



Job No: 8599/97
Our Ref: 8599/97-AA
20 September 2022

Daracon Contractors Pty Ltd
184 Adderley Street
AUBURN NSW 2144
Email: SimpsonW@daracon.com.au

Attention: Mr S Wong

Dear Sir

re: **Newpark – Precinct 7 – Stage 7D
Abell Road, Marsden Park
Post Earthworks Salinity Assessment – Exposure Classification**

At your request, Geotech Testing Pty Ltd conducted a salinity and aggressivity assessment at the above site after completion of earthworks. This report provides exposure classification of the proposed lots at Precinct 7D of the above development.

Field Work

Field work for the investigation was carried out under the full time supervision of a Geotechnical Engineer on 15th to 22nd August 2022 and consisted of excavation of seventy one (71) test pits (TP1 to TP71) to depths of the order of 1.5m using a 5 tonne excavator. 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 8599/96-AA1 in Appendix A. A summary of the field data obtained is presented in Appendix A.

Site Conditions

The site (Precinct 7D) is irregular in shape and located within the Newpark subdivision. The site is bound by Stage 7B to the north east; stage 7C to the east; air services land to the south; Stage 7F to the south west; Stage 7E to the north west; open fields followed by low density residential to the north. At the time of investigation, earthworks for the lots had been completed and the construction of internal roads was complete. The topography of the site is generally flat with a mild slope in the northern direction.

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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)	Topsoil (m)	Natural (m)
TP1	1.5	0.0-0.3	0.3-1.5
TP2	1.5	0.0-0.2	0.2-1.5
TP3	1.5	0.0-0.3	0.3-1.5
TP4	1.5	0.0-0.3	0.3-1.5
TP5	1.5	0.0-0.3	0.3-1.5
TP6	1.5	0.0-0.3	0.3-1.5
TP7	1.5	0.0-0.4	0.4-1.5
TP8	1.5	0.0-0.1	0.1-1.5
TP9	1.5	0.0-0.1	0.1-1.5
TP10	1.5	0.0-0.2	0.2-1.5
TP11	1.5	0.0-0.2	0.2-1.5
TP12	1.5	0.0-0.1	0.1-1.5
TP13	1.5	0.0-0.3	0.3-1.5
TP14	1.5	0.0-0.2	0.2-1.5
TP15	1.5	0.0-0.3	0.3-1.5
TP16	1.5	0.0-0.3	0.3-1.5
TP17	1.5	0.0-0.3	0.3-1.5
TP18	1.5	0.0-0.3	0.3-1.5
TP19	1.5	0.0-0.3	0.3-1.5
TP20	1.5	0.0-0.3	0.3-1.5
TP21	1.5	0.0-0.3	0.3-1.5
TP22	1.5	0.0-0.3	0.3-1.5
TP23	1.5	0.0-0.3	0.3-1.5
TP24	1.5	0.0-0.3	0.3-1.5
TP25	1.5	0.0-0.3	0.3-1.5
TP26	1.5	0.0-0.3	0.3-1.5
TP27	1.5	0.0-0.3	0.3-1.5
TP28	1.5	0.0-0.3	0.3-1.5
TP29	1.5	0.0-0.3	0.3-1.5
TP30	1.5	0.0-0.3	0.3-1.5
TP31	1.5	0.0-0.3	0.3-1.5
TP32	1.5	0.0-0.3	0.3-1.5
TP33	1.5	0.0-0.3	0.3-1.5
TP34	1.5	0.0-0.3	0.3-1.5
TP35	1.5	0.0-0.3	0.3-1.5
TP36	1.5	0.0-0.3	0.3-1.5
TP37	1.5	0.0-0.3	0.3-1.5

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Test Pit	Termination Depth (m)	Topsoil (m)	Natural (m)
TP38	1.5	0.0-0.3	0.3-1.5
TP39	1.5	0.0-0.3	0.3-1.5
TP40	1.5	0.0-0.3	0.3-1.5
TP41	1.5	0.0-0.3	0.3-1.5
TP42	1.5	0.0-0.3	0.3-1.5
TP43	1.5	0.0-0.3	0.3-1.5
TP44	1.5	0.0-0.3	0.3-1.5
TP45	1.5	0.0-0.3	0.3-1.5
TP46	1.5	0.0-0.3	0.3-1.5
TP47	1.5	0.0-0.3	0.3-1.5
TP48	1.5	0.0-0.3	0.3-1.5
TP49	1.5	0.0-0.3	0.3-1.5
TP50	1.5	0.0-0.3	0.3-1.5
TP51	1.5	0.0-0.3	0.3-1.5
TP52	1.5	0.0-0.3	0.3-1.5
TP53	1.5	0.0-0.3	0.3-1.5
TP54	1.5	0.0-0.3	0.3-1.5
TP55	1.5	0.0-0.3	0.3-1.5
TP56	1.5	0.0-0.3	0.3-1.5
TP57	1.5	0.0-0.3	0.3-1.5
TP58	1.5	0.0-0.3	0.3-1.5
TP59	1.5	0.0-0.3	0.3-1.5
TP60	1.5	0.0-0.3	0.3-1.5
TP61	1.5	0.0-0.3	0.3-1.5
TP62	1.5	0.0-0.3	0.3-1.5
TP63	1.5	0.0-0.3	0.3-1.5
TP64	1.5	0.0-0.3	0.3-1.5
TP65	1.5	0.0-0.3	0.3-1.5
TP66	1.5	0.0-0.3	0.3-1.5
TP67	1.5	0.0-0.3	0.3-1.5
TP68	1.5	0.0-0.3	0.3-1.5
TP69	1.5	0.0-0.3	0.3-1.5
TP70	1.5	0.0-0.3	0.3-1.5
TP71	1.5	0.0-0.3	0.3-1.5

