

APPENDIX G2

Macquarie Geotechnical— Laboratory Results

Part 1 of 3

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Geotechnical Fieldwork Summary

This appendix presents the results of the geotechnical fieldworks completed by Macquarie Geotech in December 2021. Original geotechnical fieldwork results completed 2018 to 2019 by Macquarie Golder is presented in Appendix G1: Geotechnical Investigation - Laboratory Results.

This appendix supports Chapter 9 Land Resources and Appendix J Soil Impact Assessment.

Fieldworks Summary - B2G - Kurumbul Corridor (C4)								
Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	QR Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-BH3093	BH	35.45	25599		279576.889	6837214.079	244.031	23-Feb-21
310-03-BH3094	BH	34.95	25667		279665.822	6837161.786	244.225	23-Feb-21
310-03-TP3005	TP	4	4999	175246	259814.437	6832173.055	234.275	02-Sep-21
310-03-TP3006	TP	3.52	6059	174186	260875.980	6832171.886	234.480	02-Sep-21
310-03-TP3007	TP	3.55	6567	173678	261384.436	6832173.901	235.359	02-Sep-21
310-03-TP3008	TP	3.8	7000	173245	261817.110	6832174.216	235.649	02-Sep-21
310-03-TP3009	TP	3.65	9000	171245	263817.370	6832175.337	236.145	03-Sep-21
310-03-TP3010	TP	3.75	10000	170245	264822.522	6832185.638	240.004	03-Sep-21
310-03-TP3011	TP	4.2	10953	169292	265781.637	6832442.579	240.187	03-Sep-21
310-03-TP3012	TP	3.95	12000	168245	266726.921	6832765.694	239.720	03-Sep-21
310-03-TP3013	TP	3.85	12991	167254	267662.449	6833086.917	238.222	03-Sep-21
310-03-TP3014	TP	3.7	14001	166244	268620.886	6833414.107	238.493	03-Sep-21
310-03-TP3015	TP	3.6	15001	165244	269565.616	6833736.498	238.449	04-Sep-21
310-03-TP3017	TP	3.6	17001	163244	271457.471	6834384.059	240.557	04-Sep-21
310-03-TP3018	TP	3.6	18000	162245	272402.722	6834707.995	241.454	04-Sep-21
310-03-TP3019	TP	3.55	19000	161245	273351.167	6835030.874	242.893	04-Sep-21
310-03-TP3021	TP	3.6	20996	159249	275237.977	6835676.002	244.603	04-Sep-21
310-03-TP3024	TP	3.6	24004	156241	278084.843	6836648.506	244.732	04-Sep-21
310-03-TP3025	TP	3.55	26000	154245	279971.920	6837297.117	245.061	05-Sep-21
310-03-TP3026	TP	3.65	27004	153241	280921.493	6837620.001	245.975	05-Sep-21
310-03-TP3027	TP	3.55	28000	152245	281866.496	6837943.209	247.890	06-Sep-21
310-03-TP3028	TP	3.5	28998	151247	282809.077	6838265.807	250.049	06-Sep-21
310-03-TP3029	TP	3.65	30000	150245	274284.221	6835349.737	244.415	06-Sep-21
310-03-TP3030	TP	3.7	30797	149448	284705.722	6838914.220	252.885	07-Sep-21
310-03-TP3031	TP	3.7	32000	148245	285651.566	6839238.169	258.708	07-Sep-21
310-03-TP3032	TP	3.65	32999	147246	286609.998	6839565.940	260.774	07-Sep-21
310-03-TP3033	TP	3.5	34001	146244	287483.254	6840011.647	261.377	07-Sep-21
310-03-TP3034	TP	3	34347		287770.991	6840197.545	263.330	07-Sep-21
310-03-TP3035	TP	4	36000	144245	289145.731	6841123.305	261.893	08-Sep-21
310-03-TP3036	TP	3.7	37014	143231	289990.143	6841687.923	265.100	08-Sep-21
310-03-TP3037	TP	1.63	38001	142244	290814.040	6842238.770	270.737	26-Jun-21
310-03-TP3038	TP	1.63	38999	141246	291668.380	6842734.440	270.893	26-Jun-21
310-03-TP3039	TP	3.5	39999	140246	292590.531	6843126.033	273.605	08-Sep-21
310-03-TP3040	TP	3	40999	139246	293500.054	6843512.588	266.934	13-Sep-21
310-03-TP3041	TP	3.2	42002	138243	294427.831	6843915.349	269.820	13-Sep-21
310-03-TP3043	TP	3	43996	136249	296053.535	6845068.488	263.646	13-Sep-21
310-03-TP3044	TP	3	44812	135433	296723.512	6845546.482	264.788	08-Sep-21
310-03-TP3507	TP	3	45764	134481	297286.225	6845904.287	265.743	08-Sep-21
310-03-TP3700	TP	3	33474	146771	286894.681	6840020.432	269.245	24-Aug-21
310-03-TP3701	TP	1.1	33795	146450	287164.861	6840125.642	265.923	24-Aug-21
310-03-TP3702	TP	1.7	34084		287446.456	6840222.465	267.430	25-Aug-21
310-03-TP3703	TP	1.4	34313		287667.126	6840309.241	267.132	25-Aug-21
310-03-TP3704	TP	1.8	33337	146908	286699.177	6840209.496	280.936	24-Aug-21
310-03-TP3705	TP	1.6	33897	146348	287094.991	6840404.812	272.420	24-Aug-21
310-03-TP3706	TP	1	34255		287475.167	6840492.426	269.030	25-Aug-21

Fieldworks Summary - B2G - Canning Creek to Millmerran (N1)								
Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	QR Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-BH3011	BH	36.4	97423		321982.576	6884082.868	327.467	12/07/2021
310-03-BH3012	BH	36.45	97737		322016.905	6884400.135	327.443	4/08/2021
310-03-BH3013	BH	36.2	100065		322065.82	6886724.59	331.97	8/07/2021
310-03-BH3014	BH	36.3	100215		322057.69	6886874.44	332.7624	13/07/2021
310-03-BH3021	BH	27.45	115486		324579.968	6901750.892	451.746	22/07/2021
310-03-BH3022	BH	25.9	115576		324584.547	6901843.816	451.612	12/08/2021
310-03-BH3023	BH	36.4	126872		329108.742	6911677.694	411.495	28/07/2021
310-03-BH3024	BH	42	126981		329210.738	6911712.411	411.805	10/11/2021
310-03-BH3025	BH	35	127062		339206.987	6919494.872	380.766	8/07/2021
310-03-BH3026	BH	36	127936		330132.542	6911959.006	406.73	26/07/2021
310-03-BH3027	BH	36.3	128081		330274.8173	6911997.947	405.3	10/08/2021
310-03-BH3312	BH	15.45	115997		324677.033	6902249.976	474.827	13/08/2021
310-03-BH3313	BH	15.5	116348		324817.701	6902568.595	474.546	20/07/2021
310-03-BH3314	BH	10	121416		326108.105	6907398.523	470.601	22/12/2022
310-03-BH3316	BH	25.1	122136		326383.1044	6908071.947	481.89	15/12/2021
310-03-BH3317	BH	31.1	122527		326528.2153	6908434.627	483.117	14/12/2021
310-03-BH3318	BH	21.2	122994		326805.819	6909174.536	461.719	14/12/2021
310-03-BH3319	BH	11.15	123319		326742.142	6908847.927	471.501	15/12/2022
310-03-BH3364	BH	33.5	122717		326571.715	6908622.433	459.811	16/11/2021
310-03-BH3605	BH	15.45	127340		329560.606	6911801.751	410.192	12/08/2021
310-03-TP3088	TP	3.3	94900		321709.500	6881578.000	323.804	16/06/2021
310-03-TP3089	TP	3	95839		321831.600	6882513.000	325.607	15/06/2021
310-03-TP3090	TP	3	96924		321935.500	6883588.000	327.803	15/06/2021
310-03-TP3091	TP	3	97274		321959.000	6883931.000	328.145	15/06/2021
310-03-TP3096	TP	3	101790		322380.578	6888411.800	337.087	23/08/2021
310-03-TP3097	TP	3	102255		322489.512	6888864.317	344.992	26/07/2021
310-03-TP3098	TP	2.5	103025		322732.565	6889594.490	348.412	2/09/2021
310-03-TP3101	TP	1.8	105149		323522.126	6891555.070	354.510	2/09/2021
310-03-TP3102	TP	3	105745		323753.217	6892100.570	365.311	2/09/2021
310-03-TP3103	TP	3	107253		323939.999	6893597.000	372.460	22/07/2021
310-03-TP3104	TP	2.5	107885		324017.013	6894223.635	380.946	02-Sep-21
310-03-TP3108	TP	3	112586		324596.306	6898928.037	436.980	26-Jul-21
310-03-TP3109	TP	3.3	113049		324653.361	6899349.143	437.120	26-Jul-21
310-03-TP3110	TP	3.3	113683		324729.100	6899976.000	441.018	26-Jul-21
310-03-TP3111	TP	3.2	114036		324774.863	6900328.623	448.088	24-Jul-21
310-03-TP3112	TP	3.3	114287		324797.100	6900581.000	446.624	24-Jul-21
310-03-TP3113	TP	3	114521		324791.400	6900809.000	458.389	24-Jul-21
310-03-TP3114	TP	3.2	114699		324751.100	6900988.000	461.458	24-Jul-21
310-03-TP3115	TP	2.6	115402		324581.900	6901668.000	454.266	24-Jul-21
310-03-TP3116	TP	3	115677		324589.843	6901940.710	455.440	02-Aug-21
310-03-TP3117	TP	3	116162		324740.665	6902394.962	469.630	02-Aug-21

Fieldworks Summary - B2G - Millmeran to Brookstead (N2)									
Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	QR Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed	FFJV Scope of Works Undertaken
310-03-TP3141	TP	3.1	137715	61155	337320.000	6918337.000	380.391	02-Mar-21	-
310-03-CP3018	CP	30	137978	60892	344946.559	6926406.037	382.141	07-Jan-21	-
310-03-BH3029	BH	35.26	138006	60864	337596.721	6918433.075	379.779	12-Jan-21	LWD, PLT
310-03-CP3215	CP	30	138109	60761	337696.260	6918464.254	379.325	07-Jan-21	-
310-03-BH3030	BH	35.33	138193	60677	337779.763	6918490.343	379.474	12-Jan-21	-
310-03-CP3216	CP	30	138283	60587	337865.173	6918517.403	379.367	06-Jan-21	-
310-03-CP3217	CP	30	138347	60523	337921.594	6918535.034	379.821	06-Jan-21	-
310-03-CP3019	CP	30	138505	60365	344946.578	6926406.035	382.070	06-Jan-21	-
310-03-CP3020	CP	5.4	138582	60288	345064.221	6926573.172	426.576	09-Feb-21	-
310-03-CP3020A	CP	30	138582	60288	345064.221	6926573.172	426.576	09-Feb-21	-
310-03-BH3097	BH	11.5	138583	60287	338145.202	6918604.053	317.027	08-Feb-21	-
310-03-BH3031	BH	35.95	138701	60169	338257.139	6918639.333	378.902	15-Nov-20	-
310-03-CP3218	CP	30	138932	59938	338471.590	6918730.091	379.108	25-Nov-20	-
310-03-BH3032	BH	35.3	139019	59851	338546.811	6918771.971	379.498	15-Nov-20	-
310-03-CP3021	CP	30	139110	59760	338621.658	6918826.504	379.182	25-Nov-20	-
310-03-BH3033	BH	35	139185	59685	338680.753	6918869.439	379.570	17-Nov-20	-
310-03-CP3022	CP	30	139267	59603	338744.850	6918928.357	380.406	25-Nov-20	-
310-03-BH3034	BH	35.45	139338	59532	338799.159	6918982.673	379.695	17-Nov-20	-
310-03-CP3023	CP	15	139400	59470	338834.579	6919027.036	379.195	25-Nov-20	-
310-03-CP3219	CP	15	139551	59319	338932.465	6919152.487	380.545	24-Nov-20	-
310-03-CP3024	CP	15	139670	59200	339000.303	6919237.699	379.649	23-Nov-20	-
310-03-CP3220	CP	15	139826	59044	339099.369	6919356.785	379.513	23-Nov-20	-
310-03-CP3025	CP	15	139996	58874	339205.110	6919494.697	380.216	18-Nov-20	-
310-03-CP3028	CP	30	141301	57569	339852.456	6920624.321	379.559	27-Jan-21	-
310-03-BH3035	BH	35.1	141331	57539	339865.698	6920650.943	376.809	28-Nov-20	PLT
310-03-CP3029	CP	30	141378	57492	339886.572	6920692.701	379.529	27-Jan-21	-
310-03-CP3221	CP	30	141474	57396	339927.973	6920777.916	379.679	28-Jan-21	-
310-03-BH3036	BH	36.3	141577	57293	339974.343	6920872.587	379.451	26-Nov-20	-
310-03-CP3222	CP	30	141677	57193	340017.366	6920960.452	379.745	28-Jan-21	-
310-03-BH3037	BH	35.31	141785	57085	340064.327	6921058.165	381.165	28-Nov-20	-
310-03-CP3223	CP	30	141860	57010	340097.588	6921124.454	379.886	28-Jan-21	-
310-03-CP3030	CP	30	141973	56897	340147.263	6921226.436	379.537	28-Jan-21	-
310-03-BH3038	BH	35.45	142007	56863	340162.943	6921257.330	382.189	24-Nov-20	PLT
310-03-CP3031	CP	15	142054	56816	340184.128	6921299.546	379.757	28-Jan-21	-
310-03-CP3032	CP	15	142303	56567	340292.062	6921522.270	379.956	08-Feb-21	-
310-03-TP3303	TP	3	142455	56415	340359.414	6921661.557	379.238	19-Feb-21	PLT
310-03-CP3033	CP	15	142557	56313	340404.491	6921751.830	379.913	07-Feb-21	-
310-03-BH3039	BH	34.95	142590	56280	340419.320	6921780.907	382.211	23-Nov-20	LWD, PLT
310-03-CP3034	CP	30	142640	56230	340440.027	6921825.189	379.934	07-Feb-21	-
310-03-CP3224	CP	30	142753	56117	340491.012	6921927.613	379.155	07-Feb-21	-
310-03-CP3035	CP	30	142953	55917	340564.882	6922114.061	379.480	21-Jan-21	-
310-03-BH3040	BH	35.3	143042	55828	340598.749	6922195.368	380.612	09-Feb-21	-
310-03-CP3225	CP	30	143133	55737	340641.712	6922275.728	379.771	21-Jan-21	-
310-03-CP3036	CP	30	143325	55545	340756.929	6922431.642	379.825	21-Jan-21	-
310-03-BH3041	BH	35	143422	55448	340814.412	6922509.468	379.787	08-Feb-21	-
310-03-CP3226	CP	30	143533	55337	340883.894	6922595.734	380.188	21-Jan-21	-
310-03-BH3042	BH	34.95	143636	55234	340955.841	6922670.027	379.714	06-Feb-21	-
310-03-CP3037	CP	30	143721	55149	341018.662	6922727.230	380.118	23-Jan-21	-
310-03-BH3043	BH	35.45	143827	55043	341095.448	6922791.758	379.751	06-Feb-21	-
310-03-CP3227	CP	30	143914	54956	341162.448	6922852.790	382.022	13-Jan-21	-
310-03-BH3044	BH	35.45	144029	54841	341251.000	6922928.000	378.932	26-Jan-21	-
310-03-CP3038	CP	30	144140	54730	341337.496	6922999.030	380.301	13-Jan-21	-
310-03-BH3045	BH	35.45	144253	54617	341424.511	6923073.559	379.243	24-Jan-21	-
310-03-CP3228	CP	30	144395	54475	341531.385	6923164.286	379.607	13-Jan-21	-
310-03-CP3039	CP	30	144512	54358	341617.040	6923239.112	380.372	18-Jan-21	-

Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	QR Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed	FFJV Scope of Works Undertaken
310-03-BH3046	BH	35.45	144541	54329	341646.897	6923263.913	379.800	22-Jan-21	-
310-03-CP3040	CP	30	144651	54219	341726.987	6923328.744	380.639	26-Jan-21	-
310-03-BH3047	BH	35.45	144767	54103	341815.505	6923404.683	379.983	25-Jan-21	-
310-03-CP3229	CP	30	144884	53986	341903.965	6923479.916	379.782	24-Jan-21	-
310-03-BH3048	BH	35.45	144985	53885	341981.167	6923543.508	380.148	27-Jan-21	-
310-03-CP3041	CP	30	145074	53796	342050.187	6923604.389	385.122	24-Jan-21	-
310-03-BH3049	BH	35.45	145149	53721	342107.111	6923651.442	380.388	03-Feb-21	-
310-03-CP3042	CP	30	145170	53700	342123.959	6923664.427	382.149	24-Jan-21	-
310-03-TP3304	TP	3	145265	53605	342189.801	6923728.804	384.057	04-Mar-21	LWD
310-03-TP3305	TP	3	145626	53244	342467.560	6923965.446	382.220	04-Mar-21	LWD
310-03-TP3306	TP	3	146099	52771	342825.275	6924268.421	382.741	04-Mar-21	LWD
310-03-TP3307	TP	3	146599	52271	343207.356	6924592.087	382.784	04-Mar-21	LWD
310-03-TP3310	TP	3	147646	51224	344014.626	6925276.061	382.718	04-Mar-21	LWD, PLT
310-03-CP3043	CP	15	147716	51154	344067.676	6925315.889	381.991	06-Feb-21	-
310-03-BH3050	BH	35.45	147755	51115	344095.112	6925336.669	380.287	17-Feb-21	-
310-03-CP3044	CP	30	147788	51082	344118.553	6925358.454	384.047	04-Feb-21	-
310-03-CP3230	CP	30	147889	50981	344189.216	6925428.796	382.251	04-Feb-21	-
310-03-BH3051	BH	35.45	147967	50903	344247.560	6925485.476	380.668	17-Feb-21	-
310-03-BH3052	BH	35.45	148180	50690	344391.341	6925641.811	380.888	07-Feb-21	-
310-03-CP3231	CP	30	148285	50585	344454.912	6925720.529	381.928	05-Feb-21	-
310-03-BH3053	BH	35.45	148387	50483	344517.210	6925801.841	381.990	05-Feb-21	-
310-03-CP3046	CP	30	148484	50386	344574.843	6925881.053	382.230	05-Feb-21	-
310-03-BH3054	BH	35.45	148567	50303	344624.000	6925945.000	381.989	03-Feb-21	-
310-03-CP3232	CP	30	148814	50056	344766.032	6926147.175	382.069	02-Feb-21	-
310-03-BH3055	BH	35	148865	50005	344797.798	6926188.627	381.401	03-Feb-21	-
310-03-CP3047	CP	30	149060	49810	344905.086	6926348.201	382.176	01-Feb-21	-
310-03-BH3056	BH	34.95	149129	49741	344946.578	6926406.035	382.370	23-Jan-21	-
310-03-CP3233	CP	30	149270	49600	345026.419	6926518.782	380.295	01-Feb-21	-
310-03-BH3057	BH	35	149330	49540	345064.221	6926573.172	382.236	26-Jan-21	-
310-03-CP3048	CP	30	149399	49471	345101.539	6926627.720	382.146	01-Feb-21	-
310-03-TP3311	TP	3	149544	49326	345185.706	6926743.780	382.774	05-Mar-21	LWD

Fieldworks Summary - B2G - Brookstead to Gowrie (N3)							
Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-BH3058	BH	30.65	161218.00	355190.475	6932464.006	426.576	19/02/2021
310-03-BH3059	BH	30.45	161276.00	355222.421	6932514.614	426.226	18/02/2021
310-03-BH3061	BH	30.22	163287.00	357033.983	6933303.345	442.193	7/02/2021
310-03-BH3062	BH	27.25	163361.00	307504.490	6857839.079	290.632	25/08/2021
310-03-BH3063	BH	25.00	170919.00	364406.315	6934433.415	504.842	1/09/2021
310-03-BH3064	BH	24.32	170980.00	364457.941	6934464.221	506.124	2/11/2021
310-03-BH3065	BH	24.40	172397.00	365614.544	6935275.422	518.823	21/08/2021
310-03-BH3066	BH	29.69	172482.00	365677.213	6935332.582	518.562	20/08/2021
310-03-BH3067	BH	20.00	183539.00	374397.989	6941253.818	518.927	11/11/2021
310-03-BH3070	BH	39.49	196115.00	378796.290	6952234.537	433.060	30/10/2021
310-03-BH3071	BH	18.10	196175.00	378786.200	6952295.325	432.631	27/09/2021
310-03-BH3072	BH	24.00	197120.00	378866.912	6953215.277	431.193	16/11/2021
310-03-BH3077	BH	30.10	197849.00	379249.134	6953840.307	425.077	11/12/2022
310-03-BH3078	BH	21.85	197927.00	379290.338	6953907.258	425.242	10/12/2021
310-03-BH3079	BH	24.00	197988.00	379322.109	6953956.685	424.742	17/11/2021
310-03-BH3080	BH	27.35	198050.00	379357.213	6954008.914	425.987	8/12/2021
310-03-BH3081	BH	30.00	198686.00	379795.248	6954463.855	428.982	11/12/2021
310-03-BH3082	BH	30.00	198738.00	379838.263	6954490.912	430.015	13/11/2021
310-03-BH3083	BH	17.95	202987.00	383107.907	6957082.365	473.913	18/10/2021
310-03-BH3084	BH	18.47	203083.00	383153.484	6957164.335	473.057	28/10/2021
310-03-BH3087	BH	21.30	204463.00	383983.195	6958246.190	450.716	6/12/2021
310-03-BH3091	BH	16.08	175866.00	368774.279	6936319.174	565.769	20/09/2021
310-03-BH3092	BH	17.60	175884.00	368760.422	6936371.416	567.017	15/09/2021
310-03-BH3095	BH	35.00	153164.00	348013.873	6928861.864	391.534	21/02/2021
310-03-BH3096	BH	35.45	153146.00	347979.729	6928886.736	391.033	21/02/2021
310-03-BH3320	BH	15.45	164251.00	357978.031	6933508.929	474.923	13/10/2021
310-03-BH3321	BH	12.00	164613.00	358348.171	6933580.745	478.595	23/08/2021
310-03-BH3322	BH	13.00	165020.00	358742.672	6933598.229	482.885	12/10/2021
310-03-BH3323	BH	35.60	165261.00	358985.206	6933673.672	504.191	27/09/2021
310-03-BH3324	BH	26.30	165341.00	359060.091	6933553.840	494.932	10/10/2021
310-03-BH3325	BH	21.18	165444.00	359164.147	6933596.536	494.626	13/10/2021
310-03-BH3326	BH	12.00	166205.00	359914.441	6933581.656	494.958	16/10/2021
310-03-BH3327	BH	13.65	166701.00	360419.241	6933604.747	506.484	15/10/2021
310-03-BH3329	BH	10.13	171453.00	364870.530	6934694.698	525.682	22/09/2021
310-03-BH3330	BH	10.45	171603.00	364979.895	6934800.815	528.450	1/09/2021
310-03-BH3335	BH	11.00	175388.00	368369.438	6936063.932	566.498	29/09/2021
310-03-BH3340	BH	30.31	178416.00	370860.866	6937800.618	591.788	27/10/2021
310-03-BH3341	BH	28.20	178618.00	370895.626	6938018.225	590.439	30/09/2021
310-03-BH3342	BH	30.00	178770.00	371073.943	6938064.257	592.282	31/08/2021

Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-BH3343	BH	18.00	178984.00	371125.351	6938298.715	582.621	31/08/2021
310-03-BH3344	BH	13.00	184232.00	374991.514	6941625.865	535.157	30/10/2021
310-03-BH3346	BH	14.00	187648.00	377368.516	6944004.552	537.713	2/09/2021
310-03-BH3348	BH	26.50	189225.00	377758.029	6945529.582	532.211	25/10/2021
310-03-BH3349	BH	33.35	189651.00	378029.505	6945877.750	533.676	3/10/2021
310-03-BH3350	BH	15.45	189877.00	378020.483	6946125.976	516.378	10/03/2021
310-03-BH3351	BH	14.00	190153.00	378164.526	6946368.349	513.073	6/10/2021
310-03-BH3352	BH	30.00	192490.00	378450.190	6948695.798	501.784	4/09/2021
310-03-BH3353	BH	12.00	192907.00	378614.399	6949088.000	482.608	15/09/2021
310-03-BH3354	BH	10.97	193852.00	378801.684	6950011.000	469.021	16/09/2021
310-03-BH3355	BH	12.30	194362.00	378863.900	6950518.000	468.184	16/09/2021
310-03-BH3356	BH	12.00	202301.00	382713.684	6956519.444	482.159	15/09/2021
310-03-BH3357	BH	12.00	202126.00	382578.856	6956408.652	479.010	20/09/2021
310-03-BH3358	BH	25.00	202252.00	382507.317	6956661.542	493.131	16/09/2021
310-03-BH3359	BH	10.00	202526.00	382873.170	6956680.325	481.892	7/09/2021
310-03-BH3360	BH	21.30	202491.00	382667.965	6956824.501	492.550	8/09/2021
310-03-BH3361	BH	25.00	202345.00	382570.337	6956735.739	493.897	14/09/2021
310-03-BH3362	BH	15.00	202139.00	382503.076	6956510.302	485.184	18/09/2021
310-03-BH3363	BH	13.00	202609.00	382814.385	6956829.119	486.361	4/09/2021
310-03-BH3365	BH	13.10	184462.00	375172.782	6941755.827	532.957	2/11/2021
310-03-BH3606	BH	15.30	195404.00	379008.820	6951555.261	433.187	20/09/2021
310-03-BH3607	BH	15.45	195854.00	378859.853	6951983.523	432.517	21/09/2021
310-03-BH3608	BH	12.10	196407.00	378736.071	6952520.866	436.873	27/09/2021
310-03-BH3609	BH	10.78	197526.00	379082.388	6953560.910	425.948	11/12/2021
310-03-BH3610	BH	15.00	198453.00	379602.038	6954326.660	427.110	1/10/2021
310-03-TP3143	TP	1.70	168256.00	361968.261	6933646.940	503.752	13/09/2021
310-03-TP3144	TP	2.30	169148.00	362854.612	6933592.613	504.762	13/09/2021
310-03-TP3146	TP	1.50	170046.00	363672.25	6933958.56	505.13	25/08/2021
310-03-TP3147	TP	3.20	170584.00	364118.59	6934257.74	498.93	25/08/2021
310-03-TP3148	TP	3.00	170952.00	364434.04	6934448.39	504.14	13/09/2021
310-03-TP3149	TP	1.80	171362.00	364785.24	6934658.45	519.87	15/09/2021
310-03-TP3151	TP	3.30	172805.00	365887.40	6935479.41	521.94	26/08/2021
310-03-TP3152	TP	1.40	173050.00	366175.47	6935593.89	530.59	26/08/2021
310-03-TP3153	TP	1.90	173751.00	366868.29	6935573.88	543.31	26/08/2021
310-03-TP3156	TP	1.00	175678.00	368613.77	6936242.17	556.84	26/08/2021
310-03-TP3162	TP	3.00	179814.00	371642.65	6938952.62	548.45	26/08/2021
310-03-TP3164	TP	2.60	180872.00	372123.16	6939884.99	548.88	15/09/2021
310-03-TP3166	TP	2.10	182794.00	373783.34	6940845.42	539.85	15/09/2021
310-03-TP3170	TP	2.20	183972.00	374742.00	6941523.00	531.20	15/09/2021
310-03-TP3174	TP	2.60	187206.00	377213.76	6943587.99	532.91	15/09/2021

Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-TP3175	TP	3.40	187400.00	377290.00	6943767.00	536.50	16/09/2021
310-03-TP3176	TP	3.10	187798.00	377369.87	6944155.81	532.04	16/09/2021
310-03-TP3179	TP	2.40	190339.00	378170.21	6946556.55	502.88	2/10/2021
310-03-TP3180	TP	3.60	191778.00	378401.37	6947979.25	467.16	2/10/2021
310-03-TP3181	TP	2.50	192223.00	378471.13	6948416.43	482.72	31/08/2021
310-03-TP3182	TP	2.60	193332.00	378687.00	6949504.00	471.50	31/08/2021
310-03-TP3183	TP	2.20	193595.00	378745.68	6949759.66	472.79	30/08/2021
310-03-TP3184	TP	3.10	194162.00	378854.21	6950316.48	467.66	30/08/2021
310-03-TP3185	TP	2.00	194646.00	378929.58	6950794.93	457.58	30/08/2021
310-03-TP3186	TP	3.00	195197.00	378968.34	6951339.56	437.66	27/08/2021
310-03-TP3187	TP	3.10	195655.00	378906.18	6951789.64	432.19	27/08/2021
310-03-TP3188	TP	3.00	196717.00	378749.98	6952831.72	436.91	31/08/2021
310-03-TP3189	TP	1.50	197027.00	378827.23	6953132.29	433.20	31/08/2021
310-03-TP3190	TP	1.30	197165.00	378880.74	6953253.84	430.28	1/09/2021
310-03-TP3191	TP	3.30	197266.00	378943.50	6953341.79	424.36	1/09/2021
310-03-TP3192	TP	3.10	197397.00	379013.07	6953452.17	423.97	1/09/2021
310-03-TP3193	TP	3.30	197786.00	379216.62	6953783.52	426.15	1/09/2021
310-03-TP3194	TP	3.00	197878.00	379265.91	6953865.05	425.47	2/09/2021
310-03-TP3195	TP	3.00	197951.00	379302.02	6953926.80	425.24	2/09/2021
310-03-TP3196	TP	3.10	198022.00	379339.05	6953985.43	425.63	2/09/2021
310-03-TP3197	TP	3.20	198103.00	379382.55	6954054.28	426.10	2/09/2021
310-03-TP3198	TP	3.30	198291.00	379492.27	6954206.51	426.79	2/09/2021
310-03-TP3200	TP	3.20	199516.00	380534.89	6954830.12	441.98	3/09/2021
310-03-TP3201	TP	3.10	199947.00	380921.80	6955019.48	446.63	3/09/2021
310-03-TP3202	TP	3.20	200091.00	381051.55	6955082.19	450.96	3/09/2021
310-03-TP3205	TP	2.60	201591.00	382209.54	6956028.80	460.77	4/09/2021
310-03-TP3206	TP	3.10	202006.00	382497.43	6956324.03	476.24	4/09/2021
310-03-TP3213	TP	3.10	205588.00	385062.55	6958453.08	448.86	6/09/2021
310-03-TP3214	TP	3.20	205873.00	385346.93	6958437.52	449.61	6/09/2021
310-03-TP3215	TP	3.00	206428.00	385900.66	6958407.24	455.28	16/09/2021
310-03-TP3216	TP	2.10	206744.00	386211.95	6958351.07	458.43	16/09/2021
310-03-TP3217	TP	3.20	206948.00	386408.58	6958284.62	457.89	16/09/2021
310-03-TP3314	TP	3.60	151083.00	346133.72	6927945.64	387.13	24/06/2021
310-03-TP3316	TP	3.00	151519.00	347073.39	6928412.48	390.47	5/03/2021
310-03-TP3317	TP	3.00	152121.00	347478.35	6928644.25	406.88	5/03/2021
310-03-TP3318	TP	3.00	152588.00	348022.82	6928891.40	390.54	8/09/2021
310-03-TP3319	TP	3.90	153699.00	348475.26	6929133.04	391.93	24/06/2021
310-03-TP3320	TP	3.55	154203.00	348926.28	6929359.71	393.37	26/06/2021
310-03-TP3321	TP	3.56	154702.00	349382.58	6929575.55	395.26	26/06/2021
310-03-TP3322	TP	3.25	155201.00	349832.08	6929788.19	396.38	26/06/2021

Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-TP3323	TP	3.58	155702.00	350286.02	6930003.04	397.57	26/06/2021
310-03-TP3324	TP	3.00	156202.00	350732.13	6930212.54	400.13	31/08/2021
310-03-TP3325	TP	3.00	156703.00	351192.59	6930431.97	400.24	30/08/2021
310-03-TP3326	TP	3.60	157201.00	351638.59	6930642.91	401.44	26/06/2021
310-03-TP3327	TP	3.09	157702.00	352090.82	6930856.87	402.67	30/08/2021
310-03-TP3328	TP	3.52	158198.00	352533.36	6931066.25	403.94	26/06/2021
310-03-TP3329	TP	1.63	159200.00	353441.31	6931495.33	406.63	26/06/2021
310-03-TP3330	TP	3.00	159701.00	353899.02	6931701.76	414.21	5/03/2021
310-03-TP3331	TP	3.00	160201.00	354350.07	6931910.39	423.11	5/03/2021
310-03-TP3332	TP	3.00	160697.00	354801.75	6932125.26	430.17	5/03/2021
310-03-TP3333	TP	3.00	161699.00	355536.91	6932799.77	436.55	6/03/2021
310-03-TP3334	TP	3.00	162200.00	355986.22	6933026.58	441.40	6/03/2021
310-03-TP3335	TP	3.00	162555.00	356318.40	6933152.06	380.41	6/03/2021
310-03-TP3336	TP	3.10	163786.00	357524.82	6933394.16	449.69	23/08/2021
310-03-TP3337	TP	2.50	164121.00	357855.00	6933451.00	468.23	23/08/2021
310-03-TP3338	TP	3.00	164613.00	358340.16	6933528.23	476.31	23/08/2021
310-03-TP3339	TP	3.80	164834.00	358539.29	6933581.03	476.62	24/06/2021
310-03-TP3340	TP	3.00	165323.00	359043.99	6933604.68	498.83	23/08/2021
310-03-TP3341	TP	2.70	165565.00	359291.22	6933601.20	490.54	8/09/2021
310-03-TP3342	TP	2.60	165773.00	359482.87	6933593.77	485.84	24/08/2021
310-03-TP3343	TP	2.60	165944.00	359665.16	6933575.15	487.56	24/08/2021
310-03-TP3344	TP	2.00	166402.00	360128.29	6933582.17	502.04	24/08/2021
310-03-TP3346	TP	1.00	167323.00	361041.05	6933655.94	504.92	6/09/2021
310-03-TP3347	TP	2.10	167628.00	361343.20	6933695.82	505.98	25/08/2021
310-03-CP3000	CP	13.47	52450.00	300304.50	6851814.85	272.85	14/07/2021
310-03-CP3001	CP	3.530 & 3.240	55500.00	302581.71	6853823.69	271.70	6/10/2021
310-03-CP3002	CP/DMT	15.00	67442.00	312812.50	6859238.50	283.65	7/10/2021
310-03-CP3004	CP/DMT	15.52	93862.00	321154.19	6880742.02	322.57	9/10/2021
310-03-CP3200	CP	1.32 & 1.60	52640.00	300451.60	6851940.82	270.13	5/10/2021
310-03-CP3201	CP	5.07	55596.00	302654.69	6853881.86	271.66	6/10/2021
310-03-CP3202	CP	28.13	67215.00	312610.47	6859137.39	282.72	6/10/2021
310-03-CP3203	CP	15.00	93971.00	321248.40	6880798.80	321.93	9/10/2021

Fieldworks Summary - B2G - Whetstone Greenfield Corridor (N4)							
Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-BH3000	BH	32.4	52468	300320.664	6851828.154	272.402	27/07/2021
310-03-BH3001	BH	33.93	52695	300504.631	6851960.077	271.522	21/07/2021
310-03-BH3002	BH	28.95	55438	302541.695	6853770.889	276.426	20/07/2021
310-03-BH3003	BH	25.95	55662	302670.486	6853963.180	271.752	21/08/2021
310-03-BH3004	BH	30.49	67166	312573.805	6859130.423	285.320	27/08/2021
310-03-BH3005	BH	32.3	67365	312744.754	6859204.745	283.930	18/08/2021
310-03-BH3006	BH	30.45	67531	312893.843	6859274.790	284.662	24/08/2021
310-03-BH3009	BH	19.95	93841	321140.662	6880731.527	322.598	9/08/2021
310-03-BH3010	BH	19.95	94031	321294.843	6880843.492	321.604	10/08/2021
310-03-BH3300	BH	12.95	47063	297276.053	6847680.392	283.505	21/07/2021
310-03-BH3301	BH	18	47716	297333.962	6848330.321	295.230	2/08/2021
310-03-BH3302	BH	15.68	49375	297985.660	6849827.132	305.743	20/07/2021
310-03-BH3303	BH	13.7	50307	298604.275	6850509.814	301.846	16/08/2021
310-03-BH3304	BH	22.5	57790	304240.181	6855398.190	325.320	27/10/2021
310-03-BH3305	BH	17.9	58892	3051109.109	6856078.463	332.240	22/07/2021
310-03-BH3306	BH	20.18	59238	305378.102	6856297.458	336.105	24/07/2021
310-03-BH3307	BH	20.5	61054	306810.909	6857410.750	324.858	13/11/2021
310-03-BH3308	BH	20.36	62258	307850.735	6858017.002	315.819	27/10/2021
310-03-BH3310	BH	10.95	72734	317314.221	6861762.223	305.318	24/08/2021
310-03-BH3600	BH	15	48416	297438.584	6849027.568	274.543	11/08/2021
310-03-BH3601	BH	15	60557	306426.896	6857098.491	295.184	17/08/2021
310-03-BH3602	BH	19	61869	307500.954	6857839.939	290.324	28/07/2021
310-03-BH3604	BH	15.18	66273	311759.773	6858734.110	285.089	25/08/2021
310-03-BH3800	BH	12.67	75694	319323.833	6863678.698	317.027	15/02/2021
310-03-BH3801	BH	10.1	76219	319356.070	6864201.476	314.745	19/02/2021
310-03-TP3045	TP	2.4	45495	297076.213	6846125.437	264.930	1/06/2021
310-03-TP3046	TP	3	46258	297195.468	6846894.066	272.335	26/08/2021
310-03-TP3047	TP	2.5	51473	299533.597	6851224.440	281.929	10/08/2021
310-03-TP3048	TP	2.4	53386	301043.546	6852398.774	277.769	10/08/2021
310-03-TP3049	TP	1.8	54564	301985.027	6853105.934	282.958	10/08/2021
310-03-TP3050	TP	3	55012	302292.391	6853431.026	274.048	11/08/2021
310-03-TP3051	TP	1.4	55994	355401.591	6932707.352	282.056	11/08/2021
310-03-TP3052	TP	1.3	56887	303564.746	6854795.780	305.947	11/08/2021
310-03-TP3053	TP	1.5	60098	306071.798	6856807.006	312.476	26/08/2021
310-03-TP3055	TP	2.5	65792	311324.158	6858529.438	293.020	27/08/2021
310-03-TP3056	TP	3.2	66817	311759.774	6858734.159	285.095	27/08/2021
310-03-TP3057	TP	3	68000	297287.243	6845900.978	265.326	9/08/2021
310-03-TP3058	TP	3	68696	313989.452	6859674.217	286.068	9/08/2021
310-03-TP3059	TP	3	69434	314408.913	6859816.236	285.762	10/08/2021
310-03-TP3060	TP	3	70661	315840.387	6860330.911	289.480	7/08/2021
310-03-TP3061	TP	3	71300	316328.272	6860739.890	296.169	7/08/2021

Location ID	Test Type	Final Investigation Depth (mbgl)	ARTC Chainage (m)	Easting (MGA94)	Northing (MGA94)	Test Surface RL (m AHD)	Date Completed
310-03-TP3062	TP	3	71483	316442.006	6860883.948	297.092	7/08/2021
310-03-TP3063	TP	3	72193	316878.746	6861443.427	301.059	6/08/2021
310-03-TP3064	TP	3	73384	317928.335	6861969.599	295.832	6/08/2021
310-03-TP3065	TP	3	74416	318765.077	6862571.367	306.817	6/08/2021
310-03-TP3067	TP	3	76679	319417.183	6864659.224	308.306	5/08/2021
310-03-TP3068	TP	3	77702	319539.898	6865674.579	307.795	5/08/2021
310-03-TP3069	TP	1.3	78384	319628.126	6866350.563	310.129	5/08/2021
310-03-TP3071	TP	3.2	80232	319813.622	6868189.769	317.540	30/08/2021
310-03-TP3072	TP	3	81791	320007.365	6869737.343	317.850	30/08/2021
310-03-TP3073	TP	3	82894	320144.598	6870830.975	319.567	30/08/2021
310-03-TP3074	TP	3	84148	320296.956	6872071.507	318.565	30/08/2021
310-03-TP3075	TP	3	84776	320014.138	6872621.408	319.185	31/08/2021
310-03-TP3076	TP	3.2	85826	319541.538	6873566.447	327.171	31/08/2021
310-03-TP3077	TP	2.5	86434	319359.390	6874145.708	331.395	31/08/2021
310-03-TP3078	TP	3	88065	318910.406	6875724.075	325.346	1/09/2021
310-03-TP3079	TP	2.7	88486	318970.012	6876150.778	327.714	1/09/2021
310-03-TP3080	TP	2.4	89416	319150.866	6877062.653	336.246	1/09/2021
310-03-TP3081	TP	1.7	90005	319264.366	6877640.962	336.259	1/09/2021
310-03-TP3082	TP	3	90971	319451.205	6878589.071	329.506	2/09/2021
310-03-TP3083	TP	3	91796	319666.455	6879386.851	333.490	27/07/2021
310-03-TP3084	TP	3	92568	320076.006	6880034.957	330.430	27/07/2021
310-03-TP3085	TP	3	92997	320415.566	6880295.181	328.716	27/07/2021
310-03-TP3086	TP	3	93617	320947.244	6880614.538	324.782	28/07/2021
310-03-TP3087	TP	3	94107	321369.431	6880907.054	322.419	23/08/2021
310-03-TP3218	TP	3.2	80936	319985.861	6868878.372	313.462	30/08/2021
310-03-TP3500	TP	3	61567	307212.874	6857737.293	289.421	26/08/2021
310-03-TP3710	TP	3	94132	321246.980	6881027.380	326.717	23/08/2021
310-03-TP3711	TP	3.5	94307	321316.209	6881170.429	328.338	16/06/2021
310-03-TP3713	TP	3.1	94345.43	321494.828	6881082.084	328.408	16/06/2021
310-03-TP3714	TP	3	94305	321381.646	6881107.429	326.360	16/06/2021
310-03-TP3800	TP	2.8	75615	319285.417	6863602.915	314.970	2/08/2021
310-03-TP3801	TP	3	85586	319615.261	6873334.099	325.612	31/08/2021
310-03-TP3802	TP	3	86150	319448.678	6873876.182	329.842	31/08/2021
310-03-TP3803	TP	3	86792	319255.426	6874487.350	331.583	1/09/2021
310-03-CP3000	CP	13.47	52450	300304.503	6851814.854	272.846	14/07/2021
310-03-CP3001	CP	3.530 & 3.240	55500	302581.706	6853823.686	271.697	6/10/2021
310-03-CP3002	CP/DMT	15	67442	312812.495	6859238.503	283.649	7/10/2021
310-03-CP3004	CP/DMT	15.52	93862	321154.188	6880742.024	322.572	9/10/2021
310-03-CP3200	CP	1.32 & 1.60	52640	300451.602	6851940.815	270.132	5/10/2021
310-03-CP3201	CP	5.07	55596	302654.690	6853881.859	271.661	6/10/2021
310-03-CP3202	CP	28.13	67215	312610.470	6859137.392	282.719	6/10/2021
310-03-CP3203	CP	15	93971	321248.397	6880798.797	321.927	9/10/2021

APPENDIX G2

Macquarie Geotechnical—Laboratory Results

Geotechnical notes and logs

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 271457.5 m E 6834384.1 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	240.56 m		
Hole Diameter:	300 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description							Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations			
PT				U00000 0.14-1.64 m		240.1	0.5			RAIL					RAIL			
				D00060 0.60-1.10 m PP 0.70 m =150 kPa				CL-CI	BALLAST: GRAVEL trace cobble: medium to coarse grained angular, grey and black, angular (<75mm) cobble. FOUL BALLAST: GRAVEL with sand: fine to coarse grained sub-angular to angular, grey and black, fine to coarse grained sand.	MD				BALLAST				
AD/T		Not Observed		PP 1.00 m =200 kPa B00110 1.10-1.60 m D00110 1.10-1.60 m PP 1.20 m =280 kPa D00140 1.40-1.50 m SAMPLED FROM PUSH TUBE D00160 1.60-2.10 m D00210 2.10-2.60 m		239.6	1.0		CI-CH	FILL: Gravelly SAND: fine to coarse grained, black and brown, fine to medium grained sub-angular to angular gravel. Silty CLAY with sand: low to medium plasticity, dark brown, fine to medium grained sand. Silty CLAY with sand: medium to high plasticity, dark brown mottled grey, fine to medium grained sand.	M (>PL)	VSt to H		x	FOUL BALLAST			
																	FILL	
																		ALLUVIAL SOIL
				D00260 2.60-3.10 m D00310 3.10-3.60 m		238.6	2.0		CL-CI	Silty Sandy CLAY: low to medium plasticity, brown and grey, fine to coarse grained sand. Below 2.50m: grey and orange-brown.	M (~PL)	H		x				
						238.1	2.5											
						237.6	3.0											
						237.1	3.5											
						236.6	4.0			Hole Terminated at 3.60 m Target depth								

