GEOTECH TESTING PTY LTD ®
ABN 71 076 676 321

Job No: 8599/121
Our Ref: 8599/121-AA
18 July 2024

Daracon Contractors Pty Ltd
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AUBURN NSW 2144
Email: Chandan.naidu@daracon.com.au
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Attention: Mr. C Naidu

Dear Sir

Re: **Proposed Residential Subdivision**
Precinct 7J, Marsden Park
Site Classification Report

Please find herewith the results of a geotechnical investigation for the classification of proposed lots at the above site. A total of two hundred and fifty two (252) lots are covered in this investigation (Lot 9001 to Lot 9252).

This report contains information on sub-surface conditions encountered at the site, together with site classification of the proposed lots in accordance with Australian Standard AS2870-2011 “Residential slabs & footings”.

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

Yours faithfully
GEOTECH TESTING PTY LTD

KUBER KHADKA
Geotechnical Engineer

Reviewed By:

EMGED RIZKALLA
Director

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APPENDICES

1.0 INTRODUCTION

This report provides results of a site classification investigation for the proposed dwellings to be located at the end of Flametree Drive, Marsden Park. A total of 252 lots (Lots 9001 to 9252) are covered in this report.

Site classification in accordance with AS2870-2011 is only applicable for design of footing systems for a single dwelling, house, townhouse, or similar structure that would be detached or separated by a party wall or common wall including buildings classified as Class 1 and Class 10a in the Building Code of Australia (BCA). AS2870 is not suitable for dwellings situated vertically above or below another dwelling. Therefore, a geotechnical investigation would be required for other dwellings to be classified in accordance with the BCA.

It is understood that the proposed dwellings are to be of brick veneer construction and wall loadings are expected to be in the range of 15kN/m to 50kN/m. The maximum working load (safe bearing pressure) would be in the order of 50kPa for ground supported floor slabs and 100kPa for strip and pad footings.

2.0 FIELD WORK

Field work for the investigation was carried out under the full-time supervision of a Geotechnical Engineer on 25 and 26 June 2024 and consisted of excavation of ninety-one (91) test pits (TP1 to TP91) to depths of the order of 1.5m, using a rubber-tyred backhoe. Test pits at shallow depths were terminated due to refusal on bedrock. The locations of the test pits are shown on the attached Drawing No 8599/121-AA1 in Appendix A. A summary of the field data obtained is presented in Appendix A.

3.0 SITE CONDITIONS

3.1 Surface Conditions

The site is of regular shape and is located at the end of Flametree Drive, Marsden Park, NSW. It is bounded by open grassland and bushland to the east, west, and north, and by medium to high-density residential areas to the south. The topography of the site is relatively flat, providing a stable and consistent foundation across most of the area. In the western part of the site, man-made slopes have been constructed, with gradients ranging from 1V:2H (steep) to 1V:0.5H (extreme). These slopes represent significant modifications to the natural landscape and indicate areas where elevation changes have been introduced, likely to accommodate the site's design requirements.

At the time of the investigation, significant progress had been made in preparing the site for development. Bulk earthworks for the lots and internal roads had been completed, ensuring that the ground was levelled and appropriately graded for future construction. The installation of electrical infrastructure was underway, with trenches and conduits being laid to provide power to the new development. Additionally, drainage systems were being installed to manage stormwater and prevent flooding, indicating a comprehensive approach to site preparation.

3.2 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)	Bedrock (m)
TP1	1.5	0.0-0.2	0.2-1.5	NE
TP2	1.4	0.0-0.2	0.2-1.3	1.3-1.4
TP3	0.6	0.0-0.2	0.2-0.6	NE
TP4	1.0	0.0-0.2	0.2-1.0	NE
TP5	1.5	0.0-0.4	0.4-1.5	NE
TP6	1.5	NE	0.0-1.5	NE
TP7	1.5	0.0-0.9	0.9-1.5	NE
TP8	1.5	0.0-0.5	0.5-1.5	NE
TP9	1.5	0.0-0.3	0.3-1.5	NE
TP10	1.5	0.0-0.6	0.6-1.5	NE
TP11	1.5	0.0-0.2	0.2-1.5	NE
TP12	1.5	0.0-0.3	0.3-1.5	NE
TP13	1.5	0.0-0.3	0.3-1.5	NE
TP14	1.5	0.0-0.2	0.2-1.5	NE
TP15	1.5	0.0-0.2	0.2-1.5	NE
TP16	1.5	0.0-0.3	0.3-1.5	NE
TP17	1.5	0.0-0.2	0.2-1.5	NE
TP18	1.5	NE	0.0-1.5	NE
TP19	1.5	0.0-0.7	0.7-1.5	NE
TP20	1.5	0.0-0.2	0.2-1.5	NE
TP21	1.5	NE	0.0-1.5	NE
TP22	1.5	0.0-0.2	0.2-1.5	NE
TP23	1.5	0.0-0.2	0.2-1.5	NE
TP24	1.5	0.0-0.2	0.2-1.5	NE
TP25	1.5	0.0-0.3	0.3-1.5	NE
TP26	1.5	0.0-0.2	0.2-1.5	NE
TP27	1.5	0.0-0.2	0.2-1.5	NE
TP28	1.5	0.0-0.2	0.2-1.5	NE
TP29	1.5	0.0-0.2	0.2-1.5	NE
TP30	1.5	0.0-0.8	0.8-1.5	NE
TP31	1.5	0.0-0.5	0.5-1.5	NE
TP32	1.5	0.0-1.1	1.1-1.5	NE
TP33	1.5	0.0-0.2	0.2-1.5	NE
TP34	1.5	0.0-0.5	0.5-1.5	NE
TP35	1.5	0.0-0.6	0.6-1.5	NE
TP36	1.5	0.0-0.6	0.6-1.5	NE

