



Job No: 8599/113  
Our Ref: 8599/113-AB  
6 October 2023

Daracon Contractors Pty Ltd  
184 Adderley Street  
AUBURN NSW 2144  
Email: [SimpsonW@daracon.com.au](mailto:SimpsonW@daracon.com.au)

Attention: Mr S Wong

Dear Sir

re: **Newpark Precinct 7 – Stage 7F, Marsden Park  
Exposure Classification Report**

At your request, Geotech Testing Pty Ltd conducted a salinity and aggressivity assessment at the above site after completion of earthworks. A total of sixty-two (62) lots are covered in this report (Lots 8401 to 8462).

#### **Field Work**

Field work for the investigation was carried out under the full-time supervision of a Geotechnical Engineer on 13 September 2023, and consisted of excavation of thirty-one (31) test pits (TP1 to TP31) using a rubber-tired backhoe to depths in the order of 1.5m or prior refusal on weathered bedrock. The locations of the test pits are shown on the attached Drawing No 8599/113-AA1. A summary of the field data obtained is also attached.

#### **Site Conditions**

The site is of rectangular shape located off Abell Road and Stoney Creek Road, Marsden Park. The site is bound by sandstone block retaining wall to the west, existing 7E to the north, construction of single/dual storey buildings to the east and open grassland with forestry to the south. The topography of the site is relatively flat with gentle slopes downwards from Abell Road westbound. At the time of investigation, bulk earthworks and construction of internal roads were completed. Site activities include ongoing pipe works and laborious activities. Waterway/dam to the far north.

#### **Sub-surface Conditions**

Sub-surface conditions encountered in the test pits are detailed in the attached Table A and summarised below in Table 1.

Table 1: Sub-surface Conditions

Test Pit	Termination Depth (m)	Fill (m)	Natural (m)
TP1	1.5	0.0-1.5	NE
TP2	1.5	0.0-0.5	0.5-1.5
TP3	1.5	0.0-1.5	NE
TP4	1.5	0.0-1.5	NE
TP5	1.5	0.0-1.5	NE
TP6	1.5	0.0-1.5	NE
TP7	1.5	0.0-1.5	NE
TP8	1.5	0.0-1.5	NE
TP9	1.5	0.0-1.5	NE
TP10	1.5	0.0-1.5	NE
TP11	1.5	0.0-1.5	NE
TP12	1.5	0.0-1.5	NE
TP13	1.5	0.0-1.5	NE
TP14	1.5	0.0-1.5	NE
TP15	1.5	0.0-1.5	NE
TP16	1.5	0.0-1.5	NE
TP17	1.5	0.0-1.5	NE
TP18	1.5	0.0-1.5	NE
TP19	1.5	0.0-1.5	NE
TP20	1.5	0.0-1.5	NE
TP21	1.5	0.0-1.5	NE
TP22	1.5	0.0-1.5	NE
TP23	1.5	0.0-1.5	NE
TP24	1.5	0.0-1.5	NE
TP25	1.5	0.0-1.5	NE
TP26	1.5	0.0-1.5	NE
TP27	1.5	0.0-1.5	NE
TP28	1.5	0.0-1.5	NE
TP29	1.5	0.0-1.5	NE
TP30	1.5	0.0-1.5	NE
TP31	1.5	0.0-1.5	NE

NE: Not encountered to the termination depth

Groundwater was not observed in the test pits during the short time that they remained open. It must be noted that fluctuations in the level of groundwater might occur due to variations in rainfall, temperature and/or other factors.

The test pit investigation revealed the following generalised sub-surface profile:

<b>Fill</b>	Silty Clay, medium plasticity, brown mottled orange, with gravel Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand
<b>Natural</b>	(CH) Silty CLAY, high plasticity, red-brown mottled grey, trace fine to medium gravel, trace rootlets (CH) Silty CLAY, high plasticity, grey mottled brown-red, trace fine to medium gravel

8599/113-AB

Newpark Precinct 7 – Stage 7F, Marsden Park

### Exposure Classification

#### Laboratory Testing

During field work, 31 soil samples were collected for chemical testing in the NATA accredited laboratory of SGS for salinity and acidity properties. The laboratory test results certificates from SGS are attached and are summarised below in Table 2.