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 271457.5 m E 6834384.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	240.56 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3017 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 271457.5 m E 6834384.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	240.56 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3017 Depth Range: 0.00 - 1.50 m

Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:09 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2.dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017.11.25

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 272402.7 m E 6834708.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 - 300 mm	Bearing:	
		RL Surface:	241.45 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3018 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 04/09/2021													
Project Name: Inland Rail B2G		Completed: 04/09/2021													
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena													
Hole Position: C4 - Kurrumbul Corridor 273351.2 m E 6835030.9 m N		Checked By: J.Boyle													
Drill Model and Mounting: D4TAPG		Inclination: -90°													
Hole Diameter: 300 mm		RL Surface: 242.89 m													
		Datum: AHD Operator: B.Boga													
Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
PT			Not Observed	U00000 0.14-1.64 m		242.4	0.5			RAIL					RAIL
										BALLAST: GRAVEL with cobble: medium to coarse grained angular, pale black, angular (<75mm) cobble.		D to VD			BALLAST
				D00065 0.65-1.05 m					CL-CI	FILL: Gravelly SAND trace clay: fine to medium grained sub-angular to angular gravel, low plasticity clay.	M (>PL)	H			FILL
				B00105 1.05-1.55 m		241.9	1.0		SM	Sandy Silty CLAY: low to medium plasticity, brown, fine to coarse grained sand.	M	VD			ALLUVIAL SOIL
				D00105 1.05-1.55 m						Silty SAND trace clay: fine to medium grained, pale grey, low plasticity fines.					
				D00140 1.40-1.50 m		241.4	1.5		CL-CI	Sandy Silty CLAY: low to medium plasticity, brown mottled grey, fine grained sand.					
				D00155 1.55-2.05 m		240.9	2.0								
				D00205 2.05-2.55 m		240.4	2.5								
				D00255 2.55-3.05 m		239.9	3.0			02.55-03.05m: trending to trace sand					
				D00305 3.05-3.55 m		239.4	3.5								
AD/T						238.9	4.0			Hole Terminated at 3.55 m Target depth					
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Support C - Casing Penetration No resistance ranging to refusal Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Water Level (Date) Inflow Partial Loss Complete Loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT- Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Plastic Limit < PL = PL > PL															

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 273351.2 m E 6835030.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	242.89 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3019 Depth Range: 0.00 - 1.50 m

Project No.: B21003

Client: ARTC				Commenced: 04/09/2021																																																																																											
Project Name: Inland Rail B2G				Completed: 04/09/2021																																																																																											
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena																																																																																											
Hole Position: C4 - Kurrumbul Corridor 275238.0 m E 6835676.0 m N				Checked By: J.Boyle																																																																																											
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 244.60 m																																																																																									
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga																																																																																									
Drilling Information				Soil Description						Observations																																																																																					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations																																																																																
PT			Not Observed	U00000 0.14-1.64 m		244.1	0.5		CL-CI	RAIL BALLAST: GRAVEL with cobble: medium to coarse grained angular, pale black, angular (<75mm) cobble. FOUL BALLAST: GRAVEL with sand: fine to coarse grained angular, black, fine to coarse grained sand.	M	MD			RAIL																																																																																
				D00060 0.60-1.10 m		243.6	1.0		CI-CH	FILL: Gravelly SAND trace clay: fine to coarse grained, pale brown, medium grained sub-angular to angular gravel.	M (>PL)	VSt to H			BALLAST																																																																																
				B00050 1.10-1.60 m		243.1	1.5			Sandy Silty CLAY: low to medium plasticity, dark brown, fine to coarse grained sand.	H				FOUL BALLAST																																																																																
				D00110 1.10-1.60 m		242.6	2.0			Sandy Silty CLAY: medium to high plasticity, grey, fine to coarse grained sand.	M (>PL) to M (~PL)				FILL																																																																																
				D00140 1.40-1.50 m		242.1	2.5								ALLUVIAL SOIL																																																																																
AD/T			Not Observed	D00160 1.60-2.10 m		241.6	3.0																																																																																								
				D00210 2.10-2.60 m		241.1	3.5																																																																																								
				D00260 2.60-3.10 m		240.6	4.0																																																																																								
				D00310 3.10-3.60 m																																																																																											
										Hole Terminated at 3.60 m Target depth																																																																																					
Method AS - Auger Screwing RR - Rock Roller WB - Washbore																Penetration No resistance ranging to refusal																Water Level (Date) Inflow Partial Loss Complete Loss																Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test																Moisture Condition D - Dry M - Moist W - Wet																Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense															
Support C - Casing																Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss																Classification Symbols and Soil Descriptions Based on Unified Soil Classification System																Plastic Limit < PL = PL > PL																																															

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 275238.0 m E 6835676.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	244.60 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3021 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 04/09/2021													
Project Name: Inland Rail B2G				Completed: 04/09/2021													
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena													
Hole Position: C4 - Kurrumbul Corridor 278084.8 m E 6836648.5 m N				Checked By: J.Boyle													
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 244.73 m											
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga											
Drilling Information				Soil Description				Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations		
PT			Not Observed	U000000 0.14-1.64 m		244.2	0.5			RAIL					RAIL		
																BALLAST	
																FOUL BALLAST	
																FILL	
AD/T			Not Observed	D00060 0.60-1.10 m PP 0.75 m >600 kPa		243.7	1.0		CL-CI	FOUL BALLAST: GRAVEL with sand: fine to coarse grained sub-angular to angular, black and brown, fine to coarse grained sand.	M (<PL) to M (~PL)				ALLUVIAL SOIL		
AD/T			Not Observed	B00110 1.10-1.60 m D00110 1.10-1.60 m D00140 1.40-1.50 m SAMPLED FROM PUSH TUBE D00160 1.60-2.10 m		243.2	1.5		CI	FILL: Gravelly SAND: fine to coarse grained, grey-brown, fine to medium grained sub-rounded to angular gravel.	VSt						
AD/T			Not Observed	D00210 2.10-2.60 m		242.7	2.0		SM	Sandy Silty CLAY: low to medium plasticity, black and brown, fine to coarse grained sand.	M (<PL)						
AD/T			Not Observed	D00260 2.60-3.10 m		242.2	2.5			Clayey Silty SAND: fine to coarse grained, pale brown, low plasticity fines.							
AD/T			Not Observed	D00310 3.10-3.60 m		241.7	3.0										
AD/T			Not Observed			241.2	3.5										
AD/T			Not Observed			240.7	4.0										
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Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 278084.8 m E 6836648.5 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	244.73 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3024 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 05/09/2021
Project Name: Inland Rail B2G	Completed: 05/09/2021
Hole Location: C4 - Kurumbul Corridor	Logged By: V.Chandrasena
Hole Position: C4 - Kurumbul Corridor 279971.9 m E 6837297.1 m N	Checked By: J.Boyle

Drill Model and Mounting: D4TAPG	Inclination: -90°	RL Surface: 245.06 m
Hole Diameter: 300 mm	Bearing:	Datum: AHD Operator: B.Boga

Drilling Information							Soil Description							Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
PT				U00000 0.14-1.64 m		244.6	0.5		CL	RAIL		L				RAIL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/09/2021
Project Name:	Inland Rail B2G	Completed:	05/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 279971.9 m E 6837297.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	245.06 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3025 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/09/2021
Project Name:	Inland Rail B2G	Completed:	05/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 280921.5 m E 6837620.0 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	245.98 m		
Hole Diameter:	300 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description							Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations		
PT				U00000 0.14-1.64 m		245.5	0.5			RAIL					RAIL		
																BALLAST	
																	FOUL BALLAST
																	CAPPING
																	FILL
AD/IT		Not Observed	D00065 0.65-1.15 m PP 0.70 m =250 kPa PP 0.90 m =400 kPa PP 1.10 m =350 kPa B00115 1.15-1.65 m		245.0	1.0		CL	CAPPING: Gravelly SAND: fine to coarse grained, brown, fine to medium grained sub-angular to angular gravel. FILL: GRAVEL with sand trace clay: fine to medium grained sub-rounded to sub-angular, brown, fine to coarse grained sand, low plasticity clay. Silty CLAY with sand: low plasticity, grey-brown, fine grained sand.	M (<PL)	H			x	ALLUVIAL SOIL		
			D00115 1.15-1.65 m D00140 1.40-1.50 m SAMPLED FROM TUBE D00165 1.65-2.15 m		244.5	1.5		SC SC	Clayey Silty SAND trace gravel: fine grained, grey and brown mottled white, low plasticity fines, fine to medium sub-angular gravel. Clayey Silty SAND trace gravel: fine grained, grey and brown mottled white, high plasticity fines, fine to medium sub-angular gravel. Clayey Silty SAND trace gravel: fine grained, grey and brown mottled white, low plasticity fines, fine to medium sub-angular gravel.					x			
				D00215 2.15-2.65 m		243.5	2.5				D to M	VD					
				D00265 2.65-3.15 m		243.0	3.0										
				D00315 3.15-3.65 m		242.5	3.5										
						242.0	4.0			Hole Terminated at 3.65 m Target depth							

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/09/2021
Project Name:	Inland Rail B2G	Completed:	05/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 280921.5 m E 6837620.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	245.98 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3026 Depth Range: 0.00 - 1.50 m

Project No.: B21003

Client: ARTC				Commenced: 06/09/2021																			
Project Name: Inland Rail B2G				Completed: 06/09/2021																			
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena																			
Hole Position: C4 - Kurrumbul Corridor 281866.5 m E 6837943.2 m N				Checked By: J.Boyle																			
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 247.89 m																	
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga																	
Drilling Information				Soil Description						Observations													
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations								
PT				U00000 0.14-1.64 m		247.4	0.5			RAIL					RAIL								
				D00055 0.55-1.05 m		246.9	1.0	CL SP	BALLAST: GRAVEL trace cobble: medium to coarse grained angular, brown and grey, angular (<80mm) cobble. FOUL BALLAST: GRAVEL with sand: fine to coarse grained angular, grey, fine to coarse grained sand. FILL: SAND with gravel: fine to coarse grained, black, grey and brown, fine to medium grained sub-angular to angular gravel. Sandy Silty CLAY: low plasticity, black and brown, fine to medium grained sand. SAND with silt and clay: fine to medium grained, brown, medium to high plasticity fines.	M >PL	H				BALLAST FOUL BALLAST FILL ALLUVIAL SOIL								
AD/T			Not Observed	B00105 1.05-1.55 m D00105 1.05-1.55 m		246.4	1.5		SM	Clayey Silty SAND trace gravel: fine to medium grained, pale brown mottled white (CaCO3), medium plasticity fines, fine grained sub-angular gravel.													
				D00140 1.40-1.50 m SAMPLED FROM TUBE D00155 1.55-2.05 m		245.9	2.0		Below 2.00m: with fine to medium sub-angular to angular gravel.	M	VD												
				D00205 2.05-2.55 m		245.4	2.5		SP	Gravelly SAND: fine to coarse grained, brown, fine to medium sub-angular to angular gravel.													
				D00255 2.55-3.05 m		244.9	3.0																
				D00305 3.05-3.55 m		244.4	3.5			Hole Terminated at 3.55 m Target depth													
						243.9	4.0																
Method				Penetration				Water				Samples and Tests				Moisture Condition				Consistency/Relative Density			
AS - Auger Screwing RR - Rock Roller WB- Washbore				No resistance ranging to refusal				Level (Date) Inflow Partial Loss Complete Loss				U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test				D - Dry M - Moist W - Wet				VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Support				Graphic Log/Core Loss				Classification Symbols and Soil Descriptions				Plastic Limit											
C - Casing				Core recovered (hatching indicates material) Core loss				Based on Unified Soil Classification System				< PL = PL > PL											

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/09/2021
Project Name:	Inland Rail B2G	Completed:	06/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 281866.5 m E 6837943.2 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	247.89 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3027 Depth Range: 0.00 - 1.50 m



Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:11 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/09/2021
Project Name:	Inland Rail B2G	Completed:	06/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 282809.1 m E 6838265.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	250.05 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3028 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/09/2021
Project Name:	Inland Rail B2G	Completed:	06/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 274284.2 m E 6835349.7 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	244.42 m
Hole Diameter:	300 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
PT AD/T		Not Observed		U00000 0.14-1.64 m		243.9	0.5			RAIL BALLAST: GRAVEL trace cobble: medium to coarse grained angular, grey and black, angular (<75mm) cobble. FOUL BALLAST: GRAVEL with sand: fine to medium grained angular, grey and brown, fine to coarse grained sand. CAPPING: SAND with gravel: fine to coarse grained, pale brown, fine to medium grained sub-angular to angular gravel.					RAIL
				D00065 0.65-1.15 m		243.4	1.0		SP	FILL: Sandy GRAVEL trace clay: fine to coarse grained sub-rounded to sub-angular, dark brown, fine to coarse grained sand, low to medium plasticity clay.	M	MD to D			BALLAST FOUL BALLAST CAPPING
				B00115 1.15-1.65 m		242.9	1.5		CL-CI	SAND trace silt and clay: fine to coarse grained, grey and brown, low to medium plasticity fines.	M	H			FILL
				D00115 1.15-1.65 m		242.9	1.5			SAND trace silt and clay: fine to coarse grained, grey and brown, low to medium plasticity fines.					ALLUVIAL SOIL
				D00140 1.40-1.50 m		242.4	2.0			SAND trace silt and clay: fine to coarse grained, grey and brown, low to medium plasticity fines.					
				SAMPLED FROM TUBE D00165 1.65-2.15 m		242.4	2.0		SM	Clayey Silty SAND: fine to coarse grained, brown, medium plasticity fines.	M				
				D00215 2.15-2.65 m		241.9	2.5		SP	SAND trace silt and clay: fine to coarse grained, grey and brown, medium plasticity fines.		VD			
				D00265 2.65-3.15 m		241.4	3.0				D to M				
				D00315 3.15-3.65 m		240.9	3.5								
										240.4	4.0				
										Hole Terminated at 3.65 m Target depth					

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/09/2021
Project Name:	Inland Rail B2G	Completed:	06/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 274284.2 m E 6835349.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	244.42 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3029 Depth Range: 0.00 - 1.50 m



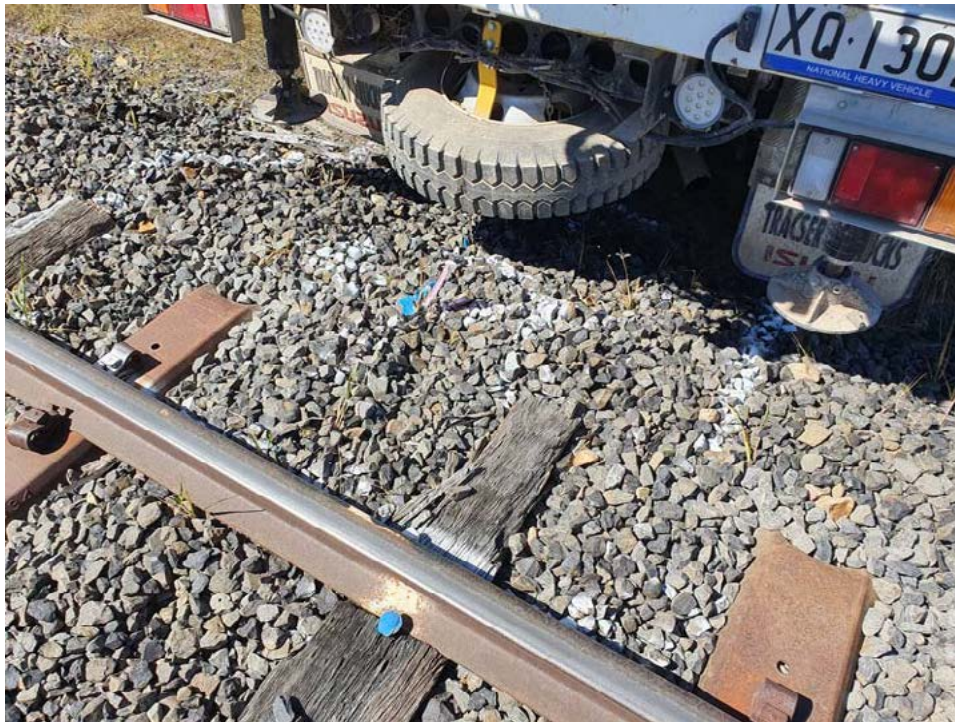
Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:11 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	07/09/2021
Project Name:	Inland Rail B2G	Completed:	07/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 284705.7 m E 6838914.2 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	252.89 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3030 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 07/09/2021													
Project Name: Inland Rail B2G		Completed: 07/09/2021													
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena													
Hole Position: C4 - Kurumbul Corridor 285651.6 m E 6839238.2 m N		Checked By: J.Boyle													
Drill Model and Mounting: D4TAPG		Inclination: -90°													
Hole Diameter: 300 mm		RL Surface: 258.71 m													
		Datum: AHD													
		Operator: B.Boga													
Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
PT			Not Observed	U00000 0.14-1.64 m		258.2	0.5			RAIL					RAIL
										BALLAST: GRAVEL trace cobble: medium to coarse grained angular, black, angular (<70mm) cobble.					BALLAST
										FOUL BALLAST: GRAVEL trace sand: fine to coarse grained angular, black, fine to coarse grained sand.					FOUL BALLAST
										CAPPING: SAND trace gravel: fine to coarse grained, brown, fine to medium grained sub-rounded to sub-angular gravel.					CAPPING
										FILL: Sandy GRAVEL: fine to medium grained angular, brown, fine to coarse grained sand.	D to M	MD to D			FILL
										SAND with silt and clay trace gravel: fine to coarse grained, brown, low to medium plasticity fines, fine to medium sub-rounded to sub-angular gravel.					ALLUVIAL SOIL
AD/T				D00070 0.70-1.20 m		257.7	1.0		SP						
				B00120 1.20-1.70 m		257.2	1.5		SP						
				D00120 1.20-1.70 m		257.2	1.5		SP						
				D00170 1.70-2.20 m		256.7	2.0								
				D00220 2.20-2.70 m		256.2	2.5			Silty SAND with Gravel: fine to coarse grained, orange brown.	D	VD			
				D00270 2.70-3.20 m		255.7	3.0		SP	SAND: fine to coarse grained, orange-brown, weakly cemented.					
				D00320 3.20-3.70 m		255.2	3.5								
						254.7	4.0			Hole Terminated at 3.70 m Target depth					
Method AS - Auger Screwing RR - Rock Roller WB- Washbore		Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT- Standard Penetration Test		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense					
Support C - Casing		Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System		Plastic Limit < PL = PL > PL									

MG 4.02 LUB L8 Log MG BOREHOLE MG 4.02 GPJ <<DrawingFile>> 21/02/2022 22:12 10.02.00.04 D:\git\Lab and In Situ Tool - DGD | U:\DGD\TP 4.01 2.dpt 3.04 2018-07-02 Pj: DGD\TP 4.00 6.2017-11-25

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Support

C - Casing

Penetration

No resistance
ranging to
refusal

Graphic Log/Core Loss

Core recovered (hatching
indicates material)
Core loss

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil
Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Plastic Limit

< PL
= PL
< PL

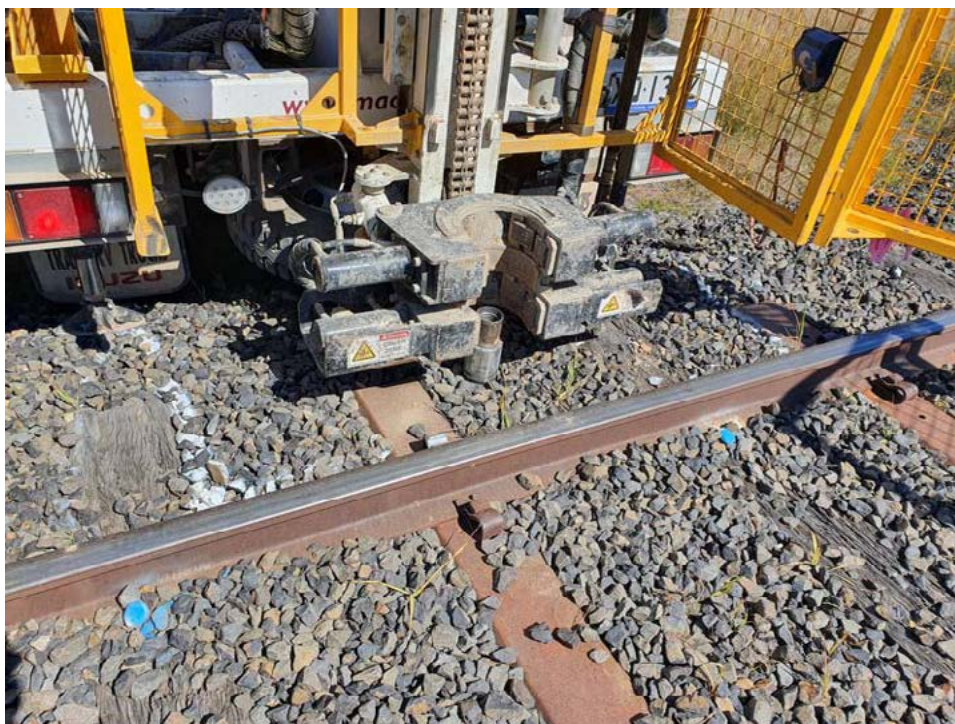
Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	07/09/2021
Project Name:	Inland Rail B2G	Completed:	07/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 285651.6 m E 6839238.2 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	258.71 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3031 Depth Range: 0.00 - 1.50 m



Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:12 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: C4 - Kurumbul Corridor
Hole Position: C4 - Kurumbul Corridor 286610.0 m E 6839565.9 m N

Commenced: 07/09/2021
Completed: 07/09/2021
Logged By: V.Chandrasena
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG
Hole Diameter: 300 mm

Inclination: -90°
Bearing:

RL Surface: 260.77 m
Datum: AHD Operator: B.Boga



310-03-TP3032 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 07/09/2021
Project Name: Inland Rail B2G	Completed: 07/09/2021
Hole Location: C4 - Kurumbul Corridor	Logged By: V.Chandrasena
Hole Position: C4 - Kurumbul Corridor 287483.3 m E 6840011.6 m N	Checked By: J.Boyle

Drill Model and Mounting: D4TAPG	Inclination: -90°	RL Surface: 261.38 m
Hole Diameter: 300 mm	Bearing:	Datum: AHD Operator: B.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations	
PT AD/IT			Not Observed	U00000 0.14-1.64 m		260.9	0.5		CI	RAIL	M (>PL) to M (~PL) M to W	St MD to D VD			RAIL	
				D00000 0.50-1.00 m					BALLAST: GRAVEL with cobble: medium to coarse grained angular, brown and grey, angular (<75mm) cobble.						BALLAST	
									FOUL BALLAST: GRAVEL trace sand: fine to coarse grained angular, grey, fine to coarse grained sand.						FOUL BALLAST	
									FILL: Sandy GRAVEL: fine to coarse grained sub-rounded to angular, dark brown, fine to coarse grained sand.						FILL	
									SANDY SILTY CLAY: medium plasticity, orange, fine to medium grained sand.						ALLUVIAL SOIL	
									SAND with silt and clay: fine to medium grained, dark brown, low plasticity fines.							
									Below 1.10m: trace clay.							
									Silty SAND trace gravel: fine to coarse grained, orange-brown and red, fine to medium rounded to sub-angular gravel.							
				D00100 1.00-1.50 m		260.4	1.0		SP							
				D00150 1.50-2.00 m		259.9	1.5									
				D00200 2.00-2.50 m		259.4	2.0									
				D00250 2.50-3.00 m		258.9	2.5									
				D00300 3.00-3.50 m		258.4	3.0									
						257.9	3.5			Hole Terminated at 3.50 m Target depth						
						257.4	4.0									

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
 No resistance ranging to refusal

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

Support
C - Casing

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL
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Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: C4 - Kurumbul Corridor
Hole Position: C4 - Kurumbul Corridor 287483.3 m E 6840011.6 m N

Commenced: 07/09/2021
Completed: 07/09/2021
Logged By: V.Chandrasena
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG
Hole Diameter: 300 mm

Inclination: -90°
Bearing:

RL Surface: 261.38 m
Datum: AHD Operator: B.Boga



310-03-TP3033 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 07/09/2021													
Project Name: Inland Rail B2G		Completed: 07/09/2021													
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena													
Hole Position: C4 - Kurrumbul Corridor 287771.0 m E 6840197.5 m N		Checked By: J.Boyle													
Drill Model and Mounting: D4TAPG		Inclination: -90°													
Hole Diameter: 300 mm		RL Surface: 263.33 m													
		Datum: AHD													
		Operator: B.Boga													
Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
AD/T		Not Observed		D00000 0.00-0.50 m		262.8	0.5		SM	TOPSOIL: Silty SAND trace gravel: fine to coarse grained, orange-brown, fine to medium sub-angular gravel, trace rootlets (<2mm).	D to M	D to VD			TOPSOIL
				B00050 0.50-1.00 m D00050 0.50-1.00 m						Sandy SILT trace gravel: low plasticity, white and yellow, fine to medium grained, fine to medium, subrounded gravel.					ALLUVIAL SOIL
				D00100 1.00-1.50 m						SAND: fine to medium grained, pale yellow, weakly cemented.					
				D00150 1.50-2.00 m						Below 1.50m: fine to coarse grained, orange.					
				D00200 2.00-2.50 m											
				D00250 2.50-3.00 m											
					260.3	3.0			Hole Terminated at 3.00 m Target depth						
						259.8	3.5								
						259.3	4.0								
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration  No resistance ranging to refusal Water  Level (Date)  Inflow  Partial Loss  Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL															

Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:13 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	07/09/2021
Project Name:	Inland Rail B2G	Completed:	07/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 287771.0 m E 6840197.5 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	263.33 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3034 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 08/09/2021
Project Name: Inland Rail B2G	Completed: 08/09/2021
Hole Location: C4 - Kurumbul Corridor	Logged By: V.Chandrasena
Hole Position: C4 - Kurumbul Corridor 289145.7 m E 6841123.3 m N	Checked By: J.Boyle

Drill Model and Mounting: D4TAPG	Inclination: -90°	RL Surface: 261.89 m
Hole Diameter: 300 mm	Bearing:	Datum: AHD Operator: B.Boga

Drilling Information								Soil Description								Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20				Pocket Penetrometer UCS (kPa) 100 200 300 400 500				Structure and Additional Observations
PT				U00000 0.14-1.64 m		261.4	0.5			RAIL						RAIL					
				BALLAST: GRAVEL with cobble: medium to coarse grained angular, grey and black, angular (<70mm) cobble.						BALLAST											
									FOUL BALLAST: Sandy GRAVEL: medium to coarse grained angular, black and brown, fine to coarse grained sand.							FOUL BALLAST					
															CAPPING						
									CAPPING: SAND trace gravel: fine to coarse grained, brown, medium to coarse grained sub-angular to angular gravel.							FILL					
				D00100 1.00-1.50 m		260.9	1.0		CI-CH	FILL: Sandy GRAVEL trace clay: fine to medium grained sub-rounded to sub-angular, brown, fine to coarse grained sand, low to medium plasticity clay.	VSt to H					ALLUVIAL SOIL					
				D00140 1.40-1.50 m		260.4	1.5		CI-CH	Silty Sandy CLAY trace gravel: medium to high plasticity, grey, fine to coarse grained sand, fine sub-angular gravel.	M (<PL)										
				SAMPLED FROM TUBE																	
				B00150 1.50-2.00 m		259.9	2.0														
				D00150 1.50-2.00 m		259.9	2.0														
				D00200 2.00-2.50 m		259.4	2.5														
				D00250 2.50-3.00 m		259.4	2.5		CH	Silty CLAY with sand: high plasticity, grey, fine to coarse grained sand.	M (<PL) to M (~PL)										
				D00300 3.00-3.50 m		258.9	3.0														
				D00350 3.50-4.00 m		258.4	3.5														
						257.9	4.0														

MG 4.02 LUB.G.L.B Log MG BOREHOLE MG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:13 10.02.00.04 D:\git\Borehole\In Situ Tool - DGD | Lib: DGD-TP 4.01 2.dpt 3.04 2018-07-02 Pj: DGD-TP 4.00 6.2017-11-25

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols
Based on Unified Soil Classification System

Support
C - Casing

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 289145.7 m E 6841123.3 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	261.89 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3035 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 08/09/2021	
Project Name: Inland Rail B2G		Completed: 08/09/2021	
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena	
Hole Position: C4 - Kurumbul Corridor 289990.1 m E 6841687.9 m N		Checked By: J.Boyle	
Drill Model and Mounting: D4TAPG		Inclination: -90°	
Hole Diameter: 300 mm		RL Surface: 265.10 m	
		Datum: AHD Operator: B.Boga	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
PT				U00000 0.14-1.64 m		264.6	0.5			RAIL BALLAST: GRAVEL trace cobble: medium to coarse grained angular, grey and black, angular (<75mm) cobble. FOUL BALLAST: GRAVEL trace sand: medium to coarse grained sub-angular to angular, dark brown, fine to coarse grained sand.					RAIL BALLAST FOUL BALLAST CAPPING FILL
				D00070 0.70-1.20 m		264.1	1.0		CH	CAPPING: COAL and ASH: black and pale grey. FILL: Gravelly SAND with silt and clay: fine to coarse grained, pale brown, fine to medium grained sub-rounded to sub-angular, low plasticity fines.	VSt			ALLUVIAL SOIL	
AD/T				B00120 1.20-1.70 m		263.6	1.5			Silty CLAY with sand trace gravel: high plasticity, black, fine to coarse grained sand, fine to medium sub-rounded to sub-angular gravel.					
				D00120 1.20-1.70 m		263.1	2.0								
				D00140 1.40-1.50 m		262.6	2.5								
				D00170 1.70-2.20 m		262.1	3.0								
				D00220 2.20-2.70 m		261.6	3.5			Below 1.20m: dark grey mottled white, with fine to medium grained sand.	M (<PL) H				
				D00270 2.70-3.20 m		261.1	4.0								
				D00320 3.20-3.70 m		261.6									
						261.1	4.0			Hole Terminated at 3.70 m Target depth					

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 289990.1 m E 6841687.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	265.10 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3036 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	26/06/2021
Project Name:	Inland Rail B2G	Completed:	26/06/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	H.Tran
Hole Position:	C4 - Kurumbul Corridor 290814.0 m E 6842238.8 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	270.74 m		
Hole Diameter:	125 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information				Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20					Pocket Penetrometer UCS (kPa) 100 200 300 400 500					Structure and Additional Observations
PT		Not Observed		U00013 0.14-1.63 m		270.2	0.5			RAIL	M (<PL)						RAIL						
				D00060 0.60-0.70 m		269.7	1.0		CI-CH	BALLAST with sand: medium to coarse sub-angular to angular, dark grey, fine to coarse grained sand							BALLAST						
										FILL: GRAVEL with sand: fine to coarse sub angular, dark grey, fine to coarse grained sand							FOUL BALLAST						
										FILL: Clayey Gravelly SAND: fine to coarse grained, dark brown, medium plasticity clay, fine to medium sub-angular / gravel							CAPPING						
										FILL: Silty SAND: fine to medium grained, brown							SUB-BASECOURSE						
				D00155 1.55-1.63 m		269.2	1.5			Silty CLAY with sand: medium to high plasticity, pale yellow brown, fine to medium grained sand							ALLUVIAL SOIL						
						268.7	2.0			Hole Terminated at 1.63 m Target depth. Bulk auger not completed													
						268.2	2.5																
						267.7	3.0																
						267.2	3.5																
						266.7	4.0																

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date)  Inflow  Partial Loss  Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	26/06/2021
Project Name:	Inland Rail B2G	Completed:	26/06/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	H.Tran
Hole Position:	C4 - Kurumbul Corridor 290814.0 m E 6842238.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	270.74 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3037 Depth Range: 0.14 - 1.63 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	26/06/2021
Project Name:	Inland Rail B2G	Completed:	26/06/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	H.Tran
Hole Position:	C4 - Kurumbul Corridor 291668.4 m E 6842734.4 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	270.89 m		
Hole Diameter:	125 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description										Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20					Pocket Penetrometer UCS (kPa) 100 200 300 400 500					Structure and Additional Observations
PT		Not Observed		U00013 0.14-1.63 m		270.4	0.5			RAIL							RAIL						
				D00045 0.45-0.55 m		270.4				BALLAST with sand: medium to coarse sub-angular to angular, dark grey, fine to coarse grained sand.						BALLAST							
						269.9	1.0		SM	FILL: Sandy GRAVEL: fine to medium sub-rounded to sub-angular, dark brown, fine to coarse grained sand.						FOUL BALLAST							
						269.4	1.5		CL-CI	FILL: Gravelly SAND: fine to coarse grained, dark brown, fine to coarse sub-rounded gravel. Silty SAND: fine to medium grained, pale brown. Below 1.01m: with fine to medium, sub-rounded gravel. Silty CLAY with gravel: low to medium plasticity, dark red and dark yellow brown, fine to medium sub-angular gravel.	M (<PL)					CAPPING							
				D00155 1.55-1.63 m		269.4				Hole Terminated at 1.63 m Target depth. Bulk auger not completed							ALLUVIAL SOIL						
						268.9	2.0																
						268.4	2.5																
						267.9	3.0																
						267.4	3.5																
						266.9	4.0																

Method

AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration

 No resistance ranging to refusal

Water

 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

Support

C - Casing

Graphic Log/Core Loss

 Core recovered (hatching indicates material)
 Core loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Plastic Limit

< PL
= PL
< PL

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

MG 4.02 LUB L8 Log MG BOREHOLE MG 4.02 GPJ <<DrawingFile>> 21/02/2022 22:14 10:02:00.04 D:\git\Lab and In Situ Tool - DGD | Lib: DGD-TP 4.01 2.dpt 3.04 2018-07-02 Pj: DGD-TP 4.00 6 2017-11-25

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
 No resistance ranging to refusal

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	26/06/2021
Project Name:	Inland Rail B2G	Completed:	26/06/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	H.Tran
Hole Position:	C4 - Kurumbul Corridor 291668.4 m E 6842734.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	270.89 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3038 Depth Range: 0.14 - 1.63 m

Project No.: B21003

Client: ARTC		Commenced: 08/09/2021	
Project Name: Inland Rail B2G		Completed: 08/09/2021	
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena	
Hole Position: C4 - Kurumbul Corridor 292590.5 m E 6843126.0 m N		Checked By: J.Boyle	

Drill Model and Mounting: D4TAPG		Inclination: -90°		RL Surface: 273.61 m	
Hole Diameter: 300 mm		Bearing:		Datum: AHD Operator: B.Boga	

Drilling Information					Soil Description							Observations								
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations					
PT	AD/T	Not Observed		U00000 0.14-1.64 m		273.1	0.5			RAIL					RAIL					
				D00050 0.50-1.00 m		273.1		SP	BALLAST: GRAVEL with cobble: medium to coarse grained angular, grey and black, angular (<85mm) cobble. FILL: SAND with gravel: fine to coarse grained, pale brown, fine to medium grained sub-rounded to sub-angular gravel. SAND: fine to coarse grained, pale brown.	MD to D				BALLAST FILL						
				B00100 1.00-1.50 m		272.6	1.0	SM	Clayey Silty SAND trace: fine to coarse grained, orange and grey, low to medium plasticity clay, fine to medium, subrounded gravel.	M										
				D00100 1.00-1.50 m		272.1														
				D00140 1.40-1.50 m		272.1	1.5	SP	SAND: fine to medium grained, orange, weakly cemented.											
				D00150 1.50-2.00 m		271.6	2.0													
				D00200 2.00-2.50 m		271.1	2.5													
				D00250 2.50-3.00 m		270.6	3.0													
				D00300 3.00-3.50 m		270.1	3.5													
										269.6	4.0			Hole Terminated at 3.50 m Target depth						

Method

AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Plastic Limit

< PL
= PL
> PL

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 292590.5 m E 6843126.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	273.61 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3039 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 293500.1 m E 6843512.6 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	266.93 m
Hole Diameter:	125 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
AD/T			Not Observed	D00000 D 0.00-0.50 m						SAND trace silt and clay, fine to coarse grained, pale brown, low plasticity clay, trace rootlets						TOPSOIL
				B00050 B 0.50-0.60 m		266.4	0.5		SW	SAND with silt and clay, fine to coarse grained, brown, low to medium plasticity clay	M - W	D - VD			ALLUVIAL SOIL	
				D00050 D 0.50-0.60 m					SW	silty SAND, yellow brown, fine to coarse grained						
				D00100 D 1.00-1.50 m		265.9	1.0				D					
				D00150 D 1.50-2.00 m		265.4	1.5			From 1.50m: pale brown, trace low plasticity clay		VD				
				D00200 D 2.00-2.50 m		264.9	2.0				M - D					
				D00250 D 2.50-3.00 m		264.4	2.5			From 2.50m: pale grey brown						
						263.9	3.0			Hole Terminated at 3.00 m Target depth						
						263.4	3.5									
						262.9	4.0									

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 293500.1 m E 6843512.6 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	266.93 m		
Hole Diameter:	125 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
						261.9	5.0								
						261.4	5.5								
						260.9	6.0								
						260.4	6.5								
						259.9	7.0								
						259.4	7.5								
						258.9	8.0								
						258.4	8.5								

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration 	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss 	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 293500.1 m E 6843512.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	266.93 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3040 Depth Range: 0.00 - 3.00 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 293500.1 m E 6843512.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	266.93 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3040 Depth Range: 0.00 - 3.00 m

Project No.: B21003

Client:		ARTC				Commenced:		13/09/2021																	
Project Name:		Inland Rail B2G				Completed:		13/09/2021																	
Hole Location:		C4 - Kurumbul Corridor				Logged By:		V.Chandrasena																	
Hole Position:		C4 - Kurrumbul Corridor 294427.8 m E 6843915.3 m N				Checked By:		J.Boyle																	
Drill Model and Mounting:				D4TAPG		Inclination:		-90°		RL Surface:		269.82 m													
Hole Diameter:						Bearing:				Datum:		AHD Operator: B.Boga													
Drilling Information						Soil Description						Observations													
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations										
E			Not Observed	D00000 D 0.00-0.20 m					CL-CI	TOPSOIL: Clayey silty SAND with gravel: fine grained grey brown, low plasticity fines, fine to medium sub-rounded to sub-angular gravel, trace roots (<10mm) / Silty CLAY with sand and gravel: low to medium plasticity, grey brown mottled white, fine to medium grained sand, fine to medium sub-rounded to sub-angular gravel Below 0.50m pale grey	M (<PL)	VSt			TOPSOIL										
				U00040 U 0.40-0.90 m B00050 B 0.50-0.70 m		269.3	0.5													ALLUVIAL SOIL					

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: C4 - Kurumbul Corridor
Hole Position: C4 - Kurumbul Corridor 294427.8 m E 6843915.3 m N

Commenced: 13/09/2021
Completed: 13/09/2021
Logged By: V.Chandrasena
Checked By: J.Boyle

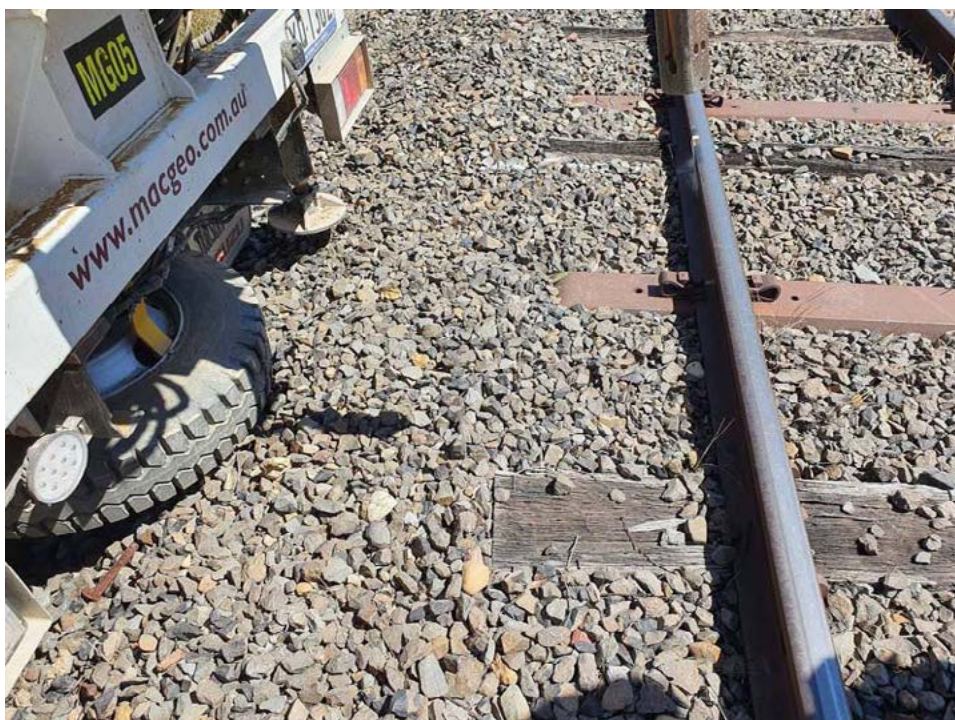
Drill Model and Mounting: D4TAPG
Hole Diameter:

Inclination: -90°
Bearing:

RL Surface: 269.82 m
Datum: AHD Operator: B.Boga



310-03-TP3041 Depth Range: 0.00 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 294427.8 m E 6843915.3 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:		RL Surface:	269.82 m
		Bearing:	
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3041 Depth Range: 0.00 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 296053.5 m E 6845068.5 m N	Checked By:	C. Green

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	263.65 m
Hole Diameter:	100 - 300 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga

Drilling Information							Soil Description							Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20				Pocket Penetrometer UCS (kPa) 100 200 300 400 500				Structure and Additional Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PT AD/T		Not Observed		U00000 U 0.14-1.64 m		263.1	0.5			RAIL	D to M																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 13/09/2021	
Project Name: Inland Rail B2G		Completed: 13/09/2021	
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena	
Hole Position: C4 - Kurumbul Corridor 296053.5 m E 6845068.5 m N		Checked By: C. Green	
Drill Model and Mounting: D4TAPG		Inclination: -90°	
Hole Diameter: 100 - 300 mm		RL Surface: 263.65 m	
		Datum: AHD Operator: B.Boga	

Drilling Information				Soil Description										Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20				Pocket Penetrometer UCS (kPa) 100 200 300 400 500				Structure and Additional Observations
						258.6	5.0														
						258.1	5.5														
						257.6	6.0														
						257.1	6.5														
						256.6	7.0														
						256.1	7.5														
						255.6	8.0														
						255.1	8.5														

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System			

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 296053.5 m E 6845068.5 m N	Checked By:	C. Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	100 - 300 mm	Bearing:	
		RL Surface:	263.65 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3043 Depth Range: 0.00 m