Test Pit	Termination Depth (m)	Fill (m)	Natural (m)	Bedrock (m)
TP37	1.5	0.0-0.4	0.4-0.9	NE
TP38	1.5	0.0-0.3	0.3-1.5	NE
TP39	1.5	0.0-0.4	0.4-1.5	NE
TP40	1.5	0.0-0.4	0.4-1.5	NE
TP41	1.5	0.0-0.4	0.4-1.5	NE
TP42	1.5	0.0-0.5	0.5-1.5	NE
TP43	1.5	0.0-0.6	0.6-1.5	NE
TP44	1.5	0.0-0.6	0.6-1.5	NE
TP45	1.5	NE	0.0-1.5	NE
TP46	1.5	0.0-0.3	0.3-1.5	NE
TP47	1.2	NE	0.0-1.2	NE
TP48	1.1	0.0-0.3	0.3-1.1	NE
TP49	1.2	0.0-0.3	0.3-1.5	NE
TP50	1.5	0.0-0.2	0.2-1.5	NE
TP51	1.5	0.0-0.6	0.6-1.5	NE
TP52	1.5	0.0-0.7	0.7-1.5	NE
TP53	1.5	0.0-1.3	1.3-1.5	NE
TP54	1.5	0.0-0.8	0.8-1.5	NE
TP55	1.5	NE	0.0-1.5	NE
TP56	1.5	NE	0.0-1.5	NE
TP57	0.5	NE	0.0-0.5	NE
TP58	1.5	NE	0.0-1.5	NE
TP59	0.8	NE	0.0-0.8	NE
TP60	1.2	NE	0.0-1.2	NE
TP61	1.5	NE	0.0-1.5	NE
TP62	1.0	NE	0.0-1.0	NE
TP63	0.6	NE	0.0-0.6	NE
TP64	0.6	NE	0.0-0.6	NE
TP65	0.7	NE	0.0-0.7	NE
TP66	1.5	0.0-0.4	0.4-1.5	NE
TP67	0.8	0.0-0.2	0.2-0.8	NE
TP68	0.6	0.0-0.2	0.2-0.6	NE
TP69	1.5	0.0-0.2	0.2-1.5	NE
TP70	1.5	0.0-0.2	0.2-1.5	NE
TP71	0.5	0.0-0.2	0.2-0.5	NE
TP72	0.5	0.0-0.1	0.1-0.5	NE
TP73	1.5	0.0-0.2	0.2-1.5	NE
TP74	1.5	0.0-0.2	0.2-1.5	NE
TP75	0.8	0.0-0.2	0.2-0.8	NE
TP76	0.6	0.0-0.2	0.2-0.6	NE

Test Pit	Termination Depth (m)	Fill (m)	Natural (m)	Bedrock (m)
TP77	1.5	0.0-0.4	0.4-1.5	NE
TP78	1.5	NE	0.0-1.5	NE
TP79	1.5	0.0-0.6	0.6-1.5	NE
TP80	1.5	0.0-0.2	0.2-1.5	NE
TP81	1.5	0.0-0.5	0.5-1.0	1.0-1.1
TP82	1.3	0.0-0.3	0.3-1.3	NE
TP83	1.5	NE	0.0-1.5	NE
TP84	1.3	NE	0.0-1.3	NE
TP85	1.3	NE	0.0-1.3	NE
TP86	0.7	NE	0.0-0.7	NE
TP87	1.5	NE	0.0-1.5	NE
TP88	1.5	NE	0.0-1.5	NE
TP89	0.5	NE	0.0-0.5	NE
TP90	0.6	NE	0.0-0.6	NE
TP91	1.5	NE	0.0-1.5	NE

Note: NE: Not encountered to the termination depth

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

Fill	Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel Silty Clay, medium to high plasticity, brown/grey-brown, with fine to coarse sub-angular gravel, with fine to coarse grained sands
Natural	Silty CLAY, high plasticity, red mottled grey, with fine to coarse sub-angular gravel Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand Silty CLAY, low/high plasticity, brown, with fine to coarse sub-angular gravel Silty Sandy CLAY, medium plasticity, grey, with fine to coarse grained sands Gravelly Sandy CLAY, medium to high plasticity, red-brown, fine to coarse sub-angular gravel, low to medium grained sand Clayey GRAVEL, medium to coarse grained, red brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, very dense Gravelly CLAY, low to medium plasticity, red-grey, with fine to coarse sub-angular gravel, fine to coarse grained sand Clayey SAND, with fine to coarse grained, grey-brown, of high plasticity clay, moist, dense
Bedrock	SANDSTONE, fine to medium grained, red brown, low to medium strength, moderately weathered

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.

4.0 LABORATORY TESTING

A total of three (3) undisturbed 50mm diameter hollow tube (U_{50}) samples and eleven (11) disturbed samples were recovered from the site. These samples were tested to determine shrink/swell index and Atterberg limit values. The tests were conducted in accordance with relevant Australian Standards and the results are summarised below and detailed in the attached test certificates, in Appendix C.