Table 2: Laboratory Tests Results

Test Pit	Depth (m)	PH	EC (µS/cm)	soil description	MF	ECe (dS/m)	Exposure Classification
TP1	0.5-1.0	4.4	700	med/High plasticity silty clay	7	4.9	B1
TP2	0.5-1.0	4.6	350	high plasticity silty clay	6	2.1	A2
TP3	0.5-1.0	8.2	340	med/High plasticity silty clay	7	2.38	A1
TP4	0.5-1.0	5.9	160	medium plasticity silty clay	8	1.28	A1
TP5	0.5-1.0	4.9	240	medium plasticity silty clay	8	1.92	A2
TP6	0.5-1.0	5.1	260	med/High plasticity silty clay	7	1.82	A2
TP7	0.5-1.0	5.1	250	med/High plasticity silty clay	7	1.75	A2
TP8	0.5-1.0	4.7	340	medium plasticity silty clay	8	2.72	A2
TP9	0.5-1.0	5.2	150	medium plasticity silty clay	8	1.2	A2
TP10	0.5-1.0	7.2	440	med/High plasticity silty clay	7	3.08	A1
TP11	0.5-1.0	5.8	260	med/High plasticity silty clay	7	1.82	A1
TP12	0.5-1.0	6.3	170	med/High plasticity silty clay	7	1.19	A1
TP13	0.5-1.0	7.1	410	med/High plasticity silty clay	7	2.87	A1
TP14	0.5-1.0	7.3	460	med/High plasticity silty clay	7	3.22	A1
TP15	0.5-1.0	8	640	med/High plasticity silty clay	7	4.48	A2
TP16	0.5-1.0	5.1	310	med/High plasticity silty clay	7	2.17	A2
TP17	0.5-1.0	7.7	380	med/High plasticity silty clay	7	2.66	A1
TP18	0.5-1.0	7.6	250	med/High plasticity silty clay	7	1.75	A1
TP19	0.5-1.0	4.9	180	med/High plasticity silty clay	7	1.26	A2
TP20	0.5-1.0	5.2	270	med/High plasticity silty clay	7	1.89	A2
TP21	0.5-1.0	4.9	200	med/High plasticity silty clay	7	1.4	A2
TP22	0.5-1.0	5.6	200	med/High plasticity silty clay	7	1.4	A1
TP23	0.5-1.0	5.2	340	med/High plasticity silty clay	7	2.38	A2
TP24	0.5-1.0	5.4	280	med/High plasticity silty clay	7	1.96	A2
TP25	0.5-1.0	5.4	160	med/High plasticity silty clay	7	1.12	A2
TP26	0.5-1.0	5.4	320	med/High plasticity silty clay	7	2.24	A2
TP27	0.5-1.0	8.1	500	med/High plasticity silty clay	7	3.5	A1
TP28	0.5-1.0	5.3	470	med/High plasticity silty clay	7	3.29	A2
TP29	0.5-1.0	6.3	330	med/High plasticity silty clay	7	2.31	A1
TP30	0.5-1.0	7.6	480	med/High plasticity silty clay	7	3.36	A1
TP31	0.5-1.0	6.4	430	med/High plasticity silty clay	7	3.01	A1

\* The multiplication factor (MF) is a function of the soil texture and description (Site Investigations for Urban Salinity - 2002)  
 $EC_e$  (Corrected Electrical Conductivity) = MF x EC

**Specifications**

Electrical Conductivity (EC) testing was carried out to assess soil salinity, as outlined in the Department of Environment and Heritage (DEH) publication, “*Site Investigations for Urban Salinity - 2002*”. The test conducted on a soil sample for salinity is generally made up of 1:5 soil water suspension, which is one part air dried soil to five parts distilled water. The determined EC is multiplied by a factor based on the texture of the soil sample (varying from 6 to 17) to obtain Corrected Electrical Conductivity designated as EC<sub>e</sub> (see Table 2). Based on site observation, a multiplication factor of 7 & 8 was used for the soil encountered during field work. The DEH publication defines various classes of saline soils as follows:

Classification	EC <sub>e</sub> (dS/m)	Exposure Classification AS2870-2011
Non-saline	<2	A1
Slightly saline	2 – 4	
Moderately saline	4 – 8	A2
Very saline	8 – 16	B1
Highly saline	>16	B2

Acidity (pH) testing was also conducted to determine the aggressivity of the soils to steel and concrete. The various classes of aggressive soils are defined as follows according to AS2870-2011.

Classification	pH	Exposure Classification AS2870-2011
Non-aggressive	>5.5	A1
Mild	4.5-5.5	A2
Moderate	4.0-4.5	B1
Severe	<4.0	B2

Based on the results, it is assessed that soils at the site are generally slightly saline to moderately saline and non-aggressive to mild aggressive to steel and concrete.

8599/113-AB

Newpark Precinct 7 – Stage 7F, Marsden Park

**Conclusion**

Based on the procedures described in AS2870-2011, the exposure classifications for the proposed lots are shown in Table 3.

Table 3 – Site Exposure Classifications (AS2870-2011) Stage 7F

Lot	Exposure Classification	Lot	Exposure Classification
8401	B1	8432	A2
8402	B1	8433	A2
8403	A2	8434	A2
8404	A2	8435	A2
8405	A2	8436	A2
8406	A2	8437	A2
8407	A2	8438	A2
8408	A2	8439	A2
8409	A2	8440	A2
8410	A2	8441	A2
8411	A2	8442	A2
8412	A2	8443	A2
8413	A2	8444	A2
8414	A2	8445	A2
8415	A2	8446	A2
8416	A2	8447	A2
8417	A2	8448	A2
8418	A2	8449	A2
8419	A2	8450	A2
8420	A2	8451	A2
8421	A2	8452	A2
8422	A2	8453	A2
8423	A2	8454	A2
8424	A2	8455	A2
8425	A2	8456	A2
8426	A2	8457	A2
8427	A2	8458	A2
8428	A2	8459	A2
8429	A2	8460	A2
8430	A2	8461	A2
8431	A2	8462	A2

8599/113-AB

Newpark Precinct 7 – Stage 7F, Marsden Park

Based on the results of the post site works salinity assessment, the site is suitable for the residential subdivision development. The construction requirements for A1, A2, B1 and B2 classifications are shown below (AS2870-2011, Table 5.3).