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

Topsoil	<p>Silty Cobbly Clay, high plasticity, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone fragments</p> <p>Silty Clay, high plasticity, brown, trace of medium to coarse grain subangular gravel</p> <p>Silty Clay, low to medium plasticity, red-brown, trace of medium to coarse grain subangular gravel</p> <p>Silty Clay, high plasticity, grey</p> <p>Silty Clay, high plasticity, yellow-orange-brown</p> <p>Silty Clay, high plasticity, brown-grey</p> <p>Silty Clay, high plasticity, orange-brown</p> <p>Silty Clay, high plasticity, dark brown-red</p> <p>Silty Clay, low to medium plasticity, orange-grey</p> <p>Silty Clay, high plasticity, brown-red, trace of medium grain subangular gravel</p> <p>Silty Clay, low plasticity, dark brown, trace of organic material</p> <p>Silty Clay, low plasticity, brown, trace of coarse grain subangular gravel</p> <p>Silty Clay, low to medium plasticity, brown</p> <p>Silty Clay, low to medium plasticity, grey-brown</p> <p>Silty Clay, medium plasticity, dark brown-red</p> <p>Silty Clay, high plasticity, red brown, trace of ironstone fragments</p> <p>Silty Clay, high plasticity, brown</p> <p>Silty Clay, high plasticity, dark brown</p> <p>Silty Clay, high plasticity, brown, trace of shale fragments</p>
Natural	<p>Silty CLAY, high plasticity, brown</p> <p>Silty CLAY, low plasticity, grey</p> <p>Silty CLAY, low plasticity, grey, trace of ironstone gravel</p> <p>Silty CLAY, medium plasticity, grey, with ironstone pockets</p> <p>Silty CLAY/ Clayey SILT, low to medium plasticity, red-brown</p> <p>Cobbly CLAY, low plasticity, grey, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, low plasticity, red-brown, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, dark brown, trace of ironstone pockets</p> <p>Sandy CLAY, low plasticity, grey, fine to medium grain sand</p> <p>Silty CLAY, low plasticity, grey-brown, trace of ironstone cobble</p> <p>Silty Cobbly CLAY, low plasticity, grey-brown, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, dark brown, coarse grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, dark brown, trace of ironstone pockets, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, medium plasticity, grey-brown, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, medium to high plasticity, brown-red, coarse grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, brown, coarse grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, dark brown, coarse grain subrounded cobble, trace of ironstone pockets</p> <p>Silty Cobbly CLAY, high plasticity, red-grey, coarse grain subrounded cobble, trace of ironstone pockets</p> <p>Silty Cobbly CLAY, medium to high plasticity, dark brown, medium grain subrounded cobble, trace of ironstone pockets</p>

	<p>Silty Cobbly CLAY, high plasticity, orange-brown, medium grain subrounded cobble, trace of ironstone pockets</p> <p>Silty Cobbly CLAY, high plasticity, brown-grey-red, medium grain subrounded cobble</p> <p>Silty Cobbly CLAY, high plasticity, grey-orange-brown, medium grain subrounded cobble</p> <p>Silty CLAY, high plasticity, dark brown-grey, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, high plasticity, brown-grey, trace of medium to coarse subangular gravel</p> <p>Silty CLAY, high plasticity, brown-red-grey, trace of ironstone pockets, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, medium to high plasticity, grey-brown, trace of medium to coarse subangular gravel, trace of ironstone pockets</p> <p>Silty CLAY, medium to high plasticity, grey-brown, medium to coarse subangular gravel, trace of ironstone pockets</p> <p>Silty Cobbly CLAY, medium to high plasticity, brown-grey, medium grain subrounded cobble, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, grey, trace of medium to coarse subangular gravel</p> <p>Silty CLAY, high plasticity, dark brown-red-grey, trace of fine to medium grain subangular gravel, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, dark brown-orange-red, trace of medium to coarse grain subangular gravel</p> <p>Silty Cobbly CLAY, high plasticity, brown-red, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, high plasticity, dark brown-orange-red-grey, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, trace of medium grain subrounded cobble</p> <p>Silty CLAY, high plasticity, mottled brown-red and brown-grey, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble</p> <p>Silty CLAY, medium to high plasticity, orange-grey, trace of ironstone pockets, trace of medium to coarse grain subrounded gravel</p> <p>Silty CLAY, high plasticity, brown, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, high plasticity, orange-red-brown, trace cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of ironstone pockets, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, low plasticity, dark brown</p> <p>Silty CLAY, high plasticity, dark brown-red, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble</p> <p>Silty CLAY, medium to high plasticity, red-brown, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, high plasticity, brown-grey-red, trace of medium grain subrounded cobble, trace of ironstone pockets, trace of medium to coarse grain subangular gravel</p> <p>Silty CLAY, medium to high plasticity, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble</p> <p>Silty CLAY, low to medium plasticity, grey-brown, trace of ironstone pockets, trace of medium grain subrounded cobble</p> <p>Silty CLAY, medium to high plasticity, mottled red-brown and orange-grey, trace of medium grain subrounded cobble, trace of ironstone pockets</p>
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	<p>Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets</p> <p>Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse subangular gravel</p> <p>Silty Shaley CLAY, medium to high plasticity, brown, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, brown, trace of medium to coarse subangular gravel, trace of medium grain subrounded cobble, trace of ironstone pockets</p> <p>Silty CLAY, high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets</p> <p>Silty Cobbly CLAY, medium to high plasticity, dark brown-grey, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets</p>
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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.

