CQ SOIL TESTING

Acid Sulphate Soil Assessment

Site Address:	**Proposed Subdivision** Lot 51 (MCH567) Wilkinson Road, Tuan
Prepared for:	W Bolton
Job Number:	CQ27857
Issue Date:	10/04/2025

CQ SOIL TESTING technical excellence

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Client & Document Information

Client:	W Bolton
Project:	Lot 51 (MCH567) Wilkinson Road, Tuan
Investigation Type:	**Acid Sulfate Soil**
Job Number:	CQ27857
Date of Issue:	10/04/2025

Contact Information

CQ SOIL TESTING ABN 87 656 845 448 PO Box 9654 PARK AVENUE QLD 4701	Telephone: (07) 4936 1163 Facsimile: (07) 4936 1162 Email: info@cqsoiltesting.com.au

Document Control

Version	Date	Author	Design Drawings	Reviewer	Reviewer Initials
A	10/04/2025	Q Rider	NA	Scott Walton	SWW

This report relates exclusively to the proposed works at the address stated on page one of this report and has been prepared for the express purpose stated above. This document does not cover any other elements related to construction on the site.

SITE DESCRIPTION

The development site is located at Wilkinson Road, Tuan, Lot 51 (MCH567), and is positioned to the western side of Conway Street as shown on the attached cadastral mapping.

During the fieldwork, it was noted that the proposed construction site has a mixture of grass groundcover and there is an existing building/s, which will be removed before construction. There are also medium to large sized trees within/adjacent to the proposed construction footprint.

A site sketch is attached to this report.

SOIL PROFILE

Boreholes carried out at the site (refer attached site sketch for approximate localities) indicate a soil profile of silty sand underlain by clayey sand then sandy clay soils (see Appendix 2 for detailed logs and test results). Tungsten carbide drill bit refusal was not encountered at either borehole locations. Groundwater was not encountered during the site investigation.

It is possible that the soil profile may vary across the site from those shown in the bore logs which were used for this site classification. CQ Soil Testing are required to be notified if different conditions are encountered during construction. No allowance has been made for any substantial earthworks on the site or importing building platform material.

Any fill placed over the existing ground shall be piered through into the existing suitable material. Further note that the placement of reactive material as fill or cutting of the site may change the site's classification.

ACID SULFATE SOIL TESTING AND COMMENTS

The extract from the relevant acid sulfate soil potential mapping indicates the site is a low probability area.

Samples were recovered from the seven boreholes at regular depth intervals to a maximum depth of 5.0 m for screening by measurement of pH after the addition of distilled water and peroxide (pH_f and pH_{fox} respectively). These preliminary tests give an indication of actual acidity due to previous oxidation and potential acidity due to unoxidized sulphides. To provide confirmation of the above qualitative testing, quantitative analytical testing was carried out on selected samples, generally with the greatest difference in pHf and pHfox readings and strongest reaction using the Chromium Suite method.

The testing was undertaken with reference to the Queensland Acid Sulfate Soil Technical Manual (QASSIT), the Soil Management Guidelines and the Laboratory Methods Guidelines, Queensland Acid Sulfate Soil Technical Manual (2023) and National Acid Sulfate Soils Guidance (2018).

Based on QASSIT Guidelines, the following criteria was adopted to determine the presence of Acid Sulfate Soils:

- pH_f of greater than 5.5 indicates the soil has little or no actual acidity. Four out of the forty samples tested returned values than 5.5 but greater than 5.2 indicating little acidity.
- pH_{fox} of greater than 5 indicates that potential acid sulfate soils (PASS) is unlikely. 100 percent of the samples tested returned values less than than 5. In general, if the difference between pH_f and pH_{fox} is greater than 2.0 pH units then PASS could be present. This was observed at BH1 at 0.25m and 0.50 m but not at BH2. Organic matter in surface soils can skew these results and therefore laboratory sulfide testing is required.
- The chromium reducible sulfur value (S_{CR}), where greater than 0.01%S indicates significant levels of sulfides, and where greater than 0.03%S, exceeds QASSIT guideline values. Four of the ten values recorded were >0.01%S but less than 0.03%S. A maximum value of 0.014 %S was recorded indicating low levels of potential acid sulfate soils (PASS).
- Total actual acidity (TAA) values in excess of 17 mol/t exceed the QASSIT guideline values. All ten values were below this value indicating very low levels of acidity.

Generally, the action criterion from the chromium suite of tests, which triggers a requirement for ASS disturbance to be managed, derived from the Soil Management Guidelines is as follows:

- Net Acidity (TAA + SCR + SNAS) of greater than or equal to 0.03% S

The action criterion was not exceeded in any of the ten samples tested with respect to either Net Acidity or Net Acidity (excluding acid neutralising capacity) and therefore no treatment of disturbed soils will be required.

If you should have any queries regarding this report, please do not hesitate to contact the undersigned at your convenience.