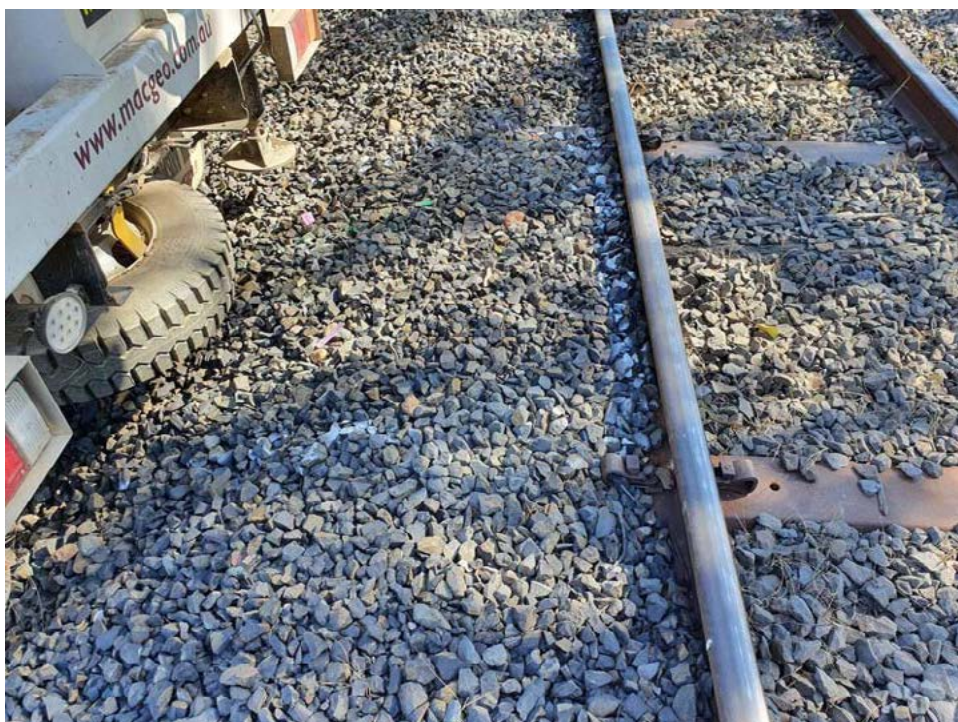
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/09/2021
Project Name:	Inland Rail B2G	Completed:	13/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 296053.5 m E 6845068.5 m N	Checked By:	C. Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	100 - 300 mm	Bearing:	
		RL Surface:	263.65 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3043 Depth Range: 0.00 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 08/09/2021											
Project Name: Inland Rail B2G				Completed: 08/09/2021											
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena											
Hole Position: C4 - Kurrumbul Corridor 296723.5 m E 6845546.5 m N				Checked By: J.Boyle											
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 264.79 m									
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga									
Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
AD/T		Not Observed		D00000 0.00-0.50 m		264.3	0.5		CL-CI	TOPSOIL: Silty CLAY with sand: medium plasticity, brown, fine to medium grained sand, trace rootlets.					TOPSOIL
				B00050 0.50-1.00 m D00050 0.50-1.00 m PP 0.80 m >600 kPa		263.8	1.0			Silty CLAY with sand: low to medium plasticity, pale brown, fine grained sand.	St				ALLUVIAL SOIL
				D00100 1.00-1.50 m		263.3	1.5				VSt				
				D00150 1.50-2.00 m		262.8	2.0				M (<PL)				
				D00200 2.00-2.50 m		262.3	2.5				H				
				D00250 2.50-3.00 m		261.8	3.0								
						261.3	3.5								
						260.8	4.0								
				Hole Terminated at 3.00 m Target depth											

Project No.: B21003

MG 4.02 LIBGLB Loc MG BOREHOLE NG 4.02.GPJ <<DrawingFile>> 21/02/2022 22:15 10.02.00.04 Databl Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpl 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017.11.25

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 296723.5 m E 6845546.5 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	264.79 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3044 Depth Range: 0.00 - 1.50 m

Project No.: B21003

Client: ARTC				Commenced: 08/09/2021																			
Project Name: Inland Rail B2G				Completed: 08/09/2021																			
Hole Location:				Logged By: V.Chandrasena																			
Hole Position: C4 - Kurrumbul Corridor 297286.2 m E 6845904.3 m N				Checked By: C. Green																			
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 265.74 m																	
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga																	
Drilling Information				Soil Description				Observations															
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations							
AD/T			Not Observed	D00000 0.00-0.50 m		265.2	0.5		CL-CI	TOPSOIL: Silty CLAY trace sand: low to medium plasticity, brown, fine to coarse grained sand, trace rootlets <2mm	M (~PL)	St to VSt				TOPSOIL							
				B00050 0.50-1.00 m																	ALLUVIAL SOIL		
				X2 D00050 0.50-1.00 m																			
				D00100 1.00-1.50 m																			
				D00150 1.50-2.00 m																			
				D00200 2.00-2.50 m																			
				D00250 2.50-3.00 m		263.2	2.5		SP-SC	Clayey silty SAND: fine to coarse grained sand, pale grey and brown, low plasticity clay	M	MD to D				ALLUVIAL SOIL							
						262.7	3.0			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface													
						262.2	3.5																
						261.7	4.0																
Method AS - Auger Screwing RR - Rock Roller WB - Washbore				Penetration No resistance ranging to refusal				Water Level (Date) Inflow Partial Loss Complete Loss				Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test				Moisture Condition D - Dry M - Moist W - Wet				Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Support C - Casing				Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss				Classification Symbols and Soil Descriptions Based on Unified Soil Classification System				Plastic Limit < PL = PL > PL											

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 08/09/2021			
Project Name: Inland Rail B2G				Completed: 08/09/2021			
Hole Location:				Logged By: V.Chandrasena			
Hole Position: C4 - Kurrumbul Corridor 297286.2 m E 6845904.3 m N				Checked By: C. Green			
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 265.74 m	
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga	

Drilling Information				Soil Description						Observations												
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP				Pocket Penetrometer UCS (kPa)				Structure and Additional Observations	
													Blows/100mm	5	10	15	20	100	200	300		400
						260.7	5.0															
						260.2	5.5															
						259.7	6.0															
						259.2	6.5															
						258.7	7.0															
						258.2	7.5															
						257.7	8.0															
						257.2	8.5															

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Plastic Limit

< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:		Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 297286.2 m E 6845904.3 m N	Checked By:	C. Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	265.74 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3507 Depth Range: 0.00 - 3.00 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/09/2021
Project Name:	Inland Rail B2G	Completed:	08/09/2021
Hole Location:		Logged By:	V.Chandrasena
Hole Position:	C4 - Kurrumbul Corridor 297286.2 m E 6845904.3 m N	Checked By:	C. Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	265.74 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3507 Depth Range: 0.00 - 3.00 m

POSITION : E: 286894.7, N: 6840020.4 ()

SURFACE ELEVATION : 269.25 (AHD)

EQUIPMENT TYPE : 13t backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 24/08/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE

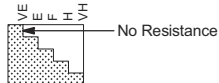
EXCAVATION INFORMATION					MATERIAL										
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETROMETER kPa	STRUCTURE & Other Observations	
			Not Observed	D00000 J00000 0.10m	0.0			TOPSOIL: SAND: fine to coarse grained, dark brown with rootlets (<2mm).						TOPSOIL	
								0.20m							RESIDUAL SOIL
				0.40m B00040 0.50m J00050	0.5			0.40m		M	VL				
				0.60m								S			
				0.80m B00080								St			
				1.00m				0.80m				VSt			
				1.20m B00120											
				1.50m											
				2.0			2.00m							EXTREMELY WEATHERED MATERIAL	
			2.50m B00250	2.5				Extremely weathered SANDSTONE: recovered as Sandy silty GRAVEL: fine to coarse, sub-angular to angular, orange to brown, fine to coarse grained sand, low plastic limit fines, with cobbled and boulders to 200 mm.							
			2.80m												
				3.0			3.00m								
								Hole Terminated at 3.00 m Target depth Testpit reinstated to surface							
			</												

PHOTOGRAPHS
NOTES

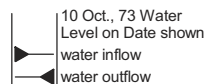
METHOD

- N Natural Exposure
- X Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

- U - Undisturbed Sample
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- PP - Pocket Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

- D - Dry
- M - Moist
- W - Wet
- M > PL - Moisture Content > Plastic Limit
- M ~ PL - Moisture Content = Plastic Limit
- M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

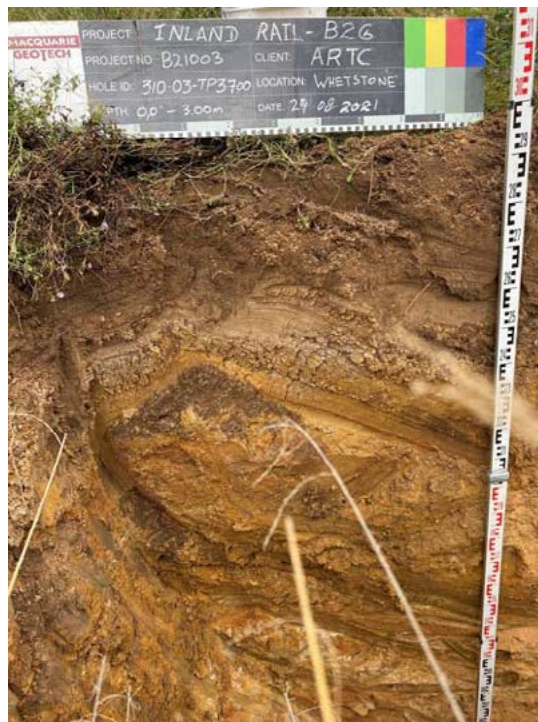
See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286894.7, N: 6840020.4 ()	SURFACE ELEVATION : 269.25 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3700 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3700 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286894.7, N: 6840020.4 ()	SURFACE ELEVATION : 269.25 (AHD)
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE	CHECKED BY : J.Boyle



310-03-TP3700 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3700 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286894.7, N: 6840020.4 ()	SURFACE ELEVATION : 269.25 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3700 - 5 Depth Range: 0.00 - 3.00 m



310-03-TP3700 - 6 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287164.9, N: 6840125.6 ()

SURFACE ELEVATION : 265.92 (AHD)

EQUIPMENT TYPE : 13t backhoe

METHOD : 450mm Toothed Bucket

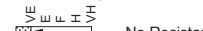
DATE EXCAVATED : 24/08/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE

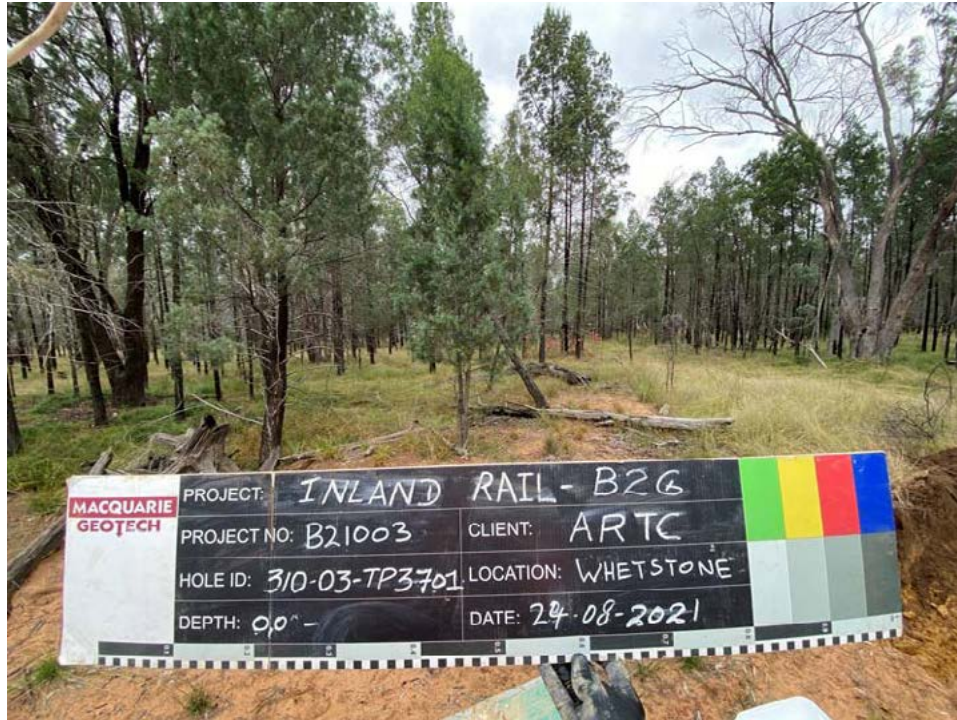
[illegible]PHOTOGRAPHS
NOTES

METHOD	PENETRATION 	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified	VS - Very Soft
X Existing Excavation		D - Disturbed Sample	Classification System	S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		F - Firm
B Bulldozer Blade		MC - Moisture Content	MOISTURE	St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)	D - Dry	Vst - Very Stiff
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)	M - Moist	H - Hard
			W - Wet	VL - Very Loose
			M > PL- Moisture Content > Plastic Limit	L - Loose
			M ~ PL- Moisture Content = Plastic Limit	MD - Medium Dense
			M < PL- Moisture Content < Plastic Limit	D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 287164.9, N: 6840125.6 ()	SURFACE ELEVATION : 265.92 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3701 - 1 Depth Range: 0.00 - 1.10 m



310-03-TP3701 - 2 Depth Range: 0.00 - 1.10 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287164.9, N: 6840125.6 ()	SURFACE ELEVATION : 265.92 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3701 - 3 Depth Range: 0.00 - 1.10 m



310-03-TP3701 - 4 Depth Range: 0.00 - 1.10 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287164.9, N: 6840125.6 ()	SURFACE ELEVATION : 265.92 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3701 - 5 Depth Range: 0.00 - 1.10 m



310-03-TP3701 - 6 Depth Range: 0.00 - 1.10 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287446.5, N: 6840222.5 ()

SURFACE ELEVATION : 267.43 (AHD)

EQUIPMENT TYPE : 13t backhoe

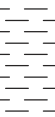
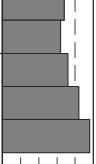
METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 25/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.80 m LONG 1.20 m WIDE

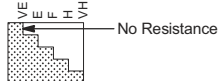
EXCAVATION INFORMATION				MATERIAL									
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed			D00000 J00000 0.10m 0.20m	0.0			TOPSOIL: Silty SAND with gravel trace cobble: fine to medium grained, dark brown, fine to coarse grained rounded to sub-angular gravel, sub-angular (<150mm) cobbles, roots (<5mm).						TOPSOIL
			0.40m J00040 0.50m B00050	266.9 0.5		SP- SM	Gravelly, silty SAND: fine to medium grained, black brown, fine to coarse rounded to sub-angular gravel.	M to W		L to MD			ALLUVIAL SOIL
			0.70m			CL-CI	Sandy Silty CLAY with sand: low to medium plasticity, orange-brown, fine to medium grained sand.	M (<PL)		H			RESIDUAL SOIL
			1.20m B00120	266.4 1.0			Highly weathered SANDSTONE: fine to medium grained sand, pale yellow and brown, breaking up to extremely weathered material < 300mm.						HIGHLY WEATHERED MATERIAL
			1.40m	265.9 1.5									
							Hole Terminated at 1.70 m Refusal - Very Slow Progress Testpit reinstated to surface						
				265.4 2.0									
				264.9 2.5									
				264.4 3.0									
				263.9 3.5									

PHOTOGRAPHS
NOTES

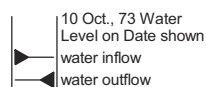
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287446.5, N: 6840222.5 ()	SURFACE ELEVATION : 267.43 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.80 m LONG 1.20 m WIDE		



310-03-TP3702 - 1 Depth Range: 0.00 - 1.70 m



310-03-TP3702 - 2 Depth Range: 0.00 - 1.70 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287446.5, N: 6840222.5 ()	SURFACE ELEVATION : 267.43 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.80 m LONG 1.20 m WIDE		



310-03-TP3702 - 3 Depth Range: 0.00 - 1.70 m



310-03-TP3702 - 4 Depth Range: 0.00 - 1.70 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287446.5, N: 6840222.5 ()	SURFACE ELEVATION : 267.43 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.80 m LONG 1.20 m WIDE		



310-03-TP3702 - 5 Depth Range: 0.00 - 1.70 m

POSITION : E: 287667.1, N: 6840309.2 ()

SURFACE ELEVATION : 267.13 (AHD)

EQUIPMENT TYPE : 13t backhoe

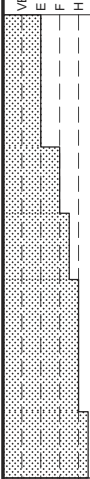
METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 25/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.20 m LONG 1.40 m WIDE

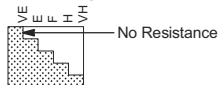
EXCAVATION INFORMATION				MATERIAL									
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations	
		Not Observed	D00000 J00000 0.10m 0.20m	0.0		TOPSOIL: SAND trace silt and clay: fine to medium grained, dark brown, low to medium plasticity fines, trace rootlets (<5mm).					TOPSOIL		
			0.40m J00040 0.50m	0.266.6	SP	SAND trace silt and clay: fine to medium grained, pale brown, low to medium fines. Below 0.30m: grey in colour.	M	L			ALLUVIAL SOIL		
			0.60m B00060	0.5	CI	Sandy Silty CLAY with gravel: low to medium plasticity, orange-brown, fine to medium grained sand.	W	MD to D			RESIDUAL SOIL		
			0.80m B00080	0.80m		Highly weathered SANDSTONE: fine to coarse grained, red-brown, orange-brown and grey-white.	M (<PL)	VSt to H			HIGHLY WEATHERED MATERIAL		
			1.00m	1.0									
				1.20m		Moderately weathered to highly weathered sandstone.							
				263.6			1.40m						
				263.6			Hole Terminated at 1.40 m Refusal - Very Slow Progress Testpit reinstated to surface						
				265.1									
				2.0									
				264.6									
				2.5									
				264.1									
				3.0									
				263.6									
				3.5									
				4.0									

PHOTOGRAPHS
NOTES

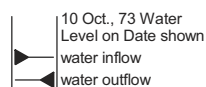
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287667.1, N: 6840309.2 ()	SURFACE ELEVATION : 267.13 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.20 m LONG 1.40 m WIDE		



310-03-TP3703 - 1 Depth Range: 0.00 - 1.40 m



310-03-TP3703 - 2 Depth Range: 0.00 - 1.40 m

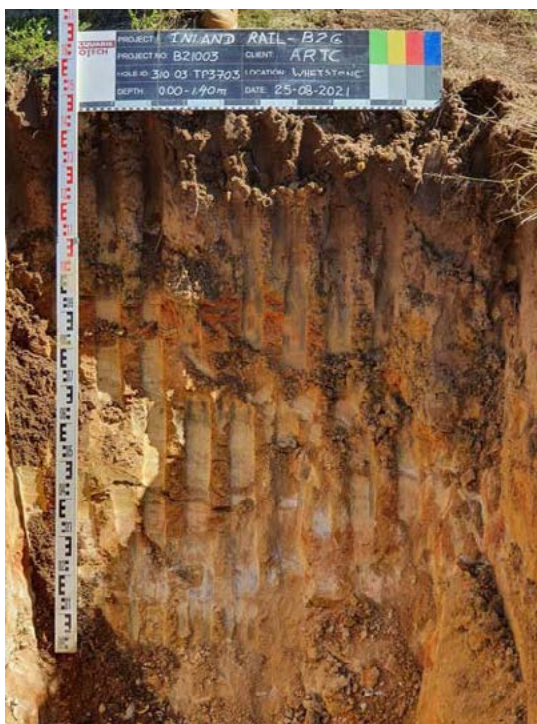
See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287667.1, N: 6840309.2 ()	SURFACE ELEVATION : 267.13 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.20 m LONG 1.40 m WIDE		



310-03-TP3703 - 3 Depth Range: 0.00 - 1.40 m



310-03-TP3703 - 4 Depth Range: 0.00 - 1.40 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287667.1, N: 6840309.2 ()	SURFACE ELEVATION : 267.13 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.20 m LONG 1.40 m WIDE		



310-03-TP3703 - 5 Depth Range: 0.00 - 1.40 m



310-03-TP3703 - 6 Depth Range: 0.00 - 1.40 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286699.2, N: 6840209.5 ()

SURFACE ELEVATION : 280.94 (AHD)

EQUIPMENT TYPE : 13t backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 24/08/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE

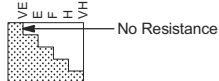
EXCAVATION INFORMATION					MATERIAL									
PENETRATION			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETROMETER kPa	STRUCTURE & Other Observations
VE	E	F												
					0.0			TOPSOIL: Sandy silty GRAVEL: fine to coarse sub-angular to angular, brown, fine to coarse grained sand.						TOPSOIL
					0.10m			Sandy CLAY: low plasticity, orange to brown and red, fine to coarse grained sand.		Vst				RESIDUAL SOIL
					0.40m		CL							
					J00040									
					0.50m					H				0.30: PP In-situ >600 kPa
					0.60m			Extremely weathered SANDSTONE: recovered as Sandy GRAVEL: fine to coarse angular, pale orange to brown, fine to coarse grained sand, with cobbles (<300mm).						EXTREMELY WEATHERED MATERIAL
					B00060									
				Not Observed	1.00m									
					279.9									
					1.0									
					279.4									
					1.5									
					278.9									
					2.0			Hole Terminated at 1.80 m Refusal - Very Slow Progress Testpit reinstated to surface						
					278.4									
					2.5									
					277.9									
					3.0									
					277.4									
					3.5									
					4.0									

PHOTOGRAPHS
NOTES

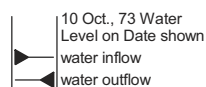
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286699.2, N: 6840209.5 ()	SURFACE ELEVATION : 280.94 (AHD)
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE	CHECKED BY : J.Boyle



310-03-TP3704 - 1 Depth Range: 0.00 - 1.80 m



310-03-TP3704 - 2 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286699.2, N: 6840209.5 ()	SURFACE ELEVATION : 280.94 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3704 - 3 Depth Range: 0.00 - 1.80 m



310-03-TP3704 - 4 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 286699.2, N: 6840209.5 ()	SURFACE ELEVATION : 280.94 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.00 m LONG 1.00 m WIDE		



310-03-TP3704 - 5 Depth Range: 0.00 - 1.80 m



310-03-TP3704 - 6 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287095.0, N: 6840404.8 ()

SURFACE ELEVATION : 272.42 (AHD)

EQUIPMENT TYPE : 13t backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 24/08/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.20 m LONG 1.10 m WIDE

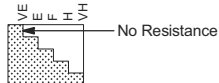
EXCAVATION INFORMATION					MATERIAL											
VE E F H PENETRATION				GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETROMETER kPa	STRUCTURE & Other Observations	
Not Observed				J00000 0.10m	0.0			0.10m	TOPSOIL: SAND trace gravel: dark brown with rootlets (<2mm).					100	TOPSOIL	
							SP		SAND trace gravel: fine to coarse grained, dark brown, fine to coarse, sub-angular to angular gravel.	M	VL				RESIDUAL SOIL	
				0.40m				0.40m								
				J00040 0.50m	271.9		CL		Sandy silty CLAY trace gravel: low plasticity, red-brown and mottled orange, fine to coarse grained sand, fine to medium sub-angular to angular gravel.	M (~PL)	H					
				B00050	0.5			0.80m								
				0.70m												
				1.00m	271.4		SP		Clayey silty SAND trace gravel: fine to coarse grained, brown and grey, low plasticity fines, fine to medium sub-angular gravel.	M	VD					
B00100	1.0															
1.20m																
1.40m	270.9															
B00140	1.40m															
1.60m	270.9															
						</										

PHOTOGRAPHS
NOTES

METHOD

- N Natural Exposure
- X Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

- U - Undisturbed Sample
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- PP - Pocket Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

- D - Dry
- M - Moist
- W - Wet
- M > PL - Moisture Content > Plastic Limit
- M ~ PL - Moisture Content = Plastic Limit
- M < PL - Moisture Content < Plastic Limit

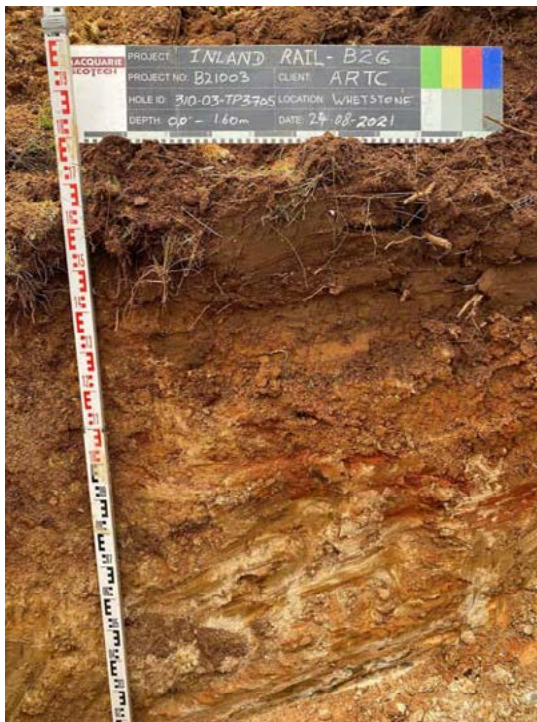
CONSISTENCY/
RELATIVE DENSITY

- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287095.0, N: 6840404.8 ()	SURFACE ELEVATION : 272.42 (AHD)
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper
EXCAVATION DIMENSIONS : 4.20 m LONG 1.10 m WIDE	CHECKED BY : J.Boyle



310-03-TP3705 - 3 Depth Range: 0.00 - 1.60 m



310-03-TP3705 - 4 Depth Range: 0.00 - 1.60 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287095.0, N: 6840404.8 ()	SURFACE ELEVATION : 272.42 (AHD)	
EQUIPMENT TYPE : 13t backhoe	METHOD : 450mm Toothed Bucket	
DATE EXCAVATED : 24/08/2021	LOGGED BY : J.Cooper	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.20 m LONG 1.10 m WIDE		



310-03-TP3705 - 5 Depth Range: 0.00 - 1.60 m



310-03-TP3705 - 6 Depth Range: 0.00 - 1.60 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287475.2, N: 6840492.4 ()

SURFACE ELEVATION : 269.03 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 25/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE

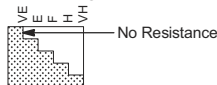
EXCAVATION INFORMATION					MATERIAL										
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed															
J00000 0.10m															
0.40m J00040 0.50m															
0.60m B00060															
0.80m B00080															
1.00m															

PHOTOGRAPHS
NOTES

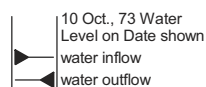
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSst - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287475.2, N: 6840492.4 ()	SURFACE ELEVATION : 269.03 (AHD)	
EQUIPMENT TYPE : Backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE		



310-03-TP3706 - 1 Depth Range: 0.00 - 1.00 m



310-03-TP3706 - 2 Depth Range: 0.00 - 1.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287475.2, N: 6840492.4 ()	SURFACE ELEVATION : 269.03 (AHD)	
EQUIPMENT TYPE : Backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE		



310-03-TP3706 - 3 Depth Range: 0.00 - 1.00 m



310-03-TP3706 - 4 Depth Range: 0.00 - 1.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 287475.2, N: 6840492.4 ()	SURFACE ELEVATION : 269.03 (AHD)	
EQUIPMENT TYPE : Backhoe	METHOD : 600mm Toothed Bucket	
DATE EXCAVATED : 25/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE		



310-03-TP3706 - 5 Depth Range: 0.00 - 1.00 m



310-03-TP3706 - 6 Depth Range: 0.00 - 1.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 22/02/2021
Project Name: Inland Rail B2G	Completed: 23/02/2021
Hole Location:	Logged By: V. Chandrasena
Hole Position: Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 244.03 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: J. Komung

Drilling Information							Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				J00020 0.20-0.30 m PID 0.20 m 0.4 ppm J00050 0.50-0.60 m S00050 SPT 0.50-0.95 m 4,4,5 N=9 PID 0.50 m 0.3 ppm J00100 1.00-1.10 m U00100 1.00-1.45 m PID 1.00 m 0.3 ppm D00150 1.50-2.00 m SPT 1.50-1.95 m 9,11,17 N=28 D00200 D00300 3.00-3.50 m		243.0	1		CH	TOPSOIL: sandy silty CLAY trace gravel, medium to high plasticity, grey brown, fine to coarse grained sand, fine to medium sub-angular gravel, trace rootlets.	M				TOPSOIL	
									SC	Sandy silty CLAY: high plasticity, green grey mottled white, fine to coarse grained sand.	(>PL) to M (-PL)	St			ALLUVIAL SOIL	
										Clayey silty SAND : fine to coarse grained, grey mottled yellow, medium to high plasticity clay.						
										SP	SAND with clay trace gravel: fine to coarse grained, yellow brown, medium plasticity clay, fine sub-rounded gravel.	M to W				
												MD				
				S00350 SPT 3.50-3.95 m 6,7,8 N=15 PP 3.70 m =340 kPa		240.0	4		CL-CI	Silty CLAY with sand: low to medium plasticity, yellow brown mottled grey and black, fine to coarse grained sand.				x		
				D00450 4.50-5.00 m		239.0	5		CI	Silty CLAY trace sand: medium plasticity, green grey, fine to medium grained sand.	M (>PL) to M (-PL)					
				S00500 SPT 5.00-5.45 m 3,3,4 N=7 PP 5.40 m =230 kPa		238.0	6							x		
				D00600 6.00-6.50 m												
				S00650 SPT 6.50-6.95 m 2,4,22					SP	Below 06.00m : green grey mottled yellow.	M to W	MD		x		
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Support C - Casing Water Level (Date) Inflow Partial Loss Complete Loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density Plastic Limit < PL = PL < PL																

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density
Support C - Casing	Core recovered (hatching indicates material) Core loss		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL	

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 22/02/2021														
Project Name: Inland Rail B2G		Completed: 23/02/2021														
Hole Location:		Logged By: V. Chandrasena														
Hole Position: Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N		Checked By: J.Boyle														
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°														
Hole Diameter: 115 mm		RL Surface: 244.03 m														
		Datum: AHD Operator: J. Komung														
Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				N=26 PP 6.80 m =160 kPa		236.0	8		SP	Gravelly SAND trace silt and clay: fine to coarse grained, black grey, fine to coarse sub-rounded gravel, low to medium plasticity clay. (continued)	M to W	MD				ALLUVIAL SOIL
				D00750 7.50-8.00 m					GP	Sandy GRAVEL trace silt and clay: fine to coarse sub-rounded, green grey, fine to coarse grained sand, low to medium plasticity clay.						
				S00800 SPT 8.00-8.45 m 11,18,24 N=42					SP	Clayey Gravelly SAND trace silt: fine to coarse grained, black green grey, low plasticity clay, fine to coarse sub-rounded to sub-angular gravel.						
				D00900 9.00-9.50 m												
				S00950 SPT 9.50-9.95 m 2,5,20 N=25												
				D01050 10.50-11.00 m												
				S01100 SPT 11.00-11.38 m 7,9,15/80mm HB N=24/230mm												
				D01200 12.00-12.50 m											12.50: Was unable to execute the SPT due to "gravelly sand" kept collapsing in to the bore hole.	
				D01350 13.50-14.00 m												
<u>Method</u>		<u>Penetration</u>		<u>Water</u>		<u>Samples and Tests</u>		<u>Moisture Condition</u>		<u>Consistency/Relative Density</u>						
AS - Auger Screwing RR - Rock Roller WB- Washbore		 No resistance ranging to refusal		 Level (Date)  Inflow  Partial Loss  Complete Loss				D - Dry M - Moist W - Wet								
<u>Support</u>						<u>Classification Symbols and Soil Descriptions</u>		<u>Plastic Limit</u>								
C - Casing		 Core recovered (hatching indicates material)  Core loss				Based on Unified Soil Classification System		< PL = PL < PL								

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 22/02/2021	
Project Name: Inland Rail B2G		Completed: 23/02/2021	
Hole Location:		Logged By: V. Chandrasena	
Hole Position: Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 244.03 m	
		Datum: AHD Operator: J. Komung	

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T						229.0	15		SP	Clayey Gravelly SAND trace silt: fine to coarse grained, black green grey, low plasticity clay, fine to coarse sub-rounded to sub-angular gravel. (continued)	MD to D			ALLUVIAL SOIL
						228.0	16		Below 15:00m : with clay and silt, low to medium plasticity.					
						227.0	17		GP	Sandy GRAVEL trace silt and clay: fine to coarse sub-rounded to sub-angular, grey black, fine to coarse grained sand, low to medium plasticity clay.				
						226.0	18							
WB				S01700 SPT 17.00-17.45 m 9,20,17 N=37		225.0	19			W				
				S01850 SPT 18.50-18.90 m 9,24,30/100mm N=54/250mm		224.0	20			VD				
				S02000 SPT 20.00-20.45 m 3,7,15 N=22 PP 20.40 m =350 kPa		224.0			MH	Clayey SILT with sand trace gravel: low plasticity, blue grey, fine grained sand, fine to medium sub-angular to angular gravel.	M (>PL)	VSt	x	

Method
AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density

Plastic Limit
< PL
= PL
< PL

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Core recovered (hatching indicates material)
Core loss

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung

Drilling Information							Soil Description						Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S02150 SPT 21.50-21.95 m 10,12,13 N=25 PP 21.80 m =430 kPa		222.0	22		MH	Clayey SILT with sand trace gravel: low plasticity, blue grey, fine grained sand, fine to medium sub-angular to angular gravel. (continued)	M (>PL)	VSt		ALLUVIAL SOIL
				S02300 SPT 23.00-23.45 m 5,6,8 N=14 PP 23.30 m =230 kPa		221.0	23		SC-SM	Silty SAND with clay : fine grained, grey black, low plasticity clay.				
				S02450 SPT 24.50-24.95 m 6,5,6 N=11 PP 24.70 m =100 kPa		220.0	24							
				S02600 SPT 26.00-26.45 m 15,9,18 N=27		219.0	25							
				S02750 SPT 27.50-27.95 m 8,11,14		218.0	26		SP	SAND with silt and clay trace gravel : fine to coarse grained, grey black, low plasticity clay, fine rounded to sub rounded gravel.				
						217.0	27							
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Support C - Casing Core recovered (hatching indicates material) Core loss Samples and Tests Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density Plastic Limit < PL = PL < PL Classification Symbols and Soil Descriptions Based on Unified Soil Classification System														

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	244.03 m		
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator:	J. Komung

Drilling Information							Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				N=25					SP	SAND with silt and clay trace gravel : fine to coarse grained, grey black, low plasticity clay, fine rounded to sub rounded gravel. (continued)					ALLUVIAL SOIL	
				S02900 SPT 29.00-29.45 m 14,8,6 N=14		215.0	29		SP-SM	Silty SAND trace clay : fine grained, grey black, low plasticity clay.		MD				
						214.0	30									
				S03050 SPT 30.50-30.95 m 8,4,4 N=8		213.0	31			Below 30.50m : fine to coarse grained sand.			L			
						212.0	32									
				S03200 SPT 32.00-32.45 m 8,9,12 N=21		211.0	33									
						210.0	34					MD				
				S03350 SPT 33.50-33.95 m 6,8,10 N=18												

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss		D - Dry M - Moist W - Wet	
Support			Classification Symbols and Soil Descriptions	Plastic Limit	
C - Casing	Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System	< PL = PL < PL	

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 22/02/2021			
Project Name: Inland Rail B2G				Completed: 23/02/2021			
Hole Location:				Logged By: V. Chandrasena			
Hole Position: Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N				Checked By: J.Boyle			
Drill Model and Mounting: Comacchio 305/Track				Inclination: -90°		RL Surface: 244.03 m	
Hole Diameter: 115 mm				Bearing:		Datum: AHD Operator: J. Komung	

Drilling Information				Soil Description						Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
				S03500 SPT 35.00-35.45 5,7,8 N=15					SC	Clayey silty SAND : fine to coarse grained, black blue grey mottled yellow brown, medium plasticity clay.	W	MD		100 200 300 400 500	ALLUVIAL SOIL	
						208.0	36			Hole Terminated at 35.45 m Target depth. Hole grouted to surface. Hole grouted to surface.						
						207.0	37									
						206.0	38									
						205.0	39									
						204.0	40									
						203.0	41									

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

Support

C - Casing

Plastic Limit

< PL
= PL
< PL

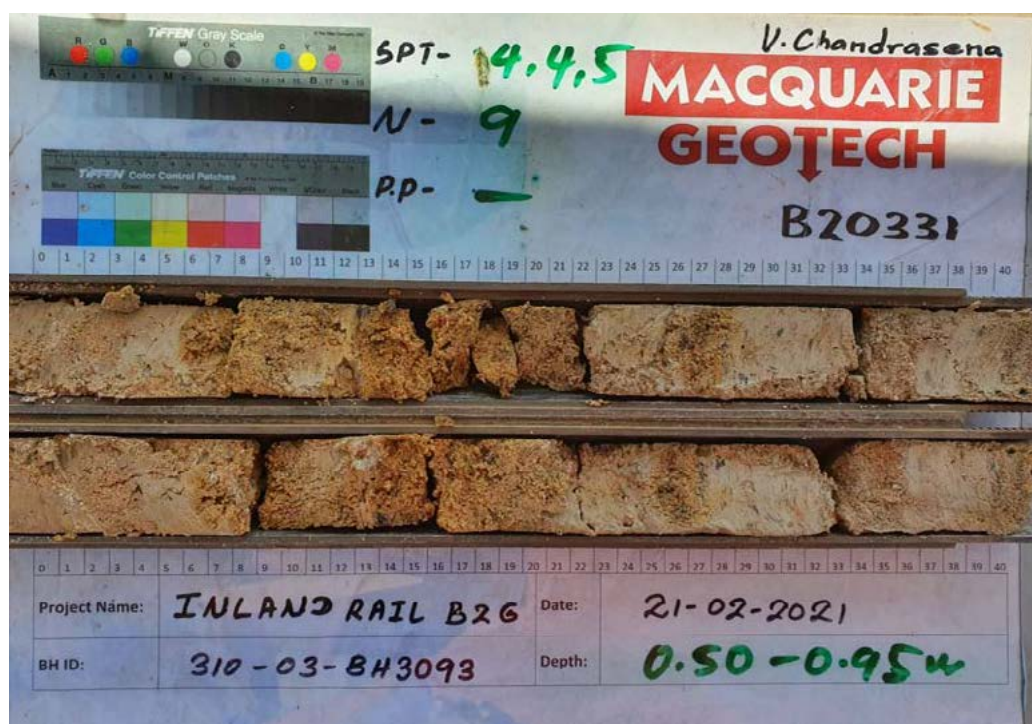
Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

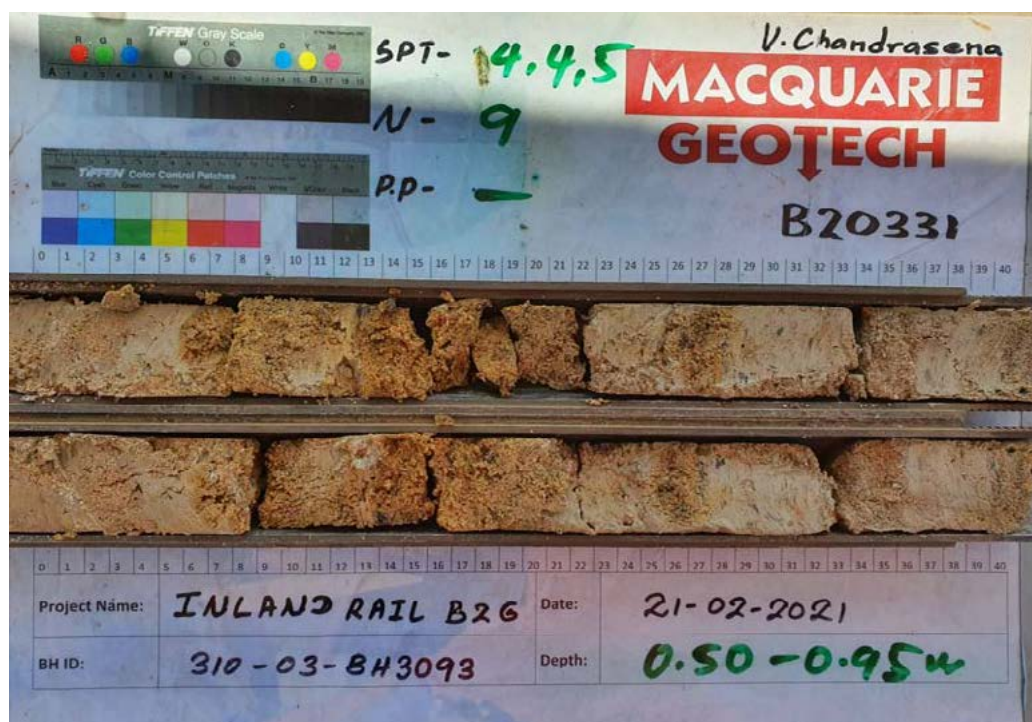
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 0.50 - 0.95 m

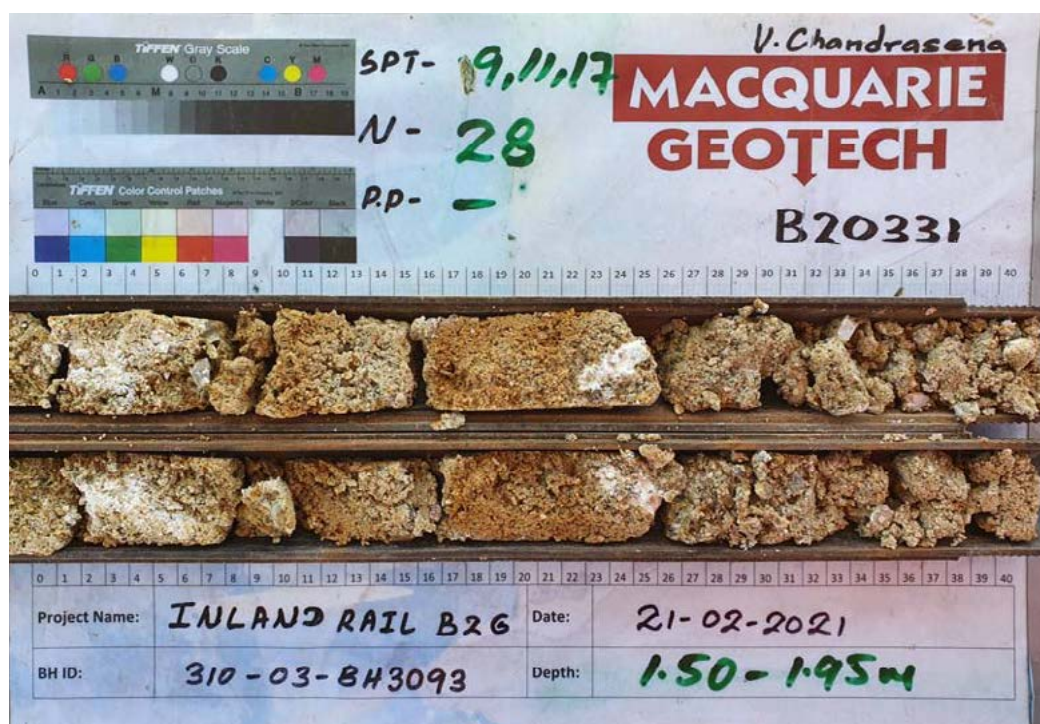


310-03-BH3093 Depth Range: 0.50 - 0.95 m

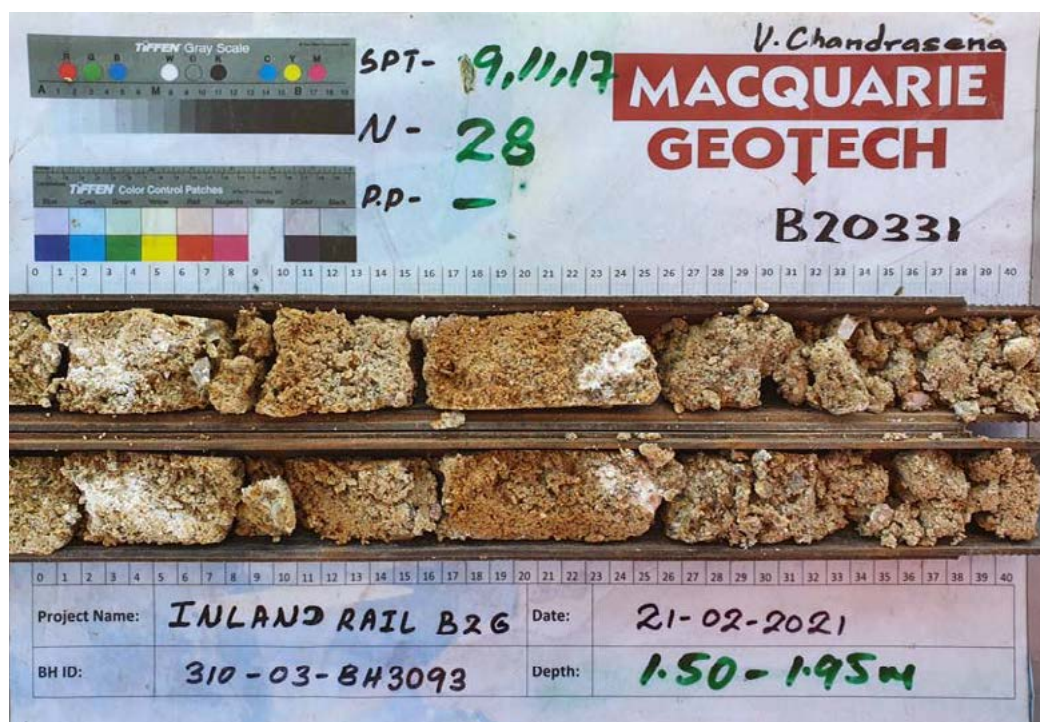
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 1.50 - 1.95 m