<b>Exposure Classification</b>	<b>Minimum Design Characteristic Strength</b>	<b>Minimum Initial Curing</b>
A1	20 MPa	3 days
A2	25 MPa	
B1	32 MPa	7 days
B2	40 MPa	

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully

GEOTECH TESTING PTY LTD

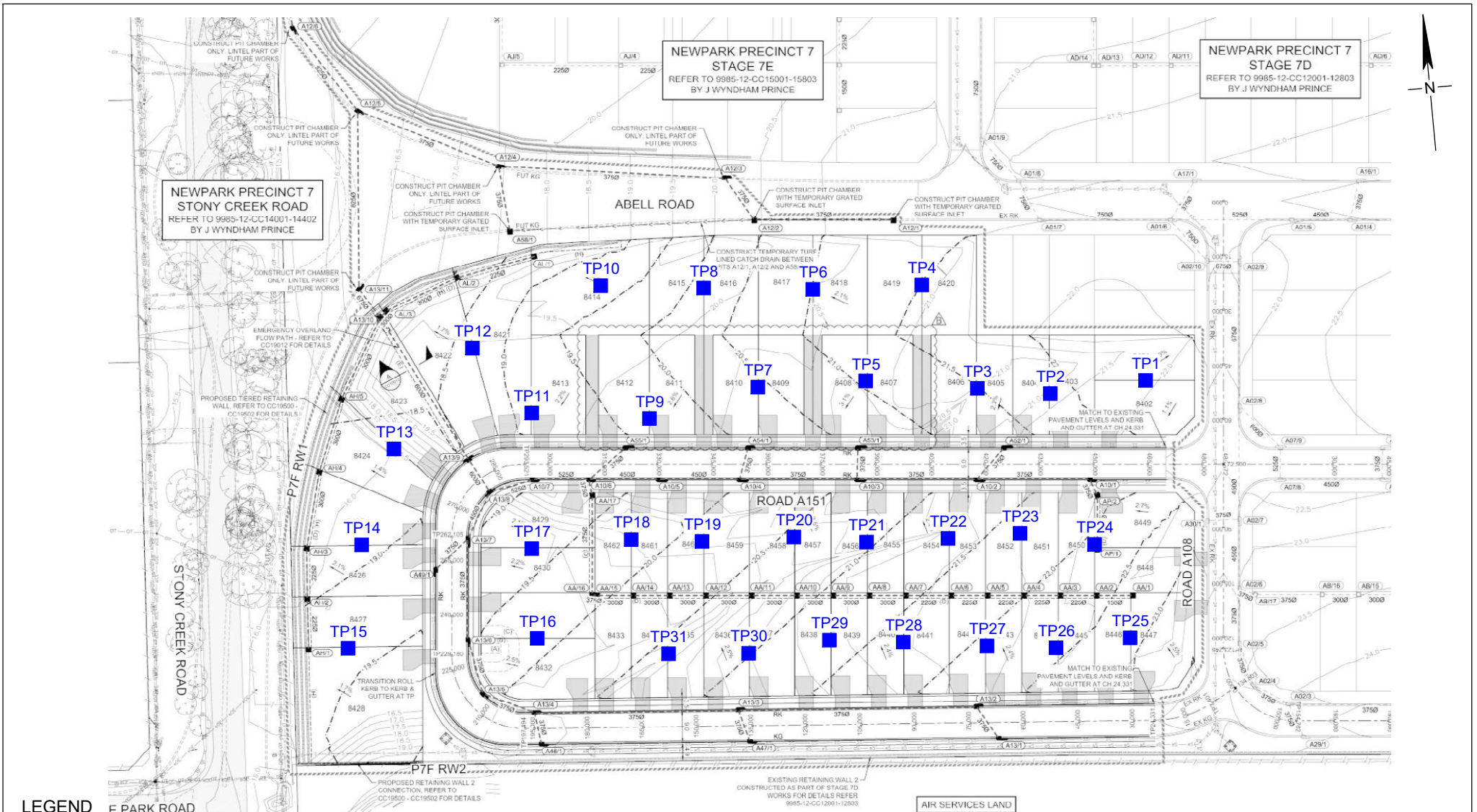


JOE CHEN

Geotechnical Engineer

Attached

Drawing No 8599/113-AA1 - Test Pit Location Plan  
Table A – Summary of Test Pits  
SGS Laboratory Test Results



