- Australian and New Zealand Environment and Conservation Council (ANZECC)(2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 1: Guidelines.
- National Environment Protection Council (NEPC), 2013, National Environment Protection (Assessment of Site Contamination) Amendment Measure (No.1), Australian Government Publishing Service, Canberra – Guideline on Investigation Levels for Soil and Groundwater.
- Environmental Protection Agency (EPA) (2009) Queensland Water Quality Guidelines (QWQG).

4.5 ***Management Responsibility***

Overall responsibility of the monitoring of the DMP is with the Principal Contractor (to be awarded).

TABLE 2 MANAGEMENT RESPONSIBILITIES

Title	By/Personnel	Duty/Responsibility	Contact Number
Project Principal	Bassar Group	Overall Project Control	Phone: TBA Fax: TBA
Principal Contractor	Hutchinson Builders	Project construction	Phone: TBA
Site Monitoring	Pacific Geotech	Monitoring of ongoing compliance with DMP and responding to questions pertaining to compliance with DMP	Phone: (07) 56364680 Fax: (07) 5636 0286
Regulator's Approvals	CofGCC	Approvals to discharge site water to stormwater or sewer; complaints regarding site environmental management, etc	Phone: TBA Fax: TBA
Dewatering Contractor	TBA	Installation and operation of dewatering method/system; compliance with DMP	Phone: TBA Fax: TBA

5.0 ENVIRONMENTAL MANAGEMENT ELEMENTS

5.1 ***Air Quality***

Air quality may be impacted by site dewatering activities as a result of exhaust emitted by mechanical equipment, odours associated with extracted water and dust generated from areas in which the water table has been lowered. To minimise these effects the following should be adhered to:

- All plant and equipment should be maintained to ensure excessive fumes are not generated;
- Switch off all plant and equipment engines when not in use;
- Water should be used to dampen exposed soil and suppress dust especially on windy days;
- Vehicle speeds on exposed soil should be kept below 10km/h; and
- Odorous water should be discharged off-site as quickly as possible.

Following implementation of the preventive measures, the following performance criteria should be used to assess the works:

- No detectable odours should leave the boundaries of the site, and
- No visual dust should leave the boundaries of the site.

Monitoring

- The site manager should visually monitor dust on site and organise the watering of roads and exposed soil areas as required;
- The Site Manager should maintain odours in stored water and vehicle inspections implemented on the site; and
- Maintain a record of any complaints in a log book, including the date and time, name of the complainant, nature of the complaint, action taken and follow up.

Response

- Attend to any complaints promptly e.g. within 24 hours;
- If stored water becomes odorous, either discharge off-site or apply and odour suppressant; and
- The dewatering Supervisor should modify work practices if air quality cannot be controlled effectively by the application of water.

5.2 Noise Emissions

Noise associated with dewatering will result from the operation of pumps and generators.

To reduce or minimise the impact of noise (particularly excessive or prolonged periods of noise) associated with dewatering on surrounding residents and other users of the area the following strategies should be adhered to:

- The dewatering system may be required to operate twenty-four hours a day and it may be necessary to use noise attenuating barriers or noise reduction (high efficiency) mufflers to reduce the noise levels, if excessive;
- Working hours should be restricted to 6:30am to 6:30pm Monday to Saturday, in accordance with the approved DA construction hours.
- Maintain and operate all equipment in accordance with manufacturers' recommendations; and
- Switch off all equipment when not in use.

Following implementation of the preventive measures, the following performance criteria should be used to assess the works:

- Absence of verified complaints regarding noise; and
- Due to the nature of the environment in which the construction work will occur, noise levels should not exceed 63dB outside a 17m radius from the operating machinery.

Monitoring

- Maintain a record of any complaints in a log book, including the date and time, name of the complainant, nature of the complaint, action taken and follow up; and
- Undertake noise level monitoring only in the event of a verified noise related complaint.

Response

- All complaints are to be responded to within twenty-four hours of receiving the complaint; and
- If necessary, amelioration measures implemented such as amended working hours and/or employment of new noise attenuating devices.

5.3 Vibration Considerations

As outlined in the geotechnical report, the vibration effects associated with the dewatering operation are expected to be minimal.