Exposure Classification

Laboratory Testing

During field work, a total of one hundred and forty two (142) 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 at the end of this report and summarised in Table 2.

Table 2: Laboratory Tests Results

Test Pit	Depth (m)	pH	EC (µS/cm)	Multiplying Factor	EC _e (dS/m)	Classification
TP1	0.4-0.5	4.8	400	8	3.2	A2
TP1	0.8-0.9	4.5	460	8	3.68	A2
TP2	0.4-0.5	5.3	460	8	3.68	A2
TP2	0.8-0.9	4.7	420	8	3.36	A2
TP3	0.4-0.5	5.3	450	8	3.6	A2
TP3	0.8-0.9	4.5	600	8	4.8	A2
TP4	0.4-0.5	5.3	390	8	3.12	A2
TP4	0.8-0.9	4.5	510	8	4.08	A2
TP5	0.4-0.5	5.4	540	8	4.32	A2
TP5	0.8-0.9	4.7	460	8	3.68	A2
TP6	0.4-0.5	4.7	160	8	1.28	A2
TP6	0.8-0.9	4.8	180	8	1.44	A2
TP7	0.4-0.5	5.3	140	8	1.12	A2
TP7	0.8-0.9	5	110	8	0.88	A2
TP8	0.4-0.5	4.7	74	8	0.592	A2
TP8	0.8-0.9	4.7	63	8	0.504	A2
TP9	0.4-0.5	4.9	370	8	2.96	A2
TP9	0.8-0.9	4.9	570	8	4.56	A2

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Test Pit	Depth (m)	pH	EC (µS/cm)	Multipling Factor	EC _e (dS/m)	Classification
TP10	0.4-0.5	4.9	600	8	4.8	A2
TP10	0.8-0.9	4.9	590	8	4.72	A2
TP11	0.4-0.5	5.2	620	8	4.96	A2
TP11	0.8-0.9	4.8	820	8	6.56	A2
TP12	0.4-0.5	5	580	8	4.64	A2
TP12	0.8-0.9	5	580	8	4.64	A2
TP13	0.4-0.5	4.8	630	8	5.04	A2
TP13	0.8-0.9	4.7	630	8	5.04	A2
TP14	0.4-0.5	6.5	790	8	6.32	A2
TP14	0.8-0.9	4.8	650	8	5.2	A2
TP15	0.4-0.5	4.7	760	8	6.08	A2
TP15	0.8-0.9	4.6	750	8	6	A2
TP16	0.4-0.5	5.5	510	8	4.08	A2
TP16	0.8-0.9	5.1	670	8	5.36	A2
TP17	0.4-0.5	5	360	8	2.88	A2
TP17	0.8-0.9	4.9	450	8	3.6	A2
TP18	0.4-0.5	4.5	92	8	0.736	A2
TP18	0.8-0.9	5.8	210	8	1.68	A1
TP19	0.4-0.5	4.9	740	8	5.92	A2
TP19	0.8-0.9	5.6	640	8	5.12	A2
TP20	0.4-0.5	5.1	440	8	3.52	A2
TP20	0.8-0.9	4.5	1000	8	8	B1
TP21	0.4-0.5	4.9	720	8	5.76	A2
TP21	0.8-0.9	5.2	460	8	3.68	A2
TP22	0.4-0.5	4.4	780	8	6.24	B1
TP22	0.8-0.9	4.4	790	8	6.32	B1
TP23	0.4-0.5	4.6	600	8	4.8	A2
TP23	0.8-0.9	5.1	620	8	4.96	A2
TP24	0.4-0.5	5.1	94	8	0.752	A2
TP24	0.8-0.9	5.2	140	8	1.12	A2
TP25	0.4-0.5	6	620	8	4.96	A2
TP25	0.8-0.9	4.8	640	8	5.12	A2
TP26	0.4-0.5	4.9	870	8	6.96	A2
TP26	0.8-0.9	4.5	870	8	6.96	A2
TP27	0.4-0.5	4.6	1500	8	12	B1
TP27	0.8-0.9	5.9	450	8	3.6	A1
TP28	0.4-0.5	4.7	420	8	3.36	A2
TP28	0.8-0.9	5.5	470	8	3.76	A1
TP29	0.4-0.5	5.3	450	8	3.6	A2
TP29	0.8-0.9	5.3	470	8	3.76	A2
TP30	0.4-0.5	5	380	8	3.04	A2