**GEOTECH**  
TESTING PTY LTD

34 Borec Road  
Penrith  
NSW 2750  
ABN 71 076 676 321

Ph: 02 4722 2744  
e-mail: info@geotech.com.au  
www.geotech.com.au

**NOTES**

1. Site features are indicative and are not to scale.
2. This drawing has been produced using a base plan provided by others to which additional information e.g test pits, borehole locations or notes have been added. Some or all of the plan may not be relevant at the time of producing this drawing

Daracon Contractors Pty Ltd  
Newpark Precinct 7F  
Marsden Park

**Test Pit Locations**

Drawing No: 8599/113-AA1  
Job No: 8599/113  
Drawn By: MH  
Date: 19 September 2023  
Checked By: JC

File No: 8599-113  
Layers: 0, AA1

TABLE A

Job No: 8599/113  
Our Ref: 8599/113-AA

Page 1 of 3

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP1	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled sub-angular grained, trace sand, M>PL, well compacted  @ 1.0m grey mottled brown, with sand
TP2	0.0 – 0.5		FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to coarse gravel, M≈PL, well compacted
	0.5 – 1.0	0.5 – 1.0 (DS)	(CH) Silty CLAY, high plasticity, red-brown mottled grey, trace fine to medium gravel, trace rootlets, M>PL. stiff
	1.0 – 1.5	1.0 – 1.2 (U <sub>50</sub> )	(CH) Silty CLAY, high plasticity, grey mottled brown-red, trace fine to medium gravel, M>PL, stiff
TP3	0.0 – 1.5	0.0 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to coarse gravel, with sand, M≥PL, well compacted
TP4	0.0 – 0.5		FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to coarse gravels, trace sand, M=PL, well compacted
	0.5 – 1.5	0.5 – 1.0 (DS)	FILL: Silty Clay, medium plasticity, brown mottled orange, roots with fine to coarse gravels, M=PL, well compacted
TP5	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Silty Clay, medium plasticity, brown mottled orange, with gravel, trace rootlets, M<PL, well compacted
TP6	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, M<PL, well compacted
TP7	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, M<PL, well compacted
TP8	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Silty Clay, medium plasticity, brown mottled orange, with gravel, M<PL, well compacted
TP9	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Silty Clay, medium plasticity, brown mottled orange, with gravel, M<PL, well compacted

**TABLE A**

Job No: 8599/113  
Our Ref: 8599/113-AA

Page 2 of 3

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP10	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, M≈PL, well compacted
TP11	0.0 – 1.5	0.5 – 1.0 (DS)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to coarse gravel, with sand, M<PL, well compacted
TP12	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP13	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP14	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP15	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP16	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP17	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP18	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP19	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted
TP20	0.0 – 1.5	0.5 – 1.0 0.6 – 0.8 (Atterberg)	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M≤PL, well compacted

**TABLE A**

Job No: 8599/113  
Our Ref: 8599/113-AA

Page 3 of 3

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP21	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP22	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP23	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP24	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP25	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP26	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP27	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP28	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP29	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP30	0.0 – 1.5	0.5 – 1.0 0.6 – 0.8	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted
TP31	0.0 – 1.5	0.5 – 1.0	FILL: Gravelly Clay, medium to high plasticity, brown mottled grey-orange, fine to cobbled gravel, trace sand, M $\leq$ PL, well compacted

CLIENT DETAILS

Contact **Joe Chen**  
 Client **Geotech Testing Pty Ltd**  
 Address **P.O. Box 880  
 PENRITH  
 NSW 2751**

Telephone **02 4722 2700**  
 Facsimile **02 4722 6161**  
 Email **joe@geotech.com.au**

Project **8599/113 MARSDEN PARK**  
 Order Number **8599/113**  
 Samples **31**

LABORATORY DETAILS

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

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

SGS Reference **SE253793 R0**  
 Date Received **13/9/2023**  
 Date Reported **20/9/2023**

COMMENTS

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

SIGNATORIES



**Shane MCDERMOTT**  
 Inorganic/Metals Chemist



**Ying Ying ZHANG**  
 Laboratory Technician

pH in soil (1:5) [AN101] Tested: 20/9/2023

			TP1	TP2	TP3	TP4	TP5
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.001	SE253793.002	SE253793.003	SE253793.004	SE253793.005
pH	pH Units	0.1	<b>4.4</b>	<b>4.6</b>	<b>8.2</b>	<b>5.9</b>	<b>4.9</b>

			TP6	TP7	TP8	TP9	TP10
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.006	SE253793.007	SE253793.008	SE253793.009	SE253793.010
pH	pH Units	0.1	<b>5.1</b>	<b>5.1</b>	<b>4.7</b>	<b>5.2</b>	<b>7.2</b>

			TP11	TP12	TP13	TP14	TP15
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.011	SE253793.012	SE253793.013	SE253793.014	SE253793.015
pH	pH Units	0.1	<b>5.8</b>	<b>6.3</b>	<b>7.1</b>	<b>7.3</b>	<b>8.0</b>