5.4 Water Quality

Water generated from dewatering may contain elevated levels of suspended solids sue to sediment particles and depending upon the depth of excavation, may have low pH levels and resultant elevated concentrations of aluminium and iron.

To maintain the downstream water quality by minimising increases in turbidity and the introduction of contaminants to the stormwater system the following should be adhered to:

- Water exceeding the below levels should not leave the site through the stormwater system, to ensure this, the following strategies shall be adopted:
- Water shall be pumped to a detention pond/tank:
- Retained water shall be monitored for compliance with water quality criteria above; and
- Water with results exceeding the requirements for discharge to the stormwater system shall be treated until testing demonstrates that it is suitable for the selected destination.

Following implementation of the preventive measures the following performance criteria should be used to assess the works:

Prior to discharge, the groundwater discharge shall meet the guidelines outlined below which form part of Queensland Water Quality Guidelines 2006 (QWQG), South - East Queensland Regional Guidelines, Mid - Estuarine and Tidal Canals, ANZECC Australian Water Quality Guidelines for Fresh and Marine Waters (2000), and Gold Coast City Council 'Guidelines for Dewatering Management Plan', the

"Environmental Protection (Water) Policy 2009 - Nerang River environmental values and water quality objectives (July 2010)."

TABLE 3 ON-SITE DEWATERING WATER QUALITY RELEASE CRITERIA

Indicator	Release Criteria
pH	6.5-8.5
Dissolved Oxygen	90th percentile is > than 80% or 6mg/L (% Saturation)
Turbidity	<20 NTU
Iron (Fe)	≤ 300mg/L

Monitoring at the release point to the Nerang River shall be undertaken weekly and shall meet the following criteria.

TABLE 4 WATER QUALITY CRITERIA – NERANG RIVER MONITORING POINT

Indicator	Release Criteria
pH	7.0-8.4
Dissolved Oxygen	80%-105% (% Saturation)
Turbidity	<5 NTU
Suspended Solids	<15mg/L
Iron (Fe)	≤ 300mg/L
Total Nitrogen	<300µg/L
Oxidised N	<10µg/L
Total Phosphorous	<30µg/L
Chlorophyll a	<4µg/L
Ammonia N	<15µg/L
Organic N	<250µg/L
Filterable Reactive Phosphorous (FRP)	<10µg/L
Secchi Depth (m)	>1.0m (20th percentile)

The above criteria have been determined in part from the Environment Protection (Water) Policy 2009 - Water quality objectives (July 2010).

Additional monitoring of the point of release of the dewater discharge should be undertaken on a weekly basis (initially) to confirm the release waters meet this criteria at the point of discharge from the stormwater network. Assessment of the criteria specified in Table 4 should also be adopted for the receiving water testing. Alternative release criteria could be adopted with suitable background monitoring.

Specific treatment techniques to be used to achieve the water quality criteria at the discharge point will be dependent on the initial test results in the holding tank and the treatment methods adopted by the dewatering contractor.

Monitoring Frequency

The following monitoring frequency will be adopted during dewatering operations:

- Daily – pH, Dissolved Oxygen (DO), Turbidity and Suspended Solids, Conductivity; and
- Weekly – as above plus chemical tests.

Further to the above, monitoring of the pH levels should be carried out immediately following rain events.

Response

- Compliance failures regarding specified performance criteria should be recorded (including the date, time, nature of failure and actions taken to rectify the situation);
- Monitoring results should be reviewed in relation to site management practices on a regular basis and improvement strategies should be developed as required; and
- In the event of consistent compliance failures, consideration should be given to increasing the monitoring frequency.

5.5 Pumping Rates – Construction Dewatering Only

The analysis undertaken indicates that the on-going volume of water to be extracted from the site during the dewatering operation will be in the order of 60L/s to 80L/s. The volume of water could be expected to vary over time with an initially larger volume of water, and a reduction in the volume of discharge expected over time.

It should be noted that the above estimated extraction volumes are approximate only and therefore necessarily conservative. It is recommended that the dewatering contractor undertake their own assessment of extraction volumes prior to installing the dewatering system.

Monitoring

Monitoring and documentation of the water levels in the surrounding groundwater monitoring well.

Response

Some adjusting of dewatering pumping rates may be required depending on the levels of the dewatering.