310-03-BH3093 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 3.50 - 3.95 m



310-03-BH3093 Depth Range: 3.50 - 3.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 5.00 - 5.45 m



310-03-BH3093 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 6.50 - 6.95 m

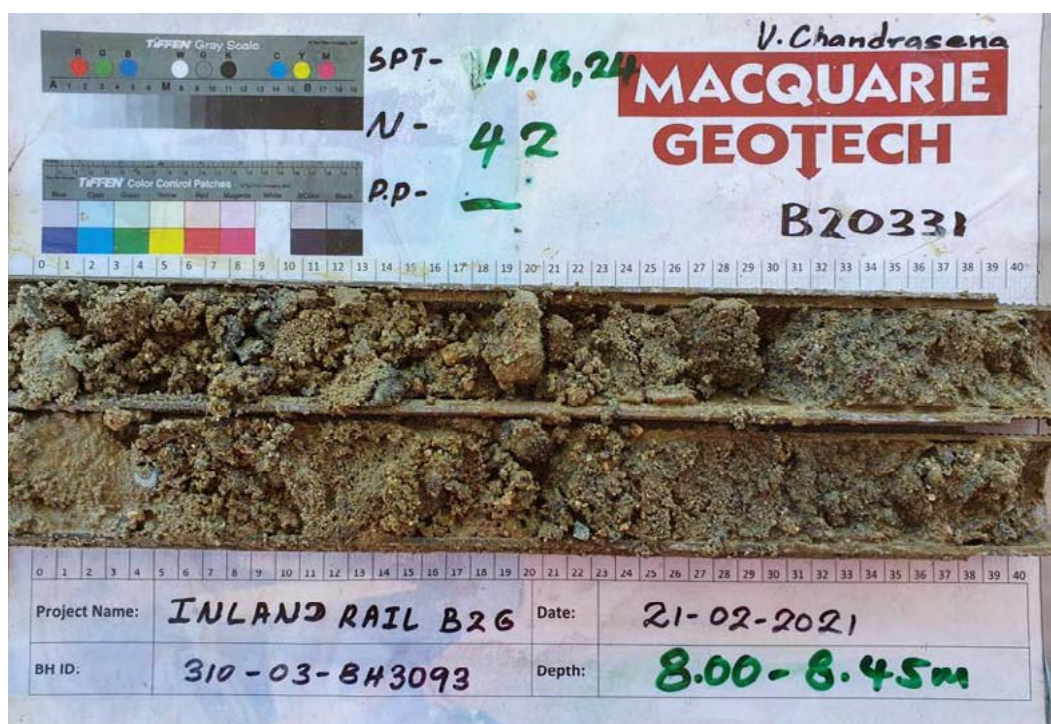


310-03-BH3093 Depth Range: 6.50 - 6.95 m

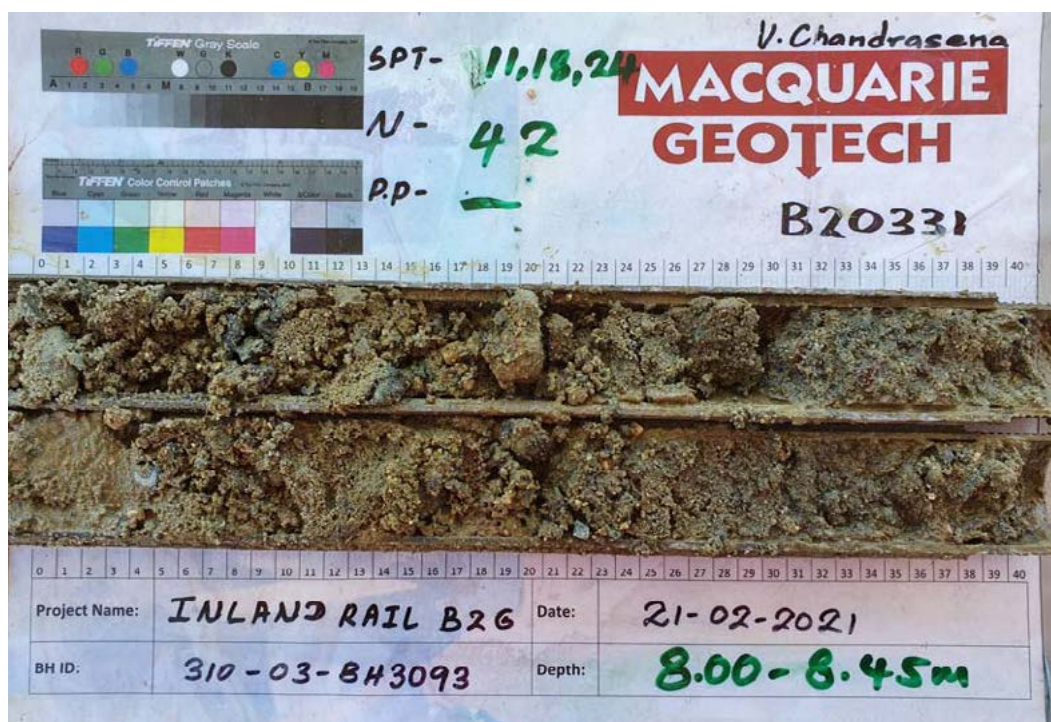
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 8.00 - 8.45 m

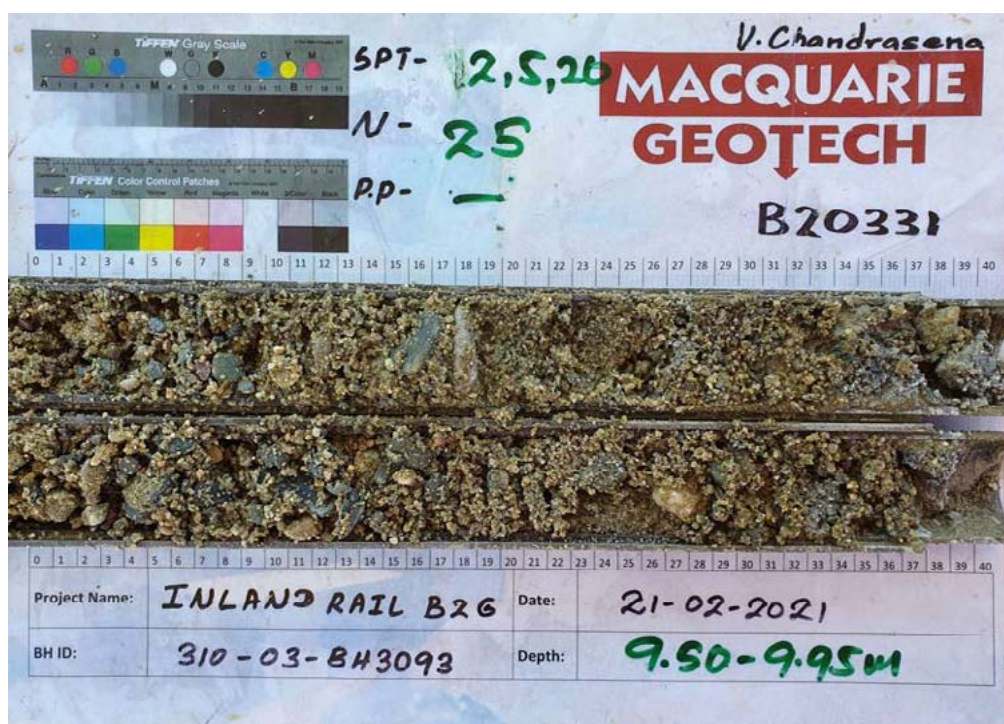


310-03-BH3093 Depth Range: 8.00 - 8.45 m

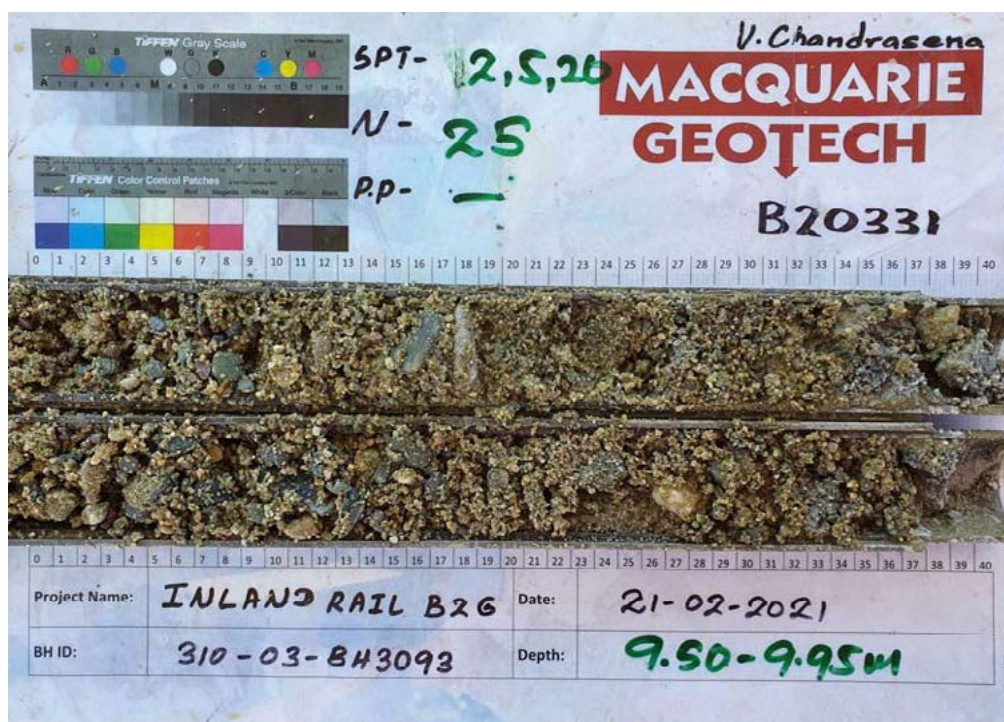
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 9.50 - 9.95 m

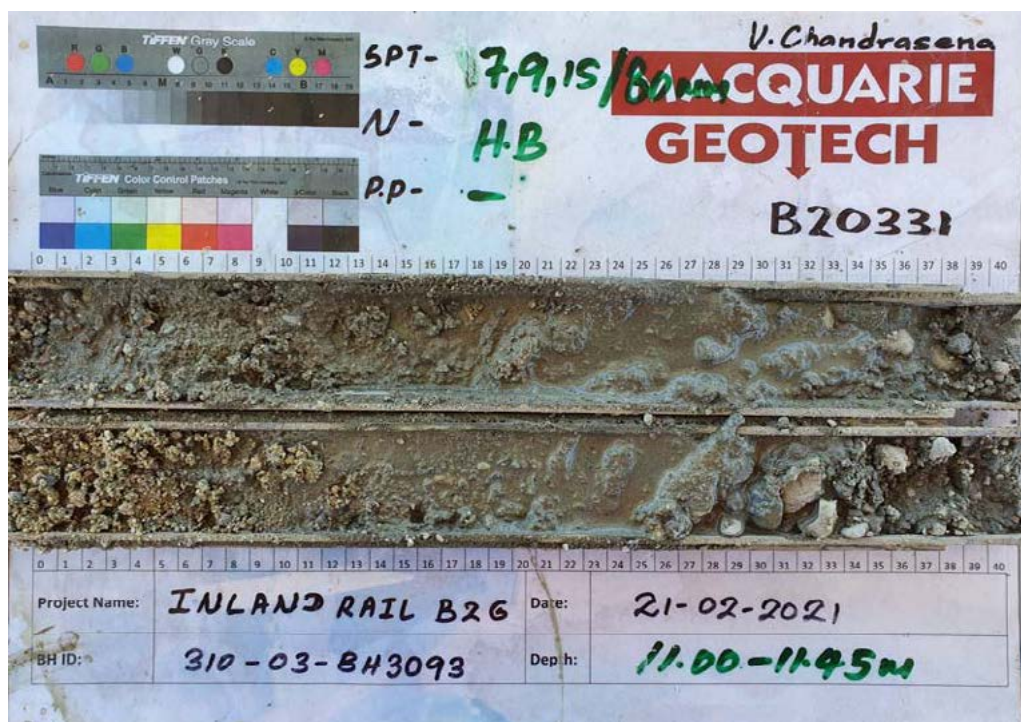


310-03-BH3093 Depth Range: 9.50 - 9.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 11.00 - 11.45 m

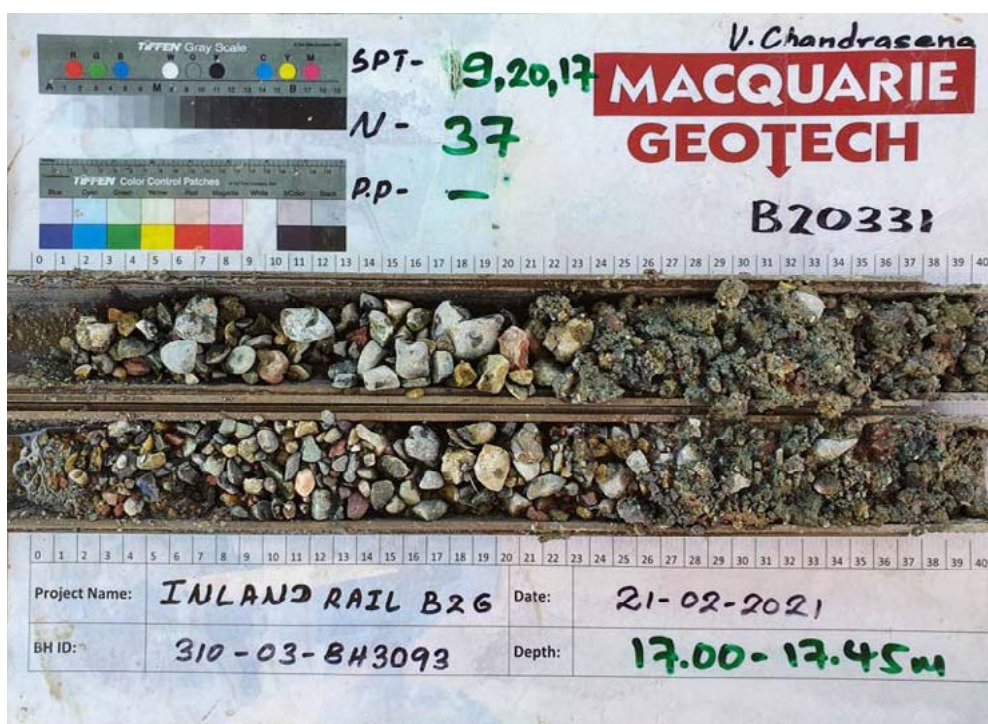


310-03-BH3093 Depth Range: 11.00 - 11.45 m

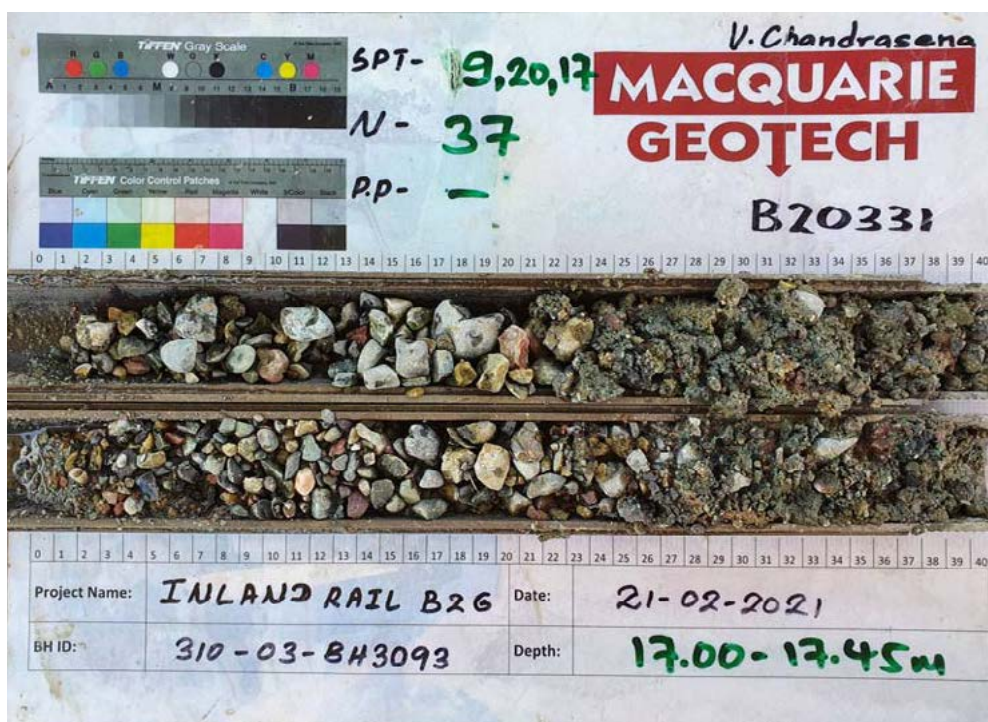
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 17.00 - 17.45 m

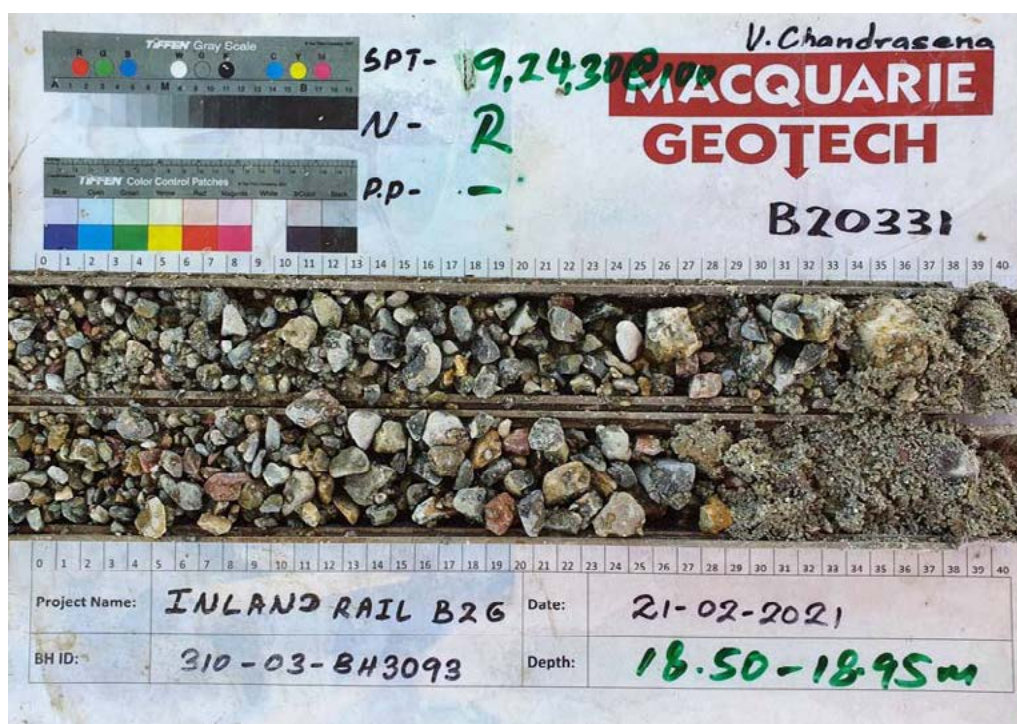


310-03-BH3093 Depth Range: 17.00 - 17.45 m

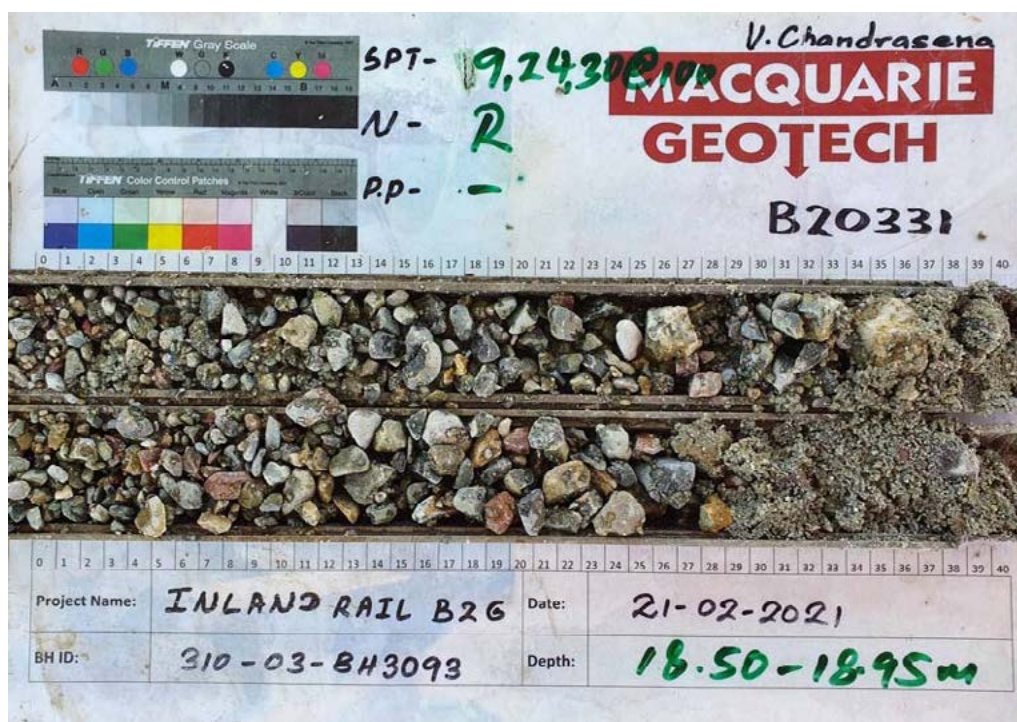
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 18.50 - 18.95 m



310-03-BH3093 Depth Range: 18.50 - 18.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	V. Chandrasena
Hole Position:	Approx. CH25599 - Yelarbon 279576.9 m E 6837214.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.03 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3093 Depth Range: 20.00 - 20.45 m



310-03-BH3093 Depth Range: 20.00 - 20.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 22/02/2021
Project Name: Inland Rail B2G	Completed: 23/02/2021
Hole Location:	Logged By: H.Tran
Hole Position: Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By: J.Boyle
Drill Model and Mounting: Comacchio 305	Inclination: -90°
Hole Diameter: 115 mm	RL Surface: 244.23 m
	Bearing: Datum: AHD Operator: M.Boga

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T				J00015 0.15-0.20 m PID 0.20 m 0.5 ppm D00040 0.40-0.50 m J00045 0.45-0.50 m S00050 SPT 0.50-0.85 m 32,36,14/50mm N=50/200mm PID 0.50 m 0.4 ppm PP 0.85 m >600 kPa J00095 0.95-1.00 m D00100 1.00-1.50 m PID 1.00 m 0.4 ppm S00150 SPT 1.50-1.95 m 6,12,13 N=25 D00250 2.50-3.00 m S00300 SPT 3.00-3.45 m 11,17,21 N=38 D00400 4.00-4.50 m S00450 SPT 4.50-4.95 m 11,16,17 N=33 PP 4.95 m >600 kPa D00550 5.50-6.00 m S00600 SPT 6.00-6.45 m 5,5,7 N=12 PP 6.45 m =570 kPa		243.2	1	CL-CI	TOPSOIL Silty CLAY: low to medium plasticity, pale grey, with rootlets (<2mm)	M (<PL)	H				TOPSOIL
						242.2	2	CL-CI	Silty CLAY with sand: low to medium plasticity, pale grey to off-white, with fine grained sand.		VSt			ALLUVIAL SOIL	
						242.2	2	SC	Sandy CLAY: low to medium plasticity, pale grey, fine grained sand.						
						241.2	3		Clayey SAND: fine to medium grained, pale grey and yellow brown, low to medium plasticity clay.			MD			
						241.2	3				D				
						240.2	4		From 3.20 to 3.50m: with fine to medium sub-rounded to sub-angular gravel.			D			
						240.2	4	CL-CI	Sandy CLAY trace gravel: low to medium plasticity, pale grey and yellow brown, fine to medium grained sand, fine to medium sub-rounded to sub-angular gravel.						
						239.2	5	CI	Silty CLAY trace sand: medium plasticity, pale grey, fine grained sand.	M (<PL)	H				
						239.2	5		Below 5.20m: no sand.						
						238.2	6								
					238.2	6	CL-CI	Silty CLAY: low to medium plasticity, off white and pale orange brown.	M (~PL)	St					
					237.2	7									
					237.2	7									
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Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 22/02/2021														
Project Name: Inland Rail B2G		Completed: 23/02/2021														
Hole Location:		Logged By: H.Tran														
Hole Position: Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N		Checked By: J.Boyle														
Drill Model and Mounting: Comacchio 305		Inclination: -90°														
Hole Diameter: 115 mm		RL Surface: 244.23 m														
		Datum: AHD Operator: M.Boga														
Drilling Information								Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB			85% Water RETURN	S01650 SPT 16.50-16.95 m 7,6,7 N=13 PP 16.95 m =260 kPa		227.2	17		CL-CI	Sandy CLAY with gravel: low to medium plasticity, dark green, fine grained sand, fine to coarse sub-rounded gravel. (continued)	H	St			x	ALLUVIAL SOIL
				S01800 SPT 18.00-18.45 m 4,4,4 N=8 PP 18.45 m =180 kPa		226.2	18		CL-CI	Silty CLAY: low to medium plasticity, pale grey.						
				S01950 SPT 19.50-19.95 m 1,4,4 N=8 PP 19.95 m =290 kPa		225.2	19		CL-CI							
				S02100 SPT 21.00-21.45 m 8,10,13 N=23 PP 21.45 m =360 kPa		224.2	20		CI	Silty CLAY: medium plasticity, grey and dark brown.		F		x		
				S02250 SPT 22.50-22.95 m 8,12,17 N=29 PP 22.95 m >600 kPa		223.2	21		CI							
			100% Water RETURN			222.2	22			Below 22.50m: with fine grained sand.	VSt				x	
						221.2	23									
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density						
AS - Auger Screwing RR - Rock Roller WB- Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss				D - Dry M - Moist W - Wet								
Support						Classification Symbols and Soil Descriptions		Plastic Limit								
C - Casing		Core recovered (hatching indicates material) Core loss				Based on Unified Soil Classification System		< PL = PL < PL								

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 22/02/2021													
Project Name: Inland Rail B2G		Completed: 23/02/2021													
Hole Location:		Logged By: H.Tran													
Hole Position: Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N		Checked By: J.Boyle													
Drill Model and Mounting: Comacchio 305		Inclination: -90°													
Hole Diameter: 115 mm		RL Surface: 244.23 m													
		Datum: AHD Operator: M.Boga													
Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB			100% Water RETURN	S02400 SPT 24.00-24.45 m 3,3,5 N=8 PP 24.45 m =150 kPa		219.2	25		SC	Clayey SAND: fine grained, black, medium plasticity clay.	L	D	W	x	ALLUVIAL SOIL
				S02550 SPT 25.50-25.95 m 4,18,20 N=38		218.2	26		SM	Silty SAND trace gravel: fine to coarse grained, pale grey, fine sub-rounded gravel.					
				S02700 SPT 27.00-27.45 m 24,18,17 N=35		217.2	27			Below 27.00m: with fine to medium sub-rounded gravel.					
				S02850 SPT 28.50-28.95 m 6,7,7 N=14		215.2	29								
				S03000 SPT 30.00-30.45 m 8,12,12 N=24		214.2	30								
				S03150 SPT 31.50-31.95 m 11,13,16		213.2	31		SP	Gravelly SAND: fine to coarse grained, pale grey, fine to medium sub-rounded gravel.					
Method AS - Auger Screwing RR - Rock Roller WB- Washbore		Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Samples and Tests		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density		Plastic Limit < PL = PL < PL			
Support C - Casing		 Core recovered (hatching indicates material) Core loss		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System											

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 22/02/2021	
Project Name: Inland Rail B2G		Completed: 23/02/2021	
Hole Location:		Logged By: H.Tran	
Hole Position: Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 244.23 m	
		Datum: AHD Operator: M.Boga	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB	100% Water RETURN			N=29					SP	Gravelly SAND: fine to coarse grained, pale grey, fine to medium sub-rounded gravel. (continued)	W	MD			ALLUVIAL SOIL
				S03300 SPT 33.00-33.45 m		211.2	33								
				9,15,12 N=27		210.2	34								
				S03450 SPT 34.50-34.95 m		209.2	35	CL-CI	Silty CLAY with sand: low to medium plasticity, dark green to dark grey, fine grained sand.	M (>PL)					
				PP 34.95 m >600 kPa		208.2	36			Hole Terminated at 34.95 m Target depth. Hole grouted to surface. Hole grouted to surface.					
						207.2	37								
						206.2	38								
						205.2	39								

Method
AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density

Plastic Limit
< PL
= PL
< PL

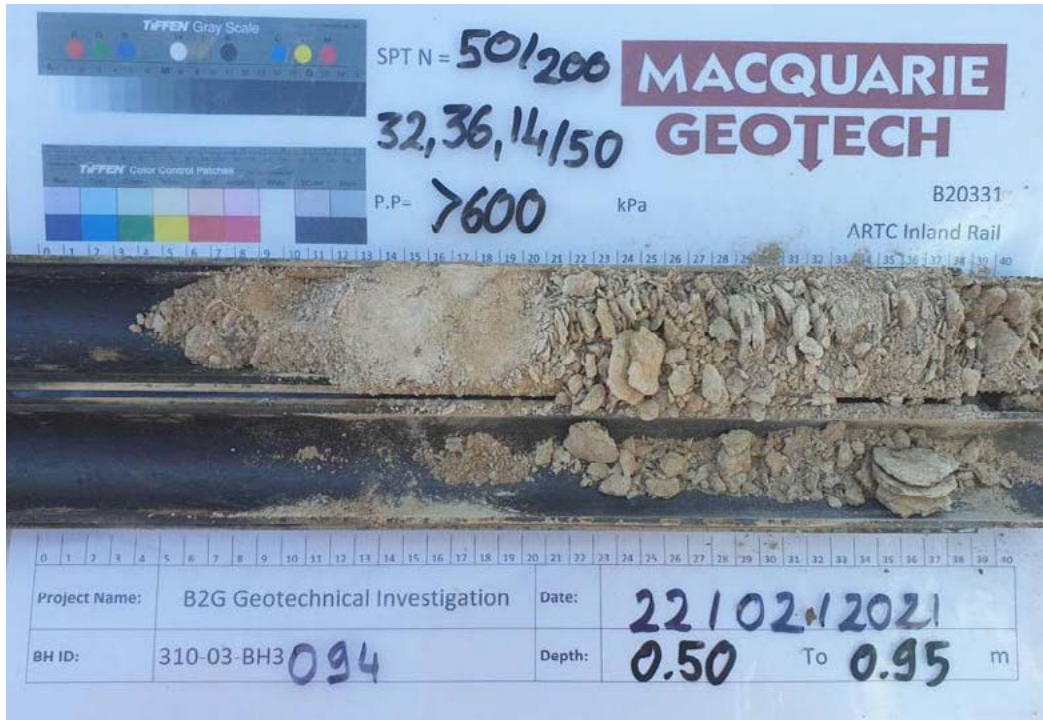
Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Core recovered (hatching indicates material)
Core loss

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 0.50 - 0.85 m



310-03-BH3094 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 3.00 - 3.45 m



310-03-BH3094 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 6.00 - 6.45 m



310-03-BH3094 Depth Range: 7.50 - 7.75 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 9.00 - 9.45 m

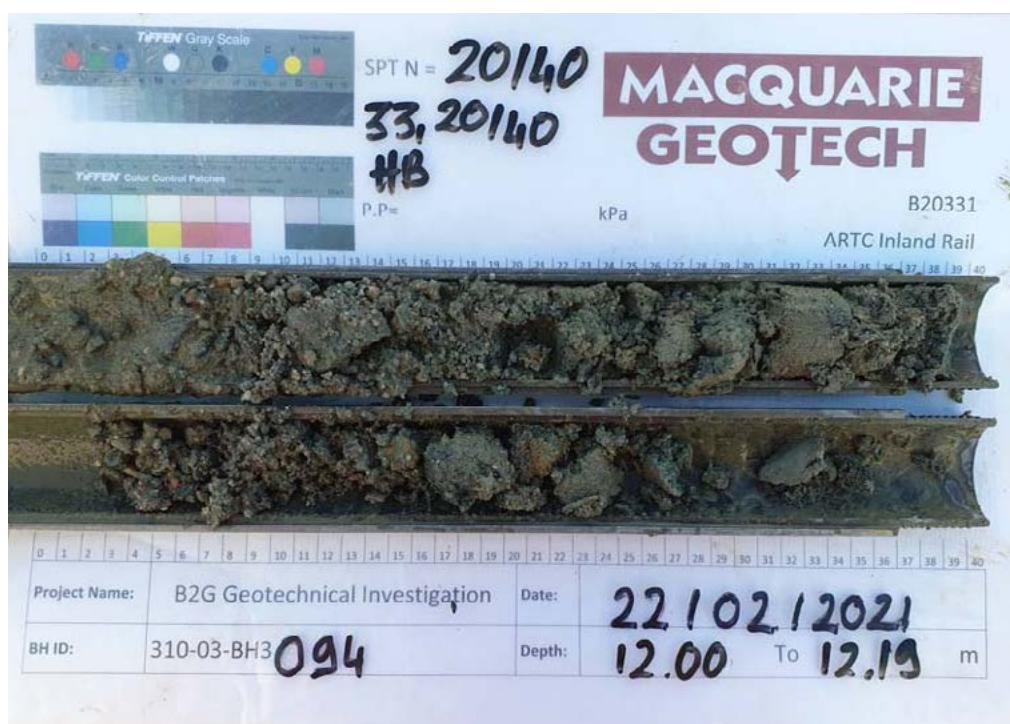


310-03-BH3094 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 12.00 - 12.19 m



310-03-BH3094 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location:
Hole Position: Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N

Commenced: 22/02/2021
Completed: 23/02/2021
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 244.23 m
Datum: AHD Operator: M.Boga



310-03-BH3094 Depth Range: 15.00 - 15.45 m



310-03-BH3094 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 18.00 - 18.45 m



310-03-BH3094 Depth Range: 19.50 - 19.95 m

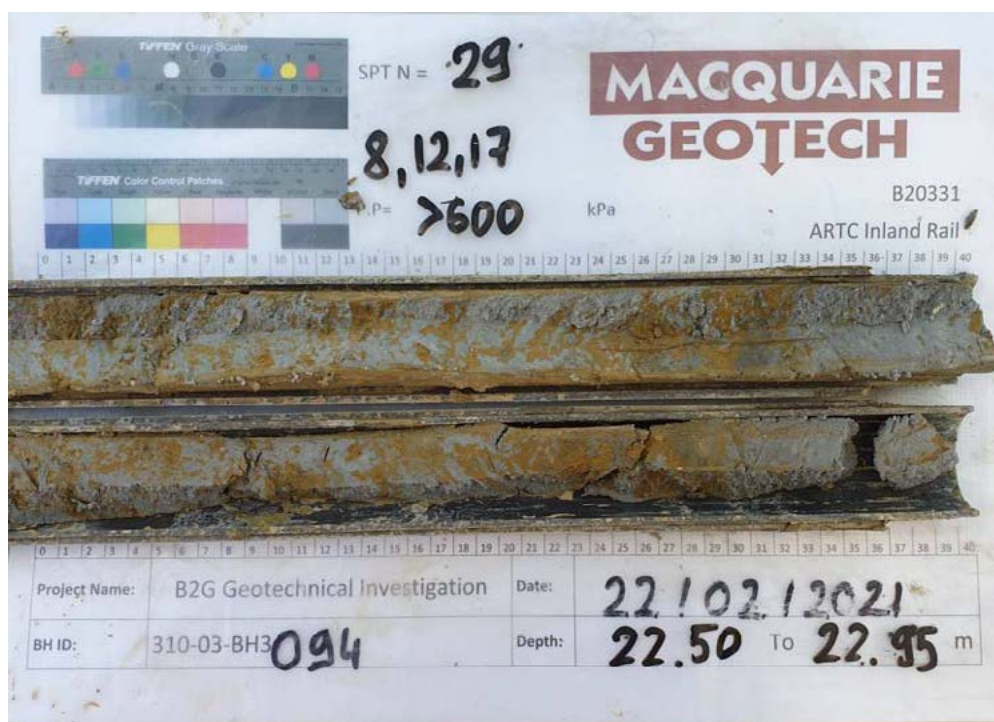
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 21.00 - 21.45 m



310-03-BH3094 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 24.00 - 24.45 m



310-03-BH3094 Depth Range: 25.50 - 25.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 27.00 - 27.45 m

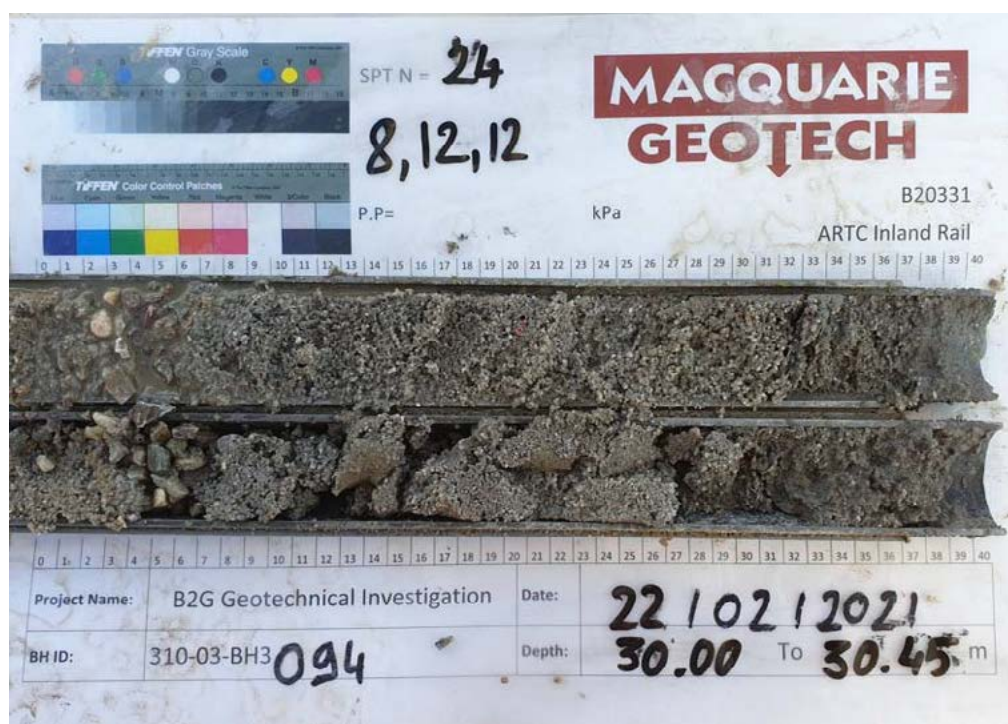


310-03-BH3094 Depth Range: 28.50 - 28.95 m

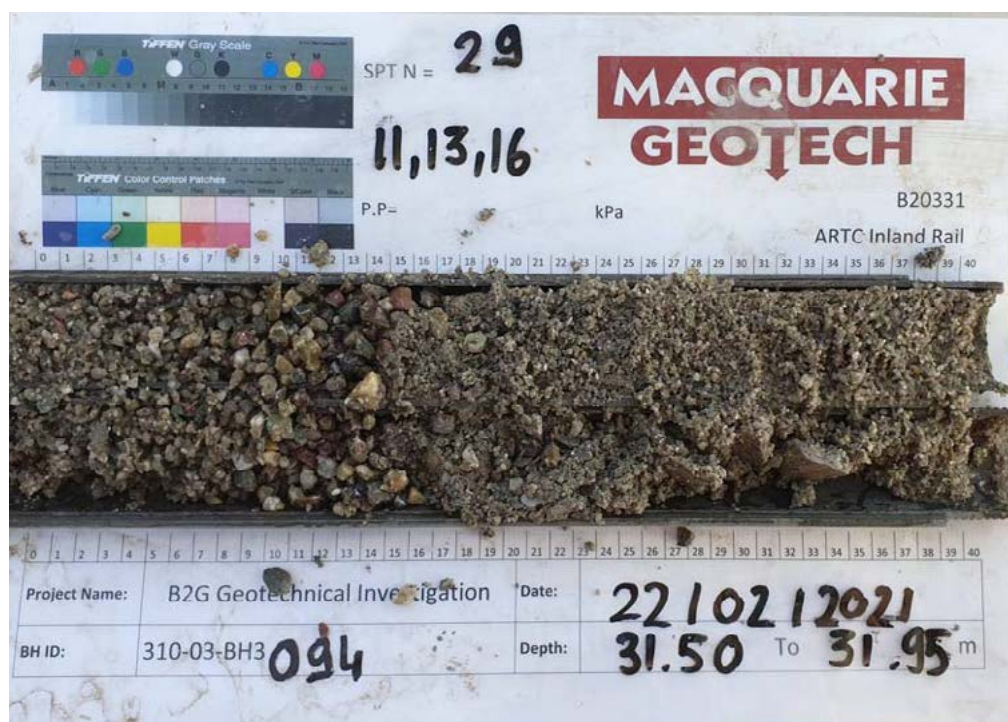
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 30.00 - 30.45 m

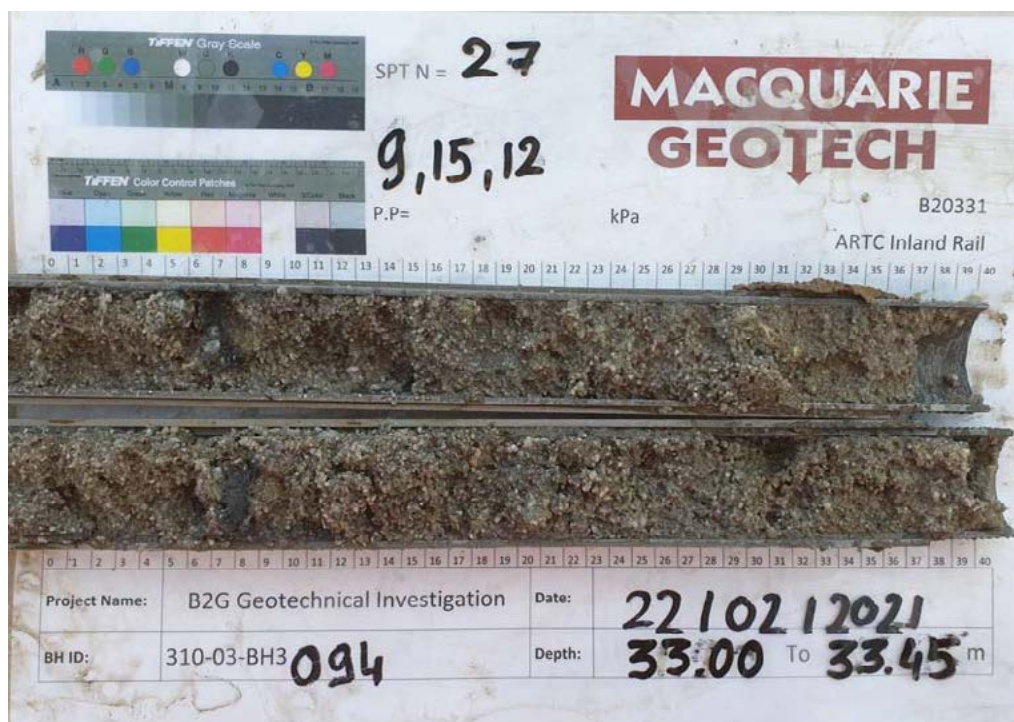


310-03-BH3094 Depth Range: 31.50 - 31.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	22/02/2021
Project Name:	Inland Rail B2G	Completed:	23/02/2021
Hole Location:		Logged By:	H.Tran
Hole Position:	Approx. CH25667 - Yelarbon 279665.8 m E 6837161.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	244.23 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3094 Depth Range: 33.00 - 33.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 02/09/2021																			
Project Name: Inland Rail B2G		Completed: 02/09/2021																			
Hole Location: C4 - Kurumbul Corridor		Logged By: J.Cooper																			
Hole Position: C4 - Kurumbul Corridor 259814.4 m E 6832173.1 m N		Checked By: J.Boyle																			
Drill Model and Mounting: D4TAPG		Inclination: -90°																			
Hole Diameter: 300 mm		RL Surface: 234.28 m																			
		Datum: AHD																			
		Operator: B.Boga																			
Drilling Information							Soil Description							Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20				Pocket Penetrometer UCS (kPa) 100 200 300 400 500				Structure and Additional Observations
PT				U00000 0.14-1.64 m		233.8	0.5			RAIL	D	D to VD					RAIL				
				J00000 1.00-1.10 m		233.3	1.0			BALLAST: GRAVEL with cobble: fine to coarse grained angular, dark grey, sub-angular to angular (<80mm) cobble.							BALLAST				
AD/T		Not Observed		D00140 1.40-1.50 m SAMPLED FROM PUSH TUBE		232.8	1.5		CL-CI	FOUL BALLAST: GRAVEL with sand: fine to coarse grained sub-angular to angular, dark grey, fine to coarse grained sand.	M	VD				FOUL BALLAST					
				J00140 1.40-1.50 m B00150 1.50-1.80 m D00200 2.00-2.50 m		232.3	2.0			FILL: Sandy GRAVEL with clay: fine to coarse grained sub-angular to angular, brown, fine to coarse grained sand, low plasticity clay.						FILL					
				D00250 2.50-3.00 m		231.8	2.5		CH	Silty CLAY: medium plasticity, brown, trace calcareous inclusions (white).						ALLUVIAL SOIL					
				D00300 3.00-3.50 m		231.3	3.0			Silty CLAY: high plasticity, brown, trace calcareous inclusions (white).											
				D00350 3.50-4.00 m		230.8	3.5		CL-CI	Silty CLAY: low to medium plasticity, brown, trace calcareous inclusions (white).	M (~PL)	H									
				D00380 3.80-4.00 m		230.3	4.0														
										Hole Terminated at 4.00 m Target depth											
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL > PL																					