Table 2: Summary of Test Results

Test Pit	Depth (m)	Material Description	Liquid Limit (%)	Plasticity Index (%)	Linear Shrinkage (%)	Shrink/Swell Index (%/pF)
TP13	1.1-1.3	Silty CLAY, high plasticity, brown, trace fine to coarse sub-angular gravel	82.0	56.0	21.0	-
TP25	0.7-0.9	Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand	62.0	41.0	19.0	-
TP32	0.5-0.7	Silty Clay, low plasticity, dark-brown, with fine to coarse sub gravel, traces of fine to medium grained sand	39.0	25.0	13.5	-
TP38	0.5-0.7	Silty CLAY, high plasticity, brown, with fine to medium sub-angular gravel, trace fine to medium grained sand	72.0	52.0	20.0	-
TP44	0.8-1.0	Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel	51.0	33.0	17.0	-
TP50	0.5-0.8	Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel	53.0	33.0	15.0	-
TP56	0.4-0.6	Silty CLAY, high plasticity, red mottled grey, with fine to coarse sub-angular gravel	-	-	-	0.5
TP61	1.0-1.2	Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel	54.0	27.0	17.0	-
TP70	0.4-0.7	Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse grained sand	-	-	-	0.4
TP73	0.6-0.8	Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel	-	-	-	0.5
TP77	0.6-0.9	Silty CLAY, low plasticity, brown, with fine to coarse sub-angular gravel	59.0	32.0	15.5	-
TP80	0.6-0.9	Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel	56.0	35.0	18.0	-
TP82	0.6-0.9	Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel	61.0	41.0	17.5	-
TP87	0.6-0.8	Silty CLAY, medium to high plasticity, red brown, with fine to coarse sub-angular gravel, fine to coarse grained sand	36.0	23.0	11.5	-

5.0 DISCUSSION & RECOMMENDATIONS

5.1 Assessment of Fill

Fill was encountered in several test pits excavated across the site. It should be noted that several field density tests were conducted by Geotech Testing Pty Ltd during the fill placement and the results are provided in our summary report (to be finalised later). Based on our inspection of the fill during the investigation and the above field density tests results, it is our assessment that the fill is “Controlled Fill”.

5.2 Site Classification

This report certifies the site classification for the reactivity of the lots in the subdivision after identification of the soil characteristics in accordance with the provisions of AS 2870, “Residential Slabs and Footings.”

Based on the field and laboratory results, the site classification to AS2870-2011 "Residential slabs & footings", for the proposed lots are summarised in Appendix B of this report.

It is recommended that footings for the proposed dwellings are founded on the same stratum, below any topsoil or deleterious material, to minimise the potential for differential movement.

The above recommendations are applicable to the Lots at the date of conducting the investigation, being 25 and 26 June 2024 and are made on the following assumptions:

1. The construction requirements of AS2870-2011 must be followed.
2. The recommendations for site maintenance set out in Appendix B of AS2870 are followed.
3. The performance expectations set out in Appendix C of AS2870 are acceptable.

It is recommended that house owners are made aware of the recommendations given by the CSIRO publication, "Guide to Home Owners on Foundation Maintenance and Footing Performance".

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APPENDIX A

TABLE A
SUMMARY OF TEST PITS

DRAWING NO 8599/121-AA1
(*Test Pit Location Plan*)

TABLE A

Job No: 8599/121
Our Ref: 8599/121-AA

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP1	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, friable
TP2	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M>PL, well compacted
	0.2-0.6	0.4-0.5 (DS)	(CH) Silty CLAY, high plasticity, brown, fine to coarse sub-angular gravel, M>PL, stiff
	0.6-1.1	1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, fine to coarse sub-angular gravel, trace fine to medium grained sand, M>PL, stiff
	1.1-1.3		(CI) Silty Sandy CLAY, medium plasticity, grey, fine to coarse grained sand, M≥PL, stiff
	1.3-1.4		SANDTONE, fine to medium grained, red brown, low to medium strength, moderately weathered
TP3	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-0.6	0.4-0.5 (DS)	(CI-CH) Gravelly Sandy CLAY, medium to high plasticity, red-brown, fine to coarse sub-angular gravel, fine to medium grained sand, M>PL, stiff TP3 terminated at 0.6m refusal on gravel
TP4	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M<PL, well compacted
	0.2-0.8	0.4-0.5 (DS)	(CI-CH) Gravelly Sandy CLAY, medium to high plasticity, red-brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, M>PL, stiff
	0.8-1.0		(GC) Clayey GRAVEL, medium to cobble grained, red brown, of medium to high plasticity clay, with sand, moist, very dense TP4 terminated at 1.0m refusal on gravel

TABLE A

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP5	0.0-0.4		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse sand, M<PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, stiff
TP6	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse sand, M≤PL, Stiff
TP7	0.0-0.9	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.9-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse sand, M≤PL, Stiff
TP8	0.0-0.5	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.5-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse sand, M≤PL, Stiff
TP9	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse sand, M≤PL, Stiff
TP10	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.6-1.5	1.0-1.1 (DS)	(CI-CH) Gravelly Sandy CLAY, medium to high plasticity, red-brown, fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≥PL, stiff