5.6 Recycling Opportunities

Consideration has been given to recycling the water extracted from site. Given the rates of discharge that has been calculated, it is not considered practical to utilise the discharge for typical recycling purposes.

6.0 CONTINGENCY PLANNING

Events requiring emergency response planning may arise including:

- Failure of pumping system;
- Excessive Settlement external to the site
- Unexpected Groundwater Inflow
- Excessive draw down of the groundwater levels
- Unexpected contaminants found during monitoring
- Failure of treatment methods
- Heavy rainfall
- Excessive drawdown of groundwater levels

The Contingency Plan will provide a procedure outlining the roles and responsibilities of key personnel for each of the unexpected situations noted above. As well as this, contingency responses and a reporting hierarchical flowchart, with emergency contact telephone numbers will also be included. Depending upon the nature of the emergency, reports to key Regulatory Authorities may also be required.

The Contingency Plan document will be required to be kept on-site at all times during the site excavation works.

6.1 Failure of Pumping Systems

The Dewatering Contractor shall be contacted immediately in the event that dewatering equipment has failed and is likely to cause a significant impact on the stability of the excavation on the environment, or surrounding properties. It is recommended the Principal Contractor, in consultation with the Dewatering Contractor shall be responsible rectifying the failure in the time frame necessary to minimise potential impacts. Tools, parts and equipment necessary to manage aspects of the system which present a high risk of significant impacts in the event of failure (if any) shall be readily available.

On-site monitoring of the dewatering tanks for sediment build-up, loss of pump pressure, blocking of suction, etc. should be undertaken on a weekly basis or in accordance with the dewatering contractors operating procedures.

6.2 Settlement

As a precaution, triggers and preventative/corrective actions in relation to the settlement of soils shall be determined and implementer by the principal contractor in conjunction with the project geotechnical engineer.

Where deemed necessary by the engineer:

- The shoring system shall be modified

- Measures taken to mitigate settlement which may have an adverse effect on the integrity of built structures.

The monitoring program shall be undertaken in consultation with the engineer who will determine whether:

- As an initial step further monitoring is appropriate, or necessary to determine to course of action; or
- Immediate action is required to mitigate potential settlement.

6.3 Unexpected Groundwater Inflow

Preventive and corrective actions shall be taken in the event that groundwater monitoring observations indicate that unexpected groundwater contamination has been encountered during dewatering. The most appropriate action(s) shall be dependent on the stage of construction and risk of adverse impacts to groundwater users and the receiving environment.

6.4 Excessive Drawdown of the Watertable

If monitoring of the groundwater levels external to the site indicates excessive drawdown of the groundwater table is occurring, moderation to the dewatering system and pumping rates shall be undertaken in consultation with a suitably qualified geotechnical engineer and the retention designers.

6.5 Failure of Treatment Methods & Unexpected Contaminants

If the monitoring indicates the water is not meeting the release criteria, the dewatering contractor shall increase or rectify treatment methods to bring the release water to within the outlined criteria. If the release water continues to exceed the approved criteria, dewatering rates will be slowed to enable additional treatment of the water to be achieved.

If the release waters can not reach the release criteria for more than 2 consecutive weeks, dewatering will cease and treatment techniques modified to enable the release criteria to be met.

6.6 Heavy Rainfall

The pumping rates outlined above are considered conservative. If pumps are sized to meet this volume, even if heavy rainfall occurs, the rate of discharge from site will be limited by the pump capacity. Whilst the time for the site to recover from a heavy rainfall event may impact on construction scheduling, it is not likely to impact on the retention stability negatively and therefore it is not considered necessary to increase the discharge rates significantly, following a heavy rainfall event.

7.0 RECORDS AND REPORTING

The Principal Contractor shall maintain a record of all quality tests/assessments along with details of corrective and preventative actions implemented in relation to the dewatering activity.