			TP16	TP17	TP18	TP19	TP20
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.016	SE253793.017	SE253793.018	SE253793.019	SE253793.020
pH	pH Units	0.1	<b>5.1</b>	<b>7.7</b>	<b>7.6</b>	<b>4.9</b>	<b>5.2</b>

			TP21	TP22	TP23	TP24	TP25
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.021	SE253793.022	SE253793.023	SE253793.024	SE253793.025
pH	pH Units	0.1	<b>4.9</b>	<b>5.6</b>	<b>5.2</b>	<b>5.4</b>	<b>5.4</b>

			TP26	TP27	TP28	TP29	TP30
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.026	SE253793.027	SE253793.028	SE253793.029	SE253793.030
pH	pH Units	0.1	<b>5.4</b>	<b>8.1</b>	<b>5.3</b>	<b>6.3</b>	<b>7.6</b>

			TP31
			SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.031
pH	pH Units	0.1	<b>6.4</b>

Conductivity and TDS by Calculation - Soil [AN106] Tested: 20/9/2023

PARAMETER	UOM	LOR	TP1	TP2	TP3	TP4	TP5
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.001	SE253793.002	SE253793.003	SE253793.004	SE253793.005
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>700</b>	<b>350</b>	<b>340</b>	<b>160</b>	<b>240</b>

PARAMETER	UOM	LOR	TP6	TP7	TP8	TP9	TP10
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.006	SE253793.007	SE253793.008	SE253793.009	SE253793.010
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>260</b>	<b>250</b>	<b>340</b>	<b>150</b>	<b>440</b>

PARAMETER	UOM	LOR	TP11	TP12	TP13	TP14	TP15
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.011	SE253793.012	SE253793.013	SE253793.014	SE253793.015
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>260</b>	<b>170</b>	<b>410</b>	<b>460</b>	<b>640</b>

PARAMETER	UOM	LOR	TP16	TP17	TP18	TP19	TP20
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.016	SE253793.017	SE253793.018	SE253793.019	SE253793.020
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>310</b>	<b>380</b>	<b>250</b>	<b>180</b>	<b>270</b>

PARAMETER	UOM	LOR	TP21	TP22	TP23	TP24	TP25
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.021	SE253793.022	SE253793.023	SE253793.024	SE253793.025
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>200</b>	<b>200</b>	<b>340</b>	<b>280</b>	<b>160</b>

PARAMETER	UOM	LOR	TP26	TP27	TP28	TP29	TP30
			SOIL	SOIL	SOIL	SOIL	SOIL
			0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
			13/9/2023	13/9/2023	13/9/2023	13/9/2023	13/9/2023
			SE253793.026	SE253793.027	SE253793.028	SE253793.029	SE253793.030
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>320</b>	<b>500</b>	<b>470</b>	<b>330</b>	<b>480</b>

PARAMETER	UOM	LOR	TP31
			SOIL
			0.5-1.0
			13/9/2023
			SE253793.031
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	<b>430</b>

Moisture Content [AN002] Tested: 18/9/2023

			TP1	TP2	TP3	TP4	TP5
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.001	SE253793.002	SE253793.003	SE253793.004	SE253793.005
% Moisture	%w/w	1	<b>13.7</b>	<b>12.4</b>	<b>12.0</b>	<b>13.9</b>	<b>10.9</b>

			TP6	TP7	TP8	TP9	TP10
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.006	SE253793.007	SE253793.008	SE253793.009	SE253793.010
% Moisture	%w/w	1	<b>13.3</b>	<b>9.7</b>	<b>16.5</b>	<b>4.2</b>	<b>11.6</b>

			TP11	TP12	TP13	TP14	TP15
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.011	SE253793.012	SE253793.013	SE253793.014	SE253793.015
% Moisture	%w/w	1	<b>2.5</b>	<b>11.0</b>	<b>11.8</b>	<b>2.2</b>	<b>12.9</b>

			TP16	TP17	TP18	TP19	TP20
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.016	SE253793.017	SE253793.018	SE253793.019	SE253793.020
% Moisture	%w/w	1	<b>7.1</b>	<b>8.5</b>	<b>14.0</b>	<b>11.1</b>	<b>6.3</b>

			TP21	TP22	TP23	TP24	TP25
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.021	SE253793.022	SE253793.023	SE253793.024	SE253793.025
% Moisture	%w/w	1	<b>16.2</b>	<b>10.8</b>	<b>4.8</b>	<b>13.7</b>	<b>14.6</b>

			TP26	TP27	TP28	TP29	TP30
			SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023	SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.026	SE253793.027	SE253793.028	SE253793.029	SE253793.030
% Moisture	%w/w	1	<b>11.0</b>	<b>14.1</b>	<b>15.9</b>	<b>14.2</b>	<b>14.5</b>

			TP31
			SOIL 0.5-1.0 13/9/2023
PARAMETER	UOM	LOR	SE253793.031
% Moisture	%w/w	1	<b>13.8</b>

METHOD

METHODOLOGY SUMMARY

**AN002**

The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.