Yours faithfully

Quentin Rider
Environmental Engineer – RPEQ, CPEng, NER, MEIAust

SCOTT WALTON
Laboratory Manager

APPENDIX A – Borehole Logs

CQ Soil Testing

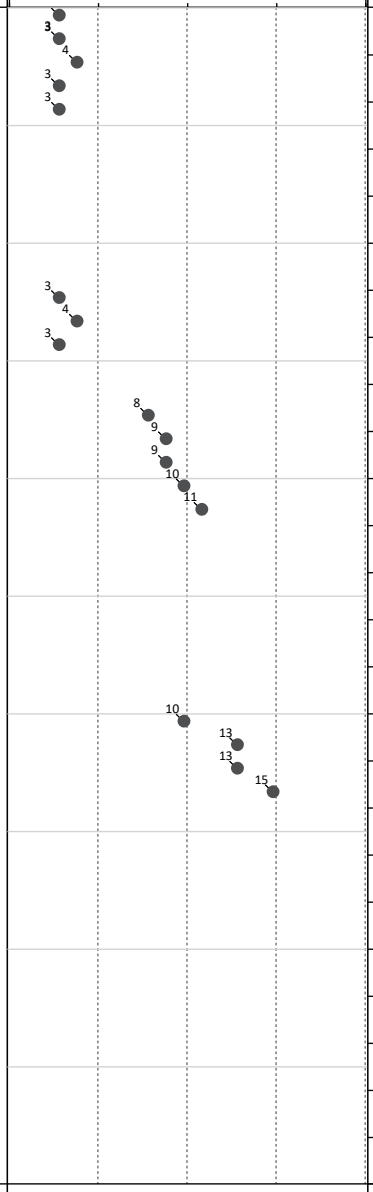
32 Alexandra Street, North Rockhampton QLD 4701

Phone: (07) 4936 1163

Geotechnical Log - Borehole

BH01

Easting	: 487481.24	**Location**	: 122 Wilkinson Rd, Tuan QLD 4650, Australia	**Job Number**	: CQ27857
Northing	: 7159790.39	**Logged By**	: Chris Burke	**Client**	:
Total Depth	: 5 m	**Date**	: 23/03/2025	**Project**	: Geotechnical Investigation



Depth (m)	Soil Origin	Classification Code	Material Description	Samples	Testing
0.9	Natural	SM	Natural Silty SAND SM: fine to coarse grained, dark grey to brown, dry-moist to moist with depth, medium dense.		
1	Natural	SC	Natural Clayey SAND SC: fine to coarse grained, low plasticity clay, brown/orange, moist.		
1.1	Natural	CI	Natural Sandy CLAY CI: medium plasticity, fine to coarse grained sand, grey/orange mottled, dry to moist, stiff.		
1.5	Natural	CH	Natural Sandy CLAY CH: high plasticity, fine to coarse grained sand, grey/orange, dry to moist, very stiff.		
2					
3	Natural	CH	Natural Gravelly Sandy CLAY CH: high plasticity, fine to coarse grained sand, fine to coarse sized gravel, grey/red/orange mottled, dry to moist, very stiff.		
4					
			BH01 Terminated at 5m		

METHOD

EX	Excavator bucket
R	Ripper
HA	Hand auger
PT	Push tube
SON	Sonic drilling
AH	Air hammer
PS	Percussion sampler
AS	Short spiral auger
AD/V	Solid flight auger:V-Bit
AD/T	Solid flight auger:TC-Bit
HFA	Hollow flight auger
WB	Washbore drilling
RR	Rock roller

PENETRATION

VE	Very Easy(No Resistance)
E	Easy
F	Firm
H	Hard
VH	Very Hard(Refusal)

WATER

- Water Level on Date
- Water inflow
- Water outflow

FIELD TESTS

SPT	- Standard Penetration Test
PP	- Hand/Pocket Penetrometer
DCP	- Dynamic Cone Penetrometer
PSP	- Perth Sand Penetrometer
MC	- Moisture Content
PBT	- Plate Bearing Test
IMP	- Borehole Impression Test
PID	- Photo Ionisation Detector
VS	- Vane Shear; P=Peak, R=residual (unconnected kPa)

SAMPLES

B	- Bulk disturbed sample
D	- Disturbed sample
ES	- Environmental sample
U	- Thin wall tube "undisturbed"

MOISTURE

D	- Dry
M	- Moist
W	- Wet
PL	- plastic limit
LL	- liquid limit
W	- Moisture content

SOIL CONSISTENCY

VS	- Very soft
S	- Soft
F	- Firm
St	- Stiff
VSt	- Very stiff
H	- Hard

RELATIVE DENSITY

VL	- Very loose
L	- Loose
MD	- Medium dense
D	- Dense
VD	- Very dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CQ Soil Testing