The following reports shall be prepared by the suitably experience environmental professional engaged to complete compliance monitoring:

- Suitable maintenance of the ground water treatment system, in accordance with the manufacturers guidelines shall be undertaken.
- Onsite reporting of field measurements and recommendations for immediate corrective actions, if required.
- Interim email reports issued upon receipt of laboratory analysis where results identify potential compliance issues or water quality impacts that require immediate action, and other recommended preventative/corrective actions.
- A monthly dewatering report the client can submit to CofGCC that shall include:
  - a summary of discharge and receiving waters quality results including a statistical appraisal of the date, control charts showing quality results, and an assessment compliance with the WQOs
  - water quality treatment required including retention methods
  - indicators of potential environmental harm, and comments and/or corrective actions implemented during the works.

The following information must be maintained and submitted to CofGCC on request:

- Discharge rates and total volume of groundwater pumped
- All water quality monitoring data including results of pre-release water quality testing and visual monitoring.
- All daily inspection results of receiving water environment including any scouring at the stormwater outfall, and any chemical sheens or other films/scum evident at the stormwater outlet.

7.1.1 Incident Register

A register of incidents (other than trivial matters) shall be kept at the premises, and is to record:

- Time, date and details of the incident
- How the incident occurred
- Response and investigation into the incident
- Action taken to remedy the incident

7.1.2 Complaints and Inquires Register

A register of complaints and inquires (other than trivial matters) shall also be kept to document any complaints or inquires received about the activity. The complaints register is to include:

- Time, date and nature of the complaint
- How the complaint was made
- Details of the complainant
- Response and investigation into the complaints and action taken
- Details of the person who investigated the complaint.

7.1.3 Notifications of Environmental Harm

EHP and CofGCC shall be immediately notified of material or serious harm to the environment as defined under Sections 16 and 17 of the EP Act.

8.0 LIMITATIONS

We have prepared this report for the Proposed High Rise Development at 19-21 Anne Avenue, Broadbeach. The report is provided for the exclusive use of Maryanne Developments Pty Ltd, for this project only and for the purposes outlined in the report. It should not be used by, or relied upon, for other projects on the same or different sites or by a third party. In preparing this report, we have relied upon information provided by the client or their agents.

The results are indicative of the subsurface conditions on site only at the specific testing locations. Subsurface conditions can change between test locations and the design and construction should take the spacing of the testing and testing methods adopted and the potential for variation between the test locations.

It is recommended that Pacific Geotech be engaged to provide advice and ensure the development is undertaken in accordance with the assumptions made in writing this report.

This is not to reduce the level of responsibility accepted by Pacific Geotech, but rather to ensure that the parties who may rely on the information contained in this report are aware of the responsibilities they assume in doing so.



P. ELKINGTON (RPEQ 7226)
For and on behalf of
PACIFIC GEOTECH PTY LTD

Attached Borehole Record Sheets
Site Plan

Pacific Geotech
Consulting Geotechnical Engineers

Borehole No.
BH01
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Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	07/07/2025
Project Name:	Proposed Highrise Development	Logged By:	AS
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Hanjin 2012	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: AS

Drilling Information								***Soil Description***		
Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional
AD/T						0.10		GP	Sandy GRAVEL (GP) Dense, fine to medium sized, brown mottled grey, fine to coarse grained sand, moist.
								SP	SAND (SP) Loose, fine to medium grained, pale brown, moist.
						1.90		SP	SAND (SP) Loose to medium dense, fine to medium grained, pale yellow brown, moist.
						2			
WB			SPT 3.00-3.45 m 3,7,8 N=15						
						4			
						4.10		SP	SAND (SP) Medium dense, fine to medium grained, pale yellow brown, moist.
						5.90		SP	SAND (SP) Dense, fine to medium grained, pale grey yellow brown, wet.
			SPT 6.00-6.45 m 18,21,25 N=46			6			
						8			
			SPT 9.00-9.45 m 17,19,23 N=42						
						9.80		SP	

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Remarks
1. Groundwater not observed due to drilling method adopted.

Support
C - Casing

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

PACGEO 1.01.1 LIB.GLB Log PACGEO BOREHOLE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:45 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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Borehole No.
BH01
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Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	07/07/2025
Project Name:	Proposed Highrise Development	Logged By:	AS
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Hanjin 2012	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: AS

Drilling Information | ***Soil Description***

Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional
WB			SPT 12.00-12.24 m 30,30/90mm N=30/90mm			12		SP	SAND (SP) Dense, fine to medium grained, pale grey yellow brown, with fine to medium sized gravel, moist (trace sea shells). *(continued)*
						13.90			
			SPT 15.00-15.45 m 12,21,30 N=51			14		SC	Clayey SAND (SC) Dense, fine to medium grained, pale brown, low plasticity clay, moist.
						16			
						16.40		SP	SAND (SP) Dense, fine to medium grained, pale grey brown, moist.
			SPT 18.00-18.45 m 18,20,21 N=41			18			
						19.10		SP	SAND (SP) Dense, fine to medium grained, pale brown, moist.
						19.80		SP	SAND (SP) Medium dense, fine to medium grained, dark brown, moist.