**AN101**

pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl<sub>2</sub>) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.

**AN106**

Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.

FOOTNOTES

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

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

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

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

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

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

Note that in terms of units of radioactivity:

- a. 1 Bq is equivalent to 27 pCi
- b. 37 MBq is equivalent to 1 mCi

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

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

This document is issued by the Company under its General Conditions of Service accessible at [www.sgs.com/en/Terms-and-Conditions.aspx](http://www.sgs.com/en/Terms-and-Conditions.aspx). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

### CLIENT DETAILS

Contact: Joe Chen  
 Client: Geotech Testing Pty Ltd  
 Address: P.O. Box 880  
 PENRITH  
 NSW 2751

Telephone: 02 4722 2700  
 Facsimile: 02 4722 6161  
 Email: joe@geotech.com.au

Project: **8599/113 MARSDEN PARK**  
 Order Number: **8599/113**  
 Samples: 31

### LABORATORY DETAILS

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

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

SGS Reference: **SE253793 R0**  
 Date Received: 13 Sep 2023  
 Date Reported: 20 Sep 2023

### COMMENTS

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

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

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

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

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

### SAMPLE SUMMARY

Sample counts by matrix	31 Soil	Type of documentation received	COC
Date documentation received	13/9/2023	Samples received in good order	Yes
Samples received without headspace	N/A	Sample temperature upon receipt	20.3°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-IENVJAN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE253793.001	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP2	SE253793.002	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP3	SE253793.003	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP4	SE253793.004	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP5	SE253793.005	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP6	SE253793.006	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP7	SE253793.007	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP8	SE253793.008	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP9	SE253793.009	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP10	SE253793.010	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP11	SE253793.011	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP12	SE253793.012	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP13	SE253793.013	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP14	SE253793.014	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP15	SE253793.015	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP16	SE253793.016	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP17	SE253793.017	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP18	SE253793.018	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP19	SE253793.019	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP20	SE253793.020	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP21	SE253793.021	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP22	SE253793.022	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP23	SE253793.023	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP24	SE253793.024	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP25	SE253793.025	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP26	SE253793.026	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP27	SE253793.027	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP28	SE253793.028	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP29	SE253793.029	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP30	SE253793.030	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023
TP31	SE253793.031	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023	20 Sep 2023

### Moisture Content

Method: ME-(AU)-IENVJAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE253793.001	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP2	SE253793.002	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP3	SE253793.003	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP4	SE253793.004	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP5	SE253793.005	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP6	SE253793.006	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP7	SE253793.007	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP8	SE253793.008	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP9	SE253793.009	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP10	SE253793.010	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP11	SE253793.011	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP12	SE253793.012	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP13	SE253793.013	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP14	SE253793.014	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP15	SE253793.015	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP16	SE253793.016	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP17	SE253793.017	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP18	SE253793.018	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP19	SE253793.019	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP20	SE253793.020	LB291130	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP21	SE253793.021	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP22	SE253793.022	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP23	SE253793.023	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP24	SE253793.024	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP25	SE253793.025	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP26	SE253793.026	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP27	SE253793.027	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP28	SE253793.028	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP29	SE253793.029	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP30	SE253793.030	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023
TP31	SE253793.031	LB291131	13 Sep 2023	13 Sep 2023	27 Sep 2023	18 Sep 2023	23 Sep 2023	20 Sep 2023

### pH in soil (1:5)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE253793.001	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP2	SE253793.002	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP3	SE253793.003	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP4	SE253793.004	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP5	SE253793.005	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP6	SE253793.006	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP7	SE253793.007	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP8	SE253793.008	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP9	SE253793.009	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP10	SE253793.010	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP11	SE253793.011	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP12	SE253793.012	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP13	SE253793.013	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP14	SE253793.014	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP15	SE253793.015	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP16	SE253793.016	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP17	SE253793.017	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP18	SE253793.018	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP19	SE253793.019	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP20	SE253793.020	LB291310	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP21	SE253793.021	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP22	SE253793.022	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP23	SE253793.023	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP24	SE253793.024	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP25	SE253793.025	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP26	SE253793.026	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP27	SE253793.027	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP28	SE253793.028	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP29	SE253793.029	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP30	SE253793.030	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023
TP31	SE253793.031	LB291311	13 Sep 2023	13 Sep 2023	20 Sep 2023	20 Sep 2023	21 Sep 2023	20 Sep 2023

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

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

No surrogates were required for this job.