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CQ Soil Testing

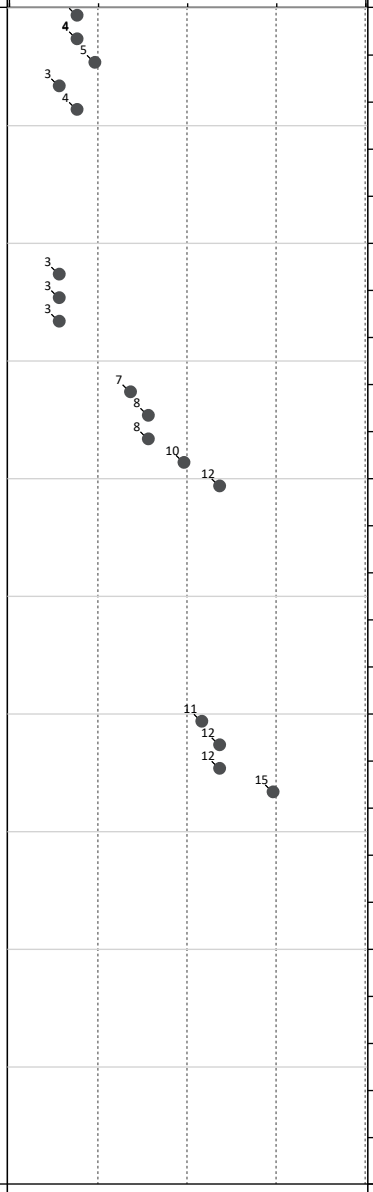
32 Alexandra Street, North Rockhampton QLD 4701

Phone: (07) 4936 1163

Geotechnical Log - Borehole

BH02

Easting	: 487481.24	**Location**	: 122 Wilkinson Rd, Tuan QLD 4650, Australia	**Job Number**	: CQ27857
Northing	: 7159790.39	**Logged By**	: Chris Burke	**Client**	:
Total Depth	: 5 m	**Date**	: 23/03/2025	**Project**	: Geotechnical Investigation



Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Samples	Testing
		0.9	Natural		SM	Natural Silty SAND SM: fine to coarse grained, dark grey to brown, dry-moist to moist with depth, medium dense.		
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		1.1	Natural		CI	Natural Sandy CLAY CI: medium plasticity, fine to coarse grained sand, grey/orange mottled, dry to moist, stiff.		
		1.5	Natural		CH	Natural Sandy CLAY CH: high plasticity, fine to coarse grained sand, grey/orange, dry to moist, very stiff.		
		2						
		3	Natural		CH	Natural Gravelly Sandy CLAY CH: high plasticity, fine to coarse grained sand, fine to coarse sized gravel, grey/red/orange mottled, dry to moist, very stiff.		
		3						
		4	Natural		CH			
						BH02 Terminated at 5m		

METHOD

EX	Excavator bucket
R	Ripper
HA	Hand auger
PT	Push tube
SON	Sonic drilling
AH	Air hammer
PS	Percussion sampler
AS	Short spiral auger
AD/V	Solid flight auger:V-Bit
AD/T	Solid flight auger:TC-Bit
HFA	Hollow flight auger
WB	Washbore drilling
RR	Rock roller

PENETRATION

VE	Very Easy(No Resistance)
E	Easy
F	Firm
H	Hard
VH	Very Hard(Refusal)

WATER

- Water Level on Date
- Water inflow
- Water outflow

FIELD TESTS

SPT	- Standard Penetration Test
PP	- Hand/Pocket Penetrometer
DCP	- Dynamic Cone Penetrometer
PSP	- Perth Sand Penetrometer
MC	- Moisture Content
PBT	- Plate Bearing Test
IMP	- Borehole Impression Test
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VS	- Vane Shear; P=Peak, R=residual (unconnected kPa)

SAMPLES

B	- Bulk disturbed sample
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MOISTURE

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M	- Moist
W	- Wet
PL	- plastic limit
LL	- liquid limit
W	- Moisture content

SOIL CONSISTENCY

VS	- Very soft
S	- Soft
F	- Firm
St	- Stiff
VSt	- Very stiff
H	- Hard

RELATIVE DENSITY

VL	- Very loose
L	- Loose
MD	- Medium dense
D	- Dense
VD	- Very dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CQ Soil Testing