TABLE A

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP11	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Gravelly Sandy CLAY, medium to high plasticity, red-brown, fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≥PL, stiff
TP12	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, fine to medium sub-angular gravel, trace fine to medium grained sand, M≥PL, stiff
TP13	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 1.0-1.1(DS) 1.1-1.3 (Atterberg)	(CH) Silty CLAY, high plasticity, brown, trace fine to coarse sub-angular gravel, M>PL, very stiff
TP14	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(SC) Clayey SAND, fine to coarse grained, grey-brown, of high plasticity, clay, moist, very dense
TP15	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, red mottled grey, traces of fine to medium sub-angular gravel, M>PL, stiff
TP16	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse gravel, M≥PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M>PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP17	0.0-0.2		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to coarse grained sand, traces of fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1-1.1 (DS)	(CL) Silty CLAY, low plasticity, brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M>PL, stiff
TP18	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CL) Silty CLAY, low plasticity, brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M>PL, stiff
TP19	0.0-0.7	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.7-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL. Stiff
TP20	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL. Stiff
TP21	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP22	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP23	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff

TABLE A

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP24	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP25	0.0-0.3		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 0.7-0.9 (Atterberg) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP26	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP27	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP28	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff
TP29	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, traces of fine to coarse grained sand, M≥PL, Stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP30	0.0-0.8	0.4-0.5 (DS)	FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.8-1.5	1.0-1.1 (DS	(GC) Clayey Gravel, low plasticity, dark grey, with fine to coarse sub-angular gravel, traces fine to medium grained sand, M≤PL, well compacted
TP31	0.0-0.5	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to coarse sub gravel, traces of fine to medium grained sand, M≤PL, well compacted
	0.5-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub gravel, traces of fine to medium grained sand, M≤PL, stiff
TP32	0.0-1.1	0.4-0.5 (DS) 0.5-0.7 (Atterberg) 1.0-1.1 (DS)	FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub gravel, traces of fine to medium grained sand, M≤PL, well compacted
	1.1-1.5		(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse gravel, M≤PL, stiff
TP33	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub gravel, traces of fine to medium grained sand, M≤PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 0.5-0.7 (Atterberg) 2.0-2.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse gravel, M≤PL, stiff
TP34	0.0-0.5	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.5-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse gravel, traces of fine to medium grained sand M≤PL, stiff
TP35	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.6-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse gravel, traces of fine to medium grained sand M≤PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP36	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.6-1.5	1.0-1.1 (DS)	(CL-CI) Gravelly CLAY, low to medium plasticity, red-grey, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≤PL, Stiff
TP37	0.0-0.4		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted TP37 terminated at 0.9m refusal on gravel
	0.4-0.9	0.4-0.5 (DS) 0.8-0.9 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, dense TP37 terminated at 0.9m refusal on gravel
TP38	0.0-0.3		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to medium sub-angular gravel, M≤PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 0.5-0.7 (Atterberg) 2.0-2.1 (DS)	(CH) Silty CLAY, high plasticity, brown, with fine to medium sub-angular gravel, trace fine to medium grained sand, M>PL, stiff
TP39	0.0-0.4		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to medium sub-angular gravel, M≤PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, trace fine to medium sub angular gravel, trace fine to medium grained sand, M>PL, stiff
TP40	0.0-0.4		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to medium sub-angular gravel, M≤PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, trace fine to medium sub angular gravel, trace fine to medium grained sand, M>PL, stiff
TP41	0.0-0.4		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to medium sub-angular gravel, M≤PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, trace fine to medium sub angular gravel, trace fine to medium grained sand, M>PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP42	0.0-0.5	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≤PL, well compacted
	0.5-1.5	1.0-1.1 (DS)	(CI-CH) Silty CLAY, high plasticity, brown, trace fine to coarse sub-angular gravel, trace fine to medium grained sand, M>PL, stiff
TP43	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≤PL, well compacted
	0.6-1.5	1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP44	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M<PL, well compacted
	0.6-1.5	0.8-1.0 (Atterberg) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP45	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, with fine to coarse grained sand, M<PL, stiff
TP46	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.3-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, M>PL, stiff
TP47	0.0-1.2	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted TP47 terminated at 1.2m refusal on gravel
TP48	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.3-1.1	0.4-0.5 (DS) 1.0-1.1 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, of medium to high plasticity clay, moist, very dense TP48 terminated at 1.1m refusal on gravel

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP49	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≤PL, well compacted
	0.3-1.2	0.4-0.5 (DS) 1.0-1.1 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, of medium to high plasticity clay, moist, very dense TP49 terminated at 1.2m refusal on gravel
TP50	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to medium sub-angular gravel, M>PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 0.6-0.8 (Atterberg) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP51	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≤PL, well compacted
	0.6-1.5	1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, red mottled grey, with fine to coarse sub-angular gravel, M>PL, stiff
TP52	0.0-0.7	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M≤PL, well compacted
	0.7-1.5	1.0-1.1 (DS)	Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP53	0.0-1.3	0.4-0.5 (DS) 1.0-1.1 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≤PL, well compacted
	1.3-1.5		(CH) Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP54	0.0-8.0	0.4-0.5 (DS)	FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≤PL, well compacted
	0.8-1.5	1.0-1.1 (DS)	Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP55	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, red mottled grey, with fine to coarse sub-angular gravel, M≥PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP56	0.0-1.5	0.4-0.5 (DS) 0.4-0.6 (U_{50}) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, red mottled grey, with fine to coarse sub-angular gravel, M≥PL, stiff
TP57	0.0-0.5	0.4-0.5 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse grained sand, of low plasticity clay, moist, very dense TP57 terminated at 0.5m refusal on gravel
TP58	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP59	0.0-0.8	0.4-0.5 (DS)	(CH) Silty CLAY, high plasticity, brown0, with fine to coarse grained sand, of low plasticity clay, moist, very dark TP59 terminated at 0.8m refusal on gravel
TP60	0.0-1.0	0.4-0.5 (DS)	(SC) Clayey SAND, fine to coarse grained, grey-brown, with fine to medium sub-angular gravel, of low plasticity clay, moist, dense
	1.0-1.2	1.0-1.1 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, very dense TP60 terminated at 1.2m refusal on gravel
TP61	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS) 1.0-1.2 (Atterberg)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP62	0.0-0.8	0.4-0.5 (DS)	(CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse grained sand, with fine to coarse sub-angular gravel, M≥PL, stiff
	0.8-1.0		(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, very dense TP62 terminated at 1.0m refusal on gravel
TP63	0.0-0.6	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, very dense TP63 terminated at 0.6m refusal on gravel