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	02/09/2021
Project Name:	Inland Rail B2G	Completed:	02/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	J.Cooper
Hole Position:	C4 - Kurumbul Corridor 259814.4 m E 6832173.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	234.28 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3005 Depth Range: 0.14 - 1.64 m



Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: C4 - Kurumbul Corridor
Hole Position: C4 - Kurumbul Corridor 259814.4 m E 6832173.1 m N

Commenced: 02/09/2021
Completed: 02/09/2021
Logged By: J.Cooper
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG
Hole Diameter: 300 mm

Inclination: -90°
Bearing:

RL Surface: 234.28 m
Datum: AHD Operator: B.Boga



310-03-TP3005 Depth Range: 0.14 - 1.64 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 02/09/2021	
Project Name: Inland Rail B2G		Completed: 02/09/2021	
Hole Location: C4 - Kurumbul Corridor		Logged By: J.Cooper	
Hole Position: C4 - Kurrumbul Corridor 260876.0 m E 6832171.9 m N		Checked By: J.Boyle	
Drill Model and Mounting: D4TAPG		Inclination: -90°	
Hole Diameter: 300 mm		RL Surface: 234.48 m	
		Datum: AHD	
		Operator: B.Boga	

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	02/09/2021
Project Name:	Inland Rail B2G	Completed:	02/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	J.Cooper
Hole Position:	C4 - Kurumbul Corridor 260876.0 m E 6832171.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	234.48 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3006 Depth Range: 0.00 - 1.50 m



Project No.: B21003

Client: ARTC				Commenced: 02/09/2021															
Project Name: Inland Rail B2G				Completed: 02/09/2021															
Hole Location: C4 - Kurumbul Corridor				Logged By: J.Cooper															
Hole Position: C4 - Kurrumbul Corridor 261384.4 m E 6832173.9 m N				Checked By: J.Boyle															
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 235.36 m													
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga													
Drilling Information				Soil Description						Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations				
PT				U00000 0.14-1.64 m		234.9	0.5			RAIL		VD			RAIL				
				J00055 0.55-0.65 m		234.9			D	D	BALLAST: COBBLE with gravel: angular (<70mm), dark grey, fine to coarse angular gravel. FOUL BALLAST: GRAVEL: fine to coarse grained angular, dark grey.				BALLAST FOUL BALLAST CAPPING				
AD/T		Not Observed		J00095 0.95-1.05 m B00105 1.05-1.35 m		234.4	1.0		CL-CI	CAPPING: Clayey Gravelly SAND: fine to coarse grained, brown mottled orange-brown, fine to medium grained sub-rounded to sub-angular gravel, low plasticity clay. FILL: Sandy GRAVEL: fine to coarse grained sub-rounded to sub-angular, brown, fine to coarse grained sand. Gravel grading up with depth.		MD to D			FILL				
				D00140 1.40-1.50 m SAMPLED FROM PUSH TUBE		233.9	1.5		CL-CI	Silty CLAY: low to medium plasticity, dark brown. From 1.00m: becoming brown.					ALLUVIAL SOIL				
						233.4	2.0			M (<PL)	VSt to H								
				D00235 2.35-2.55 m		232.9	2.5												
				D00280 2.80-3.00 m		232.4	3.0												
				D00345 3.45-3.55 m		231.9	3.5												
				Hole Terminated at 3.55 m Target depth															
						231.4	4.0												

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: C4 - Kurumbul Corridor
Hole Position: C4 - Kurumbul Corridor 261384.4 m E 6832173.9 m N

Commenced: 02/09/2021
Completed: 02/09/2021
Logged By: J.Cooper
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG
Hole Diameter: 300 mm

Inclination: -90°
Bearing:

RL Surface: 235.36 m
Datum: AHD Operator: B.Boga



310-03-TP3007 Depth Range: 0.00 - 1.50 m



Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	02/09/2021
Project Name:	Inland Rail B2G	Completed:	02/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	J.Cooper
Hole Position:	C4 - Kurumbul Corridor 261817.1 m E 6832174.2 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	235.65 m		
Hole Diameter:	300 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description							Observations								
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	DCP Blows/100mm 5 10 15 20				Pocket Penetrometer UCS (kPa) 100 200 300 400 500				Structure and Additional Observations
PT 																						

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration 	Water 	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss 	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL > PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	02/09/2021
Project Name:	Inland Rail B2G	Completed:	02/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	J.Cooper
Hole Position:	C4 - Kurumbul Corridor 261817.1 m E 6832174.2 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	235.65 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3008 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 03/09/2021															
Project Name: Inland Rail B2G				Completed: 03/09/2021															
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena															
Hole Position: C4 - Kurrumbul Corridor 263817.4 m E 6832175.3 m N				Checked By: J.Boyle															
Drill Model and Mounting: D4TAPG		Inclination: -90°		RL Surface: 236.15 m															
Hole Diameter: 300 mm		Bearing:		Datum: AHD		Operator: B.Boga													
Drilling Information				Soil Description						Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations				
PT			Not Observed	U00000 0.14-1.64 m		235.6	0.5			RAIL					RAIL				
																	BALLAST		
																		FOUL BALLAST	
																		CAPPING	
																		FILL	
AD/T			Not Observed	D00065 0.65-1.15 m		235.1	1.0		CL-CI	CAPPING/FILL 1: SAND trace gravel: fine to coarse grained, grey-brown, fine to medium grained sub-rounded to angular gravel.	M	F to St			ALLUVIAL SOIL				

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 263817.4 m E 6832175.3 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	236.15 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3009 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

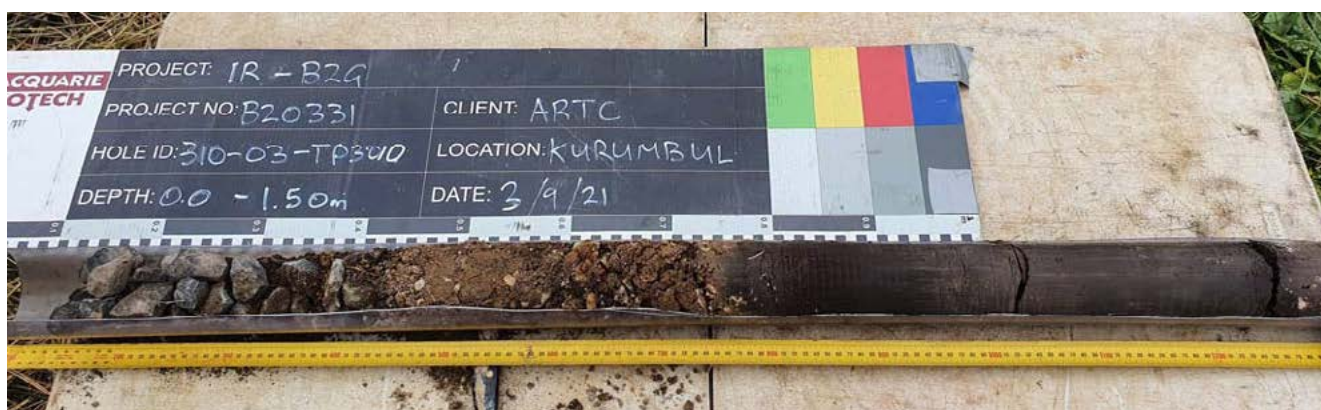
Project No.: B21003

Client: ARTC				Commenced: 03/09/2021														
Project Name: Inland Rail B2G				Completed: 03/09/2021														
Hole Location: C4 - Kurumbul Corridor				Logged By: V.Chandrasena														
Hole Position: C4 - Kurrumbul Corridor 264822.5 m E 6832185.6 m N				Checked By: J.Boyle														
Drill Model and Mounting: D4TAPG				Inclination: -90°		RL Surface: 240.00 m												
Hole Diameter: 300 mm				Bearing:		Datum: AHD Operator: B.Boga												
Drilling Information				Soil Description				Observations										
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations			
PT				U00000 0.14-1.64 m		239.5	0.5			RAIL	M	L			RAIL			
																BALLAST		
																FOUL BALLAST		
																CAPPING		
																FILL		
AD/T		Not Observed		D00075 0.75-1.25 m		239.0	1.0		CI	FOUL BALLAST: Sandy GRAVEL: fine to coarse grained sub-angular to angular, grey and black, fine to coarse grained sand.	F to St				ALLUVIAL SOIL			

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 264822.5 m E 6832185.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	240.00 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3010 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 265781.6 m E 6832442.6 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	240.19 m		
Hole Diameter:	300 mm	Bearing:		Datum:	AHD	Operator:	B.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations	
PT AD/T			Not Observed	U00000 0.14-1.64 m		239.7	0.5			RAIL BALLAST: GRAVEL with cobble: medium to coarse grained angular, grey and black, angular (<95mm) cobble.					RAIL	
						239.2	1.0			FOUL BALLAST: GRAVEL with sand trace cobble: fine to coarse grained sub-angular to angular, grey and black, fine to coarse grained sand, angular (<90mm) cobble.	MD to VD				FOUL BALLAST	
										FILL: Sandy GRAVEL trace clay: fine to medium grained sub-angular to angular, brown, fine to coarse grained sand, low to medium plasticity clay.	VD				FILL	
										Below 1.10m: with medium plasticity clay.						
				D00120 1.20-1.70 m		238.7	1.5		CI-CH	Sandy Silty CLAY: medium to high plasticity, grey and black, fine to medium grained sand.						ALLUVIAL SOIL
				B00170 1.70-2.20 m		238.2	2.0									
				D00170 1.70-2.20 m		238.2	2.0									
				D00220 2.20-2.70 m		237.7	2.5									
				D00270 2.70-3.20 m		237.2	3.0									
				D00320 3.20-3.70 m		236.7	3.5									
				D00370 3.70-4.20 m		236.2	4.0		CI-CH	Silty CLAY trace Sand: medium to high plasticity, grey and black, fine to medium grained sand.						
										Hole Terminated at 4.20 m Target depth						

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 265781.6 m E 6832442.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	240.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3011 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 03/09/2021	
Project Name: Inland Rail B2G		Completed: 03/09/2021	
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena	
Hole Position: C4 - Kurrumbul Corridor 266726.9 m E 6832765.7 m N		Checked By: J.Boyle	
Drill Model and Mounting: D4TAPG		Inclination: -90°	
Hole Diameter: 300 mm		RL Surface: 239.72 m	
		Datum: AHD Operator: B.Boga	

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 266726.9 m E 6832765.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	239.72 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3012 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 03/09/2021
Project Name: Inland Rail B2G	Completed: 03/09/2021
Hole Location: C4 - Kurumbul Corridor	Logged By: V.Chandrasena
Hole Position: C4 - Kurumbul Corridor 267662.4 m E 6833086.9 m N	Checked By: J.Boyle
Drill Model and Mounting: D4TAPG	Inclination: -90°
Hole Diameter: 300 mm	Bearing:
	RL Surface: 238.22 m
	Datum: AHD
	Operator: B.Boga

Drilling Information								Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations		
PT				U00000 0.14-1.64 m		237.7	0.5			RAIL		L			RAIL		
										BALLAST: GRAVEL with cobble: medium to coarse grained angular, grey and black, angular (<80mm) cobble.				BALLAST			
										FOUL BALLAST: Sandy GRAVEL: fine to coarse grained angular, grey and black, fine to coarse grained sand.	M			FOUL BALLAST			
										FILL: Sandy Silty CLAY with gravel: medium plasticity, brown, fine to coarse grained sand, fine to medium grained sub-angular to angular gravel.	W	St		FILL			
										Silty CLAY: medium to high plasticity, black and brown.	M (<PL) to M (~PL)	VSt to H		ALLUVIAL SOIL			
				D00085 0.85-1.35 m		237.2	1.0		CI-CH								
				B00135 1.35-1.85 m		236.7	1.5		CI								
				D00135 1.35-1.85 m					CI								
				D00140 1.40-1.50 m													
				SAMPLED FROM PUSH TUBE													
AD/T				D00185 1.85-2.35 m		236.2	2.0		CI-CH	Silty Sandy CLAY: medium to high plasticity, brown and grey, fine to medium grained sand.							
				D00235 2.35-2.85 m		235.7	2.5		CI	Silty Sandy CLAY: medium plasticity, brown and grey, fine to medium grained sand.	M (<PL) to M (~PL)	H					
				D00285 2.85-3.35 m		235.2	3.0		CI-CH	Silty Sandy CLAY: medium to high plasticity, brown and grey, fine to medium grained sand.							
				D00335 3.35-3.85 m		234.7	3.5		CI	Silty Sandy CLAY: medium plasticity, brown and grey, fine to medium grained sand.							
					234.2	4.0			Hole Terminated at 3.85 m Target depth								

Method

AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)

Inflow

Partial Loss

Complete Loss

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)

Core loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Plastic Limit

< PL
= PL
> PL

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 267662.4 m E 6833086.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	238.22 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3013 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 268620.9 m E 6833414.1 m N	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG	Inclination:	-90°	RL Surface:	238.49 m
Hole Diameter:	300 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	DCP	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT 																

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	03/09/2021
Project Name:	Inland Rail B2G	Completed:	03/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 268620.9 m E 6833414.1 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	238.49 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3014 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

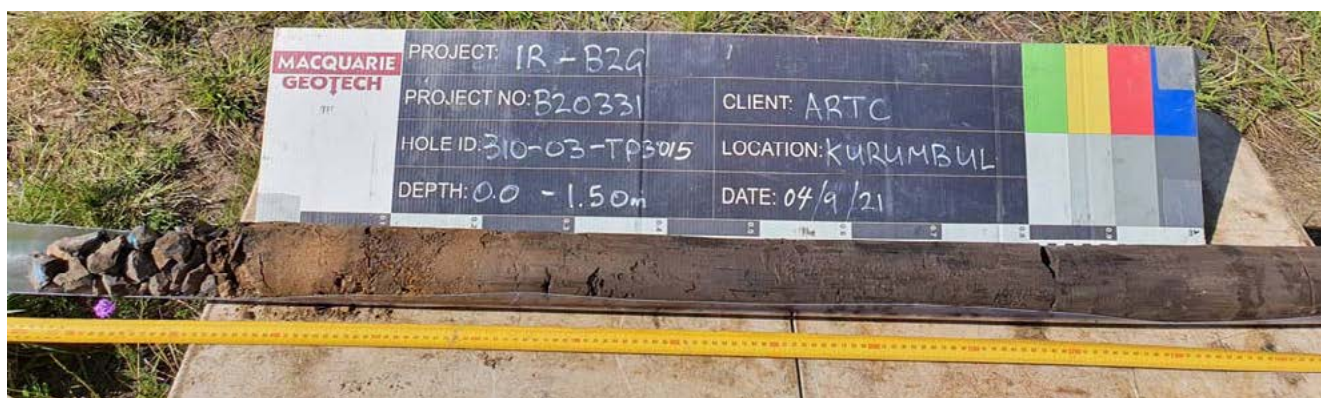
Project No.: B21003

Client: ARTC		Commenced: 04/09/2021													
Project Name: Inland Rail B2G		Completed: 04/09/2021													
Hole Location: C4 - Kurumbul Corridor		Logged By: V.Chandrasena													
Hole Position: C4 - Kurumbul Corridor 269565.6 m E 6833736.5 m N		Checked By: J.Boyle													
Drill Model and Mounting: D4TAPG		Inclination: -90°	RL Surface: 238.45 m												
Hole Diameter: 300 mm		Bearing:	Datum: AHD Operator: B.Boga												
Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	DCP Blows/100mm 5 10 15 20	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations
PT			Not Observed	U00000 0.14-1.64 m		237.9	0.5			RAIL					RAIL
				D00060 0.60-1.10 m		237.4	1.0			BALLAST: GRAVEL with cobble: medium to coarse grained angular, grey and black, angular (<70mm) cobble.	M	L			BALLAST
				PP 0.80 m =170 kPa		236.9	1.5			CAPPING: SAND trace gravel: fine to coarse grained, pale brown, fine to medium grained sub-angular to angular gravel.	M	F			CAPPING
				B00110 1.10-1.60 m		236.4	2.0			FILL: Sandy GRAVEL trace clay: fine to medium grained sub-angular to angular, brown, fine to coarse grained sand, low to medium plasticity clay.	M (>PL)				FILL
				D00110 1.10-1.60 m		235.9	2.5			Silty CLAY trace sand: medium plasticity, brown and black, fine to medium grained sand.					
				D00140 1.40-1.50 m		235.4	3.0			Below 1.00m: grey-brown, with fine to medium grained sand.					
				SAMPLED FROM PUSH TUBE PP 1.40 m =200 kPa		234.9	3.5			Silty Sandy CLAY: low to medium plasticity, grey-brown, fine to medium grained sand.	VSt				ALLUVIAL SOIL
				D00160 1.60-2.10 m		234.4	4.0								
				D00210 2.10-2.60 m		233.9	4.5								
				D00260 2.60-3.10 m		233.4	5.0								
AD/T				D00310 3.10-3.60 m		232.9	5.5								
						232.4	6.0			Hole Terminated at 3.60 m Target depth					

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/09/2021
Project Name:	Inland Rail B2G	Completed:	04/09/2021
Hole Location:	C4 - Kurumbul Corridor	Logged By:	V.Chandrasena
Hole Position:	C4 - Kurumbul Corridor 269565.6 m E 6833736.5 m N	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	300 mm	Bearing:	
		RL Surface:	238.45 m
		Datum:	AHD
		Operator:	B.Boga



310-03-TP3015 Depth Range: 0.00 - 1.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 327.47 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information								Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
ADV		Not Observed		J00000 0.00-0.20 m		326.5	1		CI-CH	TOPSOIL: silty CLAY: medium to high plasticity, dark brown, trace rootlets.	VSt				TOPSOIL		
				J00020 0.20-0.50 m					Silty CLAY: medium to high plasticity, dark brown.	ALLUVIAL SOIL							
				J00050 0.50-0.70 m													
				S00050 SPT 0.50-0.95 m													
				3,12,17 N=29													
				D00100 1.00-1.50 m													
				S00150 SPT 1.50-1.95 m													
				16,20,20 N=40													
				D00250 2.50-3.00 m													
				S00300 SPT 3.00-3.45 m													
		Not Observed		9,7,9 N=16		324.5	3		SP	SAND: fine to coarse grained, pale yellow.	M	MD					
				D00400 4.00-4.50 m													
				S00450 SPT 4.50-4.95 m													
				9,14,12 N=26													
				D00550 5.50-6.00 m													
				S00600 SPT 6.00-6.45 m													
				8,10,13 N=23													
				D00700 7.00-7.50 m													
				S00750 SPT 7.50-7.95 m													
				11,27,29													
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Support C - Casing Penetration No resistance ranging to refusal Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																	

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 327.47 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
AD/V				N=56					CI	Sandy CLAY: fine to medium grained sand, grey and orange brown, medium plasticity clay, trace plant decays. (continued)	M (<PL)	H					ALLUVIAL SOIL
				D00850 8.50-9.00 m		318.5	9		CH	Sandy silty CLAY: high plasticity, grey mottled orange-brown, fine grained sand.							
WB		Not Observed		S00900 SPT 9.00-9.45 m 9,11,18 N=29							M (<PL) to M (~PL)	VSt				x	9.40: PP Samp =550 kPa
				S01050 SPT 10.50-10.95 m 9,13,16 N=29		317.5	10										
				S01200 SPT 12.00-12.45 m 11,13,13 N=26		316.5	11		SP	SAND with silt and clay: fine grained, brown mottled grey, medium plasticity fines	W					x	10.85: PP Samp =370 kPa
				S01350 SPT 13.50-13.95 m 10,13,15 N=28		315.5	12										
				S01500 SPT 15.00-15.45 m 8,11,13 N=24		314.5	13		SC-SM	Clayey silty SAND: fine grained, grey mottled brown, low to medium plasticity clay.		MD					
						313.5	14				M						
						312.5	15										

Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density	
AS - Auger Screwing			No resistance ranging to refusal		Level (Date)	U - Undisturbed Sample		D - Dry		VS - Very Soft	
RR - Rock Roller					Inflow	D - Disturbed Sample		M - Moist		S - Soft	
WB- Washbore					Partial Loss	SPT - Standard Penetration Test		W - Wet		F - Firm	
					Complete Loss					VSt - Very Stiff	
										H - Hard	
										VL - Very Loose	
										L - Loose	
										MD - Medium Dense	
										D - Dense	
										VD - Very Dense	

Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit
C - Casing	 Core recovered (hatching indicates material)	Based on Unified Soil Classification System	< PL
	 Core loss		= PL
			< PL

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

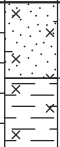
Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 06/07/2021
Project Name: Inland Rail B2G	Completed: 12/07/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: V.Chandrsena
Hole Coordinates: 321982.6 m E 6884082.9 m N	Checked By: J.Boyle
Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°
Hole Diameter: 115 mm	Bearing:
	RL Surface: 327.47 m
	Datum: AHD
	Operator: B.Boga

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB		Not Observed		S01650 SPT 16.50-16.95 m 9,14,18 N=32		310.5	17		SC-SM	Clayey silty SAND: fine grained, grey mottled brown, low to medium plasticity clay. (continued)	M	MD			ALLUVIAL SOIL
									CI	Silty CLAY with sand: medium plasticity, grey and orange brown, fine grained sand, trace fine sub-angular to angular gravel.					✖ 16.70: PP Samp >600 kPa
				S01800 SPT 18.00-18.45 m 10,15,18 N=33		309.5	18				M (<PL) to M (~PL)	H			
															✖ 18.40: PP Samp >600 kPa
				S01950 SPT 19.50-19.95 m 9,11,13 N=24		308.5	19		SC-SM	Clayey silty SAND: fine grained, brown mottled grey, medium to high plasticity fines.					
				S02100 SPT 21.00-21.45 m 6,8,13 N=21		307.5	20								
				S02250 SPT 22.50-22.85 m 19,23,30/50mm N=53/200mm		306.5	21				M to W	MD			
						305.5	22								
						304.5	23		SP	SAND with silt and clay: fine to coarse grained, brown mottled grey, medium plasticity clay.		VD			

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal 	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 06/07/2021	
Project Name: Inland Rail B2G		Completed: 12/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: V.Chandrsena	
Hole Coordinates: 321982.6 m E 6884082.9 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 327.47 m	
		Bearing: AHD	
		Operator: B.Boga	

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB		Not Observed		S02400 SPT 24.00-24.45 m 13,19,26 N=45		302.5	25		CH	Sandy silty CLAY; medium plasticity, orange brown, fine grained sand.	M (<PL) to M (~PL)	H		RESIDUAL SOIL * 24.40; PP Samp >600 kPa
				S02550 SPT 25.50-25.79 m 23,30/140mm N=30/140mm		301.5	26		SM	Silty SAND with clay: fine grained, grey brown mottled black, low to medium plasticity clay.	M to W	VD		
				S02700 SPT 27.00-27.45 m 13,28,30 N=58		300.5	27		CL-CI	Sandy CLAY: low to medium plasticity, grey mottled black, fine grained sand.				
				S02850 SPT 28.50-28.76 m 25,30/110mm N=30/110mm		298.5	29			Below 28.50m: fine to medium grained sand.	M (<PL)	H		
				S03000 SPT 30.00-30.29 m 22,30/140mm N=30/140mm		297.5	30			Below 30.00m: fine grained sand.				
						296.5	31							
Continued on cored borehole sheet														

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date)  Inflow  Partial Loss  Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL > PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

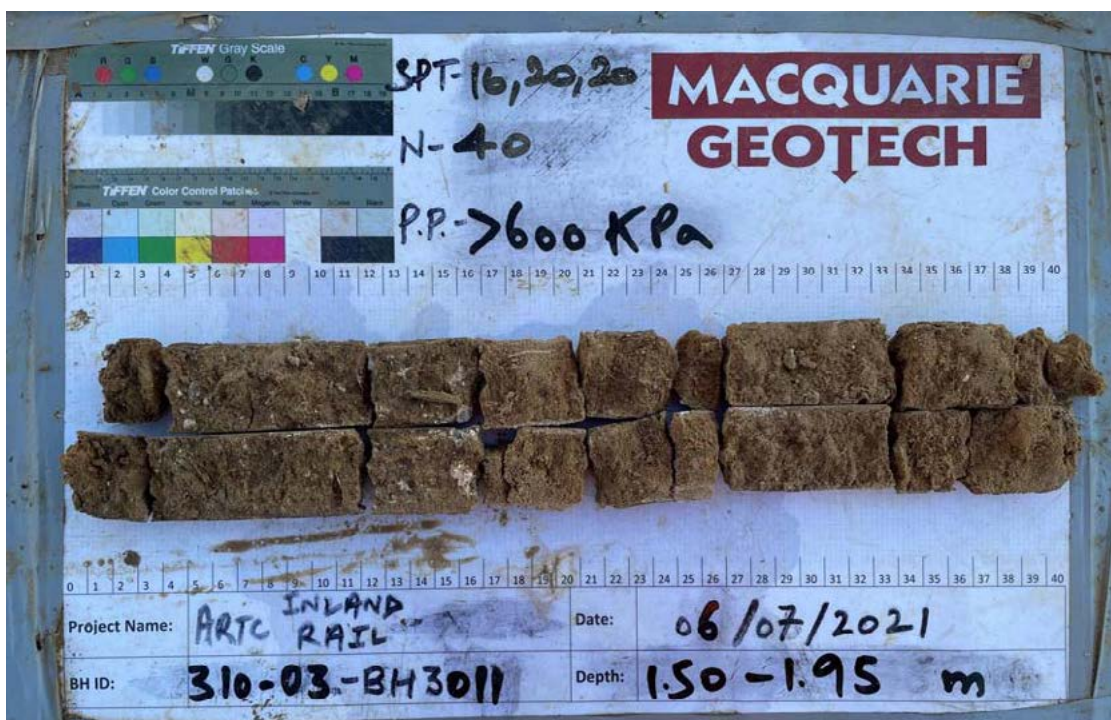
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.47 m
Datum: AHD Operator: B.Boga



310-03-BH3011 Depth Range: 0.50 - 0.95 m



310-03-BH3011 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 3.00 - 3.45 m



310-03-BH3011 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

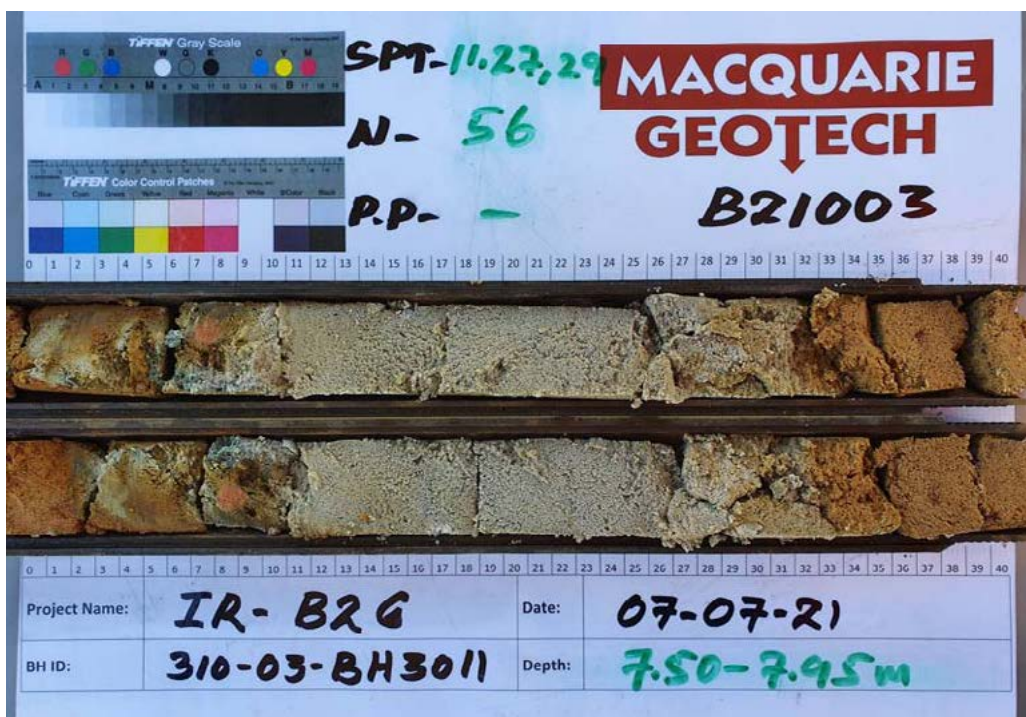
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.47 m
Datum: AHD Operator: B.Boga



310-03-BH3011 Depth Range: 6.00 - 6.45 m

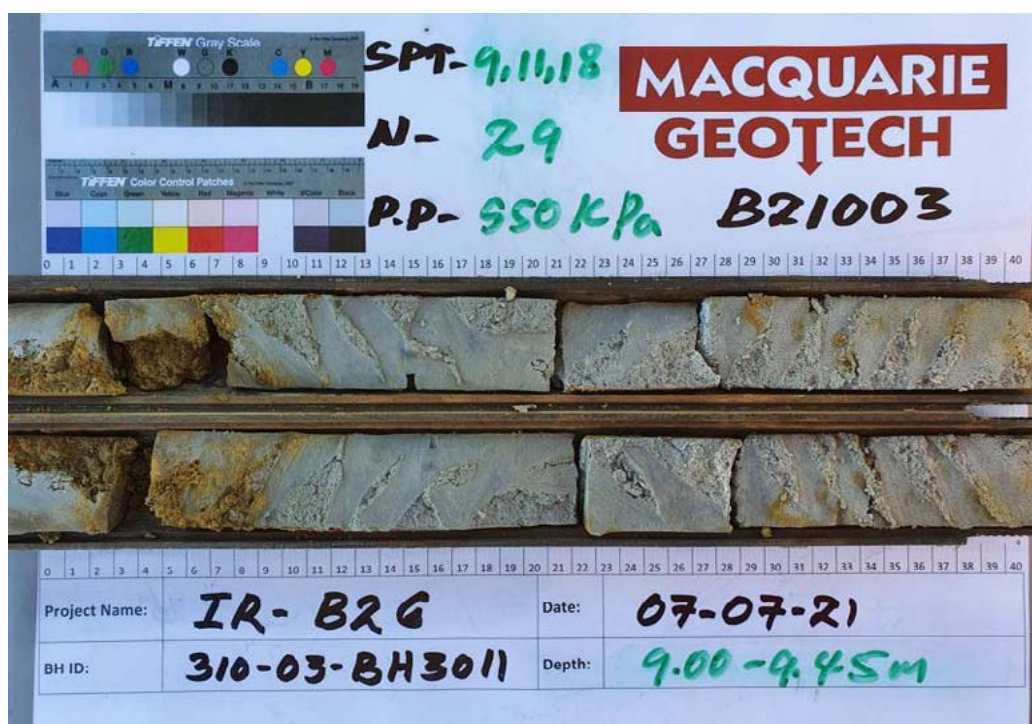


310-03-BH3011 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 9.00 - 9.45 m

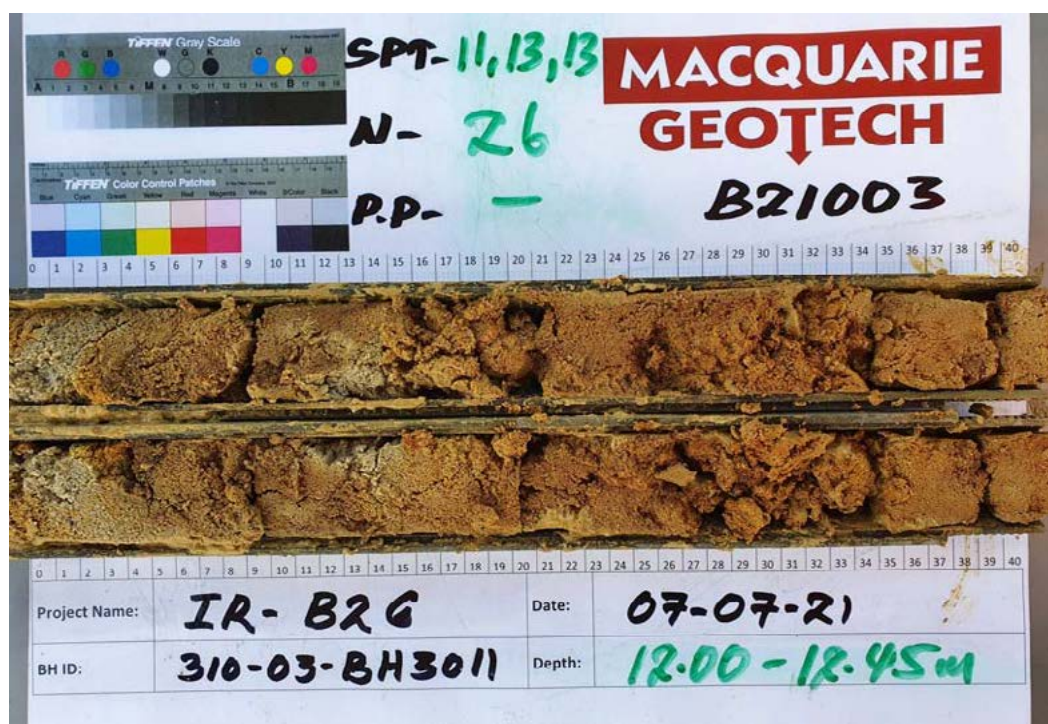


310-03-BH3011 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 12.00 - 12.45 m



310-03-BH3011 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 15.00 - 15.45 m



310-03-BH3011 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 18.00 - 18.45 m



310-03-BH3011 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

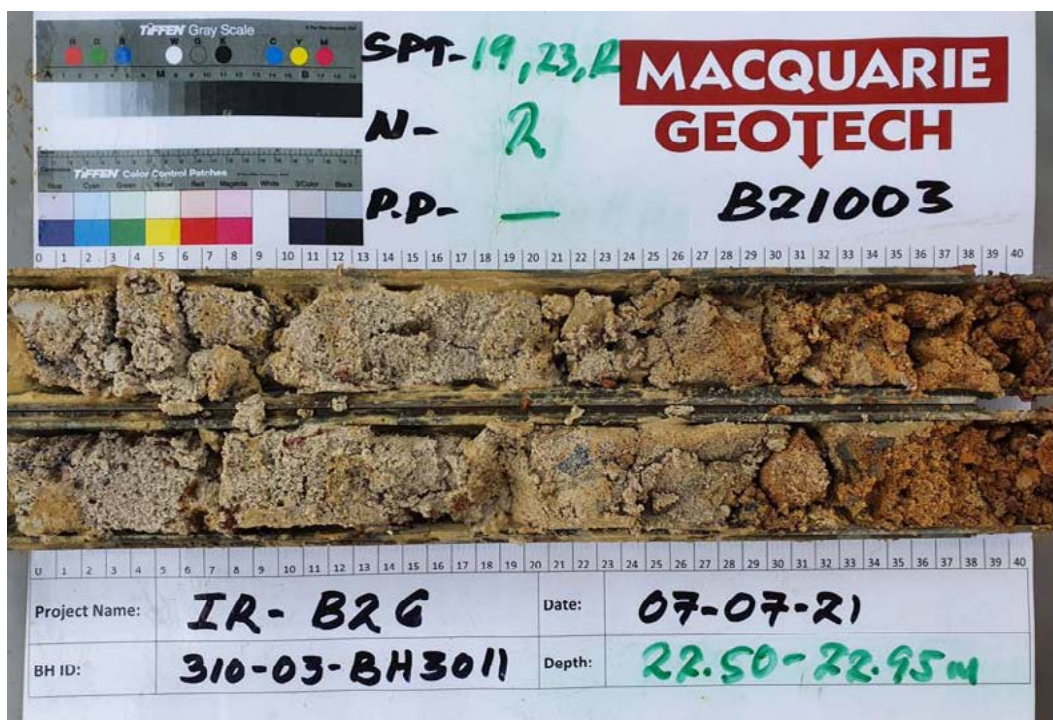
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.47 m
Datum: AHD Operator: B.Boga



310-03-BH3011 Depth Range: 21.00 - 21.45 m



310-03-BH3011 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.47 m
Datum: AHD Operator: B.Boga



310-03-BH3011 Depth Range: 24.00 - 24.45 m



310-03-BH3011 Depth Range: 25.50 - 25.80 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 321982.6 m E 6884082.9 m N

Commenced: 06/07/2021
Completed: 12/07/2021
Logged By: V.Chandrsena
Checked By: J.Boyle

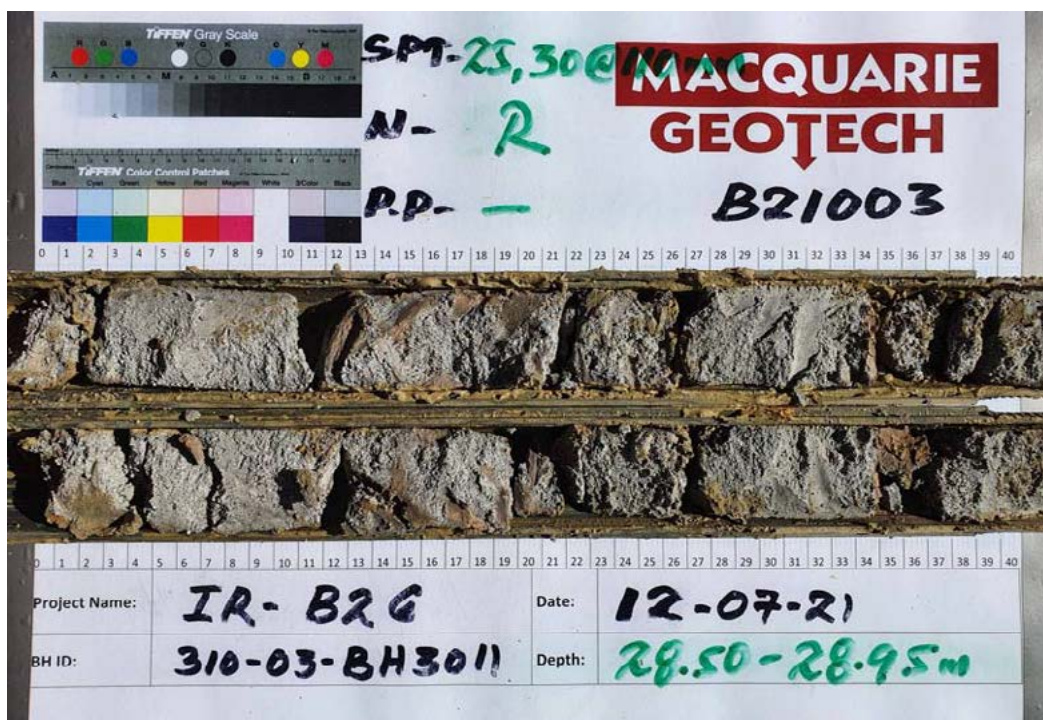
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.47 m
Datum: AHD Operator: B.Boga



310-03-BH3011 Depth Range: 27.00 - 27.45 m



310-03-BH3011 Depth Range: 28.50 - 28.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.47 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3011 Depth Range: 30.00 - 30.45 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 321982.6 m E 6884082.9 m N										Commenced: 06/07/2021 Completed: 12/07/2021 Logged By: V.Chandrsena Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ3 3 m										Inclination: -90° Bearing:										RL Surface: 327.47 m Datum: AHD Operator: B.Boga									
Drilling Information										Rock Substance										Rock Mass Defects									
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																
													Particular	General															
						302.5	25																						
						301.5	26																						
						300.5	27																						
						299.5	28																						
						298.5	29																						
						297.5	30																						
						296.5	31																						
HQ3			90	85					Continued from non-cored borehole sheet NO CORE 0.20m SILTSTONE: purple brown, quartz intrusions (<10%).	MW			IS, 80°, Qz FILLED, PR JT, 50°, CN, ST, RF																
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water ≡ Level (Date) ▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Support T - Timbering Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																													

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 06/07/2021												
Project Name: Inland Rail B2G		Completed: 12/07/2021												
Hole Location: N1 - Canning Creek to Millmeran		Logged By: V.Chandrsena												
Hole Coordinates: 321982.6 m E 6884082.9 m N		Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 327.47 m											
Barrel Type and Length: HQ3 3 m		Bearing:	Datum: AHD Operator: B.Boga											
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
HQ3	Not Observed	100	90	100	85	294.5	33							

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	06/07/2021
Project Name:	Inland Rail B2G	Completed:	12/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	V.Chandrsena
Hole Coordinates:	321982.6 m E 6884082.9 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	327.47 m
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD Operator: B.Boga



PointID : 310-03-BH3011 Depth Range: 31.50 - 35.00 m



PointID : 310-03-BH3011 Depth Range: 35.00 - 36.40 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 04/08/2021
Project Name: Inland Rail B2G	Completed: 04/08/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: A.Sharma
Hole Coordinates: 322016.9 m E 6884400.1 m N	Checked By: C.Green
Drill Model and Mounting: D4TAPG	Inclination: -90°
Hole Diameter: 115 mm	RL Surface: 327.44 m
	Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description							Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)			Structure and Additional Observations
ADN				E00000 0.00-0.20 m		326.4	1		CI	Silty CLAY: medium plasticity, dark-brown trace rootlets (<2mm).	M (<PL)	F				TOPSOIL	
				E00020 0.20-0.30 m													
				D00030 0.30-0.50 m													
				E00030 0.30-0.90 m													
				S00050 0.50-0.95 m													
				SPT 3,3,3 N=6													
				D00100 1.00-1.50 m													
				S00150 1.50-1.95 m													
				SPT 9,21,16 N=37													
				D00250 2.50-3.00 m													
			Not Observed	S00300 3.00-3.45 m		324.4	3		CI	Sandy CLAY: medium plasticity, dark brown to brown, fine grained sand.						3.40: PP Samp >600 kPa	
				SPT 11,15,16 N=31													
				D04000 4.00-4.50 m													
				S00450 4.50-4.95 m													
				SPT 9,12,15 N=27													
				D00550 5.50-6.00 m													
				S00600 6.00-6.45 m													
				SPT 7,10,12 N=22													
				D00700 7.00-7.50 m													
				S00750 7.50-7.95 m													
				SPT 6,11,15		320.4	7		CI-CH	Sandy CLAY: medium plasticity to high, grey mottled brown, fine grained sand.	M (<PL)					7.50: PP Samp >600 kPa	