APPENDIX B – Site Photographs

Site Photo - ASS

Site Photo - ASS

CQ SOIL TESTING

(07) 4936 1163

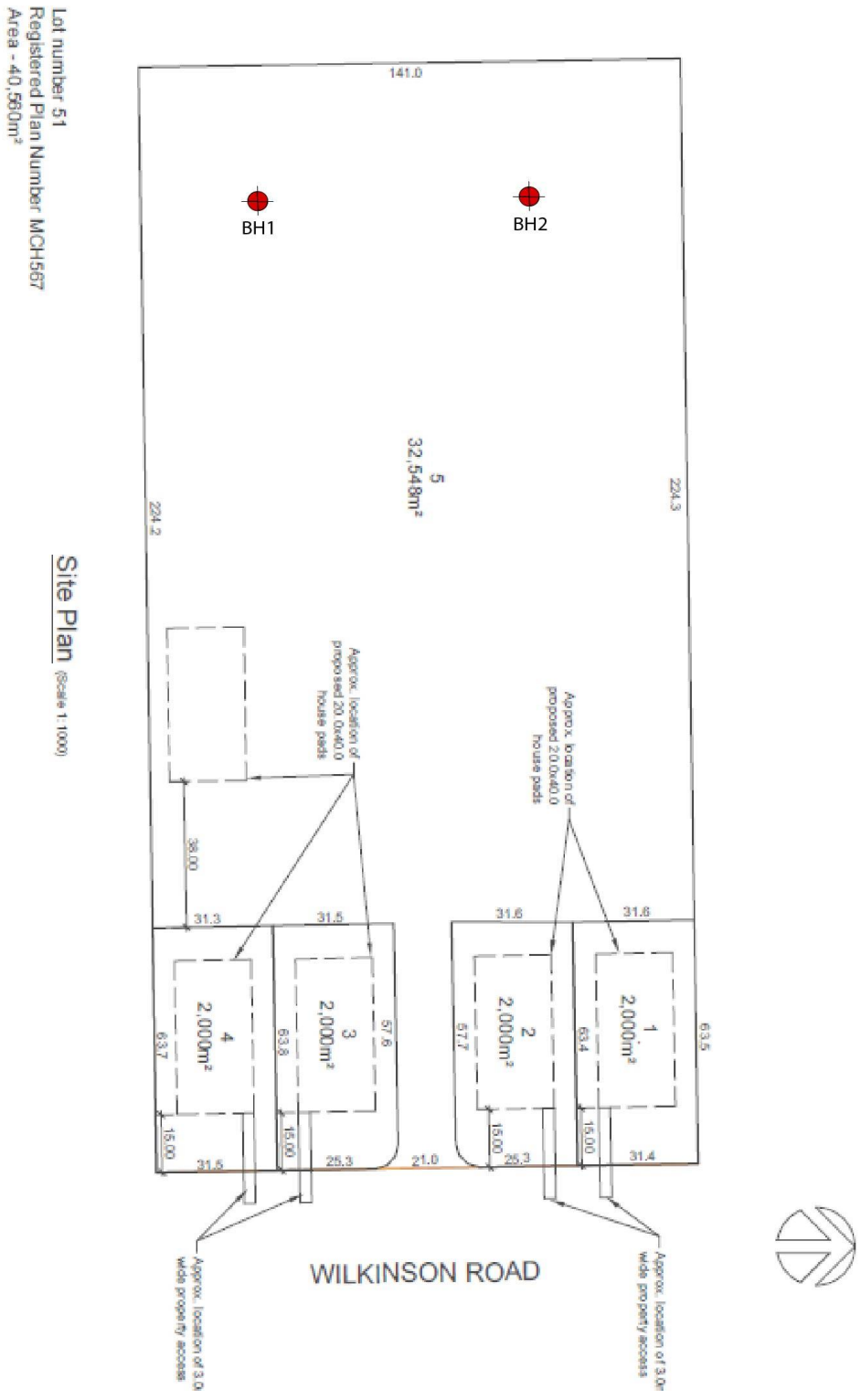
32 Alexandra Street, North Rockhampton QLD 4701

info@cqsoiltesting.com.au

Photo description	Site Photographs		
Client			
Location	122 Wilkinson Rd, Tuan QLD 4650, Australia		
Project name	Geotechnical Investigation		
Project No	CQ27857	**Scale**	Not to Scale
BH No	Site Photos	**BH Depth**	

APPENDIX C – Site Plan

Site Plan



- **Not to scale**
- **All measurements are to be used as a guide only**

APPENDIX D – Laboratory Test Results

CERTIFICATE OF ANALYSIS

Work Order	: **EB2510439**	Page	: 1 of 11
Client	: **CQ SOIL TESTING PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: Kate Reynolds	Contact	: Customer Services EB
Address	:	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 49 361 163	Telephone	: +61-7-3552-8685
Project	: CQ27857 - Wilkinson Rd, Tuan	Date Samples Received	: 27-Mar-2025 12:10
Order number	: ----	Date Analysis Commenced	: 01-Apr-2025
C-O-C number	: ----	Issue Date	: 02-Apr-2025 15:49
Sampler	: QUENTIN RIDER		
Site	: Lot 51 Wilkinson Road Tuan		
Quote number	: EN/333		
No. of samples received	: 41		
No. of samples analysed	: 41		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA037 (Rapid Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.
- EA037 ASS Field Screening: NATA accreditation does not cover performance of this service.