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Remarks
1. Groundwater not observed due to drilling method adopted.

Support
C - Casing

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

PACGEO 1.01.1 LIB.GLB Log PACGEO BOREHOLE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:45 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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Borehole No.
BH01
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Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	07/07/2025
Project Name:	Proposed Highrise Development	Logged By:	AS
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Hanjin 2012	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: AS

Drilling Information								***Soil Description***	
Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional
WB			SPT 21.00-21.45 m 2,9,9 N=18			22		SP	SAND (SP) Medium dense, fine to medium grained, dark brown, moist. *(continued)*
						22.70		CH	Sandy CLAY (CH) Stiff to very stiff, high plasticity, pale yellow brown, fine to medium grained sand, moist.
			U50 24.00-24.40 m PP=180kPa			24			
						24.40		CH	Silty CLAY (CH) Very stiff, high plasticity, grey brown mottled pale yellow brown, moist.
						26			
			U50 27.00-27.40 m PP=490kPa			27.20		CH	Silty CLAY (CH) Hard, high plasticity, grey brown mottled pale yellow brown, moist.
						28			

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Support
C - Casing

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Remarks
1. Groundwater not observed due to drilling method adopted.

PACGEO 1.01.1 LIB.GLB Log PACGEO BOREHOLE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:45 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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Borehole No.
BH01
Page 4 of 5

Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	07/07/2025
Project Name:	Proposed Highrise Development	Logged By:	AS
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Hanjin 2012	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: AS

Drilling Information							***Soil Description***		
Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional
WB			U50 30.00-30.40 m PP=480kPa					CH	Silty CLAY (CH) Hard, high plasticity, grey brown mottled pale yellow brown, moist. *(continued)*
			U50 31.50-31.90 m PP=>600kPa			32			
						32.70		SC	Clayey SAND (SC) Medium dense, fine to medium grained, dark grey brown, low plasticity clay, moist.
			SPT 33.50-33.95 m 10,11,12 N=23			34 34.10		SP	Gravelly SAND (SP) Dense, fine to medium grained, grey dark grey, fine to medium sized gravel, with low plasticity clay, moist.
						36			
						38			
						39.60			METASILTSTONE (HW) Highly weathered, low to medium strength, pale grey yellow brown.

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Support
C - Casing

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Remarks
1. Groundwater not observed due to drilling method adopted.

PACGEO 1.01.1 LIB.GLB Log PACGEO BOREHOLE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:45 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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Consulting Geotechnical Engineers

Borehole No.
BH01
Page 5 of 5

Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	07/07/2025
Project Name:	Proposed Highrise Development	Logged By:	AS
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Hanjin 2012	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: AS

Drilling Information							***Soil Description***		
Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional
WB									METASILTSTONE (HW) Highly weathered, low to medium strength, pale grey yellow brown. *(continued)*
						41.00			Hole Terminated at 41.00 m
						42			
						44			
						46			
						48			

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Remarks
1. Groundwater not observed due to drilling method adopted.

Support
C - Casing

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

PACGEO 1.01.1 LIB.GLB Log PACGEO BOREHOLE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:45 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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Borehole No.
BH02
Page 1 of 1

Project No.: PG-13778

Client:	Maryanne Developments Pty Ltd	Commenced:	03/07/2025
Project Name:	Proposed Highrise Development	Logged By:	RR
Hole Location:	19-21 Anne Avenue, Broadbeach	Checked By:	
Hole Position:			
Drill Model and Mounting:	Compac 018	RL Surface:	No survey
Hole Diameter:		Datum:	AHD Operator: RR