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP64	0.0-0.6	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of medium to high plasticity clay, moist, very dense TP64 terminated at 0.6m refusal on gravel
TP65	0.0-0.7	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, moist, very dense TP65 terminated at 0.7m refusal on gravel
TP66	0.0-0.4		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to coarse grained gravel sand, M<PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular, M≥PL, stiff
TP67	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-0.8	0.4-0.5 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff TP67 at 0.8m refusal on gravel
TP68	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-0.6	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, moist, very dense
TP69	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, traces of fine to coarse sub-angular gravel, M≥PL, stiff
TP70	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse grained sand, M≥PL, stiff

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Job No: 8599/121
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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP71	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse grained sand, M≥PL, well compacted
	0.2-0.5	0.4-0.5 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff TP71 terminated at 0.5m refusal on gravel
TP72	0.0-0.1		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.1-0.5	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, fine to coarse grained sand, moist, very dense TP72 terminated at 0.5m refusal on gravel
TP73	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 0.4-0.7 (U_{50}) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
TP74	0.0-0.2		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≥PL, stiff
TP75	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse grained gravel, M≥PL, well compacted
	0.2-0.6	0.4-0.5 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, M≥PL, stiff
	0.6-0.8		(CH) Silty CLAY, high plasticity, brown, M≥PL, stiff TP75 terminated at 0.8m refusal on gravel
TP76	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with sub-angular gravel, M≥PL, well compacted
	0.2-0.6	0.4-0.5 (DS)	(CH) Silty CLAY, high plasticity, grey-brown, with sub-angular gravel, M≥PL, very stiff TP76 terminated at 0.6m refusal on gravel

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP77	0.0-0.4		FILL: Clayey Gravel, low plasticity, dark grey, with fine to coarse grained sand, M≥PL, well compacted
	0.4-1.5	0.4-0.5 (DS) 0.6-0.8 (Atterberg) 1-1.1 (DS)	(CL) Silty CLAY, low plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP78	0.0-1.3	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse grained sand, M≥PL, stiff
	1.3-1.5		(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, M≥PL, stiff
TP79	0.0-0.6	0.4-0.5 (DS)	FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.6-1.3	1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, Stiff
	1.3-1.5		(CH) Silty CLAY, medium to high plasticity, grey-brown, M≥PL, stiff
TP80	0.0-0.2		FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.2-1.5	0.4-0.5 (DS) 0.6-0.9 (Atterberg) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
TP81	0.0-0.5	0.4-0.5 (DS)	FILL: Silty Clay, low plasticity, dark-brown, with fine to coarse sub-angular gravel, M≥PL, well compacted
	0.5-1.0		(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, M≥PL, stiff
	1.0-1.1		SANDTONE, fine to medium grained, red brown, low to medium strength, moderately weathered
TP82	0.0-0.3		FILL: Silty Clay, medium to high plasticity, brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≥PL, well compacted
	0.3-1.1	0.4-0.5 (DS) 0.6-0.9 (Atterberg) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, M≥PL, stiff
	1.1-1.3		(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of low to medium plasticity clay, moist, very dense