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Test Pit	Depth (m)	pH	EC (µS/cm)	Multiplying Factor	EC _e (dS/m)	Classification
TP30	0.8-0.9	4.6	510	8	4.08	A2
TP31	0.4-0.5	4.7	530	8	4.24	A2
TP31	0.8-0.9	4.7	440	8	3.52	A2
TP32	0.4-0.5	4.7	270	8	2.16	A2
TP32	0.8-0.9	4.8	200	8	1.6	A2
TP33	0.4-0.5	4.7	420	8	3.36	A2
TP33	0.8-0.9	4.6	580	8	4.64	A2
TP34	0.4-0.5	4.9	600	8	4.8	A2
TP34	0.8-0.9	4.6	97	8	0.776	A2
TP35	0.4-0.5	4.4	230	8	1.84	B1
TP35	0.8-0.9	N/A	N/A	8	N/A	N/A
TP36	0.4-0.5	4.2	130	8	1.04	B1
TP36	0.8-0.9	4.9	190	8	1.52	A2
TP37	0.4-0.5	4.7	680	8	5.44	A2
TP37	0.8-0.9	4.9	760	8	6.08	A2
TP38	0.4-0.5	5.1	420	8	3.36	A2
TP38	0.8-0.9	4.6	740	8	5.92	A2
TP39	0.4-0.5	5.1	240	8	1.92	A2
TP39	0.8-0.9	5	300	8	2.4	A2
TP40	0.4-0.5	5.1	240	8	1.92	A2
TP40	0.8-0.9	4.6	280	8	2.24	A2
TP41	0.4-0.5	5	220	8	1.76	A2
TP41	0.8-0.9	4.6	170	8	1.36	A2
TP42	0.4-0.5	5	210	8	1.68	A2
TP42	0.8-0.9	5	190	8	1.52	A2
TP43	0.4-0.5	4.7	550	8	4.4	A2
TP43	0.8-0.9	4.8	300	8	2.4	A2
TP44	0.4-0.5	4.6	880	8	7.04	A2
TP44	0.8-0.9	4.6	870	8	6.96	A2
TP45	0.4-0.5	4.8	530	8	4.24	A2
TP45	0.8-0.9	4.6	470	8	3.76	A2
TP46	0.4-0.5	4.7	200	8	1.6	A2
TP46	0.8-0.9	4.7	310	8	2.48	A2
TP47	0.4-0.5	4.5	390	8	3.12	A2
TP47	0.8-0.9	4.6	170	8	1.36	A2
TP48	0.4-0.5	5	210	8	1.68	A2
TP48	0.8-0.9	5	130	8	1.04	A2
TP49	0.4-0.5	4.9	170	8	1.36	A2
TP49	0.8-0.9	5	220	8	1.76	A2
TP50	0.4-0.5	5.3	210	8	1.68	A2
TP50	0.8-0.9	4.7	270	8	2.16	A2
TP51	0.4-0.5	5.7	89	8	0.712	A1

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Test Pit	Depth (m)	pH	EC (µS/cm)	Multiplying Factor	EC _e (dS/m)	Classification
TP51	0.8-0.9	4.9	290	8	2.32	A2
TP52	0.4-0.5	5.1	190	8	1.52	A2
TP52	0.8-0.9	4.8	280	8	2.24	A2
TP53	0.4-0.5	5	170	8	1.36	A2
TP53	0.8-0.9	5.2	270	8	2.16	A2
TP54	0.4-0.5	4.7	160	8	1.28	A2
TP54	0.8-0.9	5.7	110	8	0.88	A1
TP55	0.4-0.5	5.2	190	8	1.52	A2
TP55	0.8-0.9	4.9	320	8	2.56	A2
TP56	0.4-0.5	5.1	260	8	2.08	A2
TP56	0.8-0.9	5.7	540	8	4.32	A2
TP57	0.4-0.5	7.1	490	8	3.92	A1
TP57	0.8-0.9	6.1	590	8	4.72	A2
TP58	0.4-0.5	4.6	270	8	2.16	A2
TP58	0.8-0.9	4.7	430	8	3.44	A2
TP59	0.4-0.5	5	500	8	4	A2
TP59	0.8-0.9	5.1	440	8	3.52	A2
TP60	0.4-0.5	5	280	8	2.24	A2
TP60	0.8-0.9	5.1	220	8	1.76	A2
TP61	0.4-0.5	5.2	330	8	2.64	A2
TP61	0.8-0.9	5.4	460	8	3.68	A2
TP62	0.4-0.5	7	380	8	3.04	A1
TP62	0.8-0.9	7.6	350	8	2.8	A1
TP63	0.4-0.5	5.4	420	8	3.36	A2
TP63	0.8-0.9	5.6	840	8	6.72	A2
TP64	0.4-0.5	6.1	370	8	2.96	A1
TP64	0.8-0.9	5.1	700	8	5.6	A2
TP65	0.4-0.5	5.6	350	8	2.8	A1
TP65	0.8-0.9	7	350	8	2.8	A1
TP66	0.4-0.5	5.5	400	8	3.2	A1
TP66	0.8-0.9	6.6	510	8	4.08	A2
TP67	0.4-0.5	5.6	240	8	1.92	A1
TP67	0.8-0.9	5.4	270	8	2.16	A2
TP68	0.4-0.5	6.3	270	8	2.16	A1
TP68	0.8-0.9	6.3	370	8	2.96	A1
TP69	0.4-0.5	5	300	8	2.4	A2
TP69	0.8-0.9	5.7	280	8	2.24	A1
TP70	0.4-0.5	4.9	290	8	2.32	A2
TP70	0.8-0.9	4.8	380	8	3.04	A2
TP71	0.4-0.5	4.9	320	8	2.56	A2
TP71	0.8-0.9	4.8	320	8	2.56	A2