Drilling Information							Soil Description			DCP
Method	Casing	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm
AD/T			ASS 0.00-0.50 m D 0.20-0.50 m ASS 0.50-1.00 m ASS 1.00-1.50 m D 1.10-1.50 m ASS 1.50-2.00 m ASS 2.00-2.50 m ASS 2.50-3.00 m ASS 3.00-3.50 m ASS 3.50-4.00 m ASS 4.00-4.50 m D 4.10-4.50 m ASS 4.50-5.00 m ASS 5.00-5.50 m ASS 5.50-6.00 m ASS 6.00-6.50 m ASS 6.50-7.00 m ASS 7.00-7.50 m ASS 7.50-8.00 m D 8.60-9.00 m			0.10 1.20 2.10 3.10 3.60 5.60 9.00		SM SP SP SP SP SP	FILL Silty SAND (SM) Very loose to loose, fine to medium grained, dark grey, with low plasticity clay, trace fine sized gravel, moist (with organics). FILL SAND (SP) Very loose, fine to medium grained, pale brown, moist. NATURAL SAND (SP) Very loose to loose, fine to medium grained, pale yellow brown, moist. SAND (SP) Loose, fine to medium grained, pale yellow brown, moist. SAND (SP) Dense, fine to medium grained, pale yellow brown, moist. SAND (SP) Medium dense to dense, fine to medium grained, pale yellow brown, moist. SAND (SP) Dense, fine to medium grained, pale yellow brown, wet. Hole Terminated at 9.00 m	0 5 10 15 20 25

Method
AS - Auger
RR - Rock Roller
WB - Washbore

Water
Level (Date)
Inflow

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
B - Bulk Sample

Support
C - Casing

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Remarks
1. Groundwater encountered at 5.60m.
2. DCP refusal at 3.14m.
3. Standpipe installed to 5.60m.

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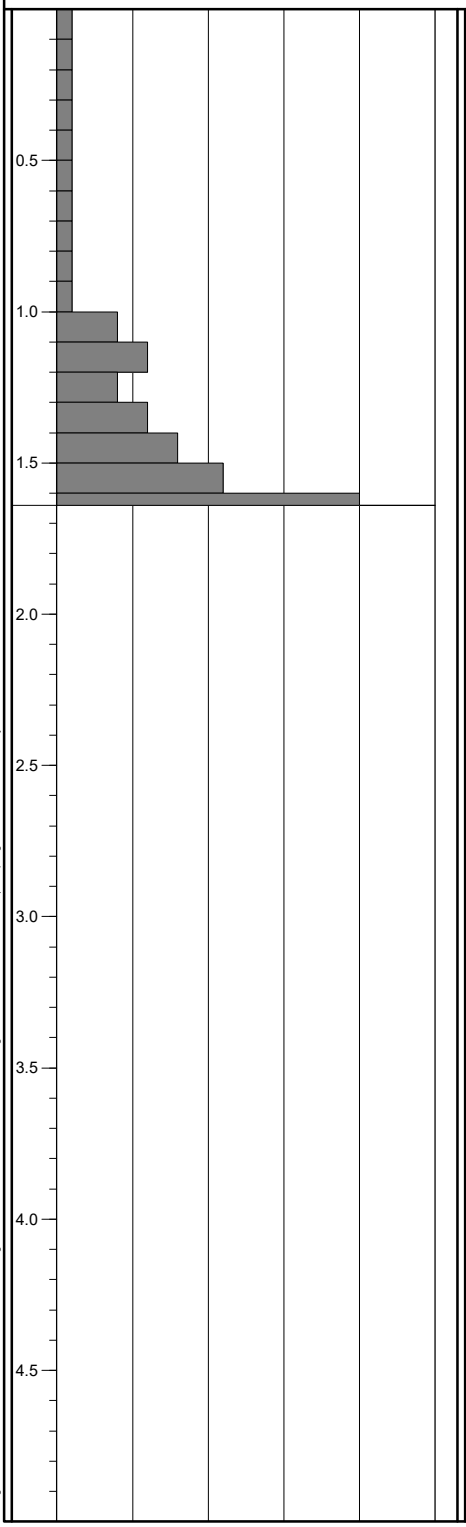
CLIENT : Maryanne Developments Pty Ltd CONTRACTOR : PROJECT : Proposed Highrise Development LOCATION : 19-21 Anne Avenue, Broadbeach PROJECT No. : PG-13778		SHEET : 1 OF 2