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal 	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC						Commenced: 04/08/2021																							
Project Name: Inland Rail B2G						Completed: 04/08/2021																							
Hole Location: N1 - Canning Creek to Millmeran						Logged By: A.Sharma																							
Hole Coordinates: 322016.9 m E 6884400.1 m N						Checked By: C.Green																							
Drill Model and Mounting: D4TAPG						Inclination: -90°		RL Surface: 327.44 m																					
Hole Diameter: 115 mm						Bearing:		Datum: AHD		Operator: B.Boga																			
Drilling Information						Soil Description						Observations																	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations															
AD/V				N=26					CI-CH	Sandy CLAY: medium plasticity to high, grey mottled brown, fine grained sand. (continued)				RESIDUAL SOIL															
				D00850 8.50-9.00 m					Cl	CLAY: medium plasticity, grey brown.	VSt																		
				S00900 SPT 9.00-9.45 m 7,8,10 N=18		318.4	9				St			* 9.00: PP Samp >600 kPa															
				D01000 10.00-10.50 m SPT 10.00-10.45 m 5,10,16 N=26		317.4	10		CL	Sandy CLAY: low plasticity, brown to pale brown, fine grained sand.																			
				S01050 SPT 10.50-10.95 m 5,10,16 N=26		316.4	11				VSt																		
				S01200 SPT 12.00-12.45 m 12,12,16 N=28		315.4	12				M (<PL)																		
				S01350 SPT 13.50-13.95 m 10,13,18 N=31		314.4	13		CI-CH	CLAY trace sand: medium to high plasticity, grey mottled brown, fine grained sand.																			
				S01500 SPT 15.00-15.45 m 8,11,14 N=25		313.4	14		Cl	Sandy CLAY: medium plasticity, grey mottled black, fine grained sand, trace ferric oxides.	H			* 13.50: PP Samp >600 kPa															
						312.4	15			Below 15.00m: colour changes to grey mottled brown.	VSt			* 15.00: PP Samp >600 kPa															
Method AS - Auger Screwing RR - Rock Roller WB - Washbore															Penetration No resistance ranging to refusal														
Support C - Casing															Water Level (Date) Inflow Partial Loss Complete Loss														
Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss															Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test														
Classification Symbols and Soil Descriptions Based on Unified Soil Classification System															Moisture Condition D - Dry M - Moist W - Wet														
Plastic Limit < PL = PL > PL															Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense														

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 04/08/2021	
Project Name: Inland Rail B2G		Completed: 04/08/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: A.Sharma	
Hole Coordinates: 322016.9 m E 6884400.1 m N		Checked By: C.Green	
Drill Model and Mounting: D4TAPG		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 327.44 m	
		Bearing: Datum: AHD Operator: B.Boga	

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB		Not Observed		S01650 SPT 16.50-16.95 7,13,14 N=27		310.4	17		CI	Sandy CLAY: medium plasticity, grey mottled black, fine grained sand, trace ferric oxides. (continued)	M (<PL)	VSt		RESIDUAL SOIL 19.70: PP Sample > 600 kPa
				S01800 SPT 18.00-18.45 10,14,18 N=32		309.4	18							
						308.4	19							
				S01950 SPT 19.50-19.95 6,11,11 N=22		307.4	20		SC	Clayey SAND: fine grained, grey mottled brown, low to medium plasticity clay.				
				S02100 SPT 21.00-21.45 8,17,21 N=38		306.4	21							
				S02250 SPT 22.50-22.95 7,12,17 N=29		305.4	22							
						304.4	23		CI-CH	Gravelly sandy CLAY: medium to high plasticity, dark green mottled brown, fine to coarse grained sand, fine to coarse sub-angular to angular gravel.	M (<PL)	VSt		
									SC	SAND trace clay: coarse grained, pale brown, low plasticity clay.	D	MD		

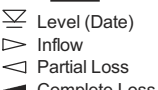
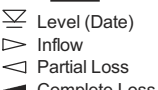
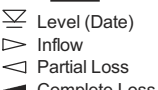
Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 04/08/2021
Project Name: Inland Rail B2G	Completed: 04/08/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: A.Sharma
Hole Coordinates: 322016.9 m E 6884400.1 m N	Checked By: C.Green

Drill Model and Mounting: D4TAPG	Inclination: -90°	RL Surface: 327.44 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations																
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)					Structure and Additional Observations											
WB		Not Observed		S02400 SPT 24.00-24.45 m 5,10,14 N=24		302.4	25		SC	SAND trace clay: coarse grained, pale brown, low plasticity clay. (continued)	D	MD	100	200	300	400	500	RESIDUAL SOIL											
				S02550 SPT 25.50-25.54 m 31/35mm		301.4	26		CI	Sandy CLAY: medium plasticity, pale brown, fine grained sand.	M (<PL)	H						* 25.50: PP Samp >600 kPa											
				S02700 SPT 27.00-27.02 m 30/20mm		300.4	27		SC	Clayey SAND: fine grained, brown mottled black, low plasticity clay.																			
				S02850 SPT 28.50-28.52 m 31/20mm		299.4	28			Below 28.50m: colour changes to brown.	D	VD																	
				S03000 SPT 30.00-30.19 m 31/40mm,0 N=0/150mm		297.4	30			Below 30.00m: colour changes to green mottled grey.																			
				S03150 SPT 31.50-31.68 m 22.30/30mm		296.4	31		CI	Sandy CLAY: medium plasticity, green grey mottled grey and brown, fine grained sand.	M (<PL)	H								* 31.50: PP Samp >600 kPa									
<table><tr><td>Method AS - Auger Screwing RR - Rock Roller WB - Washbore</td><td>Penetration  No resistance ranging to refusal</td><td>Water  Level (Date) Inflow Partial Loss Complete Loss</td><td>Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test</td><td>Moisture Condition D - Dry M - Moist W - Wet</td><td>Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</td></tr><tr><td>Support C - Casing</td><td>Graphic Log/Core Loss  Core recovered (hatching indicates material) Core loss</td><td>Classification Symbols and Soil Descriptions Based on Unified Soil Classification System</td><td>Plastic Limit < PL = PL < PL</td><td></td><td></td></tr></table>																		Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		
Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense																								
Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL																										

Engineering Log - Borehole

Project No.: B21003

Client: ARTC						Commenced: 04/08/2021									
Project Name: Inland Rail B2G						Completed: 04/08/2021									
Hole Location: N1 - Canning Creek to Millmeran						Logged By: A.Sharma									
Hole Coordinates: 322016.9 m E 6884400.1 m N						Checked By: C.Green									
Drill Model and Mounting: D4TAPG						Inclination: -90°		RL Surface: 327.44 m							
Hole Diameter: 115 mm						Bearing:		Datum: AHD		Operator: B.Boga					
Drilling Information						Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa) 100 200 300 400 500	Structure and Additional Observations	
WB		Not Observed	N=30/30mm						CI	Sandy CLAY: medium plasticity, green grey mottled grey and brown, fine grained sand. (continued)	M (<PL)	H		RESIDUAL SOIL	
			S03300 SPT 33.00-33.34 m 20,30,30/40mm N=60/190mm		294.4	33							* 33.00: PP Samp >600 kPa		
					293.4	34			Below 34.00m: grey.				* 34.50: PP Samp >600 kPa		
			S03450 SPT 34.50-34.67 m 22,30/20mm N=30/20mm		292.4	35									
			S03600 SPT 36.00-36.19 m 26,31/40mm N=31/40mm		291.4	36			Hole Terminated at 36.45 m Target depth					* 36.00: PP Samp >600 kPa	
						290.4	37								
						289.4	38								
						288.4	39								
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Support C - Casing Penetration No resistance ranging to refusal Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Plastic Limit < PL = PL < PL Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense															

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 0.50 - 0.95 m



310-03-BH3012 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 3.00 - 3.45 m



310-03-BH3012 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 6.00 - 6.45 m

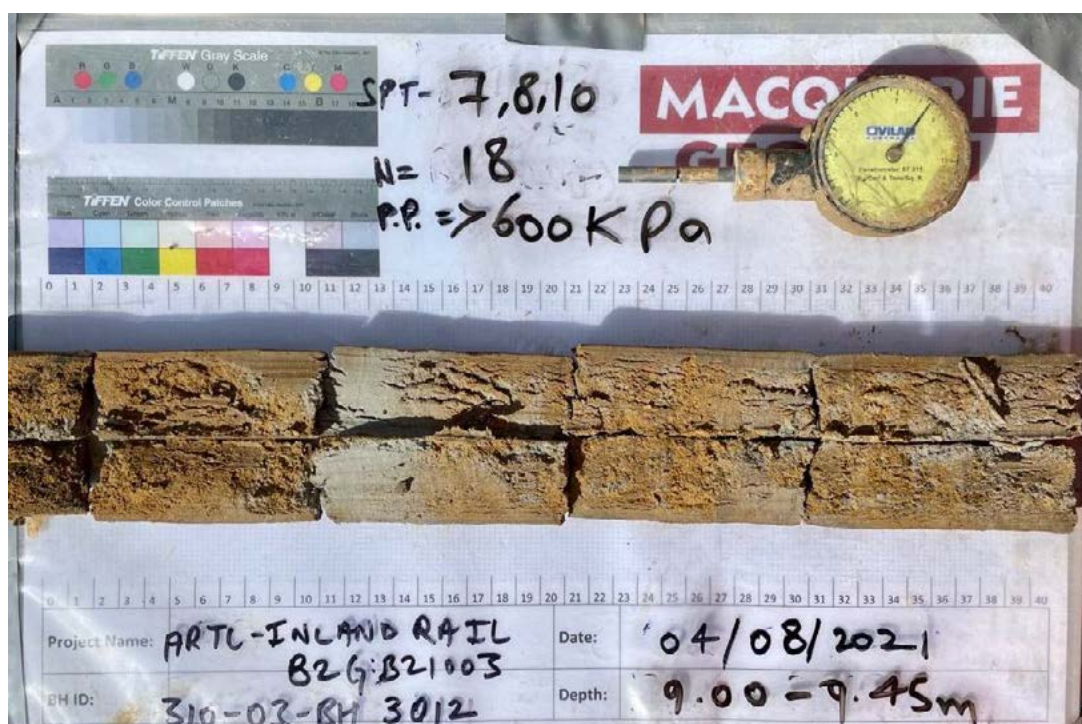


310-03-BH3012 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 9.00 - 9.45 m



310-03-BH3012 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 12.00 - 12.45 m



310-03-BH3012 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 15.00 - 15.45 m



310-03-BH3012 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 18.00 - 18.45 m



310-03-BH3012 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 21.00 - 21.45 m



310-03-BH3012 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 24.00 - 24.45 m



310-03-BH3012 Depth Range: 25.50 - 25.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

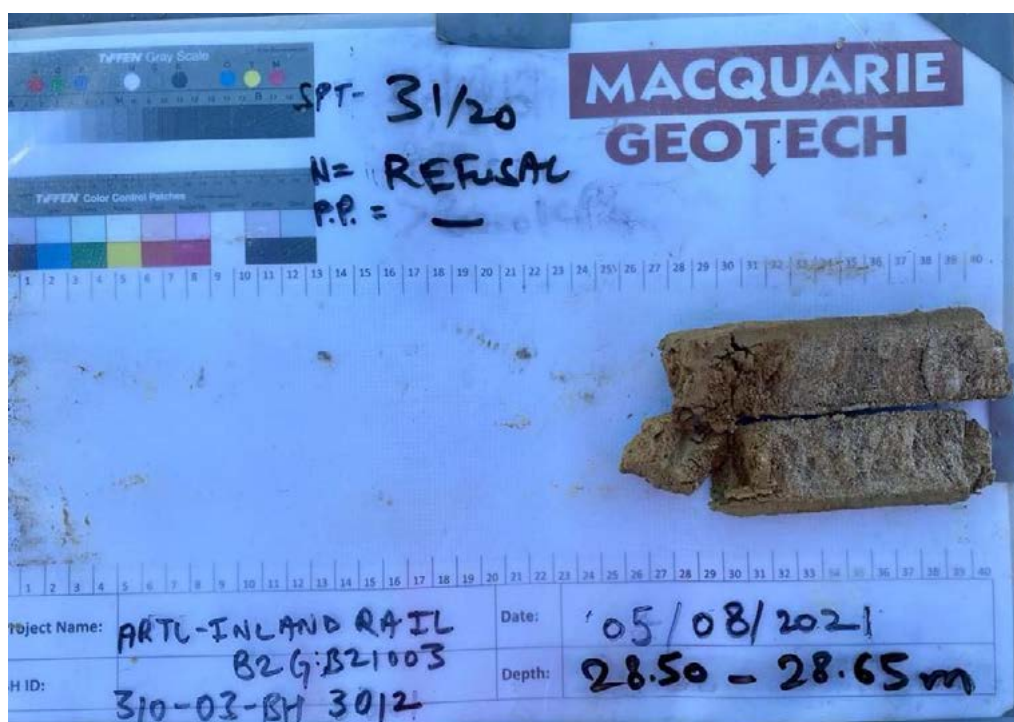
Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 27.00 - 27.45 m



310-03-BH3012 Depth Range: 28.50 - 28.65 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 30.00 - 30.45 m



310-03-BH3012 Depth Range: 31.50 - 31.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322016.9 m E 6884400.1 m N

Commenced: 04/08/2021
Completed: 04/08/2021
Logged By: A.Sharma
Checked By: C.Green

Drill Model and Mounting: D4TAPG
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 327.44 m
Datum: AHD Operator: B.Boga



310-03-BH3012 Depth Range: 33.00 - 33.45 m

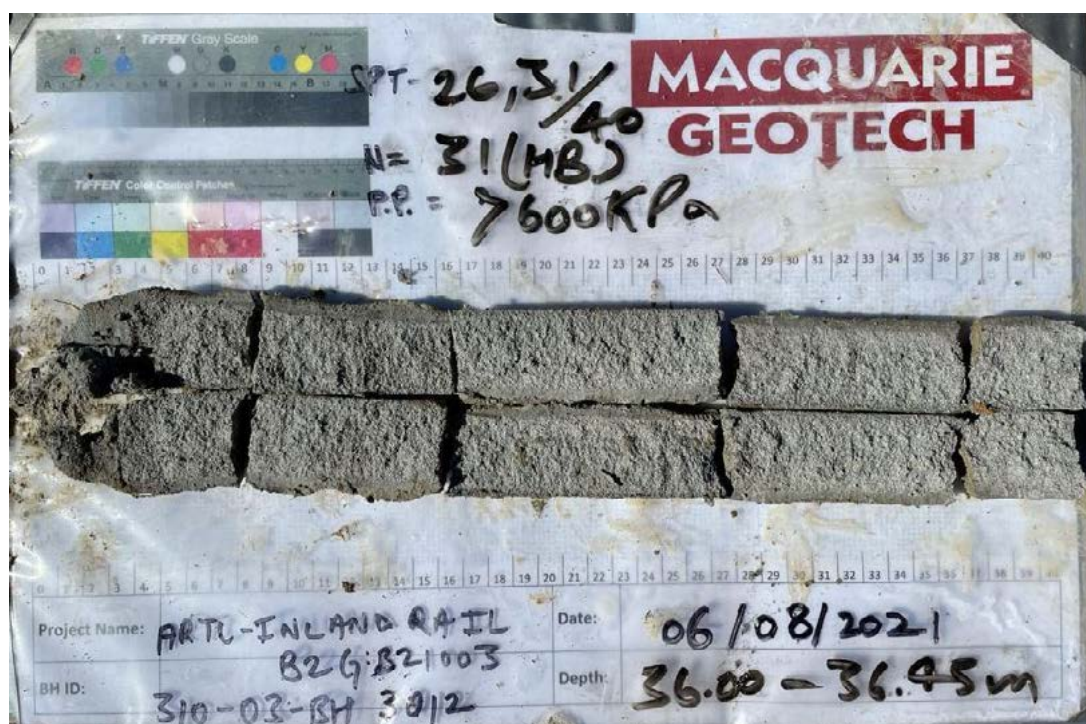


310-03-BH3012 Depth Range: 34.50 - 34.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	04/08/2021
Project Name:	Inland Rail B2G	Completed:	04/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	A.Sharma
Hole Coordinates:	322016.9 m E 6884400.1 m N	Checked By:	C.Green
Drill Model and Mounting:	D4TAPG	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	327.44 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3012 Depth Range: 36.00 - 36.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 05/07/2021
Project Name: Inland Rail B2G	Completed: 08/07/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 322065.8 m E 6886724.6 m N	Checked By: J.Boyle
Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°
Hole Diameter: 115 mm	Bearing:
	RL Surface: 331.97 m
	Datum: AHD
	Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
ADIV				D00030 0.30-0.50 m U00050 0.50-1.00 m		331.0	1		CI-CH	TOPSOIL: Sandy silty CLAY: medium plasticity, dark brown, fine to medium sand, trace rootlets (<2mm).	M	F			TOPSOIL
				S00100 SPT 1.00-1.45 m 14,17,18 N=35		SC	Sandy silty CLAY: medium to high plasticity, dark brown, fine grained sand.		(-PL to M (-PL)	D	ALLUVIAL SOIL				
				D00200 2.00-2.50 m		SM	Silty SAND trace gravel: fine to coarse grained, brown orange, fine to medium grained sub-rounded to sub-angular gravel.		M	MD to D					
				S00250 SPT 2.50-2.95 m 15,15,10 N=25		SC	Clayey SAND with gravel: fine to coarse grained, brown mottled grey, medium plasticity clay, fine to medium sub-rounded gravel.			MD					
				D00350 3.50-4.00 m		CH	Silty CLAY: high plasticity, blue grey.								
				S00400 SPT 4.00-4.45 m 5,5,10 N=15 PP 4.20 m =450 kPa			M (-PL to M (-PL)		St						
				D00500 5.00-5.50 m			Below 5.00m: trace fine grained sand.								
				S00550 SPT 5.50-5.95 m 9,15,20 N=35		CH	Sandy CLAY: high plasticity, pale grey-orange mottled black, fine grained sand.		M (-PL to M (-PL)	H					
				D00650 6.50-7.00 m		SM	SAND with silty: fine grained, pale brown mottled orange.								
				S00700 SPT 7.00-7.45 m 0,0,0 N=0					W	L					

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 05/07/2021	
Project Name: Inland Rail B2G		Completed: 08/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 322065.8 m E 6886724.6 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 331.97 m	
		Datum: AHD Operator: R. Welsh	

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S00850 SPT 8.50-8.95 m 6,9,13 N=22 PP 8.50 m =340 kPa		323.0	9		SM	SAND with silty: fine grained, pale brown mottled orange. (continued)	W	L		ALLUVIAL SOIL
						322.0	10		CH	Sandy silty CLAY: high plasticity, grey mottled orange-brown-black, fine grained sand.	M (-PL) to M (>PL)	VSt		
				S01000 SPT 10.00-10.45 m 8,15,17 N=32		321.0	11		SC	Clayey SAND: fine grained sand, grey brown, low plasticity clay.				
				S01150 SPT 11.50-11.95 m 8,12,15 N=27		320.0	12				VSt to H			
				S01300 SPT 13.00-13.45 m 4,11,14 N=25		319.0	13		SP	SAND trace silt and clay: fine grained, pale brown, low to medium plasticity clay.				
				S01450 SPT 14.50-14.95 m 7,11,14 N=25 PP 14.70 m =350 kPa		318.0	14							
						317.0	15		CI	Sandy silty CLAY: medium plasticity, grey, fine grained sand.	M (<PL) to M (-PL)	VSt		

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

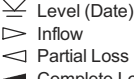
Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 05/07/2021																			
Project Name: Inland Rail B2G				Completed: 08/07/2021																			
Hole Location: N1 - Canning Creek to Millmeran				Logged By: T. Tran																			
Hole Coordinates: 322065.8 m E 6886724.6 m N				Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track				Inclination: -90°		RL Surface: 331.97 m																	
Hole Diameter: 115 mm				Bearing:		Datum: AHD Operator: R. Welsh																	
Drilling Information				Soil Description				Observations															
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations								
WB				S01600 SPT 16.00-16.45 m 9,15,19 N=34		315.0	17		SM	Silty SAND trace clay: fine to medium grained, pale grey, low plasticity fines.	W	D			ALLUVIAL SOIL								
				S01750 SPT 17.50-17.95 m 9,11,15 N=26 PP 17.83 m =400 kPa		314.0	18		CI	Silty CLAY with sand: medium plasticity, pale grey brown, fine grained sand.	M (<PL)	VSt		x									
				S01900 SPT 19.00-19.45 m 6,13,14 N=27		313.0	19		SC	Clayey SAND: fine grained, pale grey mottled pale brown, medium to high plasticity clay.	M to W	MD											
				S02050 SPT 20.50-20.95 m 6,8,17 N=25 PP 20.50 m =190 kPa		311.0	21		CL-CI	Sandy CLAY trace gravel: low to medium plasticity, pale grey mottled orange-pale brown, fine to coarse grained sub-rounded sand, fine to medium grained sub-angular to angular gravel.	M (<PL) to M (~PL)	VSt		x									
				SPT02200 SPT 22.00-22.45 m 18,30,28 N=58		310.0	22		SP	Gravelly SAND trace clay: fine to coarse grained, orange brown mottled pale grey, sub-angular to angular, fine to coarse sub-angular to angular gravel (quartz, no reaction to HCl), medium plasticity clay.	M to W	VD		RESIDUAL SOIL									
				S02350 SPT 23.50-23.91 m 10,18,30/110mm		309.0	23																
Method AS - Auger Screwing RR - Rock Roller WB- Washbore				Penetration No resistance ranging to refusal				Water Level (Date) Inflow Partial Loss Complete Loss				Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test				Moisture Condition D - Dry M - Moist W - Wet				Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Support C - Casing				Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss				Classification Symbols and Soil Descriptions Based on Unified Soil Classification System				Plastic Limit < PL = PL > PL											

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 05/07/2021																			
Project Name: Inland Rail B2G				Completed: 08/07/2021																			
Hole Location: N1 - Canning Creek to Millmeran				Logged By: T. Tran																			
Hole Coordinates: 322065.8 m E 6886724.6 m N				Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°		RL Surface: 331.97 m																			
Hole Diameter: 115 mm		Bearing:		Datum: AHD		Operator: R. Welsh																	
Drilling Information				Soil Description				Observations															
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations								
WB				N=48/260mm					SP	Gravelly SAND trace clay: fine to coarse grained, orange brown mottled pale grey, sub-angular to angular, fine to coarse sub-angular to angular gravel (quartz, no reaction to HCl), medium plasticity clay. (continued)	M to W			100	RESIDUAL SOIL								
				S02500 SPT 25.00-25.24 m 26,30/90mm N=30/90mm		307.0	25						200										
						306.0	26					300											
				S02650 SPT 26.50-26.93 m 6,27,30/130mm N=57/280mm		305.0	27	SC	Clayey SAND, fine grained, grey mottled orange brown, low medium plasticity clay.			400											
						304.0	28			Below 28.00m: trace fine to medium grained sub-angular to angular gravel.	VD		500										
				S02800 SPT 28.00-28.10 m 28/100mm		303.0	29				W												
						302.0	30																
				S02950 SPT 29.50-29.70 m 17,18/50mm N=18/50mm		301.0	31																
					S03100 SPT 31.00-31.18 m 18,8/30mm N=8/30mm																		
Method AS - Auger Screwing RR - Rock Roller WB- Washbore				Penetration 				Water 				Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test				Moisture Condition D - Dry M - Moist W - Wet				Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Support C - Casing				Graphic Log/Core Loss 				Classification Symbols and Soil Descriptions Based on Unified Soil Classification System				Plastic Limit < PL = PL < PL											

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	331.97 m	
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S03250 SPT 32.50-32.69 14,10/40mm N=10/40mm		299.0	33		SC	Clayey SAND, fine grained, grey mottled orange brown, low medium plasticity clay. (continued)	W	VD		100 200 300 400 500	RESIDUAL SOIL
						298.0	34			Continued on cored borehole sheet					
						297.0	35								
						296.0	36								
						295.0	37								
						294.0	38								
						293.0	39								

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date)  Inflow  Partial Loss  Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322065.8 m E 6886724.6 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 331.97 m
Datum: AHD Operator: R. Welsh



310-03-BH3013 Depth Range: 1.00 - 1.45 m

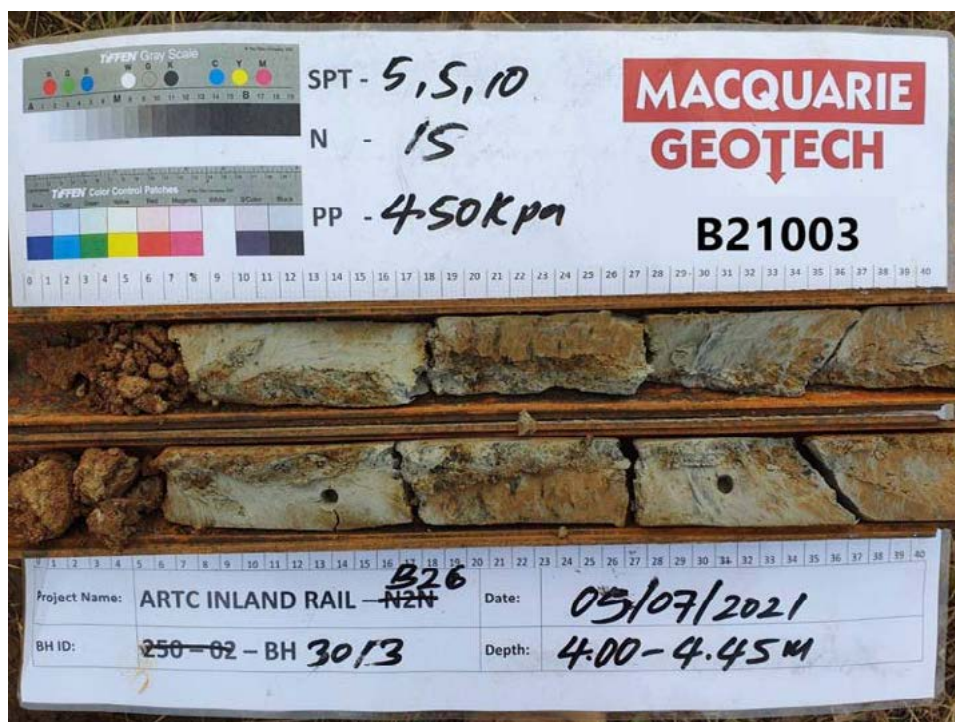


310-03-BH3013 Depth Range: 2.50 - 2.95 m

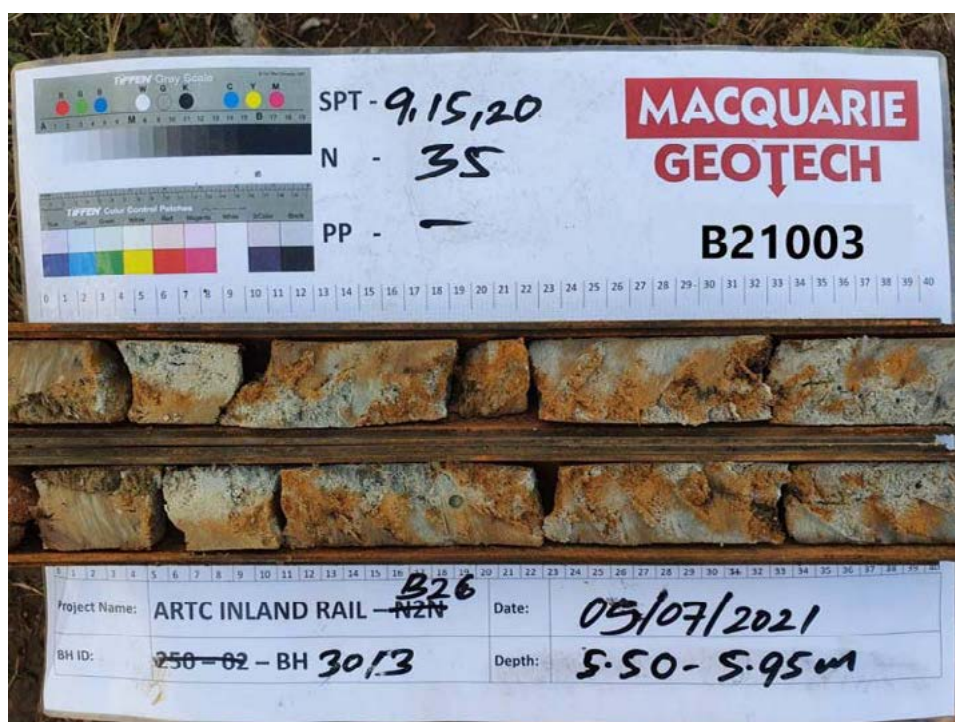
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 4.00 - 4.45 m

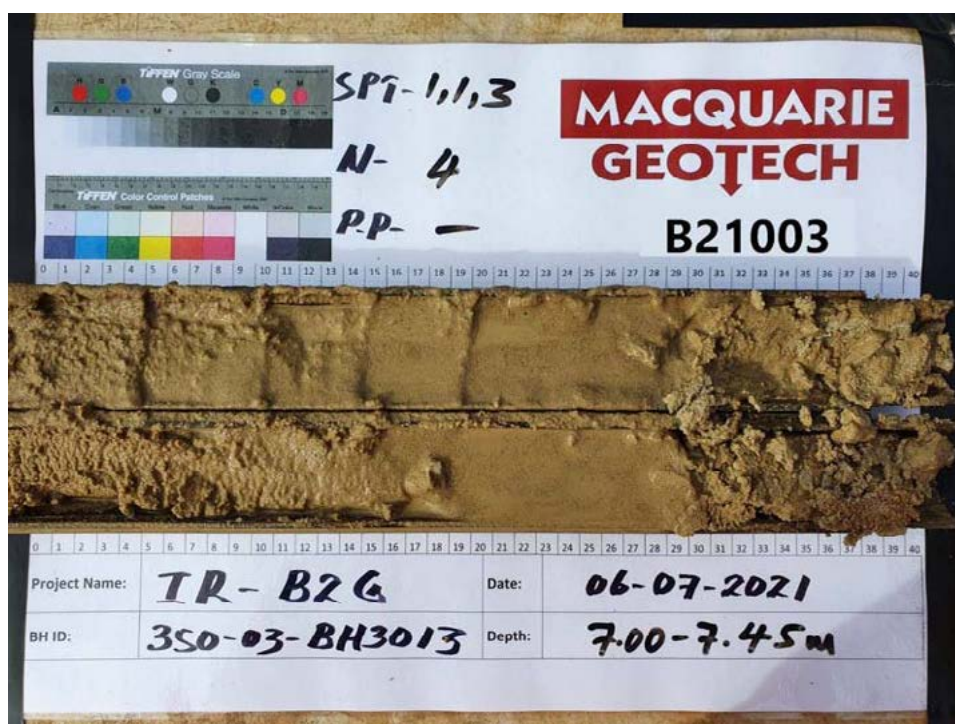


310-03-BH3013 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 7.00 - 7.45 m



310-03-BH3013 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 10.00 - 10.45 m

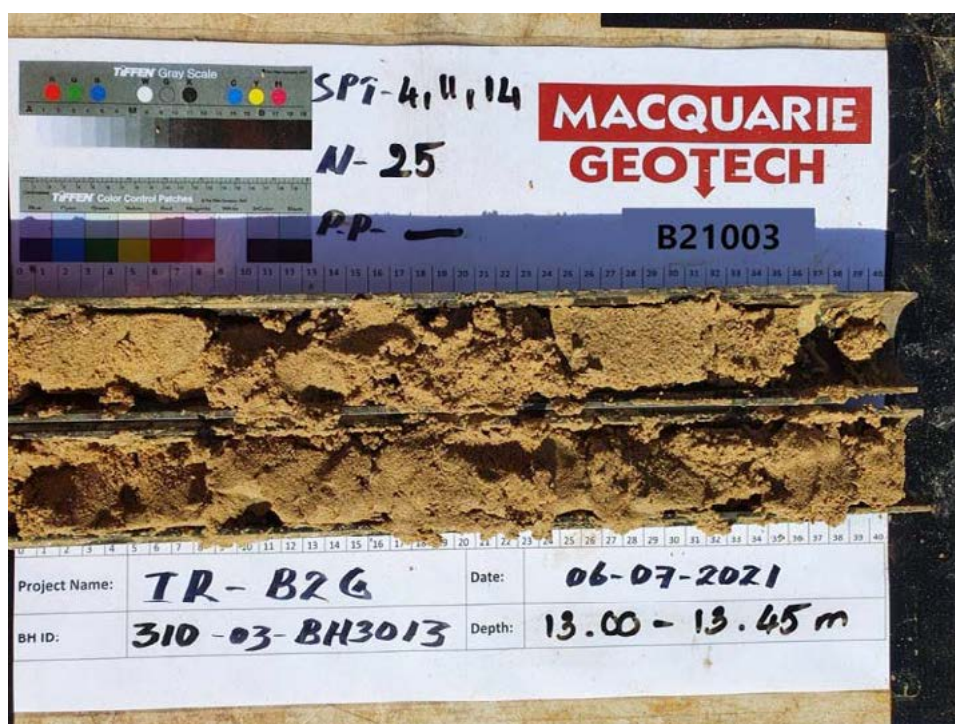


310-03-BH3013 Depth Range: 11.50 - 11.95 m

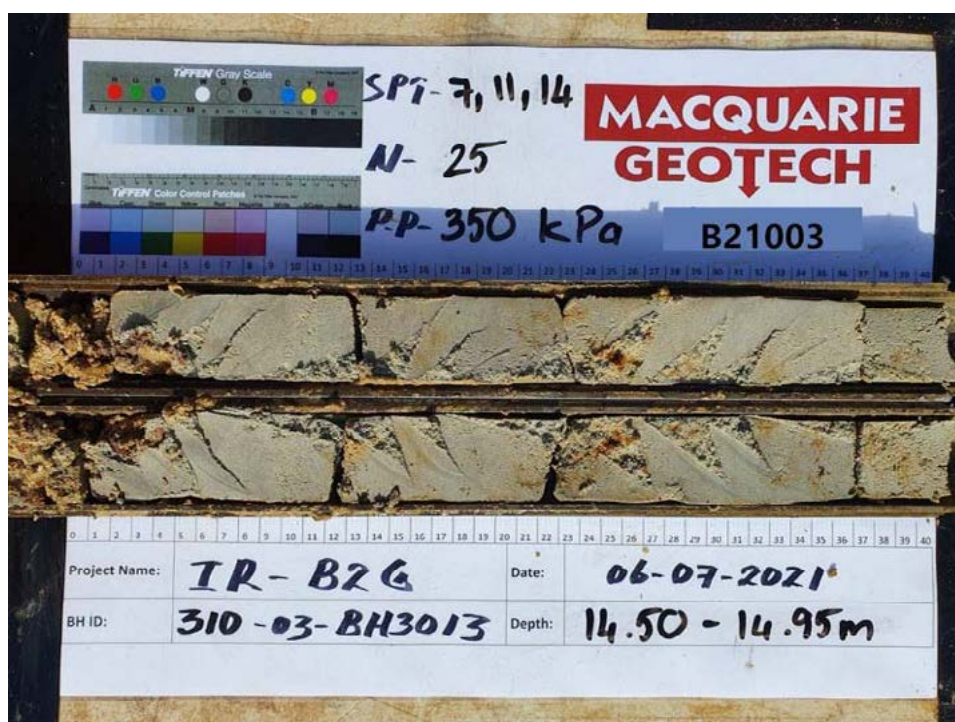
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 13.00 - 13.45 m

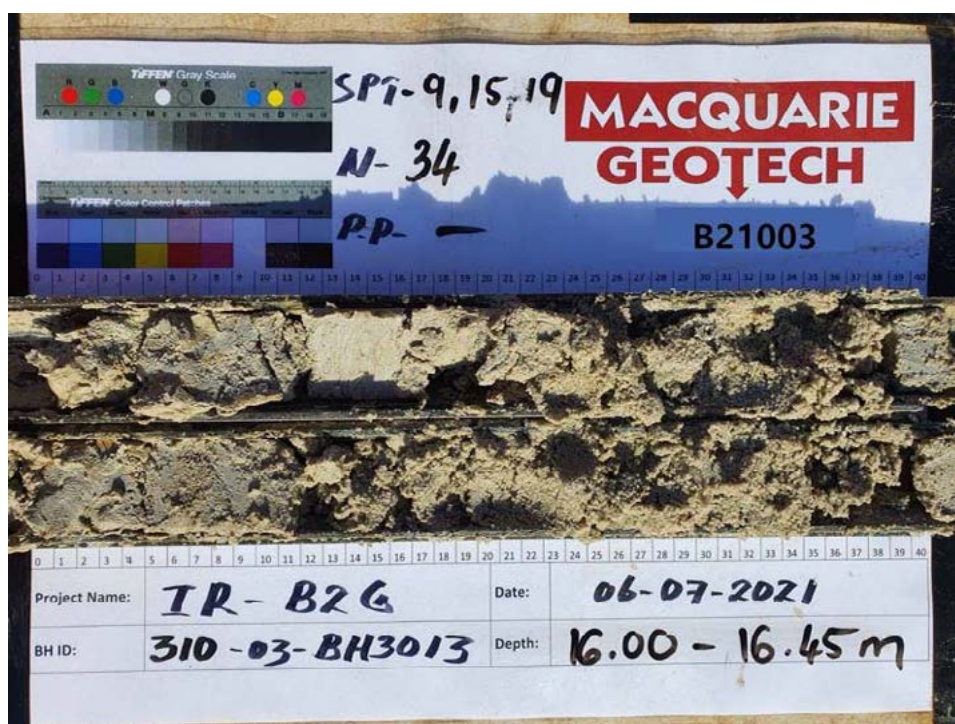


310-03-BH3013 Depth Range: 14.50 - 14.95 m

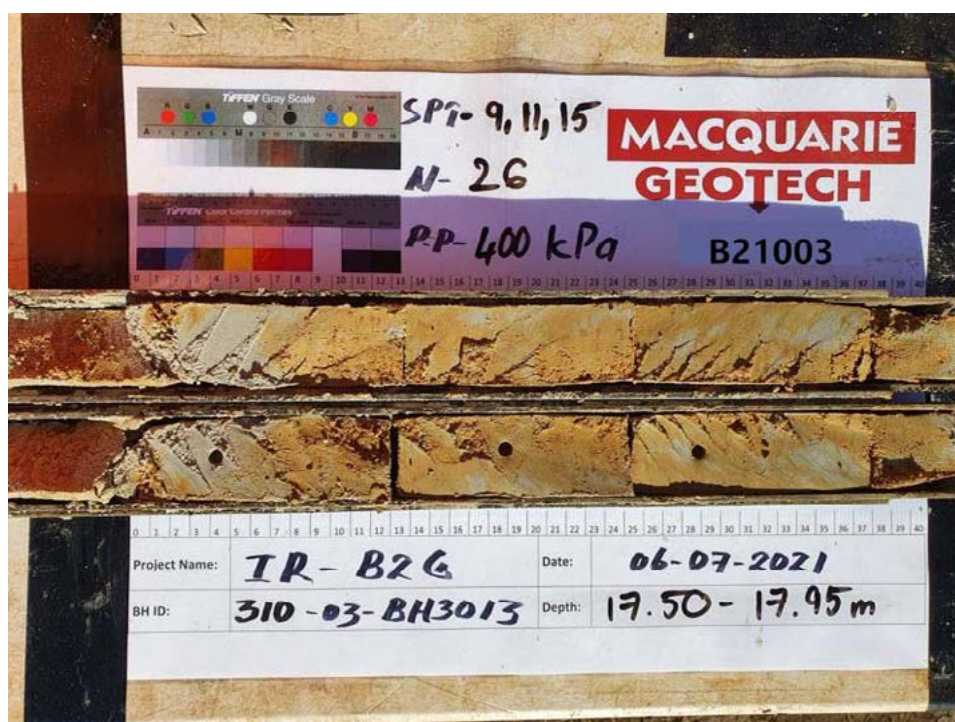
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 16.00 - 16.45 m

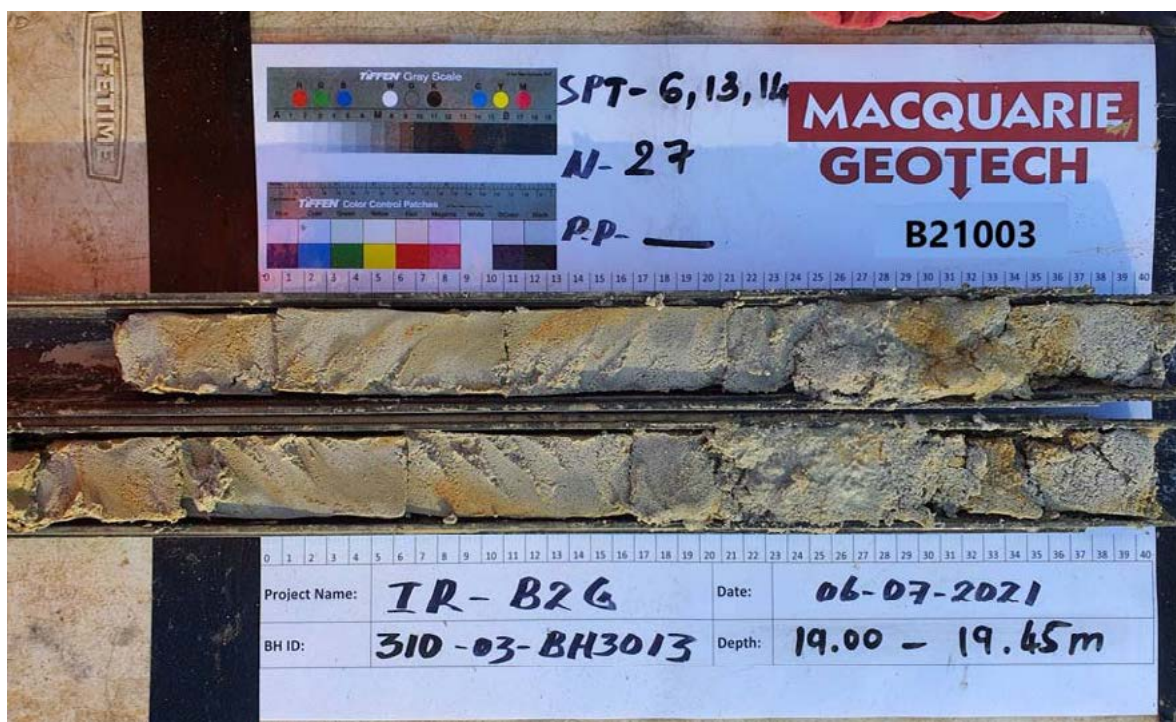


310-03-BH3013 Depth Range: 17.50 - 17.95 m

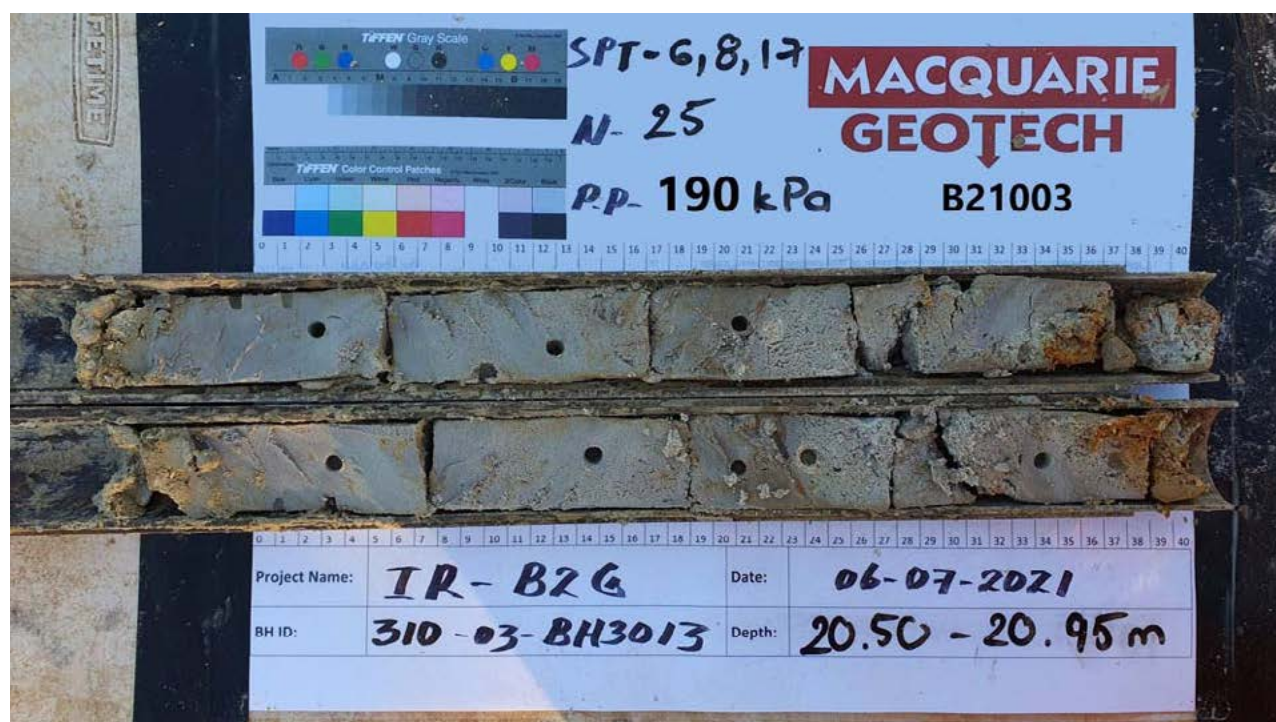
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 19.00 - 19.45 m