* 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

N/A = Not able to be determined

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 (see Table 2) designated as EC_e. Based on site observation, a multiplication factor of 8 was used for the soil encountered during field work. The DEH publication defines various classes of saline soils as follows:

Classification	EC _e (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 non-saline to slightly saline and non-aggressive to mildly aggressive to steel and concrete.

Conclusion

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

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Table 3 – Site Exposure Classifications (AS2870-2011)

Lot	Exposure Classification	Lot	Exposure Classification	Lot	Exposure Classification
8001	A2	8034	A2	8067	A2
8002	A2	8035	A2	8068	A2
8003	A2	8036	A2	8069	A2
8004	A2	8037	A2	8070	A2
8005	A2	8038	A2	8071	A2
8006	A2	8039	A2	8072	A2
8007	A2	8040	A2	8073	A2
8008	A2	8041	A2	8074	A2
8009	A2	8042	A2	8075	A2
8010	A2	8043	A2	8076	A2
8011	A2	8044	A2	8077	A2
8012	A2	8045	A2	8078	A2
8013	A2	8046	A2	8079	A2
8014	A2	8047	A2	8080	A2
8015	A2	8048	A2	8081	A2
8016	A2	8049	A2	8082	A2
8017	A2	8050	A2	8083	A2
8018	A2	8051	A2	8084	A2
8019	A2	8052	A2	8085	A2
8020	A2	8053	A2	8086	A2
8021	A2	8054	A2	8087	A2
8022	A2	8055	A2	8088	A2
8023	A2	8056	A2	8089	A2
8024	A2	8057	A2	8090	A2
8025	A2	8058	A2	8091	A2
8026	A2	8059	A2	8092	A2
8027	A2	8060	A2	8093	A2
8028	A2	8061	A2	8094	A2
8029	A2	8062	A2	8095	A2
8030	A2	8063	A2	8096	A2
8031	A2	8064	A2	8097	A2
8032	A2	8065	A2	8098	A2
8033	A2	8066	A2	8099	A2

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Lot	Exposure Classification	Lot	Exposure Classification	Lot	Exposure Classification
8100	A2	8133	A2	8166	A2
8101	A2	8134	A2	8167	A2
8102	A2	8135	A2	8168	A2
8103	A2	8136	A2	8169	A2
8104	A2	8137	A2	8170	A2
8105	A2	8138	A2	8171	B1
8106	B1	8139	A2	8172	B1
8107	B1	8140	A2	8173	B1
8108	B1	8141	B1	8174	B1
8109	B1	8142	B1	8175	A2
8110	B1	8143	A2	8176	A2
8111	A2	8144	A2	8177	B1
8112	A2	8145	A2	8178	B1
8113	A2	8146	A2	8179	B1
8114	A2	8147	A2	8180	A2
8115	A2	8148	A2	8181	A2
8116	A2	8149	A2	8182	A2
8117	A2	8150	A2	8183	A2
8118	B1	8151	A2	8184	A2
8119	B1	8152	A2	8185	A2
8120	B1	8153	A2	8186	A2
8121	B1	8154	A2	8187	A2
8122	B1	8155	A2	8188	A2
8123	A2	8156	A2	8189	A2
8124	A2	8157	A2	8190	A2
8125	A2	8158	A2	8191	A2
8126	A2	8159	A2	8192	A2
8127	A2	8160	A2	8193	A2
8128	A2	8161	A2	8194	A2
8129	A2	8162	A2	8195	A2
8130	A2	8163	A2	8196	A2
8131	A2	8164	A2	8197	A2
8132	A2	8165	A2	8198	A2

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Lot	Exposure Classification
8199	A2
8200	A2
8201	A2
8202	A2
8203	A2
8204	A2
8205	A2
8206	A2
8207	A2
8208	A2
8209	A2
8210	A2
8211	A2
8212	A2
8213	A2

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).