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

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

Conductivity and TDS by Calculation - Soil

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

Sample Number	Parameter	Units	LOR	Result
LB291310.001	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	1.09
LB291311.001	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	0.88

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$   
 Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

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

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

Conductivity and TDS by Calculation - Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253793.010	LB291310.014	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	440	60.101708043	30	4
SE253793.020	LB291310.025	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	270	93.902757793	31	10
SE253793.030	LB291311.026	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	480	74.011695906	30	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253777.023	LB291131.021	% Moisture	%w/w	1	11.3394216133	12.480739596	39	1
SE253793.010	LB291130.011	% Moisture	%w/w	1	11.6	16.1	37	32
SE253793.020	LB291130.022	% Moisture	%w/w	1	6.3	8.4	44	29
SE253793.030	LB291131.011	% Moisture	%w/w	1	14.5	14.7	37	1

pH in soil (1:5)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253771.003	LB291311.025	pH	pH Units	0.1	6.413	6.317	32	2
SE253793.010	LB291310.014	pH	pH Units	0.1	7.2	7.2	31	1
SE253793.020	LB291310.025	pH	pH Units	0.1	5.2	5.3	32	2
SE253793.030	LB291311.026	pH	pH Units	0.1	7.6	7.6	31	1

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

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

**Conductivity and TDS by Calculation - Soil**

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB291310.002	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	NA	303	85 - 115	102
LB291311.002	Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	NA	303	85 - 115	111

**pH in soil (1:5)**

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB291310.003	pH	pH Units	0.1	7.4	7.415	98 - 102	99
LB291311.003	pH	pH Units	0.1	7.4	7.415	98 - 102	99

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

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

No matrix spikes were required for this job.

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

This document is issued by the Company under its General Conditions of Service accessible at [www.sgs.com/en/Terms-and-Conditions.aspx](http://www.sgs.com/en/Terms-and-Conditions.aspx). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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

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

# GEOTECH TESTING PTY LTD

# Laboratory Test Request / Chain of Custody Record

Lemko Place  
PENRITH NSW 2750

P O Box 880  
PENRITH NSW 2751

Tel: (02) 4722 2700  
Fax: (02) 4722 6161  
email: info@geotech.com.au

Page

1 of 2

<b>TO:</b> SGS ENVIRONMENTAL SERVICES UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015	<b>Sampling By:</b> JC <b>Job No:</b> 8599/113  <b>Project:</b> NEWPARK PRECINCT 7F, MARSDEN PARK
<b>PH:</b> 02 8594 0400 <b>FAX:</b> 02 8594 0499 <b>ATTN:</b> Ms Emily Yin	<b>Project Manager:</b> JC <b>Location:</b> MARSDEN PARK

Sampling details						Results required by:						
Location	Depth	Soil	Water	EC (1:5)	pH	Sulphate	Chloride	ESP			Notes	Keep Sample
1 TP1	0.5-1.0	DSP		✓	✓						ESP=Exchnageable Sodium Percentage	
2 TP2	0.5-1.0	DSP		✓	✓							
3 TP3	0.5-1.0	DSP		✓	✓							
4 TP4	0.5-1.0	DSP		✓	✓							
5 TP5	0.5-1.0	DSP		✓	✓							
6 TP6	0.5-1.0	DSP		✓	✓							
7 TP7	0.5-1.0	DSP		✓	✓							
8 TP8	0.5-1.0	DSP		✓	✓							
9 TP9	0.5-1.0	DSP		✓	✓							
10 TP10	0.5-1.0	DSP		✓	✓							
11 TP11	0.5-1.0	DSP		✓	✓							
12 TP12	0.5-1.0	DSP		✓	✓							
13 TP13	0.5-1.0	DSP		✓	✓							
14 TP14	0.5-1.0	DSP		✓	✓							
15 TP15	0.5-1.0	DSP		✓	✓							
16 TP16	0.5-1.0	DSP		✓	✓							
17 TP17	0.5-1.0	DSP		✓	✓							
18 TP18	0.5-1.0	DSP		✓	✓							
19 TP19	0.5-1.0	DSP		✓	✓							
20 TP20	0.5-1.0	DSP		✓	✓							
21 TP21	0.5-1.0	DSP		✓	✓							
22 TP22	0.5-1.0	DSP		✓	✓							
23 TP23	0.5-1.0	DSP		✓	✓							
24 TP24	0.5-1.0	DSP		✓	✓							
25 TP25	0.5-1.0	DSP		✓	✓							

SGS EHS Sydney COC  
**SE253793**



**Please Use Geotechnical Engineering Template for Reporting**

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	
Joe	JC	13/09/2023	Suba	B. Subancay	13/09/23 @ 3:20

**Legend:**  
 WG Form No 4.7F2-5 SGS      USG Undisturbed soil sample (glass jar)      DSP Disturbed soil sample (small plastic bag)      \* Purge & Trap  
 WP      DSG Disturbed soil sample (glass jar)      ✓ Test required      # Geotechnique Screen