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	CQ27857 - Wilkinson Rd - BH1_0.25m	CQ27857 - Wilkinson Rd - BH1_0.50m	CQ27857 - Wilkinson Rd - BH1_0.75m	CQ27857 - Wilkinson Rd - BH1_1.0m	CQ27857 - Wilkinson Rd - BH1_1.25m
				Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
					EB2510439-001	EB2510439-002	EB2510439-003	EB2510439-004	EB2510439-005
					Result	Result	Result	Result	Result
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit		----	----	----	**5.4**	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t		----	----	----	**4**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S		----	----	----	<0.02	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S		----	----	----	**0.010**	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t		----	----	----	<10	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		----	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S		----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t		----	----	----	<10	----
Liming Rate	----	1	kg CaCO3/t		----	----	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	<1	----
EA037: Ass Field Screening Analysis									
ø pH (F)	----	0.1	pH Unit		**6.6**	**6.4**	**6.0**	**6.1**	**5.8**
ø pH (Fox)	----	0.1	pH Unit		**3.2**	**3.7**	**4.0**	**4.4**	**4.1**
ø Reaction Rate	----	1	-		**3**	**2**	**2**	**2**	**2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH1_1.50m	CQ27857 - Wilkinson Rd - BH1_1.75m	CQ27857 - Wilkinson Rd - BH1_2.0m	CQ27857 - Wilkinson Rd - BH1_2.25m	CQ27857 - Wilkinson Rd - BH1_2.5m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-006	EB2510439-007	EB2510439-008	EB2510439-009	EB2510439-010
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	**5.2**	**----**	**----**	**----**	**5.6**
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**7**	**----**	**----**	**----**	**3**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	**----**	**----**	**----**	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	**0.007**	**----**	**----**	**----**	**0.009**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	**----**	**----**	**----**	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	**----**	**----**	**----**	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	**----**	**----**	**----**	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	**11**	**----**	**----**	**----**	<10
Liming Rate	----	1	kg CaCO3/t	<1	**----**	**----**	**----**	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	**----**	**----**	**----**	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	**11**	**----**	**----**	**----**	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	**----**	**----**	**----**	<1
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**5.7**	**5.7**	**5.6**	**5.8**	**6.0**
ø pH (Fox)	----	0.1	pH Unit	**4.3**	**4.4**	**4.6**	**4.7**	**4.7**
ø Reaction Rate	----	1	-	**2**	**1**	**1**	**1**	**1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH1_2.75m	CQ27857 - Wilkinson Rd - BH1_3.0m	CQ27857 - Wilkinson Rd - BH1_3.25m	CQ27857 - Wilkinson Rd - BH1_3.5m	CQ27857 - Wilkinson Rd - BH1_3.75m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-011	EB2510439-012	EB2510439-013	EB2510439-014	EB2510439-015
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**5.5**	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	**3**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	**0.008**	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	<10	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**5.9**	**5.9**	**6.0**	**6.0**	**6.0**
ø pH (Fox)	----	0.1	pH Unit	**4.7**	**4.9**	**5.0**	**5.0**	**5.0**
ø Reaction Rate	----	1	-	**1**	**1**	**1**	**1**	**1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH1_4.0m	CQ27857 - Wilkinson Rd - BH1_4.25m	CQ27857 - Wilkinson Rd - BH1_4.5m	CQ27857 - Wilkinson Rd - BH1_4.75m	CQ27857 - Wilkinson Rd - BH1_5.0m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-016	EB2510439-017	EB2510439-018	EB2510439-019	EB2510439-020
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	**5.9**	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	<2	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	<0.02	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	**0.007**	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	<10	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	**1.5**	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	<1	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**6.1**	**6.2**	**6.1**	**6.2**	**6.3**
ø pH (Fox)	----	0.1	pH Unit	**4.5**	**5.1**	**5.0**	**4.9**	**5.0**
ø Reaction Rate	----	1	-	**1**	**2**	**2**	**2**	**2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - Quarry	CQ27857 - Wilkinson Rd - BH2_0.25m	CQ27857 - Wilkinson Rd - BH2_0.50m	CQ27857 - Wilkinson Rd - BH2_0.75m	CQ27857 - Wilkinson Rd - BH2_1.0m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-021	EB2510439-022	EB2510439-023	EB2510439-024	EB2510439-025
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	**5.0**	----	**5.4**	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**5**	----	**3**	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	<0.02	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	**0.014**	----	**0.007**	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	<10	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	**1.5**	----	----
Net Acidity (sulfur units)	----	0.02	% S	**0.02**	----	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	**13**	----	<10	----	----
Liming Rate	----	1	kg CaCO3/t	**1**	----	<1	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	**0.02**	----	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	**13**	----	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	**1**	----	<1	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**6.8**	**5.4**	**6.3**	**6.2**	**6.0**
ø pH (Fox)	----	0.1	pH Unit	**5.2**	**3.5**	**4.3**	**4.4**	**4.3**
ø Reaction Rate	----	1	-	**2**	**2**	**2**	**2**	**2**