Classification	Minimum Design Characteristic Strength	Minimum Initial Curing
A1	20 MPa	3 days
A2	25 MPa	3 days
B1	32 MPa	7 days
B2	40 MPa	7 days

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

Yours faithfully
GEOTECH TESTING PTY LTD



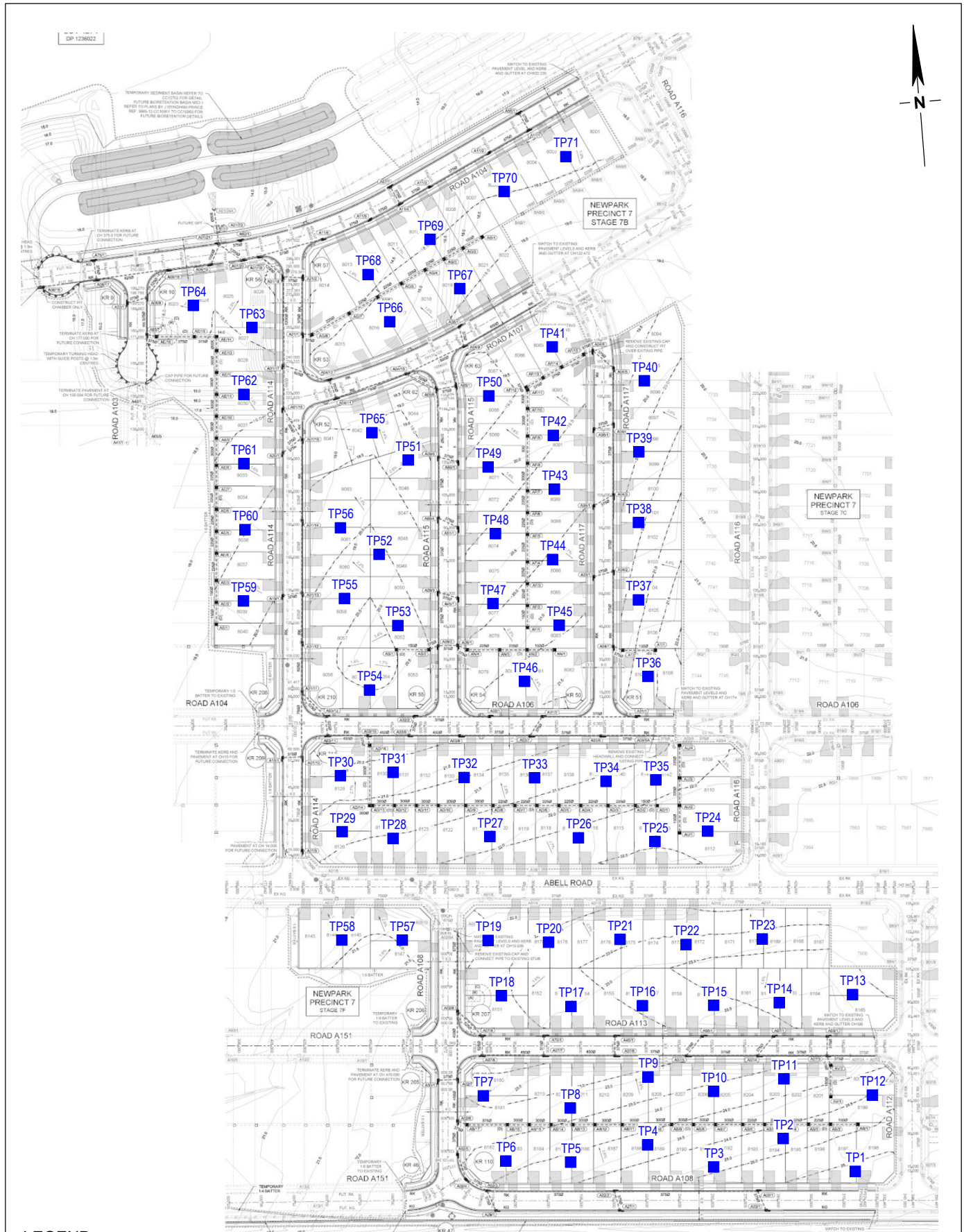
JACK-SCOTT HERBEN
Geotechnical Engineer

Reviewed by



EMGED RIZKALLA
Director

Attached Drawing No 8599/96-AA1 - Test Pit Location Plan
 Table A – Summary of Test Pits
 SGS Laboratory Test Results



LEGEND

■ Test Pit

PREPARED BY:



34 Borec Road
Penrith
NSW 2750
ABN 71 076 676 321

Tel: 02 4722 2744
Fax: 02 4722 2777
e-mail: info@geotech.com.au
www.geotech.com.au

Daracon Contractors Pty Ltd
Residential Development
Woorong Park Precinct 7D
Marsden Park

Test Pit Locations

Drawing No: 8599/96-AA1
Job No: 8599/96
Drawn By: MH
Date: 16 September 2022
Checked By: KB/JSH