TABLE A

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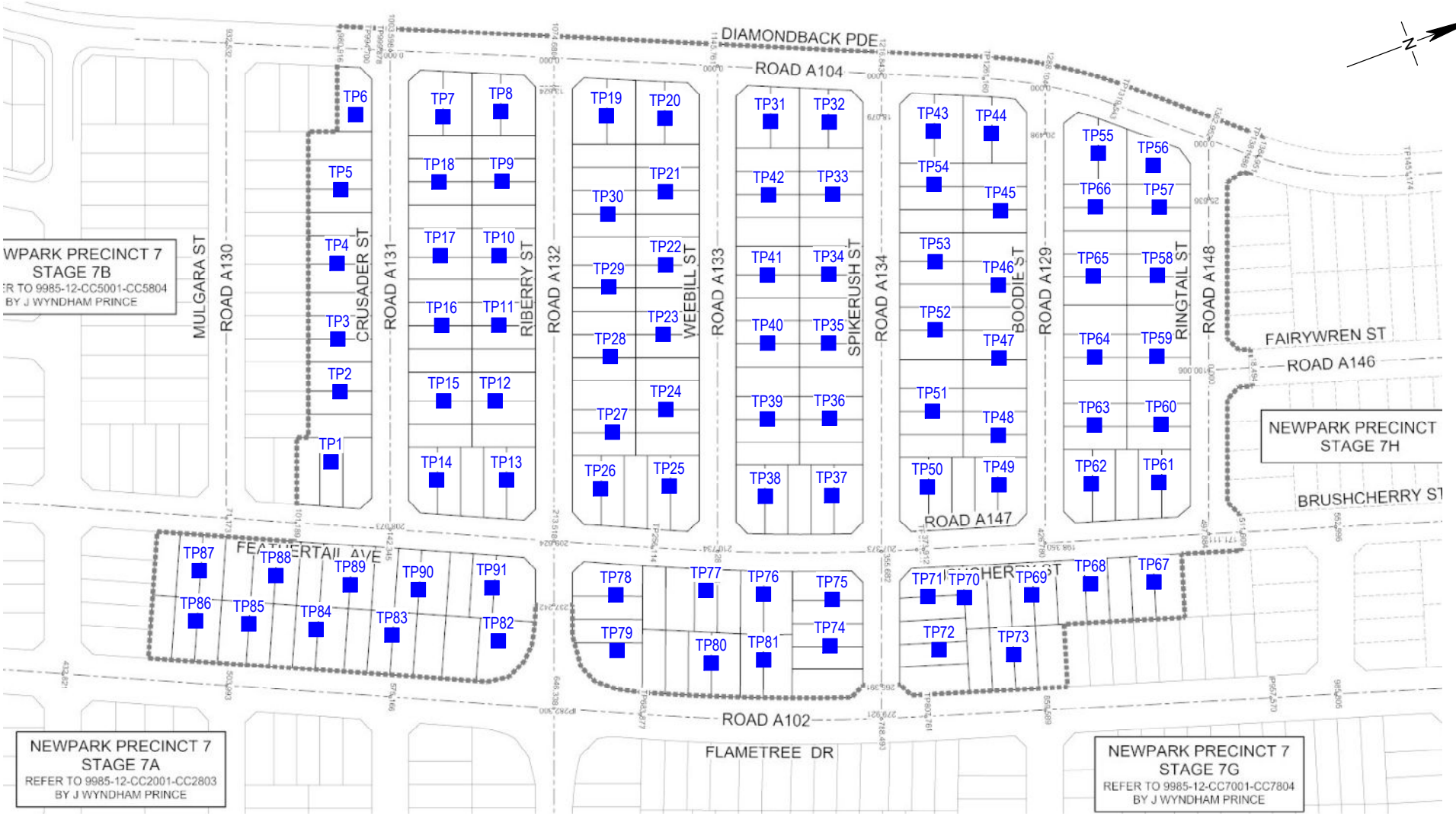
TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP83	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, with fine to coarse sub-angular gravel, trace fine to medium grained sand, M≥PL, stiff
TP84	0.0-1.1	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M<PL, stiff
	1.1-1.3		(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of low to medium plasticity clay, moist, very dense TP84 terminated at 1.3m refusal on gravel
TP85	0.0-1.1	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, with fine to coarse sub-angular gravel, trace fine to coarse grained sand, M<PL, stiff
	1.1-1.3		(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of low to medium plasticity clay, moist, very dense TP85 terminated at 1.3m refusal on gravel
TP86	0.0-0.7	0.4-0.5 (DS)	(CI-CH) Gravelly Silty CLAY, medium to high plasticity, brown-grey, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≥PL, very stiff
TP87	0.0-1.5	0.4-0.5 (DS) 0.6-0.8 (Atterberg) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, red brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≥PL, stiff
TP88	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, red brown, with fine to coarse sub-angular gravel, fine to coarse grained sand, M≥PL, stiff
TP89	0.0-0.5	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of low to medium plasticity clay, moist, very dense TP89 terminated at 0.5m refusal on gravel
TP90	0.0-0.6	0.4-0.5 (DS)	(GC) Clayey GRAVEL, medium to coarse grained, red-brown, with fine to coarse grained sand, of low to medium plasticity clay, moist, very dense TP90 terminated at 0.6m refusal on gravel
TP91	0.0-1.5	0.4-0.5 (DS) 1.0-1.1 (DS)	(CH) Silty CLAY, high plasticity, brown, with fine to coarse grained gravel, M≤PL, stiff



LEGEND

■ Test Pit

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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 Engineering Pty Limited
Newpark Precinct 7J
Marsden Park

Test Pit Locations

Drawing No: 8599/121-AA1
Job No: 8599/121
Drawn By: MH
Date: 27 June 2024
Checked By: KK

File No: 8599-121
Layers: 0, AA1

APPENDIX B

SUMMARY OF SITE CLASSIFICATIONS

Job No: 8599/121
Our Ref: 8599/121-AA

TABLE B

SUMMARY OF SITE CLASSIFICATIONS
Newpark Precinct 7J, Marsden Park

Lot	Site Classification	Lot	Site Classification	Lot	Site Classification
9001	M	9032	H1	9063	M
9002	M	9033	H1	9064	M
9003	M	9034	H1	9065	M
9004	M	9035	H1	9066	M
9005	M	9036	H1	9067	M
9006	M	9037	H1	9068	H1
9007	M	9038	M	9069	H1
9008	M	9039	M	9070	M
9009	M	9040	H1	9071	M
9010	M	9041	H1	9072	M
9011	M	9042	M	9073	M
9012	M	9043	M	9074	M
9013	M	9044	M	9075	M
9014	M	9045	M	9076	M
9015	M	9046	M	9077	M
9016	M	9047	M	9078	M
9017	M	9048	M	9079	M
9018	M	9049	M	9080	M
9019	M	9050	M	9081	M
9020	M	9051	M	9082	M
9021	M	9052	M	9083	M
9022	M	9053	M	9084	M
9023	M	9054	M	9085	M
9024	M	9055	M	9086	M
9025	M	9056	M	9087	M
9026	H1	9057	M	9088	M
9027	H1	9058	M	9089	M
9028	H1	9059	M	9090	M
9029	M	9060	M	9091	M
9030	M	9061	M	9092	M
9031	M	9062	M	9093	M