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	CQ27857 - Wilkinson Rd - BH2_1.25m	CQ27857 - Wilkinson Rd - BH2_1.50m	CQ27857 - Wilkinson Rd - BH2_1.75m	CQ27857 - Wilkinson Rd - BH2_2.0m	CQ27857 - Wilkinson Rd - BH2_2.25m
				Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
					EB2510439-026	EB2510439-027	EB2510439-028	EB2510439-029	EB2510439-030
					Result	Result	Result	Result	Result
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit		**----**	**----**	**----**	**5.2**	**----**
Titratable Actual Acidity (23F)	----	2	mole H+ / t		**----**	**----**	**----**	**6**	**----**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S		**----**	**----**	**----**	<0.02	**----**
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S		**----**	**----**	**----**	**0.011**	**----**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t		**----**	**----**	**----**	<10	**----**
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		**----**	**----**	**----**	**1.5**	**----**
Net Acidity (sulfur units)	----	0.02	% S		**----**	**----**	**----**	**0.02**	**----**
Net Acidity (acidity units)	----	10	mole H+ / t		**----**	**----**	**----**	**13**	**----**
Liming Rate	----	1	kg CaCO3/t		**----**	**----**	**----**	<1	**----**
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		**----**	**----**	**----**	**0.02**	**----**
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		**----**	**----**	**----**	**13**	**----**
Liming Rate excluding ANC	----	1	kg CaCO3/t		**----**	**----**	**----**	<1	**----**
EA037: Ass Field Screening Analysis									
ø pH (F)	----	0.1	pH Unit		**5.7**	**5.9**	**5.8**	**5.7**	**5.4**
ø pH (Fox)	----	0.1	pH Unit		**3.9**	**4.1**	**4.3**	**4.4**	**4.0**
ø Reaction Rate	----	1	-		**2**	**1**	**1**	**1**	**1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH2_2.5m	CQ27857 - Wilkinson Rd - BH2_2.75m	CQ27857 - Wilkinson Rd - BH2_3.0m	CQ27857 - Wilkinson Rd - BH2_3.25m	CQ27857 - Wilkinson Rd - BH2_3.5m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-031	EB2510439-032	EB2510439-033	EB2510439-034	EB2510439-035
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	**5.4**	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	**4**	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	<0.02	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	**0.010**	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	<10	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	**1.5**	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	<1	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**5.6**	**5.6**	**5.5**	**5.5**	**5.6**
ø pH (Fox)	----	0.1	pH Unit	**4.3**	**4.2**	**4.5**	**4.3**	**4.5**
ø Reaction Rate	----	1	-	**1**	**1**	**1**	**1**	**1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH2_3.75m	CQ27857 - Wilkinson Rd - BH2_4.0m	CQ27857 - Wilkinson Rd - BH2_4.25m	CQ27857 - Wilkinson Rd - BH2_4.5m	CQ27857 - Wilkinson Rd - BH2_4.75m
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	EB2510439-036	EB2510439-037	EB2510439-038	EB2510439-039	EB2510439-040
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	**5.4**	----	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	**3**	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	----	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	**0.014**	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	<10	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	**12**	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	**12**	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	----	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**5.4**	**5.5**	**5.5**	**5.2**	**5.5**
ø pH (Fox)	----	0.1	pH Unit	**4.3**	**4.5**	**4.5**	**4.2**	**3.9**
ø Reaction Rate	----	1	-	**1**	**1**	**1**	**1**	**1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CQ27857 - Wilkinson Rd - BH2_5.0m	----	----	----	----
			Sampling date / time	24-Mar-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB2510439-041	--------	--------	--------	--------
				Result	----	----	----	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	**5.4**	----	----	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**3**	----	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	**0.010**	----	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	**5.5**	----	----	----	----
ø pH (Fox)	----	0.1	pH Unit	**4.3**	----	----	----	----
ø Reaction Rate	----	1	-	**1**	----	----	----	----

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2510439**	Page	: 1 of 5
Client	: **CQ SOIL TESTING PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: Kate Reynolds	Telephone	: +61-7-3552-8685
Project	: CQ27857 - Wilkinson Rd, Tuan	Date Samples Received	: 27-Mar-2025
Site	: Lot 51 Wilkinson Road Tuan	Issue Date	: 02-Apr-2025
Sampler	: QUENTIN RIDER	No. of samples received	: 41
Order number	: ----	No. of samples analysed	: 41