TEST: DCP01

LOGGED: RR 03/07/2025

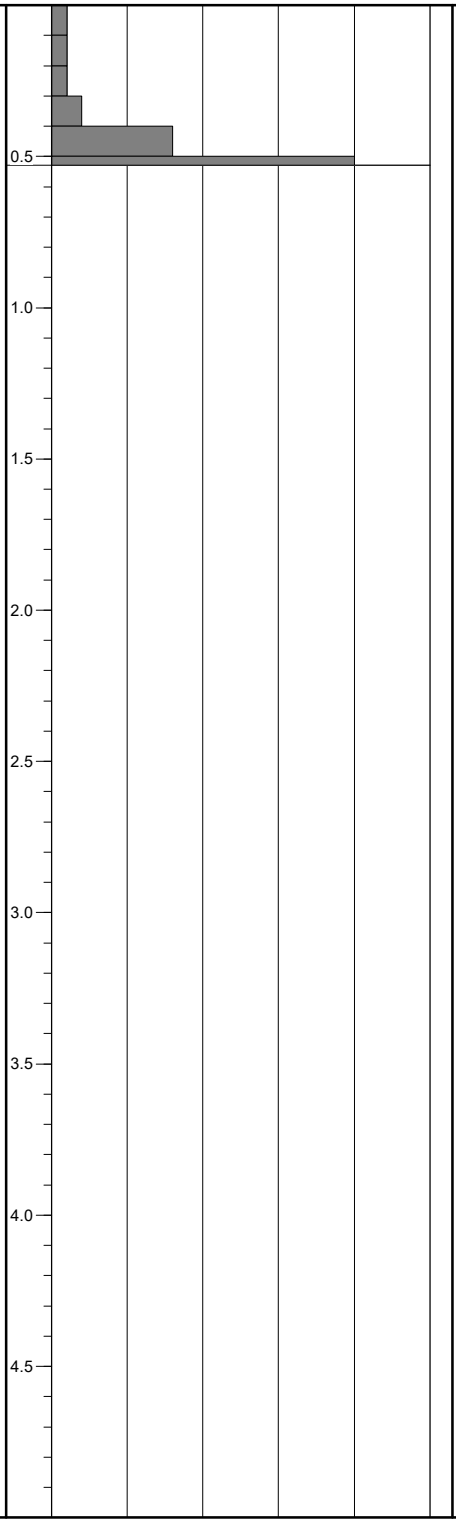


Comments

1. DCP refusal at 1.64m.

TEST: DCP02

LOGGED: RR 03/07/2025

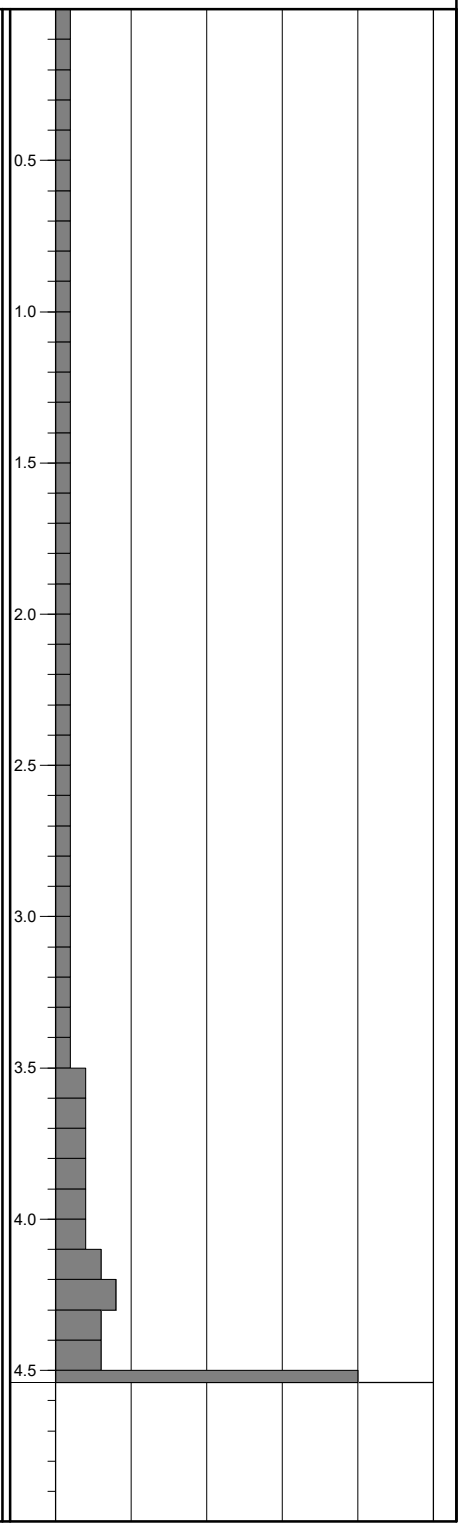


Comments

1. DCP refusal at 0.53m.

TEST: DCP03

LOGGED: RR 03/07/2025



Comments

1. DCP refusal at 4.54m.

PACGEO 1.01.1.UB.GLB Log IS DCP 3 PER PAGE PG-13778.GPJ <<DrawingFile>> 25/07/2025 17:46 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: pacgeo 1.01.1 2018-05-15 Prj: Precise 1.01 2016-11-23