Job No: 8599/121
Our Ref: 8599/121-AA

Newpark Precinct 7J, Marsden Park (Continued)

Lot	Site Classification	Lot	Site Classification	Lot	Site Classification
9094	M	9125	M	9156	M
9095	M	9126	M	9157	M
9096	M	9127	M	9158	M
9097	M	9128	M	9159	M
9098	M	9129	M	9160	M
9099	M	9130	M	9161	M
9100	M	9131	M	9162	M
9101	M	9132	M	9163	M
9102	H1	9133	M	9164	M
9103	H1	9134	M	9165	M
9104	M	9135	M	9166	M
9105	M	9136	M	9167	M
9106	M	9137	H1	9168	M
9107	M	9138	H1	9169	M
9108	M	9139	M	9170	M
9109	M	9140	M	9171	M
9110	M	9141	M	9172	M
9111	M	9142	M	9173	M
9112	M	9143	M	9174	H1
9113	M	9144	M	9175	H1
9114	M	9145	M	9176	H1
9115	M	9146	M	9177	M
9116	M	9147	M	9178	M
9117	M	9148	M	9179	M
9118	M	9149	M	9180	M
9119	M	9150	M	9181	M
9120	M	9151	M	9182	M
9121	M	9152	M	9183	M
9122	M	9153	M	9184	M
9123	M	9154	M	9185	M
9124	M	9155	M	9186	M

Job No: 8599/121
Our Ref: 8599/121-AA

Newpark Precinct 7J, Marsden Park (Continued)

Lot	Site Classification	Lot	Site Classification	Lot	Site Classification
9187	M	9209	H1	9231	M
9188	M	9210	H1	9232	M
9189	M	9211	M	9233	M
9190	M	9212	M	9234	M
9191	H1	9213	M	9235	M
9192	H1	9214	M	9236	H1
9193	H1	9215	M	9237	H1
9194	H1	9216	M	9238	M
9195	M	9217	M	9239	M
9196	M	9218	M	9240	M
9197	M	9219	M	9241	M
9198	M	9220	M	9242	M
9199	M	9221	M	9243	M
9200	M	9222	M	9244	M
9201	M	9223	H1	9245	M
9202	M	9224	H1	9246	M
9203	M	9225	H1	9247	M
9204	M	9226	M	9248	M
9205	M	9227	M	9249	M
9206	M	9228	M	9250	M
9207	H1	9229	M	9251	M
9208	H1	9230	M	9252	M

M: Moderately Reactive, Free Surface Movement: 20-40mm
H1: Highly Reactive, Free Surface Movement: 40-60mm

APPENDIX C

LABORATORY TEST RESULTS

GEOTECH TESTING PTY LTD ®
ABN 71 076 676 321

TEST RESULTS - ATTERBERG LIMITS
Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

DARACON ENGINEERING PTY LIMITED
20 KULLARA CLOSE
BERESFIELD NSW 2322

Laboratory: Penrith
Job No: 8599/121

PROJECT: SITE CLASSIFICATION
NEWPARK PRECINCT 7J, MARSDEN PARK

Date Tested: 03to08/07/2024 Tested By: BG
Checked By: AK

Sample Identification	Test Pit 13	Test Pit 25	Test Pit 32
Laboratory Number	8599/121-1	8599/121-2	8599/121-3
Depth (m)	1.1 - 1.3	0.7 - 0.9	0.5 - 0.7
Test Description			
Liquid Limit (W_L)	82%	62%	39%
Plastic Limit (W_P)	26%	21%	14%
Plastic Index (I_P)	56%	41%	25%
Linear Shrinkage (LS)	21.0%	19.0%	13.5%
Mould Length (mm)	125	127	127
Sample History	Oven Dried Dry Sieved	Oven Dried Dry Sieved	Oven Dried Dry Sieved
Material Description	(CH) Silty CLAY, high plasticity, brown, trace of fine to coarse gravel	(CH) Silty CLAY, high plasticity, grey-brown with fine to coarse gravel	FILL: Silty Clay, medium plasticity, dark brown with fine to coarse gravel

A Kench
Report Date 10/07/2024

NATA
Accredited for compliance with ISO/IEC 17025 - Testing.