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-A: Actual Acidity							
Snap Lock Bag - frozen on receipt at ALS (EA033)							
CQ27857 - Wilkinson Rd - BH1_1.0m, CQ27857 - Wilkinson Rd - BH1_1.50m, CQ27857 - Wilkinson Rd - BH1_2.5m, CQ27857 - Wilkinson Rd - BH1_3.5m, CQ27857 - Wilkinson Rd - BH1_4.5m, CQ27857 - Wilkinson Rd - Quarry, CQ27857 - Wilkinson Rd - BH2_0.50m, CQ27857 - Wilkinson Rd - BH2_2.0m, CQ27857 - Wilkinson Rd - BH2_3.0m, CQ27857 - Wilkinson Rd - BH2_4.0m, CQ27857 - Wilkinson Rd - BH2_5.0m	**24-Mar-2025**	**01-Apr-2025**	24-Mar-2026	✓	**01-Apr-2025**	30-Jun-2025	✓
EA033-B: Potential Acidity							
Snap Lock Bag - frozen on receipt at ALS (EA033)							
CQ27857 - Wilkinson Rd - BH1_1.0m, CQ27857 - Wilkinson Rd - BH1_1.50m, CQ27857 - Wilkinson Rd - BH1_2.5m, CQ27857 - Wilkinson Rd - BH1_3.5m, CQ27857 - Wilkinson Rd - BH1_4.5m, CQ27857 - Wilkinson Rd - Quarry, CQ27857 - Wilkinson Rd - BH2_0.50m, CQ27857 - Wilkinson Rd - BH2_2.0m, CQ27857 - Wilkinson Rd - BH2_3.0m, CQ27857 - Wilkinson Rd - BH2_4.0m, CQ27857 - Wilkinson Rd - BH2_5.0m	**24-Mar-2025**	**01-Apr-2025**	24-Mar-2026	✓	**01-Apr-2025**	30-Jun-2025	✓
EA033-C: Acid Neutralising Capacity							
Snap Lock Bag - frozen on receipt at ALS (EA033)							
CQ27857 - Wilkinson Rd - BH1_1.0m, CQ27857 - Wilkinson Rd - BH1_1.50m, CQ27857 - Wilkinson Rd - BH1_2.5m, CQ27857 - Wilkinson Rd - BH1_3.5m, CQ27857 - Wilkinson Rd - BH1_4.5m, CQ27857 - Wilkinson Rd - Quarry, CQ27857 - Wilkinson Rd - BH2_0.50m, CQ27857 - Wilkinson Rd - BH2_2.0m, CQ27857 - Wilkinson Rd - BH2_3.0m, CQ27857 - Wilkinson Rd - BH2_4.0m, CQ27857 - Wilkinson Rd - BH2_5.0m	**24-Mar-2025**	**01-Apr-2025**	24-Mar-2026	✓	**01-Apr-2025**	30-Jun-2025	✓
EA033-D: Retained Acidity							
Snap Lock Bag - frozen on receipt at ALS (EA033)							
CQ27857 - Wilkinson Rd - BH1_1.0m, CQ27857 - Wilkinson Rd - BH1_1.50m, CQ27857 - Wilkinson Rd - BH1_2.5m, CQ27857 - Wilkinson Rd - BH1_3.5m, CQ27857 - Wilkinson Rd - BH1_4.5m, CQ27857 - Wilkinson Rd - Quarry, CQ27857 - Wilkinson Rd - BH2_0.50m, CQ27857 - Wilkinson Rd - BH2_2.0m, CQ27857 - Wilkinson Rd - BH2_3.0m, CQ27857 - Wilkinson Rd - BH2_4.0m, CQ27857 - Wilkinson Rd - BH2_5.0m	**24-Mar-2025**	**01-Apr-2025**	24-Mar-2026	✓	**01-Apr-2025**	30-Jun-2025	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-E: Acid Base Accounting								
Snap Lock Bag - frozen on receipt at ALS (EA033)								
CQ27857 - Wilkinson Rd - BH1_1.0m,	CQ27857 - Wilkinson Rd - BH1_1.50m,	**24-Mar-2025**	**01-Apr-2025**	24-Mar-2026	✓	**01-Apr-2025**	30-Jun-2025	✓
CQ27857 - Wilkinson Rd - BH1_2.5m,	CQ27857 - Wilkinson Rd - BH1_3.5m,							
CQ27857 - Wilkinson Rd - BH1_4.5m,	CQ27857 - Wilkinson Rd - Quarry,							
CQ27857 - Wilkinson Rd - BH2_0.50m,	CQ27857 - Wilkinson Rd - BH2_2.0m,							
CQ27857 - Wilkinson Rd - BH2_3.0m,	CQ27857 - Wilkinson Rd - BH2_4.0m,							
CQ27857 - Wilkinson Rd - BH2_5.0m								
EA037: Ass Field Screening Analysis								
Snap Lock Bag - frozen on receipt at ALS (EA037)								
CQ27857 - Wilkinson Rd - BH1_0.25m,	CQ27857 - Wilkinson Rd - BH1_0.50m,	**24-Mar-2025**	**01-Apr-2025**	20-Sep-2025	✓	**01-Apr-2025**	20-Sep-2025	✓
CQ27857 - Wilkinson Rd - BH1_0.75m,	CQ27857 - Wilkinson Rd - BH1_1.0m,							
CQ27857 - Wilkinson Rd - BH1_1.25m,	CQ27857 - Wilkinson Rd - BH1_1.50m,							
CQ27857 - Wilkinson Rd - BH1_1.75m,	CQ27857 - Wilkinson Rd - BH1_2.0m,							
CQ27857 - Wilkinson Rd - BH1_2.25m,	CQ27857 - Wilkinson Rd - BH1_2.5m,							
CQ27857 - Wilkinson Rd - BH1_2.75m,	CQ27857 - Wilkinson Rd - BH1_3.0m,							
CQ27857 - Wilkinson Rd - BH1_3.25m,	CQ27857 - Wilkinson Rd - BH1_3.5m,							
CQ27857 - Wilkinson Rd - BH1_3.75m,	CQ27857 - Wilkinson Rd - BH1_4.0m,							
CQ27857 - Wilkinson Rd - BH1_4.25m,	CQ27857 - Wilkinson Rd - BH1_4.5m,							
CQ27857 - Wilkinson Rd - BH1_4.75m,	CQ27857 - Wilkinson Rd - BH1_5.0m,							
CQ27857 - Wilkinson Rd - Quarry,	CQ27857 - Wilkinson Rd - BH2_0.25m,							
CQ27857 - Wilkinson Rd - BH2_0.50m,	CQ27857 - Wilkinson Rd - BH2_0.75m,							
CQ27857 - Wilkinson Rd - BH2_1.0m,	CQ27857 - Wilkinson Rd - BH2_1.25m,							
CQ27857 - Wilkinson Rd - BH2_1.50m,	CQ27857 - Wilkinson Rd - BH2_1.75m,							
CQ27857 - Wilkinson Rd - BH2_2.0m,	CQ27857 - Wilkinson Rd - BH2_2.25m,							
CQ27857 - Wilkinson Rd - BH2_2.5m,	CQ27857 - Wilkinson Rd - BH2_2.75m,							
CQ27857 - Wilkinson Rd - BH2_3.0m,	CQ27857 - Wilkinson Rd - BH2_3.25m,							
CQ27857 - Wilkinson Rd - BH2_3.5m,	CQ27857 - Wilkinson Rd - BH2_3.75m,							
CQ27857 - Wilkinson Rd - BH2_4.0m,	CQ27857 - Wilkinson Rd - BH2_4.25m,							
CQ27857 - Wilkinson Rd - BH2_4.5m,	CQ27857 - Wilkinson Rd - BH2_4.75m,							
CQ27857 - Wilkinson Rd - BH2_5.0m								