310-03-BH3013 Depth Range: 20.50 - 20.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 22.00 - 22.45 m



310-03-BH3013 Depth Range: 23.50 - 23.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322065.8 m E 6886724.6 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: T. Tran
Checked By: J.Boyle

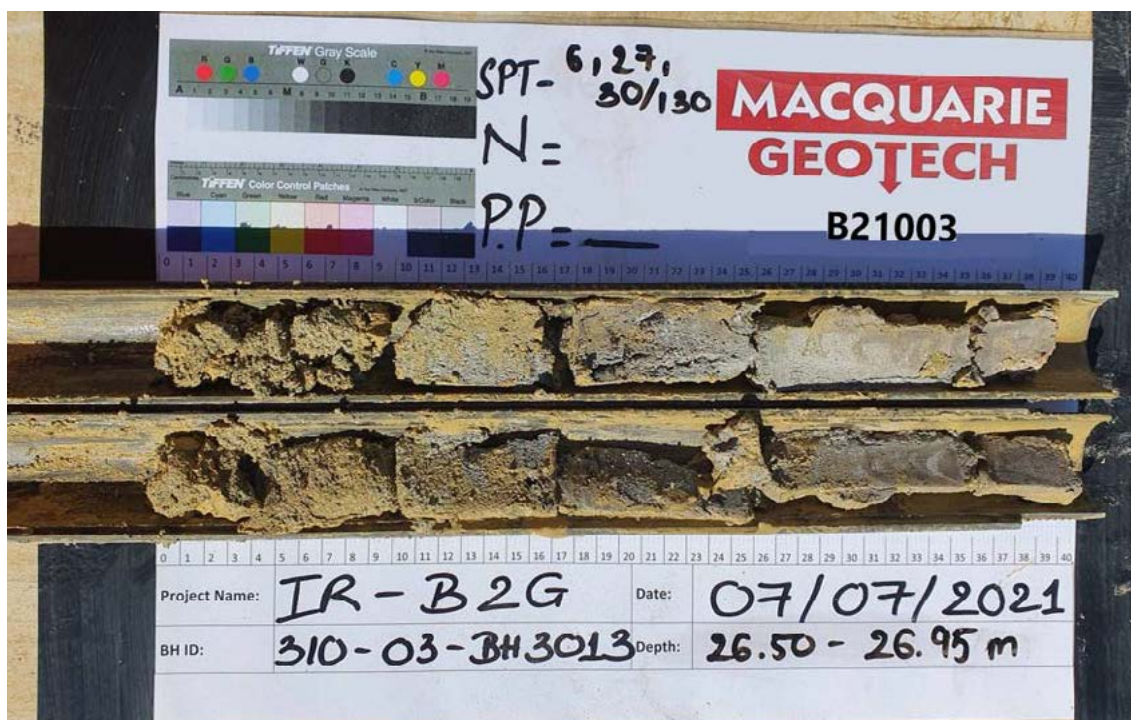
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 331.97 m
Datum: AHD Operator: R. Welsh



310-03-BH3013 Depth Range: 25.00 - 25.45 m



310-03-BH3013 Depth Range: 26.50 - 26.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 28.00 - 28.45 m



310-03-BH3013 Depth Range: 29.50 - 29.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322065.8 m E 6886724.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	331.97 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3013 Depth Range: 31.00 - 31.45 m



310-03-BH3013 Depth Range: 32.50 - 32.95 m

Engineering Log - Borehole

Project No.: B21003

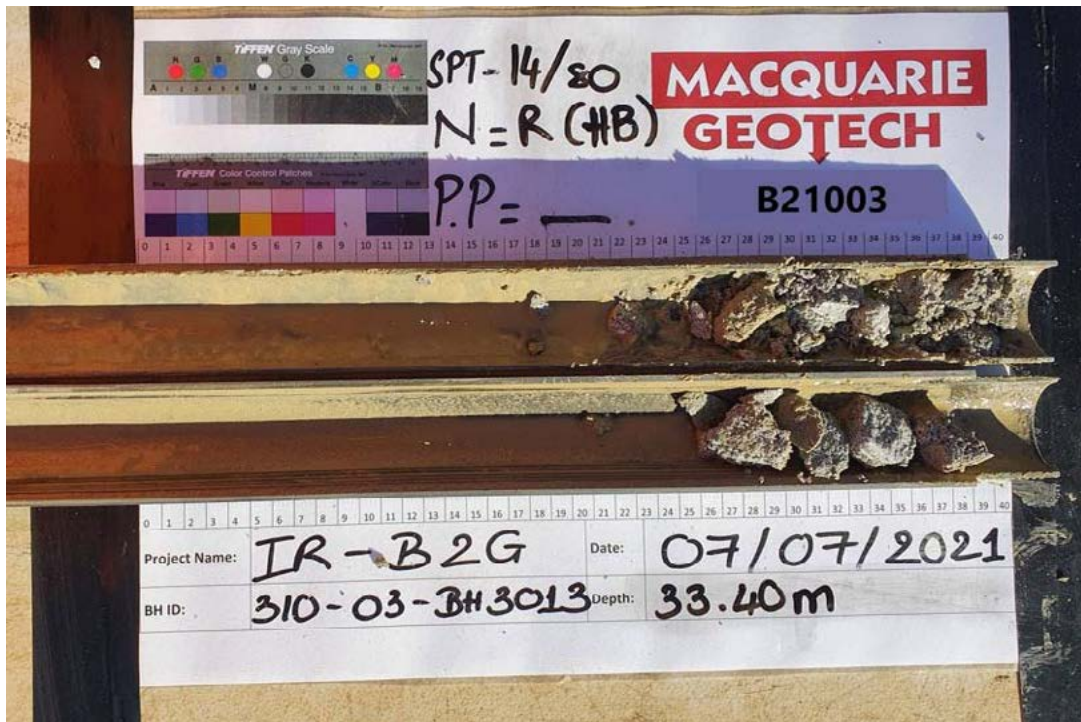
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322065.8 m E 6886724.6 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 331.97 m
Datum: AHD Operator: R. Welsh



310-03-BH3013 Depth Range: 33.40 - 33.48 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322065.8 m E 6886724.6 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 331.97 m
Barrel Type and Length: HQ3 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling				
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General			
HQ3						299.0	33		Continued from non-cored borehole sheet								
			43		0	298.0	34		No Core: 0.20m. SANDSTONE: fine grained, grey mottled black, massive, trace coal / organic inclusions (<5%).				BP, 5°, Clay VNR, UN, RF BP, 5°, Clay VNR, UN, RF BP, 5°, Clay VNR, UN, RF SM, 5°, Clay FILLED, 10mm width FZ, 30°, Clay, IR, S - RF BP, 5°, Clay VNR, UN, RF BP, 5°, Clay CN, IR, RF				
		100		79		297.0	35		Below 35.20m: siltstone lenses (5%).	HW			BP, 5°, Clay VNR, UN, RF BP, 5°, Clay VNR, UN, RF JT, 65°, CN, UN, RF BP, 5°, CN, UN, RF				
						296.0	36						BP, 5°, Clay VNR, UN, RF BP, 10°, Clay, UN, RF BP, 10°, Clay, UN, RF BP, 10°, CN, IR, RF BP, 5°, CN, UN, RF				
						295.0	37		Hole Terminated at 36.20 m Target depth. Hole reinstated with arisings and additional fill. Hole grouted to surface.								
						294.0	38										
						293.0	39										

Method	Water	Graphic Log/Core Loss	Weathering	Strength
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Level (Date) Inflow Partial Loss Complete Loss	Core recovered (hatching indicates material) Core loss	FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
	Support T - Timbering			

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322065.8 m E 6886724.6 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3 3 m

Inclination: -90°
Bearing:

RL Surface: 331.97 m
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3013 Depth Range: 33.40 - 36.20 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322057.7 m E 6886874.4 m N

Commenced: 08/07/2021
Completed: 13/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 332.76 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description							Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
AD/T				D00030 0.30-0.50 m U00050 0.50-1.00 m		331.8	1		CL-CI	TOPSOIL: Sandy SILT: dark brown, fine grained sand, trace rootlets (<2mm). Sandy silty CLAY: low to medium plasticity, dark brown, fine grained sand, trace rootlets (<2mm).	M (<PL)	H			TOPSOIL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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				S00100 SPT 1.00-1.45 m 14,17,20 N=37 PP 1.00 m >600 kPa																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322057.7 m E 6886874.4 m N

Commenced: 08/07/2021
Completed: 13/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 332.76 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
WB									SM	Silty SAND trace gravels: fine to coarse grained sand, grey, fine sub rounded to sub angular gravels (continued)	D	MD					ALLUVIAL SOIL
				S00850 SPT 8.50-8.95 m 10,16,7 N=23 PP 8.80 m =250 kPa		323.8	9		CL-CI	Sandy CLAY: low to medium plasticity, grey and red-brown, fine grained sand.							
				S01000 SPT 10.00-10.45 m 10,13,14 N=27 PP 10.30 m =175 kPa		322.8	10			Below 10.00m: colour tending to grey and pale brown mottled orange.	M (<PL) to M (~PL)						
				S01150 SPT 11.50-11.95 m 8,9,12 N=21 PP 11.70 m =270 kPa		320.8	12					VSt					
				S01300 SPT 13.00-13.45 m 9,9,11 N=20 PP 13.30 m =250 kPa		319.8	13		CI-CH	Sandy silty CLAY trace gravel: medium to high plasticity, grey-brown mottled orange, fine to medium grained sand, fine to medium sub-rounded to sub-angular gravel.							
				S01450 SPT 14.50-14.95 m 7,9,13 N=22 PP 14.75 m =380 kPa		317.8	15				M (~PL)						

Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density	
AS - Auger Screwing	RR - Rock Roller		No resistance ranging to refusal		Level (Date)	U - Undisturbed Sample	D - Dry	VS - Very Soft			
WB- Washbore					Inflow	D - Disturbed Sample	M - Moist	S - Soft			
			Partial Loss			SPT - Standard Penetration Test	W - Wet	F - Firm			
			Complete Loss					VSt - Very Stiff			
								H - Hard			
								VL - Very Loose			
								L - Loose			
								MD - Medium Dense			
								D - Dense			
								VD - Very Dense			

Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit	
C - Casing			Core recovered (hatching indicates material)	Based on Unified Soil Classification System		< PL	
			Core loss			= PL	
						< PL	

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 08/07/2021													
Project Name: Inland Rail B2G		Completed: 13/07/2021													
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran													
Hole Coordinates: 322057.7 m E 6886874.4 m N		Checked By: J.Boyle													
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 332.76 m												
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: R. Welsh												
Drilling Information		Soil Description		Observations											
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S01600 SPT 16.00-16.45 m 7,9,14 N=23		315.8	17		SC	Clayey SAND: fine to coarse grained, pale grey, medium plasticity clay.				100	ALLUVIAL SOIL
				S01750 SPT 17.50-17.95 m 8,12,14 N=26		314.8	18			Below 17.50m: colour tending to pale grey mottled red and pale brown.	W	MD		200	
				S01900 SPT 19.00-19.45 m 5,8,11 N=19 PP 19.35 m =280 kPa		313.8	19		CI	Sandy CLAY trace silt: medium plasticity, pale grey mottled orange, fine grained sand.				300	
				S02050 SPT 20.50-20.95 m 6,8,12 N=20 PP 20.75 m =290 kPa		312.8	20					VSt		400	
				S02200 SPT 22.00-22.37 m 15,30,10/70mm HB N=40/220mm		311.8	21					M (-PL)		500	
				S02350 SPT 23.50-23.94 m 10,23,17/135mm		310.8	22				Below 22.00m: fine to coarse grained sand and colour tending to orange brown.		H		
						309.8	23		SC	Clayey SAND with gravel: fine to coarse grained, pale brown-orange mottled black, low to medium plasticity clay, fine to coarse sub-rounded to sub-angular gravel.	M to W	VD			RESIDUAL SOIL
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density					
AS - Auger Screwing RR - Rock Roller WB- Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense					
Support		Graphic Log/Core Loss				Classification Symbols and Soil Descriptions		Plastic Limit							
C - Casing		Core recovered (hatching indicates material) Core loss				Based on Unified Soil Classification System		< PL = PL > PL							

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322057.7 m E 6886874.4 m N

Commenced: 08/07/2021
Completed: 13/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 332.76 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description						Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)					Structure and Additional Observations
WB				HB N=40/285mm					SC	Clayey SAND with gravel: fine to coarse grained, pale brown-orange mottled black, low to medium plasticity clay, fine to coarse sub-rounded to sub-angular gravel. <i>(continued)</i>		VD					RESIDUAL SOIL	
				S02500 SPT 25.00-25.45 m 9,15,15 N=30		307.8	25					D						
						306.8	26											
				S02650 SPT 26.50-26.94 m 6,16,30/140mm N=46/290mm		305.8	27											
				S02800 SPT 28.00-28.28 m 19,30/130mm HB N=30/130mm		304.8	28			Below 28.00m: colour tending to grey mottled black and gravel decreasing with depth.	M to W							
						303.8	29					VD						
				S02950 SPT 29.50-29.80 m 7,25/145mm HB N=25/145mm		302.8	30											
				S03100 SPT 31.00-31.30 m 5,30 HB N=30/150mm		301.8	31											

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	 No resistance ranging to refusal	 Level (Date)  Inflow  Partial Loss  Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	 Core recovered (hatching indicates material)  Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 08/07/2021	
Project Name: Inland Rail B2G		Completed: 13/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 322057.7 m E 6886874.4 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 332.76 m	
		Bearing: Datum: AHD Operator: R. Welsh	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S03250 SPT 32.50-32.62 13/120mm HB		299.8	33		SC	Clayey SAND with gravel: fine to coarse grained, pale brown-orange mottled black, low to medium plasticity clay, fine to coarse sub-rounded to sub-angular gravel. (continued)	M to W	VD			RESIDUAL SOIL
				S03400 SPT 34.00-34.08 10/80mm HB		298.8	34								
						297.8	35			Continued on cored borehole sheet					
						296.8	36								
						295.8	37								
						294.8	38								
						293.8	39								

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 1.00 - 1.45 m



310-03-BH3014 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 4.00 - 4.45 m



310-03-BH3014 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 7.00 - 7.45 m



310-03-BH3014 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 10.00 - 10.45 m



310-03-BH3014 Depth Range: 11.50 - 11.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 13.00 - 13.45 m



310-03-BH3014 Depth Range: 16.00 - 16.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 17.50 - 17.95 m



310-03-BH3014 Depth Range: 19.00 - 19.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 22.00 - 22.45 m



310-03-BH3014 Depth Range: 23.50 - 23.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 25.00 - 25.45 m



310-03-BH3014 Depth Range: 26.50 - 26.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 28.00 - 28.45 m

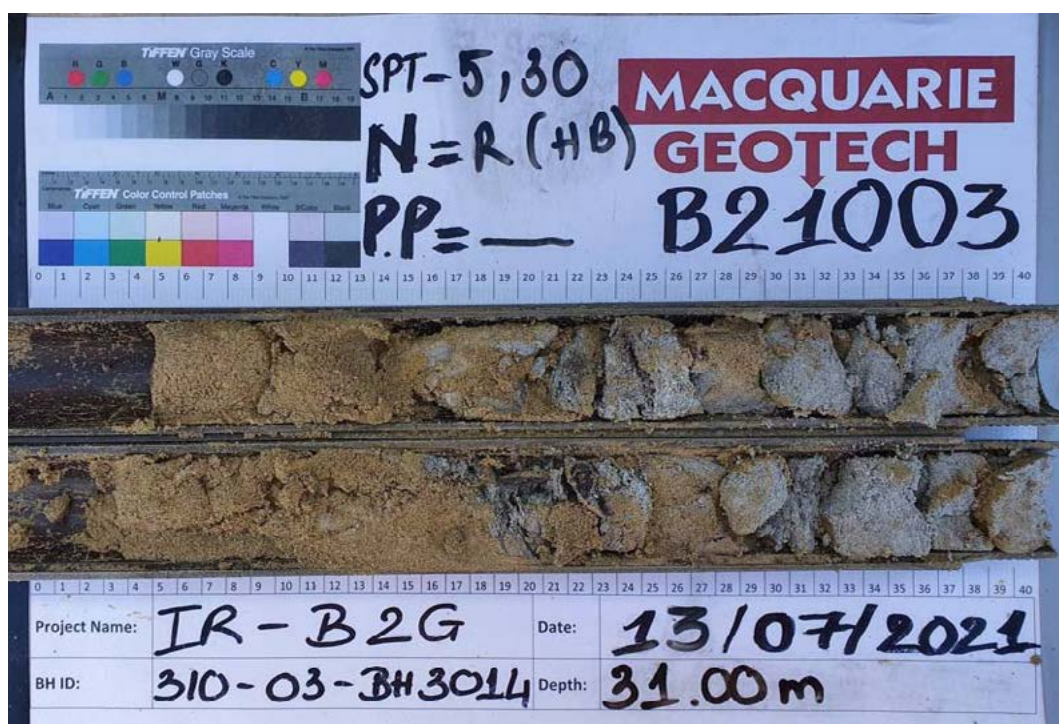


310-03-BH3014 Depth Range: 29.50 - 29.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/07/2021
Project Name:	Inland Rail B2G	Completed:	13/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	322057.7 m E 6886874.4 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	332.76 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3014 Depth Range: 31.00 - 31.45 m



310-03-BH3014 Depth Range: 32.50 - 32.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322057.7 m E 6886874.4 m N

Commenced: 08/07/2021
Completed: 13/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 332.76 m
Datum: AHD Operator: R. Welsh



310-03-BH3014 Depth Range: 34.00 - 34.10 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 322057.7 m E 6886874.4 m N										Commenced: 08/07/2021 Completed: 13/07/2021 Logged By: T. Tran Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ3 3 m										Inclination: -90° Bearing: RL Surface: 332.76 m Datum: AHD Operator: R. Welsh																			
Drilling Information										Rock Substance										Rock Mass Defects									
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																
													Particular	General															
						299.8	33																						
						298.8	34																						
									Continued from non-cored borehole sheet																				
						297.8	35		SANDSTONE: (60%) interbedded with siltstone (40%), fine grained, grey mottled black, massive, trace organic inclusions (<5%).																				
						296.8	36		SANDSTONE: medium to coarse grained, grey, massive																				
									Below 36.10m thin 60% silt laminations																				
						295.8	37		Hole Terminated at 36.30 m Target depth Hole grouted to surface.																				
						294.8	38																						
						293.8	39																						

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 322057.7 m E 6886874.4 m N

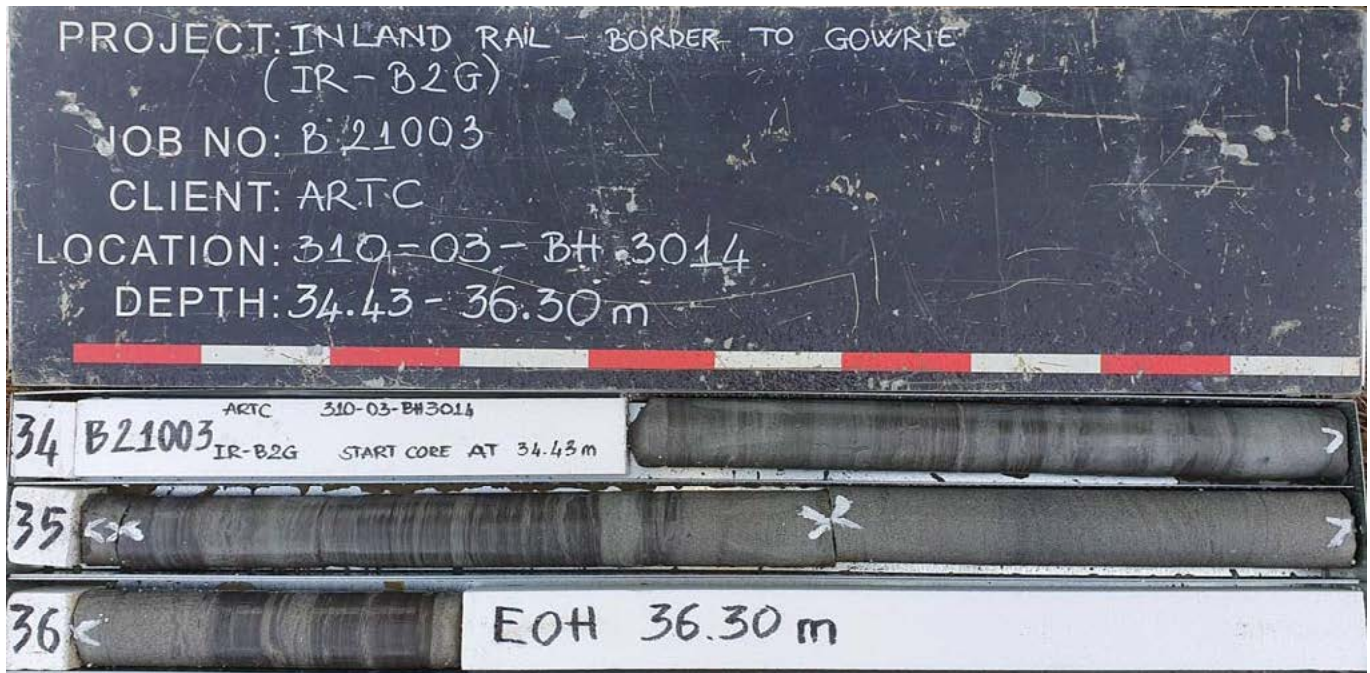
Commenced: 08/07/2021
Completed: 13/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3 3 m

Inclination: -90°
Bearing:

RL Surface: 332.76 m
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3014 Depth Range: 34.43 - 36.30 m

Engineering Log - Borehole

Project No.: B21003

Client: Project Name: Hole Location: Hole Coordinates:						ARTC Inland Rail B2G N1 - Canning Creek to Millmeran 324580.0 m E 6901750.9 m N																													
						Commenced: 20/07/2021 Completed: 22/07/2021 Logged By: T. Tran Checked By: J.Boyle																													
Drill Model and Mounting: Comacchio 305/Track						Inclination: -90°				RL Surface: 451.75 m																									
Hole Diameter: 115 mm						Bearing:				Datum: AHD Operator: R. Welsh																									
Drilling Information						Soil Description									Observations																				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)					Structure and Additional Observations																	
													100	200	300	400	500																		
AD/T			Not Observed	D00030 0.30-0.50 m U00050 0.50-1.00 m		450.7	1		CH	TOPSOIL: Sandy silty CLAY: high plasticity, dark brown, fine grained sand, trace rootlets (<1mm). Silty CLAY trace sand and gravel: high plasticity, dark brown mottled black, fine grained sand, fine sub rounded gravels.	M (<>PL)	H						TOPSOIL																	
				S00100 SPT 1.00-1.45 m 10,15,16 N=31 PP 1.00 m >600 kPa		449.7			2	CH	Silty CLAY trace sand: high plasticity, brown mottled orange, fine grained sand.				*																				
				S00250 SPT 2.50-2.95 m 6,10,10 N=20 PP 2.50 m >600 kPa		448.7			3	CH	Sandy CLAY trace silt: high plasticity, brown, fine grained sand.	M (<>PL) M (<>PL)	VSt		*																				
				D00350 3.50-4.00 m		447.7			4	CI	Silty CLAY trace sand: medium plasticity, grey-brown mottled orange-white, fine grained sand.	M (<>PL)	H		*																				
				S00400 SPT 4.00-4.45 m 7,14,18 N=32 PP 4.00 m >600 kPa		446.7			5																										
				D00500 5.00-5.50 m		444.7			7	Continued on cored borehole sheet																									
C																																			
Method AS - Auger Screwing RR - Rock Roller WB- Washbore						Penetration No resistance ranging to refusal						Water Level (Date) Inflow Partial Loss Complete Loss						Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT- Standard Penetration Test						Moisture Condition D - Dry M - Moist W - Wet						Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense					
Support C - Casing						Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss						Classification Symbols and Soil Descriptions Based on Unified Soil Classification System						Plastic Limit < PL = PL > PL																	

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	20/07/2021
Project Name:	Inland Rail B2G	Completed:	22/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324580.0 m E 6901750.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	451.75 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3021 Depth Range: 1.00 - 1.45 m



310-03-BH3021 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	20/07/2021
Project Name:	Inland Rail B2G	Completed:	22/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324580.0 m E 6901750.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	451.75 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3021 Depth Range: 4.00 - 4.45 m



310-03-BH3021 Depth Range: 5.50 - 5.58 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 324580.0 m E 6901750.9 m N										Commenced: 20/07/2021 Completed: 22/07/2021 Logged By: T. Tran Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ3 4.2 m										Inclination: -90° Bearing:										RL Surface: 451.75 m Datum: AHD Operator: R. Welsh									

Drilling Information							Rock Substance										Rock Mass Defects																	
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral						Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling													
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular						General					
AD/T						450.7	1																											
						449.7	2																											
						448.7	3																											
						447.7	4																											
						446.7	5																											
HQ3	Not Observed	90	100	0	13	445.7	6	Continued from non-cored borehole sheet Silty CLAY trace sand: medium plasticity, grey-brown mottled orange-white, fine grained sand. (continued)	XW																									
						444.7	7	Extremely weathered SILTSTONE recovered as Silty CLAY: medium to high plasticity, brown-grey mottled orange and black.																										
								SILTSTONE: fine grained, pale brown mottled grey and orange.	HW																									
									XW																									

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

≡ Level (Date)
▽ Inflow
△ Partial Loss
▲ Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
 Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 20/07/2021																																																																																																																	
Project Name: Inland Rail B2G		Completed: 22/07/2021																																																																																																																	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran																																																																																																																	
Hole Coordinates: 324580.0 m E 6901750.9 m N		Checked By: J.Boyle																																																																																																																	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 451.75 m																																																																																																																
Barrel Type and Length: HQ3 4.2 m		Bearing:	Datum: AHD Operator: R. Welsh																																																																																																																
Drilling Information		Rock Substance		Rock Mass Defects																																																																																																															
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																																																																																																						
													Particular	General																																																																																																					
HQ3	Not Observed	100	90	13	442.7	441.7	440.7	439.7	438.7	437.7	436.7	15	Thin bed of siltstone, dark grey.	HW	●	30	100	300	1000	3000	8.00°: thin bed of coal form 8.00-8.10m																																																																																														
																							9	XW	VL	J	M	H	EH	BP, 5°, Fe FILLED, IR, VR	JT, 85°, CN, UN, RF	IS, 20°, Clay FILLED, UN, RF	BP, 5°, CN, UN, RF	JT, 60°, Clay FILLED, PR, S	JT, 70°, Fe VNR, PR, S	BP, 15°, CN, UN, RF	BP, 5°, Clay FILLED, UN, RF	BP, 10°, Fe VNR, UN, RF	JT, 75°, CN, IR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	BP, 10°, Clay VNR, CU, RF	BP, 5°, Clay VNR, PR, RF	BP, 10°, CN, IR, RF	IS, 45°, Clay FILLED, UN, RF	JT, 40°, Clay VNR, IR, RF	JT, 60°, CN, IR, VR	BP, 15°, CN, CU, VR	BP, 30°, Clay VNR, IR, VR	JT, 65°, CN, UN, RF	IS, 10°, Clay FILLED, UN, RF																																																														
																																																						10	HW	VL	J	M	H	EH	BP, 5°, Fe FILLED, IR, VR	JT, 85°, CN, UN, RF	IS, 20°, Clay FILLED, UN, RF	BP, 5°, CN, UN, RF	JT, 60°, Clay FILLED, PR, S	JT, 70°, Fe VNR, PR, S	BP, 15°, CN, UN, RF	BP, 5°, Clay FILLED, UN, RF	BP, 10°, Fe VNR, UN, RF	JT, 75°, CN, IR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	BP, 10°, Clay VNR, CU, RF	BP, 5°, Clay VNR, PR, RF	BP, 10°, CN, IR, RF	IS, 45°, Clay FILLED, UN, RF	JT, 40°, Clay VNR, IR, RF	JT, 60°, CN, IR, VR	BP, 15°, CN, CU, VR	BP, 30°, Clay VNR, IR, VR	JT, 65°, CN, UN, RF	IS, 10°, Clay FILLED, UN, RF																															
																																																																																					11	MW	VL	J	M	H	EH	BP, 5°, Fe FILLED, IR, VR	JT, 85°, CN, UN, RF	IS, 20°, Clay FILLED, UN, RF	BP, 5°, CN, UN, RF	JT, 60°, Clay FILLED, PR, S	JT, 70°, Fe VNR, PR, S	BP, 15°, CN, UN, RF	BP, 5°, Clay FILLED, UN, RF	BP, 10°, Fe VNR, UN, RF	JT, 75°, CN, IR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	BP, 10°, Clay VNR, CU, RF	BP, 5°, Clay VNR, PR, RF	BP, 10°, CN, IR, RF	IS, 45°, Clay FILLED, UN, RF	JT, 40°, Clay VNR, IR, RF	JT, 60°, CN, IR, VR	BP, 15°, CN, CU, VR	BP, 30°, Clay VNR, IR, VR	JT, 65°, CN, UN, RF	IS, 10°, Clay FILLED, UN, RF
13	HW	VL	J	M	H	EH	BP, 5°, Fe FILLED, IR, VR	JT, 85°, CN, UN, RF	IS, 20°, Clay FILLED, UN, RF	BP, 5°, CN, UN, RF	JT, 60°, Clay FILLED, PR, S	JT, 70°, Fe VNR, PR, S	BP, 15°, CN, UN, RF	BP, 5°, Clay FILLED, UN, RF	BP, 10°, Fe VNR, UN, RF	JT, 75°, CN, IR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	BP, 10°, Clay VNR, CU, RF	BP, 5°, Clay VNR, PR, RF	BP, 10°, CN, IR, RF	IS, 45°, Clay FILLED, UN, RF	JT, 40°, Clay VNR, IR, RF	JT, 60°, CN, IR, VR	BP, 15°, CN, CU, VR	BP, 30°, Clay VNR, IR, VR	JT, 65°, CN, UN, RF	IS, 10°, Clay FILLED, UN, RF																																																																																					
14	MW	VL	J	M	H	EH	BP, 5°, Fe FILLED, IR, VR	JT, 85°, CN, UN, RF	IS, 20°, Clay FILLED, UN, RF	BP, 5°, CN, UN, RF	JT, 60°, Clay FILLED, PR, S	JT, 70°, Fe VNR, PR, S	BP, 15°, CN, UN, RF	BP, 5°, Clay FILLED, UN, RF	BP, 10°, Fe VNR, UN, RF	JT, 75°, CN, IR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	JT, 40°, Fe VNR, PR, RF	BP, 10°, Clay VNR, CU, RF	BP, 5°, Clay VNR, PR, RF	BP, 10°, CN, IR, RF	IS, 45°, Clay FILLED, UN, RF	JT, 40°, Clay VNR, IR, RF	JT, 60°, CN, IR, VR	BP, 15°, CN, CU, VR	BP, 30°, Clay VNR, IR, VR																																																																																							

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324580.0 m E 6901750.9 m N

Commenced: 20/07/2021
Completed: 22/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 451.75 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
HQ3	Not Observed	100	88	68	434.7	17	X	SANDSTONE (80%): fine grained, grey to pale grey, interbedded siltstone (20%), massive, trace organic inclusions (<5%).(continued)	HW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	100	433.7	18	X	NO CORE: 0.38m	MW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	85	431.7	19	X	SANDSTONE: medium to coarse grained, grey mottled black and dark brown, massive.	MW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	85	430.7	20	X	18.45m: sub rounded clast of siltstone Below 18.70m very thin lamination of coal	MW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	85	429.7	21	X	SILTSTONE: dark grey, massive, thinly bedded coal (200mm).	MW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	100	428.7	22	X	SANDSTONE (60%): fine grained, grey mottled black, thinly bedded siltstone (40%), massive.	SW	EL	VL	M	H	EH
HQ3	Not Observed	100	100	100	428.7	23	X		SW	EL	VL	M	H	EH

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss
Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 20/07/2021	
Project Name: Inland Rail B2G		Completed: 22/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 324580.0 m E 6901750.9 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ3 4.2 m		RL Surface: 451.75 m	
		Datum: AHD Operator: R. Welsh	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
HQ3		Not Observed	100		100		25		SANDSTONE (60%): fine grained, grey mottled black, thinly bedded siltstone (40%), massive.(continued)	SW			
			100		100		26						
							27		Below 26.70m sandstone 80% siltstone 20%				BP, 5°, CN, PR, RF
							28		Hole Terminated at 27.45 m Target depth Hole grouted to surface.				
							29						
							30						
							31						

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324580.0 m E 6901750.9 m N

Commenced: 20/07/2021
Completed: 22/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 451.75 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh



PointID : 310-03-BH3021 Depth Range: 5.58 - 9.00 m



PointID : 310-03-BH3021 Depth Range: 9.00 - 13.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	20/07/2021
Project Name:	Inland Rail B2G	Completed:	22/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324580.0 m E 6901750.9 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	451.75 m
Barrel Type and Length:	HQ3 4.2 m	Bearing:		Datum:	AHD
				Operator:	R. Welsh



PointID : 310-03-BH3021 Depth Range: 13.00 - 17.00 m



PointID : 310-03-BH3021 Depth Range: 17.00 - 21.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324580.0 m E 6901750.9 m N

Commenced: 20/07/2021
Completed: 22/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 451.75 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh



PointID : 310-03-BH3021 Depth Range: 21.00 - 25.00 m



PointID : 310-03-BH3021 Depth Range: 25.00 - 27.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324584.5 m E 6901843.8 m N

Commenced: 11/08/2021
Completed: 12/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 96 - 115 mm

Inclination: -90°
Bearing:

RL Surface: 451.61 m
Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
AD/N		Not Observed		D00020 0.20-0.50 m		450.6	1		CH	TOPSOIL: Silty CLAY: medium to high plasticity, dark brown, trace rootlets (<1mm).						TOPSOIL	
				U00050 0.50-1.00 m						Silty sandy CLAY: high plasticity, brown mottled black and orange, fine grained sand.						ALLUVIAL SOIL	
				S00100 SPT 1.00-1.45 m 6,10,15 N=25		449.6	2				VSt				* 1.30: PP Samp >600 kPa		
				D00200 2.00-2.50 m												Below 2.00m: colour changing to pale brown, grey mottled orange and white.	
				S00250 SPT 2.50-2.95 m 6,12,13 N=25		448.6	3		CH	Silty CLAY trace sand: high plasticity, grey to pale brown mottled black and orange, trace organic inclusions (<5%), fine grained sand.	M (<PL)				* 2.70: PP Samp >600 kPa		
				D00350 3.50-4.00 m						Below 3.50m: colour changing to pale brown mottled orange.							
				S00400 SPT 4.00-4.45 m 7,13,17 N=30		447.6	4								* 4.30: PP Samp >600 kPa		
				D00500 5.00-5.50 m		446.6	5				H				* 5.60: PP Samp >600 kPa		
				S00550 SPT 5.50-5.77 m 21,8/120mm N=8/120mm													
				D00650 6.50-7.00 m		444.6	7		CI-CH	Silty CLAY trace sand and gravel: medium to high plasticity, dark brown, fine to medium grained sand, fine to medium sub-angular to angular gravel.	D	VD			* 7.20: PP Samp >600 kPa		
S00700 SPT 7.00-7.29 m 14,30/135mm N=30/135mm	Silty SAND trace clay: fine grained, dark brown and dark grey and black mottled orange, low plasticity fines.																
WB																	
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Support C - Casing Water Level (Date) Inflow Partial Loss Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																	

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	451.61 m	
Hole Diameter:	96 - 115 mm	Bearing:		Datum:	AHD	Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB										Silty SAND trace clay: fine grained, dark brown and dark grey and black mottled orange, low plasticity fines. (continued)	D	VD		100 200 300 400 500	RESIDUAL SOIL
				S00850 SPT 8.50-8.95 m 9,15,30/145mm N=45/295mm		442.6	9		CI	Silty CLAY: medium plasticity, grey and pale brown mottled orange. Continued on cored borehole sheet	M >PL	H			*
						441.6	10								
						440.6	11								
						439.6	12								
						438.6	13								
						437.6	14								
						436.6	15								

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324584.5 m E 6901843.8 m N

Commenced: 11/08/2021
Completed: 12/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 96 - 115 mm

Inclination: -90°
Bearing:

RL Surface: 451.61 m
Datum: AHD Operator: R. Welsh



310-03-BH3022 Depth Range: 1.00 - 1.45 m



310-03-BH3022 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	Bearing:	
		RL Surface:	451.61 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3022 Depth Range: 4.00 - 4.45 m



310-03-BH3022 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	Bearing:	
		RL Surface:	451.61 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3022 Depth Range: 7.00 - 7.45 m



310-03-BH3022 Depth Range: 8.50 - 8.95 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324584.5 m E 6901843.8 m N

Commenced: 11/08/2021
Completed: 12/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 451.61 m
Barrel Type and Length: HQ3 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance			Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
									Continued from non-cored borehole sheet				
			100		76	442.6	9		SANDSTONE: fine grained, grey mottled orange. From 8.60 to 8.77m: thinly bedded siltstone.				JT, 65°, Fe VNR, PR, RF BP, 5°, CN, IR, RF BP, 10°, Clay VNR, IR, RF BP, 5°, Clay VNR, UN, RF JT, 85°, Fe SN, UN, RF JT, 25°, CN, IR, S JT, 65°, Fe SN, UN, RF
							10		SILTSTONE: grey mottled black and orange.				BP, 5°, Clay VNR, UN, RF
									From 10.35 to 10.54m: coal, black, shiny.	HW			BP, 10°, Clay VNR, IR, RF BP, 5°, CN, IR, RF 5°, Clay FILLED, IR, VR
			100		93	440.6	11		SANDSTONE: fine grained, grey mottled orange.				
									SILTSTONE (70%): pale grey mottled black, interbedded sandstone (30%), fine grained.				
							12						
									SANDSTONE (80%): fine grained, pale grey mottled brown and grey, interbedded siltstone (20%), massive.				JT, 20°, Clay VNR, UN, RF BP, 5°, CN, UN, RF BP, 10°, CN, UN, RF BP, 20°, Clay VNR, UN, RF BP, 5°, CN, PR, RF
			100		83	437.6	14			MW			BP, 5°, CN, UN, RF
													BP, 15°, Clay VNR, UN, RF BP, 5°, CN, UN, RF BP, 15°, Fe SN, UN, RF 10°, Clay FILLED, IR, RF
							15						BP, 10°, CN, UN, RF BP, 5°, CN, IR, RF
			58		55				NO CORE 0.67m				

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324584.5 m E 6901843.8 m N

Commenced: 11/08/2021
Completed: 12/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 451.61 m
Barrel Type and Length: HQ3 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance					Rock Mass Defects																
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral				Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling									
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General				
HQ3	Not Observed	100	58	55	100	434.6	17		SANDSTONE: fine grained, grey and brown mottled black, coal and organic inclusions (<5%). COAL: dark brown and black, dull.	HW													JT, 45°, CN, IR, RF					
																												10°, Clay FILLED, IR, RF
																												BP, 20°, CN, IR, RF
HQ3	Not Observed	100	58	55	100	431.6	20			SW																		
HQ3	Not Observed	100	58	55	100	430.6	21			SW																		
HQ3	Not Observed	100	58	55	100	429.6	22			MW																		
HQ3	Not Observed	100	58	55	100	428.6	23			SW																		

Method	Water	Graphic Log/Core Loss	Weathering	Strength
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Level (Date) Inflow Partial Loss Complete Loss	Core recovered (hatching indicates material) Core loss	FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
	Support T - Timbering			

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	451.61 m		
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD	Operator:	R. Welsh

Drilling Information								Rock Substance								Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral						Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling					
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular		General	
HQ3		Not Observed	100		99		25		SANDSTONE (75%): fine grained, grey and dark grey mottled black, interbedded siltstone (25%), trace organic inclusions (5%), massive.(continued)	SW																
			100		100	426.6				MW SW														BP, 5°, CN, UN, RF		
						425.6	26		Hole Terminated at 25.90 m Target depth																	
						424.6	27																			
						423.6	28																			
						422.6	29																			
						421.6	30																			
						420.6	31																			

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	451.61 m
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD
				Operator:	R. Welsh



PointID : 310-03-BH3022 Depth Range: 8.60 - 13.00 m



PointID : 310-03-BH3022 Depth Range: 13.00 - 17.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	11/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	324584.5 m E 6901843.8 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 3 m	RL Surface:	451.61 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Welsh



PointID : 310-03-BH3022 Depth Range: 17.00 - 21.00 m



PointID : 310-03-BH3022 Depth Range: 21.00 - 25.90 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 27/07/2021	
Project Name: Inland Rail B2G		Completed: 28/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 329108.7 m E 6911677.7 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 411.50 m	
		Bearing: Datum: AHD Operator: R. Welsh	
Drilling Information			
Soil Description			
Observations			
Method	Penetration	Support	Water
Samples Tests Remarks	Recovery	RL (m)	Depth (m)
Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition Consistency Relative Density
Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
100			
200			
300			
400			
500			
ADN			
Not Observed			
D00030 0.30-0.50 m U00050 0.50-1.00 m S00100 SPT 1.00-1.45 m 15,16,14 N=30 PP 1.00 m >600 kPa			
410.5			
1			
D00200 2.00-2.50 m S00250 SPT 2.50-2.95 m 11,23,21 N=44			
409.5			
2			
D00350 3.50-4.00 m S00400 SPT 4.00-4.45 m 6,12,15 N=27 PP 4.00 m >600 kPa			
408.5			
3			
D00500 5.00-5.50 m S00550 SPT 5.50-5.95 m 6,18,23 N=41 PP 5.50 m >600 kPa			
407.5			
4			
D00650 6.50-7.00 m S00700 SPT 7.00-7.45 m 8,24,26/145mm N=50/295mm PP 7.00 m >600 kPa			
406.5			
5			
405.5			
6			
7			
404.5			
Method Penetration Water Samples and Tests Moisture Condition Consistency/Relative Density			
AS - Auger Screwing RR - Rock Roller WB- Washbore			
No resistance ranging to refusal			
Level (Date) Inflow Partial Loss Complete Loss			
U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test			
D - Dry S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Plastic Limit			
< PL = PL > PL			
Classification Symbols and Soil Descriptions			
Based on Unified Soil Classification System			
Support C - Casing			
Graphic Log/Core Loss			
Core recovered (hatching indicates material) Core loss			

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 27/07/2021	
Project Name: Inland Rail B2G		Completed: 28/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 329108.7 m E 6911677.7 m N		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 411.50 m	
		Datum: AHD Operator: R. Welsh	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
ADV		Not Observed		D00800 8.00-8.50 m		402.5	9		CI-CH	Silty CLAY with sand trace gravel, medium to high plasticity, brown mottled black, fine to medium grained sand, fine, sub angular gravels.	M (<PL)	H			RESIDUAL SOIL
				S00850 SPT 8.50-8.95 m 4,17,27 N=44						Below 8.50m becoming brown mottled pale grey and orange					
				D00950 9.50-10.00 m		401.5	10		CL-CI	Silty CLAY trace sand, low to medium plasticity, brown mottled white and orange	M (<PL)				
				S01000 SPT 10.00-10.27 18,30/120mm N=30/120mm						Below 10.00m trace fine to medium sub-angular gravel, colour becoming brown and pale grey mottled orange and black					
										Continued on cored borehole sheet					
						400.5	11								
						399.5	12								
						398.5	13								
						397.5	14								
						396.5	15								

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Plastic Limit

< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	411.50 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3023 Depth Range: 1.00 - 1.45 m