**GEOTECH TESTING PTY LTD**

**Laboratory Test Request / Chain of Custody Record**

Lemko Place  
PENRITH NSW 2750

P O Box 880  
PENRITH NSW 2751

Tel: (02) 4722 2700  
Fax: (02) 4722 6161  
email: info@geotech.com.au

Page

2 of 2

<b>TO:</b>	SGS ENVIRONMENTAL SERVICES UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015			<b>Sampling By:</b>	JC	<b>Job No</b>	8599/113			
<b>PH:</b>	02 8594 0400			<b>Project Manager:</b>	JC	<b>Location:</b>	MARSDEN PARK			
<b>ATTN:</b>	Ms Emily Yin			<b>FAX:</b>	02 8594 0499			<b>Project:</b>	NEWPARK PRECINCT 7F, MARSDEN PARK	

Sampling details						Results required by:						
Location	Depth	Soil	Water	EC (1:5)	pH	Sulphate	Chloride	ESP			Notes	Keep Sample
26 TP26	0.5-1.0	DSP		✓	✓						ESP=Exchnageable Sodium Percentage	
27 TP27	0.5-1.0	DSP		✓	✓							
28 TP28	0.5-1.0	DSP		✓	✓							
29 TP29	0.5-1.0	DSP		✓	✓							
30 TP30	0.5-1.0	DSP		✓	✓							
31 TP31	0.5-1.0	DSP		✓	✓							

**Please Use Geotechnical Engineering Template for Reporting**

Relinquished by				Received by			
Name	Signature	Date	Name	Signature			
Joe	JC	3/02/2023	Suba	<i>[Signature]</i>	13/01/23 @ 3.20		

<b>Legend:</b>	USG	Undisturbed soil sample (glass j	DSP	Disturbed soil sample (small plastic bag)	* Purge & Trap
WG	DSG	Disturbed soil sample (glass jar)	✓	Test required	# Geotechnique Screen



## SAMPLE RECEIPT ADVICE

SE253793

### CLIENT DETAILS

Contact Joe Chen  
Client Geotech Testing Pty Ltd  
Address P.O. Box 880  
PENRITH  
NSW 2751  
  
Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email joe@geotech.com.au  
  
Project **8599/113 MARSDEN PARK**  
Order Number **8599/113**  
Samples 31

### LABORATORY DETAILS

Manager Huong Crawford  
Laboratory SGS Alexandria Environmental  
Address Unit 16, 33 Maddox St  
Alexandria NSW 2015  
  
Telephone +61 2 8594 0400  
Facsimile +61 2 8594 0499  
Email au.environmental.sydney@sgs.com  
  
Samples Received Wed 13/9/2023  
Report Due Wed 20/9/2023  
SGS Reference **SE253793**

### SUBMISSION DETAILS

This is to confirm that 31 samples were received on Wednesday 13/9/2023. Results are expected to be ready by COB Wednesday 20/9/2023. Please quote SGS reference SE253793 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	31 Soil	Type of documentation received	COC
Date documentation received	13/9/2023	Samples received in good order	Yes
Samples received without headspace	N/A	Sample temperature upon receipt	20.3°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

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

### COMMENTS

Sampling date was not provided. It is assumed to be as date samples were relinquished.

This document is issued by the Company under its General Conditions of Service accessible at [www.sgs.com/en/Terms-and-Conditions.aspx](http://www.sgs.com/en/Terms-and-Conditions.aspx). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

CLIENT DETAILS

Client **Geotech Testing Pty Ltd**

Project **8599/113 MARSDEN PARK**

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Moisture Content	pH in soil (1:5)
001	TP1 0.5-1.0	1	1	1
002	TP2 0.5-1.0	1	1	1
003	TP3 0.5-1.0	1	1	1
004	TP4 0.5-1.0	1	1	1
005	TP5 0.5-1.0	1	1	1
006	TP6 0.5-1.0	1	1	1
007	TP7 0.5-1.0	1	1	1
008	TP8 0.5-1.0	1	1	1
009	TP9 0.5-1.0	1	1	1
010	TP10 0.5-1.0	1	1	1
011	TP11 0.5-1.0	1	1	1
012	TP12 0.5-1.0	1	1	1
013	TP13 0.5-1.0	1	1	1
014	TP14 0.5-1.0	1	1	1
015	TP15 0.5-1.0	1	1	1
016	TP16 0.5-1.0	1	1	1
017	TP17 0.5-1.0	1	1	1
018	TP18 0.5-1.0	1	1	1
019	TP19 0.5-1.0	1	1	1
020	TP20 0.5-1.0	1	1	1
021	TP21 0.5-1.0	1	1	1
022	TP22 0.5-1.0	1	1	1
023	TP23 0.5-1.0	1	1	1
024	TP24 0.5-1.0	1	1	1

CONTINUED OVERLEAF

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

CLIENT DETAILS

Client **Geotech Testing Pty Ltd**

Project **8599/113 MARSDEN PARK**

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Moisture Content	pH in soil (1:5)
025	TP25 0.5-1.0	1	1	1
026	TP26 0.5-1.0	1	1	1
027	TP27 0.5-1.0	1	1	1
028	TP28 0.5-1.0	1	1	1
029	TP29 0.5-1.0	1	1	1
030	TP30 0.5-1.0	1	1	1
031	TP31 0.5-1.0	1	1	1

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