File No: 8599-96
Layers: 0, AA1

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP1	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, M _≤ PL, stiff to very stiff
TP2	0.0-0.2		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.2-1.0	0.2-0.5 (U ₅₀) 0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, M<PL, very stiff
	1.0-1.5		(CL) Silty CLAY, low plasticity, grey, trace of ironstone gravel, M<PL, stiff
TP3	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, M<PL, very stiff
TP4	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.3	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, M<PL, very stiff
	1.3-1.4		(CI) Silty CLAY, medium plasticity, grey, with ironstone pockets, M<PL, stiff
TP5	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, very stiff, M<PL
TP6	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.3	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL-CI) Silty CLAY/ Clayey SILT, low to medium plasticity, red-brown, M<PL, firm-stiff
	1.3-1.5		(CL) Cobbly CLAY, low plasticity, grey, medium grain subrounded cobble, M<PL, stiff, alluvial

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP7	0.0-0.4		TOPSOIL: Silty Clay, medium plasticity, brown
	0.4-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Silty Cobbly CLAY, low plasticity, red-brown, medium grain subrounded cobble, M<PL, firm, alluvial
TP8	0.0-0.1		TOPSOIL: Silty Clay, medium plasticity, brown
	0.1-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown, trace of ironstone pockets, M<PL, firm
TP9	0.0-0.1		TOPSOIL: Silty Clay, medium plasticity, brown
	0.1-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown, trace of ironstone pockets, M<PL, firm
TP10	0.0-0.2		TOPSOIL: Silty Clay, medium plasticity, brown
	0.2-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Cobbly CLAY, low plasticity, grey, medium grain subrounded cobble, alluvial, stiff, M<PL
TP11	0.0-0.2		TOPSOIL: Silty Clay, medium plasticity, brown
	0.2-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Cobbly CLAY, low plasticity, grey, medium grain subrounded cobble, alluvial, stiff, M<PL
TP12	0.0-0.1		TOPSOIL: Silty Clay, medium plasticity, brown
	0.1-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Sandy CLAY, low plasticity, grey, fine to medium grain sand, M<PL, stiff
TP13	0.0-0.3		TOPSOIL: Silty Clay, medium plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS) 0.3-0.6 (U ₅₀)	(CL) Silty CLAY, low plasticity, grey, M<PL, stiff
TP14	0.0-0.2		TOPSOIL: Silty Clay, medium plasticity, brown
	0.2-1.3	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Silty CLAY, low plasticity, grey-brown, trace of ironstone cobble, alluvial, M<PL, stiff
	1.3-1.5		(CL) Silty Cobbly CLAY, low plasticity, grey-brown, medium grain subrounded cobble, alluvial, M<PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP15	0.0-0.3		TOPSOIL: Silty Clay, medium plasticity, brown
	0.3-1.3	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Silty CLAY, low plasticity, grey-brown, trace of ironstone cobble, alluvial, M<PL, stiff
	1.3-1.5		(CL) Silty Cobbly CLAY, low plasticity, grey-brown, M<PL, stiff
TP16	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown, trace of ironstone pockets, medium grain subrounded cobble, alluvial, M≤PL, very stiff
TP17	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI) Silty Cobbly CLAY, medium plasticity, grey-brown, medium grain subrounded cobble, alluvial, M≤PL, stiff to very stiff
TP18	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty Cobbly CLAY, medium to high plasticity, coarse cobble, red-grey, medium grain subrounded cobble, alluvial, M<PL, stiff
TP119	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty Cobbly CLAY, medium to high plasticity, brown-red, coarse grain subrounded cobble, alluvial, M≤PL, stiff
TP20	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, brown, coarse grain subrounded cobble, alluvial, M≤PL, stiff
TP21	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown, coarse grain subrounded cobble, alluvial, M≤PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP22	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown, coarse grain subrounded cobble, trace of ironstone pockets, alluvial, M \leq PL, stiff to very stiff
TP23	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, red-grey, coarse grain subrounded cobble, trace of ironstone pockets, alluvial, M \leq PL, stiff
TP24	0.0-0.3		TOPSOIL: Silty Clay, medium to high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty Cobbly CLAY, medium to high plasticity, dark brown, medium grain subrounded cobble, trace of ironstone pockets, alluvial, M \leq PL, stiff
TP25	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, yellow-orange-brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, orange-brown, medium grain subrounded cobble, trace of ironstone pockets, alluvial, M \leq PL stiff
TP26	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, brown-grey-red, medium grain subrounded cobble, alluvial, M \leq PL, stiff to very stiff
TP27	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, dark brown-red, medium grain subrounded cobble, trace of ironstone pockets, alluvial, M \leq PL, stiff to very stiff
TP28	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, grey-orange-brown, medium grain subrounded cobble, alluvial, M \leq PL, stiff to very stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP29	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.3-0.9 (U ₅₀) 0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-grey, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP30	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-grey, trace of medium to coarse subangular gravel, alluvial, M _s PL, stiff
TP31	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-grey
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red-grey, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, alluvial, M _s PL, stiff
TP32	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, grey-brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, trace of medium to coarse subangular gravel, trace of ironstone pockets, alluvial, M _s PL, stiff to very stiff
TP33	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, grey-brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, trace of medium to coarse subangular gravel, trace of ironstone pockets, alluvial, M _s PL, stiff to very stiff
TP34	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-grey
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, grey-brown, medium to coarse subangular gravel, trace of ironstone pockets, alluvial, M _s PL, stiff to very stiff
TP35	0.0-0.3		TOPSOIL: Silty Clay, medium to high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, medium to high plasticity, brown-grey, medium grain subrounded cobble, trace of ironstone pockets, alluvial, M _s PL, stiff to very stiff
TP36	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-grey
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, brown-grey, medium grain subrounded cobble, trace of ironstone pockets, alluvial, M _s PL, stiff to very stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP37	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, grey
	0.3-1.5	0.4-0.5 (DS) 0.4-0.6 (atterberg) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, grey, trace of medium to coarse subangular gravel, alluvial, M≤PL, stiff to very stiff