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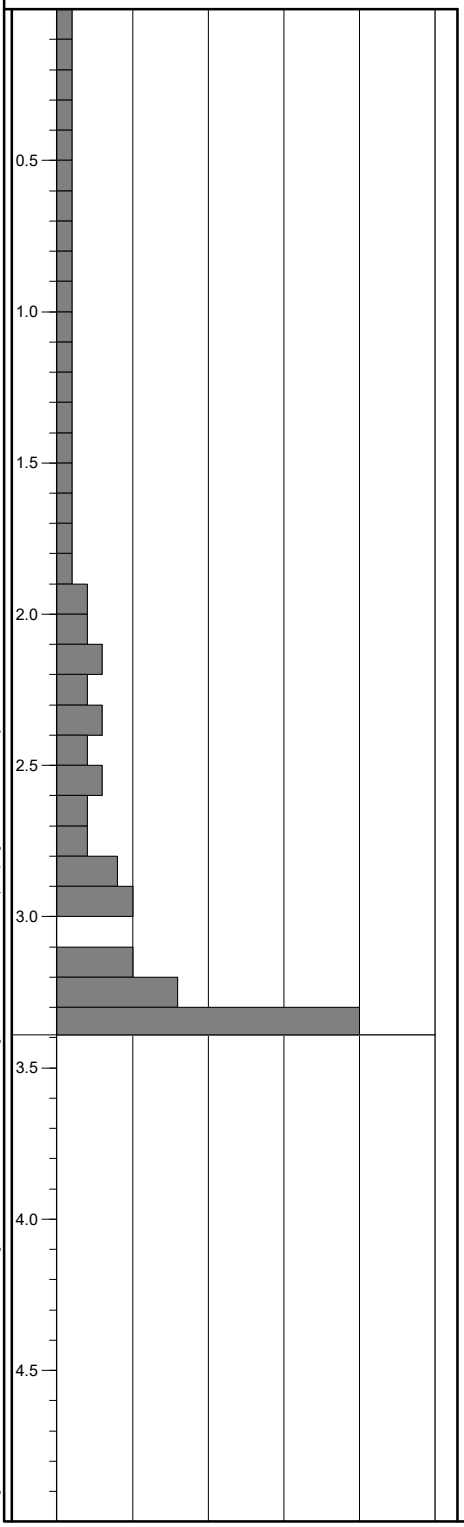
CLIENT : Maryanne Developments Pty Ltd CONTRACTOR : PROJECT : Proposed Highrise Development LOCATION : 19-21 Anne Avenue, Broadbeach PROJECT No. : PG-13778		SHEET : 2 OF 2

TEST: DCP04

LOGGED: RR 03/07/2025



Comments

1. DCP refusal at 3.39m.

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Drawn ER	Project:	Proposed Highrise Development	Drawing No. PG-13778-01 SITE PLAN	A4
Date JULY 25	Location:	19-21 Anne Avenue, Broadbeach		
Checked	Client:	Maryanne Developments Pty Ltd		