Nata Accreditation Number 2734
Corporate Site Number 2727

Approved Signatory

34 Borec Road, Penrith NSW 2750
Telephone: (02) 4722 2744

Unit 4, 18-20 Whyalla Place, Prestons NSW 2170
Telephone: (02) 9607 6111

email: info@geotech.com.au www.geotech.com.au

GEOTECH TESTING PTY LTD ®
ABN 71 076 676 321

TEST RESULTS - ATTERBERG LIMITS
Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

DARACON ENGINEERING PTY LIMITED
20 KULLARA CLOSE
BERESFIELD NSW 2322

Laboratory: Penrith
Job No: 8599/121

PROJECT: SITE CLASSIFICATION
NEWPARK PRECINCT 7J, MARSDEN PARK

Date Tested: 03to08/07/2024 Tested By: BG
Checked By: AK

Sample Identification	Test Pit 38	Test Pit 44	Test Pit 50
Laboratory Number	8599/121-4	8599/121-5	8599/121-6
Depth (m)	0.5 - 0.7	0.8 - 1.0	0.5 - 0.8
Test Description			
Liquid Limit (W_L)	72%	51%	53%
Plastic Limit (W_P)	20%	18%	20%
Plastic Index (I_P)	52%	33%	33%
Linear Shrinkage (LS)	20.0%	17.0%	15.0%
Mould Length (mm)	127	125	127
Sample History	Oven Dried Dry Sieved	Oven Dried Dry Sieved	Oven Dried Dry Sieved
Material Description	(CH) Silty CLAY, high plasticity, brown with fine to medium gravel	(CH) Silty CLAY, high plasticity, grey-brown with fine to coarse gravel	(CH) Silty CLAY, high plasticity, grey-brown with fine to coarse gravel

A Kench
Report Date 10/07/2024

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TEST RESULTS - ATTERBERG LIMITS
Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

DARACON ENGINEERING PTY LIMITED
20 KULLARA CLOSE
BERESFIELD NSW 2322

Laboratory: Penrith
Job No: 8599/121

PROJECT: SITE CLASSIFICATION
NEWPARK PRECINCT 7J, MARSDEN PARK

Date Tested: 03to08/07/2024 Tested By: BG
Checked By: AK

Sample Identification	Test Pit 61	Test Pit 77	Test Pit 80
Laboratory Number	8599/121-8	8599/121-11	8599/121-12
Depth (m)	1.0 - 1.2	0.6 - 0.8	0.6 - 0.9
Test Description			
Liquid Limit (W_L)	54%	59%	56%
Plastic Limit (W_P)	27%	27%	21%
Plastic Index (I_P)	27%	32%	35%
Linear Shrinkage (LS)	17.0%	15.5%	18.0%
Mould Length (mm)	127	127	127
Sample History	Oven Dried Dry Sieved	Oven Dried Dry Sieved	Oven Dried Dry Sieved
Material Description	(CH) Silty CLAY, high plasticity, grey-brown with fine to coarse gravel	(CH) Silty CLAY, high plasticity, brown with fine to coarse gravel	(CH) Sity CLAY, high plasticity, brown with fine to coarse gravel

A Kench
Report Date 10/07/2024

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GEOTECH TESTING PTY LTD ®
ABN 71 076 676 321

TEST RESULTS - ATTERBERG LIMITS
Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

DARACON ENGINEERING PTY LIMITED
20 KULLARA CLOSE
BERESFIELD NSW 2322

Laboratory: Penrith
Job No: 8599/121

PROJECT: SITE CLASSIFICATION
NEWPARK PRECINCT 7J, MARSDEN PARK

Date Tested: 03to08/07/2024 Tested By: BG
Checked By: AK

Sample Identification	Test Pit 82	Test Pit 87
Laboratory Number	8599/121-13	8599/121-14
Depth (m)	0.6 - 0.9	0.6 - 0.9
Test Description		
Liquid Limit (W_L)	61%	36%
Plastic Limit (W_P)	20%	13%
Plastic Index (I_P)	41%	23%
Linear Shrinkage (LS)	17.5%	11.5%
Mould Length (mm)	125	150
Sample History	Oven Dried Dry Sieved	Oven Dried Dry Sieved
Material Description	(CH) Silty CLAY, high plasticity, brown with fine to coarse gravel	(CI) Silty CLAY, medium plasticity, red-brown with fine to coarse gravel

Form No R004 Version 13 - 07/21 - Issued by ER

A Kench

Report Date
10/07/2024

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GEOTECH TESTING PTY LTD®
ABN 71 076 676 321

TEST RESULTS - SHRINK / SWELL INDEX

DARACON ENGINEERING PTY LIMITED
20 KULLARA CLOSE
BERESFIELD NSW 2322

Laboratory: Penrith
Job No: 8599/121

SITE CLASSIFICATION
NEWPARK PRECINCT 7J, MARSDEN PARK

Test Procedure: AS 1289 7.1.1				
Sample Identification	Test Pit 56	Test Pit 70	Test Pit 73	
Depth (m)	0.4 - 0.6	0.4 - 0.7	0.4 - 0.7	
Laboratory Number	8599/121-7	8599/121-9	8599/121-10	
Date Tested:	01/07/2024	01/07/2024	01/07/2024	
Tested By:	SB	SB	SB	
Checked By:	AK	AK	AK	
Test Description				
Moisture Content				
Initial %	12.7	13.2	13.2	
Final %	15.7	17.2	19.3	
Swell %	0.5	0.6	0.6	
Shrinkage %	0.6	0.5	0.5	
Shrink/Swell Index $\%/_pF$	0.5	0.4	0.5	
Material Description	(CL) Silty CLAY, low plasticity, red-brown with grey mottling, trace of fine to medium gravel	(CL-CI) Silty CLAY, low to medium plasticity, grey-brown	(CI) Silty CLAY, medium plasticity, grey-brown with fine to coarse gravel	

Report Date
10/07/2024

Accredited for compliance with ISO/IEC 17025 - Testing.

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Corporate Site Number 2727

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