TP38	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown-red
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-red-grey, trace of fine to medium grain subangular gravel, trace of ironstone pockets, M≤PL, stiff
TP39	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-orange-red, trace of medium to coarse grain subangular gravel, M<PL, stiff
TP40	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-red
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty Cobbly CLAY, high plasticity, brown-red, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, alluvial, M<PL, stiff
TP41	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown-red
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-orange-red-grey, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, trace of medium grain subrounded cobble, M≤PL, stiff
TP42	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown-red
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-orange-red-grey, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, trace of medium grain subrounded cobble, M≤PL, stiff
TP43	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-red, trace of medium to coarse grain subangular gravel, M≤PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP44	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-orange-red-grey, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble, M _s PL, stiff
TP45	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.4-0.6 (U ₅₀) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-grey-orange, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP46	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, orange-grey
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, orange-grey, trace of ironstone pockets, trace of medium to coarse grain subrounded gravel, M _s PL, stiff
TP47	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, orange-brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, orange-red-brown, trace cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, M _s PL, stiff to very stiff
TP48	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-red, trace of medium grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP49	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-red, trace of medium grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain sub angular gravel, M _s PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP50	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-red, trace of medium grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP51	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown-red, trace of medium grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP52	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, dark brown, trace of organic material
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL) Silty CLAY, low plasticity, dark brown, M _s PL, stiff
TP53	0.0-0.3		TOPSOIL: Silty Cobbly Clay, high plasticity, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone fragments, M _s PL, stiff
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, dark brown-red, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble, M _s PL, stiff
TP54	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP55	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, red brown, trace of ironstone fragments
	0.3-1.5	0.4-0.5 (DS) 0.4-0.6 (U ₅₀) 0.8-0.9 (DS)	(CI-H) Silty CLAY, medium to high plasticity, red-brown, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP56	0.0-0.3		TOPSOIL: Silty Clay, medium plasticity, dark brown-red
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI) Silty CLAY, medium plasticity, mottled dark brown and grey-red, trace of ironstone pockets, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP57	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, grey-brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CL-CI) Silty CLAY, low to medium plasticity, grey-brown, trace of ironstone pockets, trace of medium grain subrounded cobble, M _s PL, stiff
TP58	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, red-brown, trace of medium to coarse grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.6-0.8 (atterberg) 0.8-0.9 (DS)	(CI) Silty CLAY, medium to high plasticity, mottled red-brown and orange-grey, trace of medium grain subrounded cobble, trace of ironstone pockets, M _s PL, stiff
TP59	0.0-0.3		TOPSOIL: Silty Clay, low plasticity, brown, trace of coarse grain subangular gravel
	0.3-1.5	0.4-0.5 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP60	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.6-0.8 (U ₅₀) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of ironstone pockets, M _s PL, stiff
TP61	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, M _s PL, stiff
TP62	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown, trace of shale fragments
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse subangular gravel, M _s PL, stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP63	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, trace of shale fragments, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-grey-red, trace of medium grain subrounded cobble, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, M _s PL, stiff
TP64	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty CLAY, medium to high plasticity, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble, M _s PL, stiff
TP65	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown, trace of shale fragments
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty Shaley CLAY, medium to high plasticity, brown, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, M _s PL, stiff
TP66	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown, trace of medium to coarse grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.4-0.6 (U ₅₀) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, trace of medium to coarse subangular gravel, trace of medium grain subrounded cobble, trace of ironstone pockets, M _s PL, stiff
TP67	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown-grey, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, M _s PL, stiff
TP68	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, dark brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff to very stiff

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TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP69	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown, trace of medium to coarse grain subangular gravel
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, brown, trace of medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, M _s PL, stiff to very stiff
TP70	0.0-0.3		TOPSOIL: Silty Clay, low to medium plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CI-CH) Silty Cobbly CLAY, medium to high plasticity, dark brown-grey, medium grain subrounded cobble, trace of medium to coarse grain subangular gravel, trace of ironstone pockets, M _s PL, stiff to very stiff
TP71	0.0-0.3		TOPSOIL: Silty Clay, high plasticity, brown
	0.3-1.5	0.4-0.5 (DS) 0.8-0.9 (DS)	(CH) Silty CLAY, high plasticity, mottled brown-red and brown-grey, trace of ironstone pockets, trace of medium to coarse grain subangular gravel, trace of medium grain subrounded cobble, M _{<} PL, stiff to very stiff