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
ASS Field Screening Analysis	EA037	5	41	**12.20**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chromium Suite for Acid Sulphate Soils	EA033	4	32	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
ASS Field Screening Analysis	* EA037	SOIL	In house: Referenced to Acid Sulfate Soils Laboratory Methods Guidelines. As received samples are tested for pH field and pH fox and assessed for a reaction rating.

Preparation Methods	Method	Matrix	Method Descriptions
Drying only	EN020D	SOIL	In house
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house

LIMITATIONS

1. Recommendations given in this report are based on the information supplied by the client regarding the proposed building construction in conjunction with the findings of the investigation. Any change in construction type, building location or omission in the client supplied information, may require additional testing and/or make the recommendations invalid.

2. The recommendations herein may identify a target soil stratum into which the footings should be founded. The target stratum has been located by the depth in mm of the target stratum's upper horizon boundary below the existing ground surface level at the time of the site investigation. Any cutting or filling works and any surface erosion or deposits subsequent to the site investigation, will alter the measured location of the stratum relative to the surface. Where required, the author should be notified in such cases to confirm the location of the target stratum.

3. The description of the soil given in Section 3.0 of this report is intended as a brief overview of the soil's primary constituents. For a detailed classification of the soil, the reader should refer to the Soil Profile Reports and/or Borehole Reports.

4. Every reasonable effort has been made to locate the test sites so that the borehole profiles are representative of the soil conditions within the area investigated. The client should be made aware, however, that exploration is limited by time available and economic restraints. In some cases, soil conditions can change dramatically over short distances, therefore, even careful exploration programs may not locate all the variations.

5. If soil conditions different from those shown in this report are encountered or are inferred from other sources, then the author must be notified immediately.

6. This report may not be reproduced except in full, and only then with the permission of the entity trading as CQ Soil Testing. The information and site sketch shall only be used and will only be applicable for the development shown on the client-supplied information provided for this site.

7. All information contained within this report is the intellectual property of the entity trading as CQ Soil Testing. All information contained within can only be used for the express purposes of the commissioned scope of works.

8. Any dimensions, contours, slope directions and magnitudes shown on the site sketch plan shall not be used for any building construction or costing calculations. The purpose of the plan is to show the approximate location of field tests only.

9. Any changes made to these recommendations by persons unauthorized by the author will legally be interpreted by that person assuming the responsibility for the long-term performance of the footing system.

10. The recommendations contained in this report have not taken into consideration the long-term effects of any previous, current, or potential subsurface work by mining companies or potential slope instability problems. At the time of writing this report neither our client (nor his agent) nor the local authority had made the author aware that these problems may be affecting this allotment. If a mining subsidence or slope stability assessment is required for this allotment, the recommendations of a suitably qualified geotechnical engineer should be sought.

11. Removal of trees from a site before an investigation can cause significant swelling of the soil over large areas. The removal of large trees from a construction site during development is rarely picked up during the investigation phase and is generally outside the scope of AS2870. Sites affected by large trees are often classified "P". If, during the footing excavation, it is noticed that there are soils with varying moisture contents or evidence of large trees having been removed CQ Soil Testing should be notified immediately.

12. The following documents are available from the CSIRO and QBCC and shall be read and adhered to in relation to this site:

    - Builder's Guide to Preventing Damage to Dwellings- Part 1 Site Investigation and Preparation http://www.publish.csiro.au/nid/22/pid/3621.html
    - Builder's Guide to Preventing Damage to Dwellings- Part 2 Sound Construction Methods http://www.publish.csiro.au/nid/22/pid/3661.html
    - QBCC Subsidence Fact Sheet https://www.qbcc.qld.gov.au/sites/default/files/Homeowner%27s%20Guide%20to%20Subsidence.pdf