310-03-BH3023 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	411.50 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3023 Depth Range: 4.00 - 4.45 m

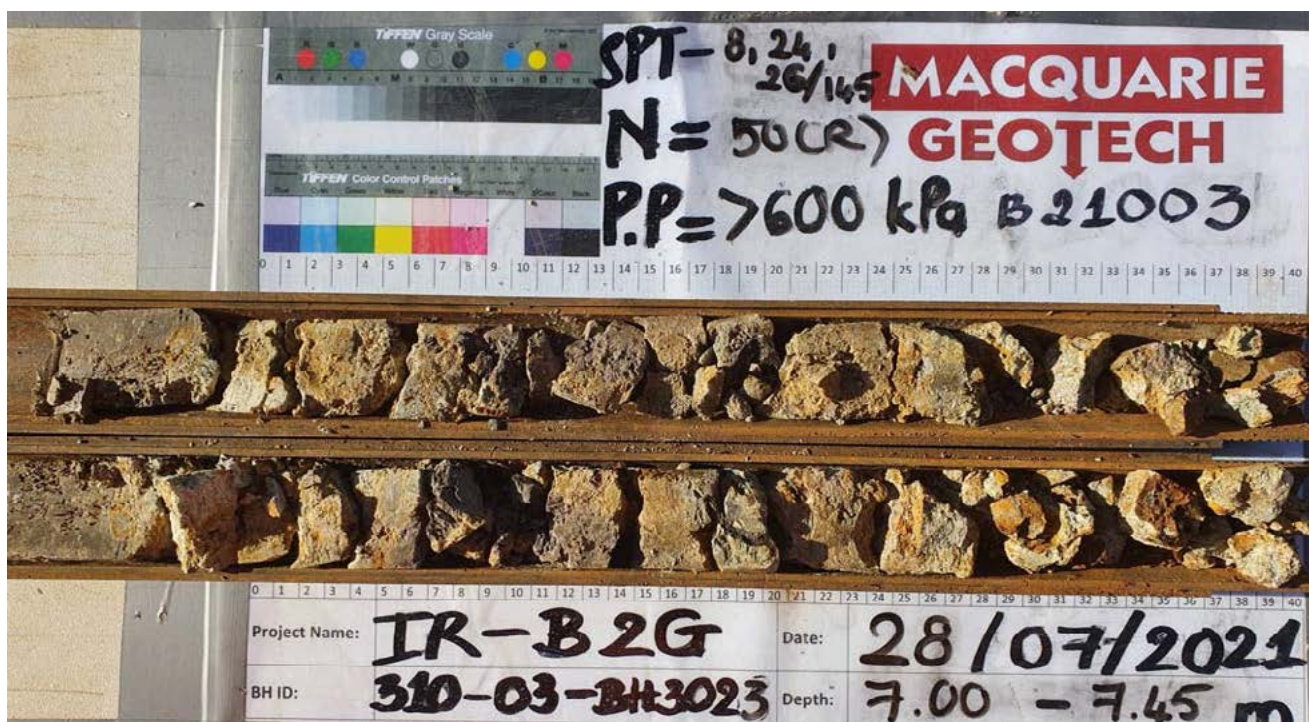


310-03-BH3023 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	411.50 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3023 Depth Range: 7.00 - 7.45 m



310-03-BH3023 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	411.50 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3023 Depth Range: 10.00 - 10.45 m

Engineering Log - Cored Borehole

Project No.: B21003

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329108.7 m E 6911677.7 m N

Commenced: 27/07/2021
Completed: 28/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 411.50 m
Barrel Type and Length: HQ3 Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
										EL VL M H VH EH		30 100 300 1000 3000	Particular	General
HQ3	Not Observed	100	89	13	20	394.5	17	△ △ △	SANDSTONE, fine to medium grained, brown mottled black, massive	XW	●		BP, 5°, CN, UN, RF	
						393.5	18	△ △ △	SANDSTONE, fine to medium grained, brown mottled black and orange, trace organic inclusions (<5%)	XW	●		BP, 5°, CN, UN, RF	
						392.5	19	△ △ △	Extremely weathered SANDSTONE: Recovered as sandy CLAY trace gravel, high plasticity, pale brown and orange mottled white and black	XW	●			
						391.5	20	△ △ △	SANDSTONE, fine to coarse grained, brown-orange mottled pale grey and black	XW	●		BP, 5°, Fe VNR, UN, RF	
						390.5	21	△ △ △	Extremely weathered SANDSTONE: Recovered as clayey SAND, fine to coarse grained, brown orange mottled white and black, medium plasticity clay	XW	●		JT, 40°, CN, UN, VR	
						389.5	22	△ △ △	SANDSTONE, fine to medium grained, pale brown mottled orange and black, trace organic inclusions (<5%)	HW	●		JT, 25°, Clay VNR, IR, RF	
						388.5	23	△ △ △	Extremely weathered SANDSTONE: Recovered as SAND with clay, fine to medium grained, brown-orange mottled white, low plasticity clay	HW	●		JT, 20°, CN, IR, VR	
								△ △ △	SANDSTONE, fine to medium grained, pale brown - grey mottled orange and black, massive, trace organic inclusions (5%)	HW	●		BP, 25°, CN, IR, VR	
								△ △ △	From 22.32m to 24.70m with very thin laminations of siltstone	HW	●		BP, 10°, CN, UN, VR	
								△ △ △		MW	●		BP, 5°, Clay VNR, UN, RF	

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
△ Level (Date)
▽ Inflow
△ Partial Loss
▲ Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329108.7 m E 6911677.7 m N

Commenced: 27/07/2021
Completed: 28/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 411.50 m
Barrel Type and Length: HQ3 Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General		
HQ3	Not Observed	100	97	97	100	386.5	25		SANDSTONE, fine to medium grained, pale brown - grey mottled orange and black, massive, trace organic inclusions (5%)(continued)	MW			IS, 10°, Clay FILLED, IR, RF			
							26		Below 24.70m with fine to medium sub-rounded clasts SILTSTONE (90%), fine grained, grey mottled brown-orange, interbedded thinly laminated sandstone (10%), massive.		SM, 30°, Clay FILLED, IR, RF BP, 10°, CN, IR, RF					
							27		SANDSTONE (80%), fine to medium grained, grey-dark brown mottled black, interbedded siltstone (20%), massive, trace organic inclusions (<5%)		BP, 15°, Clay VNR, IR, VR BP, 10°, Clay VNR, UN, RF BP, 10°, Clay VNR, UN, RF BP, 15°, CN, PR, RF					
							28				BP, 20°, Clay VNR, UN, RF BP, 10°, Clay VNR, UN, RF					
							29				BP, 10°, Clay VNR, PR, RF CZ, 30°, Rock Fragments FILLED, IR, RF					
							30									
							31									
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Support T - Timbering Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 329108.7 m E 6911677.7 m N										Commenced: 27/07/2021 Completed: 28/07/2021 Logged By: T. Tran Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ3										Inclination: -90° Bearing:										RL Surface: 411.50 m Datum: AHD Operator: R. Welsh									
Drilling Information										Rock Substance										Rock Mass Defects									
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																
										EL VL L M H VH EH	30 100 300 1000 3000	Particular	General																
HQ3		Not Observed	100		92	378.5	33		SANDSTONE (80%), fine to medium grained, grey-dark brown mottled black, interbedded siltstone (20%), massive, trace organic inclusions (<5%)(continued)	SW																			
						377.5	34							IS, 5°, Clay FILLED, UN, RF															
			100		95	376.5	35							BP, 10°, Clay VNR, UN, RF															
						375.5	36							BP, 5°, CN, UN, RF															
						374.5	37		Hole Terminated at 36.40 m Target depth																				
						373.5	38																						
						372.5	39																						

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Support

T - Timbering

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021				
Project Name:	Inland Rail B2G	Completed:	28/07/2021				
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran				
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.50 m		
Barrel Type and Length:	HQ3	Bearing:		Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3023 Depth Range: 10.32 - 14.00 m



PointID : 310-03-BH3023 Depth Range: 14.00 - 18.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3	RL Surface:	411.50 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Welsh



PointID : 310-03-BH3023 Depth Range: 18.00 - 22.00 m



PointID : 310-03-BH3023 Depth Range: 22.00 - 26.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021				
Project Name:	Inland Rail B2G	Completed:	28/07/2021				
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran				
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.50 m		
Barrel Type and Length:	HQ3	Bearing:		Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3023 Depth Range: 26.00 - 30.00 m



PointID : 310-03-BH3023 Depth Range: 30.00 - 34.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	27/07/2021
Project Name:	Inland Rail B2G	Completed:	28/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329108.7 m E 6911677.7 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.50 m
Barrel Type and Length:	HQ3	Bearing:		Datum:	AHD Operator: R. Welsh



PointID : 310-03-BH3023 Depth Range: 34.00 - 36.40 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 08/11/2021																			
Project Name: Inland Rail B2G				Completed: 10/11/2021																			
Hole Location: N1 - Canning Creek to Millmeran				Logged By: T. Tran																			
Hole Coordinates: 329210.7 m E 6911712.4 m N				Checked By: J.Cooper																			
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°		RL Surface: 411.81 m																			
Hole Diameter: 125 mm		Bearing:		Datum: AHD		Operator: R. Welsh																	
Drilling Information							Soil Description							Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations								
HAND AUGER							410.8	1		TOPSOIL: silty CLAY: medium to high plasticity, dark brown, trace rootlets (<2mm) Sandy silty CLAY: medium to high plasticity, dark brown, fine grained sand At 1.00m: colour changing to pale brown - yellow	M (<PL) - M (=PL)	St			TOPSOIL								
							409.8	2	SC	Clayey SAND: fine grained, pale brown mottled orange,	D - M				FILL								
				S00250 SPT 2.50-2.95 m 5,11,17 N=28		408.8	3	SC	Clayey SAND trace gravel: fine grained, pale brown mottled red-orange, medium to coarse sub-angular gravel		W	MD			ALLUVIAL SOIL								
				S00400 SPT 4.00-4.45 m 4,6,8 N=14		407.8	4	CI-CH	Sandy CLAY: medium to high plasticity, pale brown, fine grained sand		M (=PL)	St - VSt			4.00: PP Samp >300 kPa								
				S00550 SPT 5.50-5.95 m 4,10,12 N=22		405.8	6	SC	Clayey SAND trace gravel: fine to coarse grained, pale brown mottled dark grey and orange, medium to high plasticity clay, fine to coarse sub-rounded to sub-angular gravel		W	MD											
				S00700 SPT 7.00-7.45 m 2,4,9 N=13		404.8	7	CH	Sandy CLAY: high plasiticty, pale grey and pale brown, fine grained sand From 7.40m: fine to coarse grained sand, trace fine to coarse gravel, sub-rounded to sub-angular		M (>PL)	St - VSt											
Method AS - Auger Screwing RR - Rock Roller WB- Washbore				Penetration No resistance ranging to refusal				Water Level (Date) Inflow Partial Loss Complete Loss				Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test				Moisture Condition D - Dry M - Moist W - Wet				Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense			
Support C - Casing				Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss				Classification Symbols and Soil Descriptions Based on Unified Soil Classification System				Plastic Limit < PL = PL < PL											

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 411.81 m
Hole Diameter: 125 mm Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description							Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations	
WB									CH	Sandy CLAY: high plasticity, pale grey and pale brown, fine grained sand (<i>continued</i>)	M (>PL)	St - VSt	100	200	300	400	500	ALLUVIAL SOIL
				S00850 SPT 8.50-8.95 m 6,6,11 N=17		402.8	9		CH	CLAY: high plasticity, grey								8.50: PP Samp >450 kPa
				S01000 SPT 10.00-10.45 m 4,11,14 N=25		401.8	10			At 10.00m: with fine to coarse grained sand, trace fine to coarse gravel, sub-rounded to sub-angular	M (=PL) - M (>PL)							
				S01150 SPT 11.50-11.95 m 12,13,20 N=33		399.8	11					H						11.50: PP Samp >600 kPa
				S01300 SPT 13.00-13.45 m 8,17,30/145mm N=47/295mm		398.8	12		CL-CI	Sandy CLAY: low to medium plasticity, grey mottled orange and black, fine grained sand								RESIDUAL SOIL
				S01450 SPT 14.50-14.95 m 5,13,20 N=33		397.8	13		CI	CLAY with sand and gravel: medium plasticity, pale brown and green mottled orange and grey, fine to coarse sub-angular to angular gravel	M (>PL)							
						396.8	14											
							15		SP	Gravelly SAND with clay: fine to coarse grained, pale brown mottled green and dark grey, fine to coarse sub-angular to angular gravel, low plasticity clay	W	D						

Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density	
AS - Auger Screwing			No resistance ranging to refusal		Level (Date)	U - Undisturbed Sample		D - Dry		VS - Very Soft	
RR - Rock Roller				Inflow		D - Disturbed Sample	M - Moist		S - Soft		
WB- Washbore				Partial Loss		SPT - Standard Penetration Test	W - Wet		F - Firm		
			Complete Loss					VSt - Very Stiff			
								H - Hard			
								VL - Very Loose			
								L - Loose			
								MD - Medium Dense			
								D - Dense			
								VD - Very Dense			

Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit		Consistency/Relative Density	
C - Casing			Core recovered (hatching indicates material)	Based on Unified Soil Classification System		< PL		< PL	
			Core loss			< PL		< PL	

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

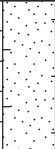
Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.81 m		
Hole Diameter:	125 mm	Bearing:		Datum:	AHD	Operator:	R. Welsh

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				S01600 SPT 16.00-16.45 m 8,22,22 N=44		394.8	17		SP	Gravelly SAND with clay: fine to coarse grained, pale brown mottled green and dark grey, fine to coarse sub-angular to angular gravel, low plasticity clay <i>(continued)</i> At 16.00m: trace quartz	W	D			RESIDUAL SOIL	
				S01750 SPT 17.50-17.89 m 8,13,25/90mm N=38/240mm		393.8	18		SC	Clayey SAND with gravel: fine to coarse grained, pale brown and grey mottled orange and pale yellow - white, low to medium palsticity clay, fine to coarse sub-rounded to sub-angular gravel		VD				
						393.8				Continued on cored borehole sheet						
						392.8	19									
						391.8	20									
						390.8	21									
						389.8	22									
						388.8	23									

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J. Cooper
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	411.81 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3024 Depth Range: 2.50 - 2.95 m



310-03-BH3024 Depth Range: 4.00 - 4.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J. Cooper

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: 411.81 m
Datum: AHD Operator: R. Welsh



310-03-BH3024 Depth Range: 5.50 - 5.95 m



310-03-BH3024 Depth Range: 7.00 - 7.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	411.81 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3024 Depth Range: 8.50 - 8.95 m



310-03-BH3024 Depth Range: 10.00 - 10.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J. Cooper

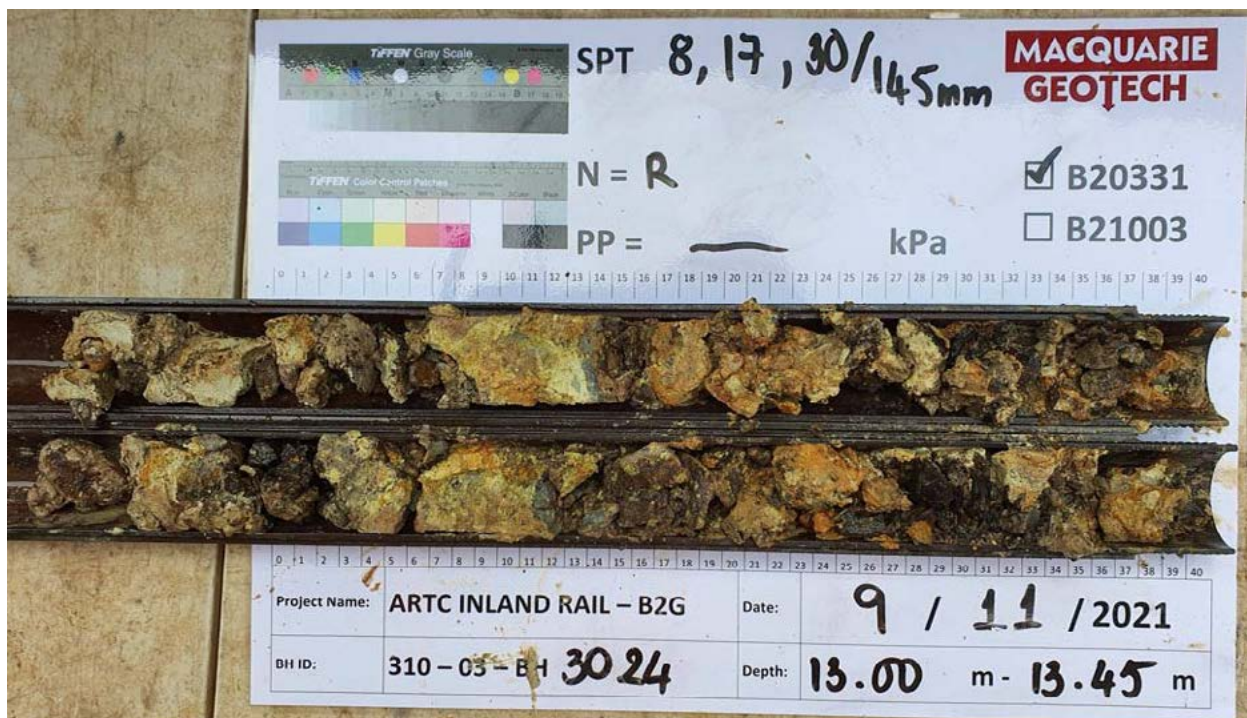
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: 411.81 m
Datum: AHD Operator: R. Welsh



310-03-BH3024 Depth Range: 11.50 - 11.95 m

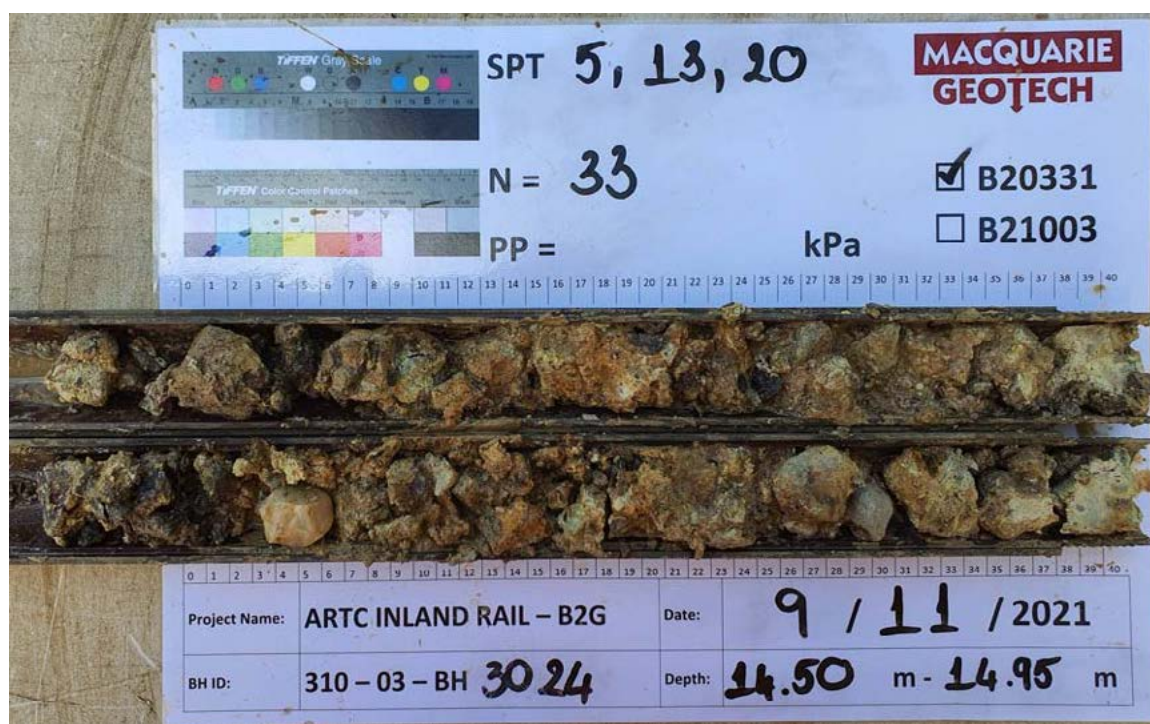


310-03-BH3024 Depth Range: 13.00 - 13.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	411.81 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3024 Depth Range: 14.50 - 14.95 m

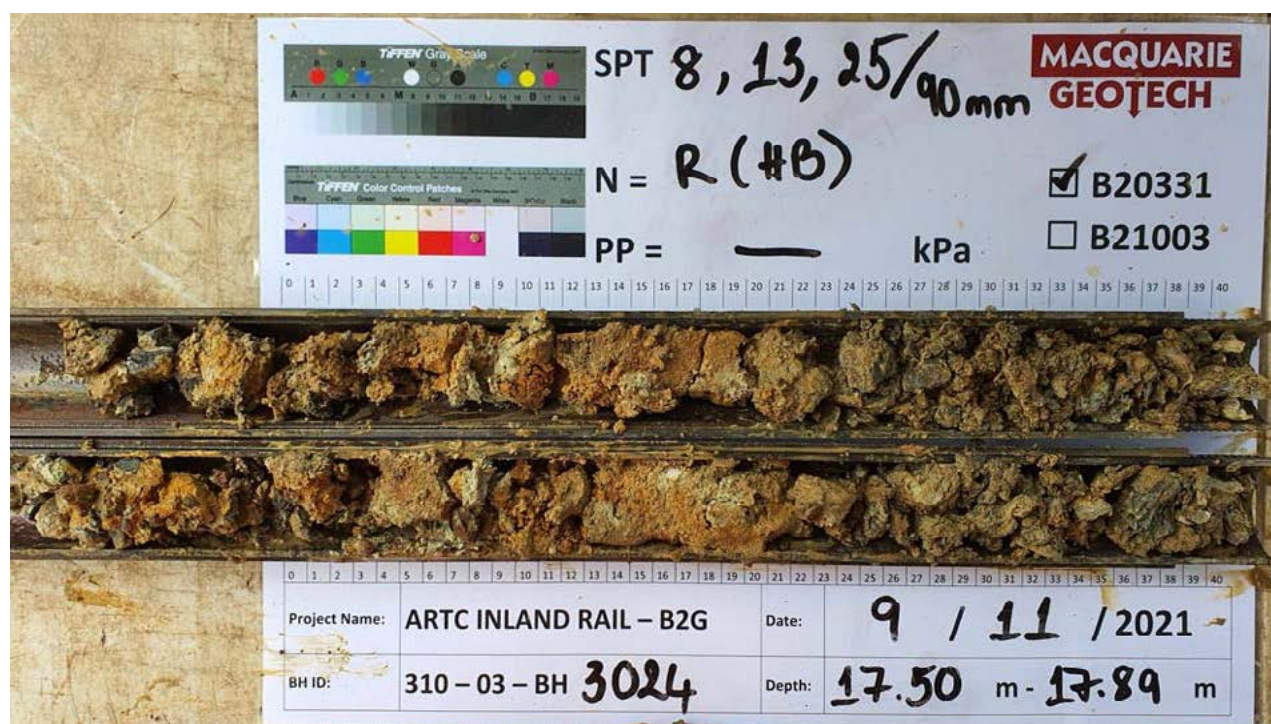


310-03-BH3024 Depth Range: 16.00 - 16.45 m

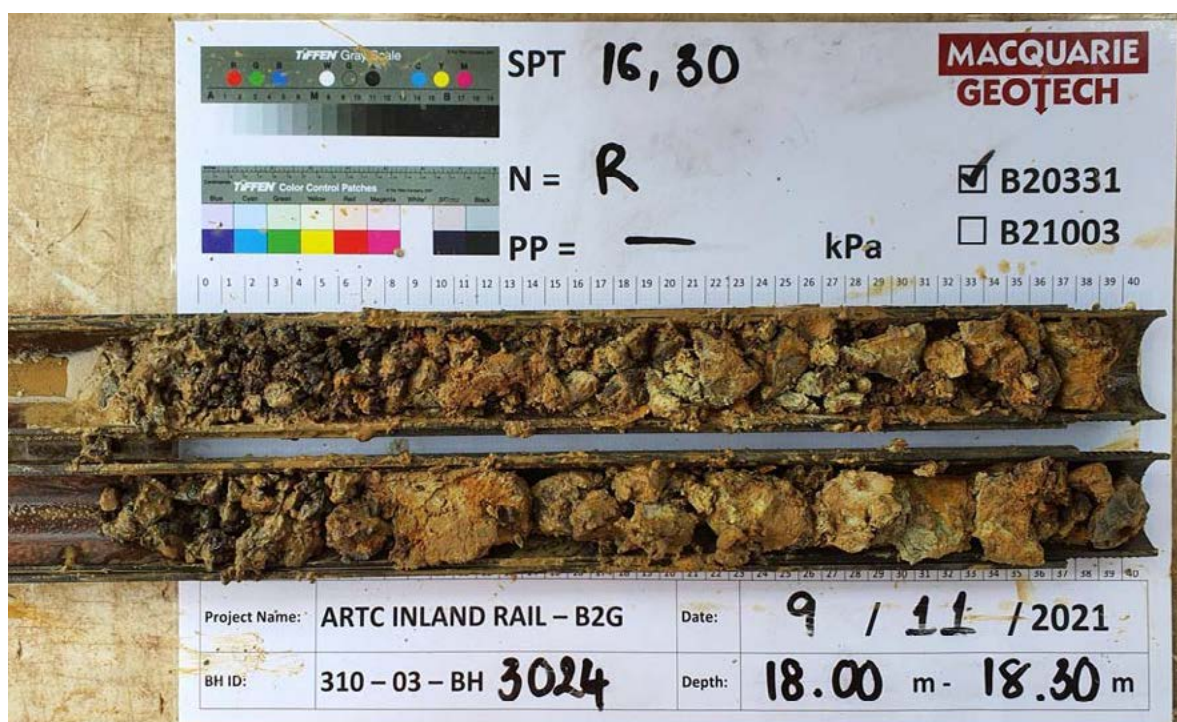
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J. Cooper
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	411.81 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3024 Depth Range: 17.50 - 17.89 m



310-03-BH3024 Depth Range: 18.00 - 18.30 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: 411.81 m
Datum: AHD Operator: R. Welsh



310-03-BH3024 Depth Range: 21.00 - 21.30 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 08/11/2021	
Project Name: Inland Rail B2G		Completed: 10/11/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 329210.7 m E 6911712.4 m N		Checked By: J.Cooper	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ 3 m		RL Surface: 411.81 m	
		Datum: AHD	
		Operator: R. Welsh	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
						394.8	17						
						393.8	18		Continued from non-cored borehole sheet				
			100		0	392.8	19		SPT 18.00 - 18.30m 16, 30 N=R Material recovered as clayey SAND with gravel, fine to coarse grained, pale brown and grey mottled orange and pale yellow - white, low to medium plasticity clay, fine to coarse sub-rounded to sub-angular Extremely weathered CONGLOMERATE: recovered as Sandy clayey GRAVEL trace cobble: fine to coarse, rounded to sub-angular basalt gravel, grey mottled brown and orange and pale green, low to medium plasticity clay, fine to coarse grained sand From 19.5m: interbedded with SANDSTONE	XW			
						391.8	20						
						390.8	21		SPT 21.00 - 21.30m 19, 30/145mm N=R Material recovered as clayey SAND with gravel, fine to coarse grained, grey mottled orange and pale green, low to medium plasticity clay, fine to coarse sub-rounded to sub-angular gravel	XW			
			100		0	389.8	22						
						388.8	23						

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclinaton: -90° RL Surface: 411.81 m
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance			Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
										EL VL L M H VH EH	30 100 300 1000 3000	Particular	General
HQ			100		3	386.8	25		Extremely weathered CONGLOMERATE: recovered as Sandy clayey GRAVEL trace cobble: fine to coarse, rounded to sub-angular basalt gravel, grey mottled brown and orange and pale green, low to medium plasticity clay, fine to coarse grained sand (continued)	XW			
						385.8	26		SANDSTONE: fine to coarse grained, brown - orange mottled white and black, massive to distinctly bedded with siltstone.	HW			VN, 10°, CA FILLED, UN, RF
						384.8	27		SILTSTONE: fine grained, grey and orange, heavily ironstained	XW			JT, 90°, FE SN, IR, VR
			100		77	383.8	28		SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)	HW			JT, 30°, FE SN, UN, VR
						382.8	29		SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)	XW			JT, 5°, FE SN, UN, VR
						381.8	30		SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)	HW			BP, 5°, CN, UN, RF
			100			380.8	31		SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)	SW			BP, 5°, FE SN, UN, RF
									SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)				BP, 5°, CN, UN, S
									SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)				BP, 10°, FE SN, UN, RF
									SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)				BP, 10°, CN, UN, RF

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss
Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329210.7 m E 6911712.4 m N

Commenced: 08/11/2021
Completed: 10/11/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 411.81 m
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling				
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General			
HQ									SANDSTONE: fine grained, grey mottled brown and orange, interbedded siltstone breccia (<20%)(continued)								
			100		100	378.8	33							BP, 5°, CN, UN, RF			
						377.8	34										
			100		98	376.8	35							BP, 5°, CN, UN, RF			
						375.8	36							BP, 20°, CLAY VNR, UN, RF			
						374.8	37							BP, 10°, CN, UN, S			
						373.8	38							BP, 10°, CN, UN, S			
			100		91	372.8	39							JT, 60°, CLAY CT, PR, S			
														JT, 25°, CLAY VNR, PR, S			
														BP, 15°, CN, UN, RF			
														BP, 10°, CN, UN, RF			
														BP, 5°, CN, UN, RF			
														IS, 5°, CLAY FILLED, UN, RF			
														FZ, 10°, CN, UN, RF			
														BP, 10°, Organic/Coal CT, UN, RF			
			100		98									DB			

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water ▧ Level (Date) ▽ Inflow ◁ Partial Loss ◼ Complete Loss	Graphic Log/Core Loss ▨ Core recovered (hatching indicates material) ▩ Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
	Support T - Timbering			

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 329210.7 m E 6911712.4 m N										Commenced: 08/11/2021 Completed: 10/11/2021 Logged By: T. Tran Checked By: J.Cooper																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 411.81 m					Operator: R. Welsh																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Barrel Type and Length: HQ 3 m					Bearing:					Datum: AHD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Drilling Information								Rock Substance								Rock Mass Defects																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Method

AS - Auger Screwing
 WB- Washbore
 HQ3 HQ3 Core Barrel
 NQ3 NQ3 Core Barrel

Water

Level (Date)
 Inflow
 Partial Loss
 Complete Loss

Support

T - Timbering

Graphic Log/Core Loss

Core recovered (hatching indicates material)
 Core loss

Weathering

FR - Fresh
 SW - Slightly Weathered
 DW - Distinctly Weathered
 XW - Extremely Weathered
 RS - Residual Soil

Strength

(indirect tensile strength)
 EL - Extremely Low
 VL - Very Low
 L - Low
 M - Medium
 H - High
 VH - Very High
 EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 3 m	RL Surface:	411.81 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Welsh



PointID : 310-03-BH3024 Depth Range: 18.00 - 22.00 m



PointID : 310-03-BH3024 Depth Range: 22.00 - 27.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.81 m
Barrel Type and Length:	HQ 3 m	Bearing:		Datum:	AHD Operator: R. Welsh



PointID : 310-03-BH3024 Depth Range: 27.00 - 32.00 m



PointID : 310-03-BH3024 Depth Range: 32.00 - 37.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/11/2021
Project Name:	Inland Rail B2G	Completed:	10/11/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	329210.7 m E 6911712.4 m N	Checked By:	J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	411.81 m
Barrel Type and Length:	HQ 3 m	Bearing:		Datum:	AHD Operator: R. Welsh



PointID : 310-03-BH3024 Depth Range: 37.00 - 42.00 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 339207.0 m E 6919494.9 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL 170 Inclin: -90° RL Surface: 380.77 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information				Soil Description								Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
HA				D00000		379.8	1		CI-CH	TOPSOIL: Silty CLAY trace sand: medium to high plasticity, dark brown, fine grained sand, trace rootlets less than 2mm		St			TOPSOIL
				0.00-0.50 m						Silty CLAY trace sand: medium to high plasticity, dark brown, fine grained sand					ALLUVIAL SOIL
				J00020											
				0.20-0.30 m											
				J00040											
				0.40-0.50 m											
				D00050											
				0.50-1.00 m											
				J00090											
				0.90-1.00 m											
				S00100											
				SPT											
				1.00-1.45 m											
				6,11,10											
N=21															
PP 1.45 m															
>600 kPa	below 2.0m colour changes to grey mottled with black and white.														
D00150															
1.50-2.00 m															
S00200															
SPT															
2.00-2.45 m															
7,9,15															
N=24															
PP 2.45 m															
>600 kPa															
D00300															
3.00-3.50 m															
S00350															
SPT															
3.50-3.95 m	Sandy CLAY: medium plasticity, grey mottled orange and white, fine grained sand	VSt													
9,13,15															
N=28															
PP 3.95 m															
>600 kPa															
D00450															
4.50-5.00 m															
S00500															
SPT															
5.00-5.45 m															
6,8,13															
N=21															
PP 5.45 m															
>600 kPa															
D00600															
6.00-6.50 m	below 6.00m trace fine sub rounded grained														
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m			Sandy CLAY trace gravel: high plasticity, grey mottled orange, fine to medium grained sand, fine grained sub-angular gravel	H											
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
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N=35															
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D00750															
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N=35															
PP 6.95 m															
>600 kPa															
D00750															
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N=35															
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>600 kPa															
D00750															
7.50-8.00 m															
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6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
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6.50-6.95 m															
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N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
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6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
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SPT															
6.50-6.95 m															
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N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
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6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
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>600 kPa															
D00750															
7.50-8.00 m															
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N=35															
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>600 kPa															
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N=35															
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>600 kPa															
D00750															
7.50-8.00 m															
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SPT															
6.50-6.95 m															
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N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
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N=35															
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>600 kPa															
D00750															
7.50-8.00 m															
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N=35															
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>600 kPa															
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>600 kPa															
D00750															
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N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															
S00650															
SPT															
6.50-6.95 m															
8,14,21															
N=35															
PP 6.95 m															
>600 kPa															
D00750															
7.50-8.00 m															

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 339207.0 m E 6919494.9 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL 170
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 380.77 m
Datum: AHD Operator: B.Boga

Drilling Information								Soil Description					Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB		Not Observed		S00800 SPT 8.00-8.45 m 2,9,14 N=23 PP 8.45 m =500 kPa		371.8	9		CH	Silty CLAY: high plasticity, pale white mottled orange and maroon, below 9.50m colour changes to pale green mottled brown and black below 11.0m colour changes to pale white and brown mottled pale green below 12.0m becoming with Sand below 12.5m colour changes to pale white mottled brown and black	VSt			ALLUVIAL SOIL
				D00900 9.00-9.50 m										
				S00950 SPT 9.50-9.95 m 9,15,20 N=35 PP 9.95 m >600 kPa										
				D01050 10.50-11.00 m										
				S01100 SPT 11.00-11.45 m 14,21,29 N=50 PP 11.45 m =500 kPa										
				D01200 12.00-12.50 m										
				S01250 SPT 12.50-12.79 m 27,50/140mm HB N=50/140mm PP 12.79 m =450 kPa										
				D01350 13.50-14.00 m										
				S01400 SPT 14.00-14.45 m 13,23,28 N=51										
				D01500 15.00-15.50 m										
				S01550 SPT 15.50-15.64 m 30/140mm										

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 339207.0 m E 6919494.9 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL 170 Inclin: -90° RL Surface: 380.77 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)					Structure and Additional Observations
WB				S01700 SPT 17.00-17.10 m 30/100mm		363.8	17		SM	Silty SAND: fine to medium grained, pale white (continued) below 17.0m colour changes to light brown	D						ALLUVIAL SOIL	
HQ3			Not Observed	S01850 SPT 18.50-18.60 m 30/100mm		362.8	18											
				S02000 SPT 20.00-20.11 m 30/110mm		361.8	19											
				S02150 SPT 21.50-21.60 m 30/100mm		360.8	20											
				S02300 SPT 23.00-23.12 m 30/120mm		359.8	21											
						358.8	22											
						357.8	23											

Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density	
AS - Auger Screwing			No resistance ranging to refusal		Level (Date)	U - Undisturbed Sample		D - Dry		VS - Very Soft	
RR - Rock Roller				Inflow	D - Disturbed Sample		M - Moist		S - Soft		
WB- Washbore				Partial Loss	SPT - Standard Penetration Test		W - Wet		F - Firm		
					Complete Loss					VSt - Very Stiff	
										H - Hard	
										VL - Very Loose	
										L - Loose	
										MD - Medium Dense	
										D - Dense	
										VD - Very Dense	

Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit	
C - Casing			Core recovered (hatching indicates material)		Based on Unified Soil Classification System		< PL
			Core loss				= PL
							< PL

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 339207.0 m E 6919494.9 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL 170 Inclin: -90° RL Surface: 380.77 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
HQ3		Not Observed							SM	Silty SAND: fine to medium grained, pale white (continued)	M	VD			ALLUVIAL SOIL
				S02450 SPT 24.50-24.92 m 25,30,30/120mm N=60/270mm		355.8	25		CI-CH	Silty CLAY: medium to high plasticity, brown mottled white and grey, indistinctly very thinly laminated					RESIDUAL SOIL
				S02600 SPT 26.00-26.27 m 20,30/120mm N=30/120mm PP 26.27 m >600 kPa		354.8	26			from 26.00-27.50m colour changes to grey, distinguish very thinly laminated.					*
				S02750 SPT 27.50-27.56 m 30/60mm PP 27.56 m >600 kPa		353.8	27								*
				S02900 SPT 29.00-29.06 m 30/60mm PP 29.06 m =440 kPa		351.8	29			below 29.0m becoming trace fine grained gravel sub-angular, colour changes to grey and blue	M (<PL)	H			*
				S03050 SPT 30.50-30.58 m 30/80mm PP 30.58 m >600 kPa		349.8	31		CI-CH	Sandy CLAY: medium to high plasticity, grey, fine to medium grained sand					*

Method	Penetration	Water	Continued on cored to Sample and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 1.00 - 1.45 m



310-03-BH3025 Depth Range: 2.00 - 2.45 m

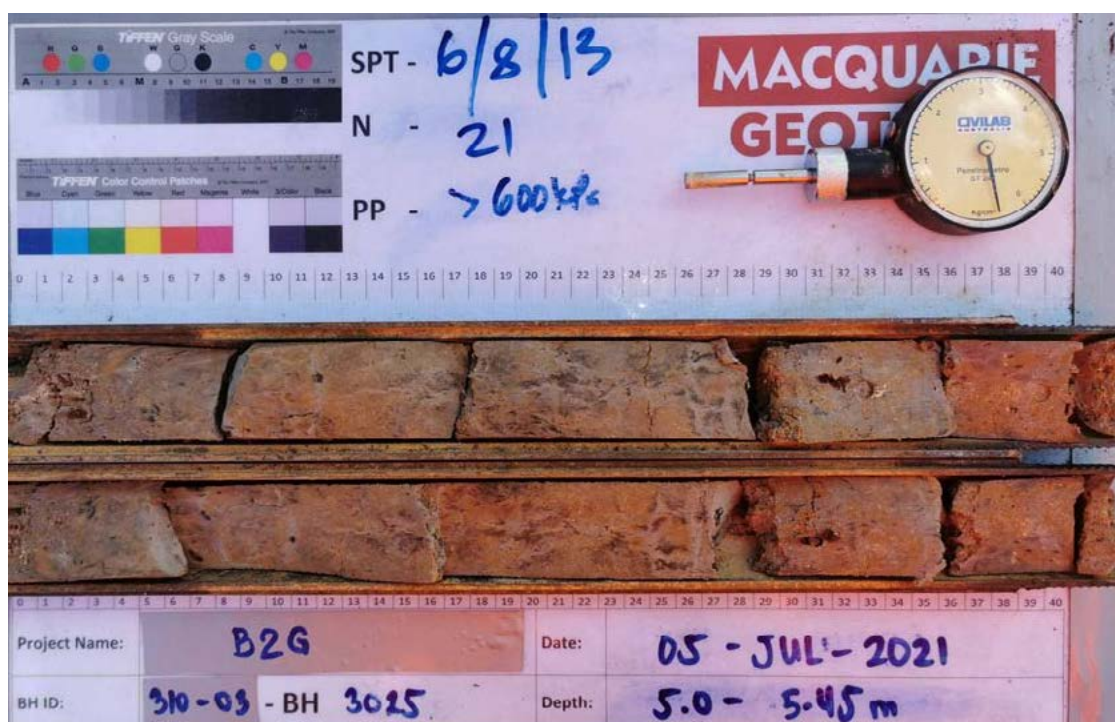
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 3.50 - 3.95 m



310-03-BH3025 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 6.50 - 6.95 m



310-03-BH3025 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 9.50 - 9.95 m



310-03-BH3025 Depth Range: 11.00 - 11.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 12.50 - 12.79 m



310-03-BH3025 Depth Range: 14.00 - 14.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 15.50 - 15.64 m



310-03-BH3025 Depth Range: 17.00 - 17.10 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 18.50 - 18.60 m



310-03-BH3025 Depth Range: 20.00 - 20.11 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 21.50 - 21.60 m



310-03-BH3025 Depth Range: 23.00 - 23.12 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 24.50 - 24.92 m



310-03-BH3025 Depth Range: 26.00 - 26.27 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 27.50 - 27.56 m



310-03-BH3025 Depth Range: 29.00 - 29.06 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	05/07/2021
Project Name:	Inland Rail B2G	Completed:	08/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	339207.0 m E 6919494.9 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL 170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	380.77 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3025 Depth Range: 30.50 - 30.58 m



310-03-BH3025 Depth Range: 32.00 - 32.01 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 05/07/2021	
Project Name: Inland Rail B2G		Completed: 08/07/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: M.Faustino	
Hole Coordinates: 339207.0 m E 6919494.9 m N		Checked By: J.Boyle	
Drill Model and Mounting: CRS XL 170		Inclination: -90°	
Barrel Type and Length:		RL Surface: 380.77 m	
		Datum: AHD Operator: B.Boga	

Drilling Information				Rock Substance				Rock Mass Defects													
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling								
										Particular				General							
HQ3	Not Observed	96	96	347.8	346.8	345.8	344.8	343.8	342.8	341.8	340.8	339.8	338.8								
														Continued from non-cored borehole sheet				HW	EL VL M H VH EH	30 100 300 1000 3000	Particular General
														No Core: 110mm.							
														SANDSTONE: fine to medium grained, white and grey mottled black							
														SANDSTONE: fine to coarse grained, white and grey mottled black with carbonaceous material, massive.							
Below 34.00m thin carbonaceous lamination (<5%)				HW to MW	EL VL M H VH EH	30 100 300 1000 3000	Particular General														
Hole Terminated at 35.00 m Target depth																					

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water Level (Date) Inflow Partial Loss Complete Loss	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
Support T - Timbering				

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 339207.0 m E 6919494.9 m N

Commenced: 05/07/2021
Completed: 08/07/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL 170
Barrel Type and Length:

Inclination: -90°
Bearing:

RL Surface: 380.77 m
Datum: AHD

Operator: B.Boga



PointID : 310-03-BH3025 Depth Range: 32.00 - 35.00 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 406.73 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: R.Welsh

Drilling Information							Soil Description							Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)					Structure and Additional Observations
ADV				D00030 0.30-0.50 m U00050 0.50-1.00 m		405.7	1		CI	TOPSOIL: silty CLAY trace sand, medium plasticity, dark brown, fine grained sand, some rootlets (<1mm)		H					TOPSOIL	
				S00100 SPT 1.00-1.45 m 11,17,22 N=39 PP 1.00 m >600 kPa						Sandy CLAY, medium plasticity, brown mottled orange and black, fine grained sand							ALLUVIAL SOIL	
				D00200 2.00-2.50 m														
				S00250 SPT 2.50-2.95 m 5,11,13 N=24 PP 2.50 m >600 kPa														
				D00350 3.50-4.00 m														
				S00400 SPT 4.00-4.45 m 5,9,16 N=25 PP 4.00 m >600 kPa						Sandy CLAY, medium plasticity clay, brown mottled black and orange, fine to medium grained sand.								
				D00500 5.00-5.50 m														
				S00550 SPT 5.50-5.95 m 10,14,16 N=30		400.7	6		SP-SC	Gravelly SAND with clay, fine to coarse grained, pale brown and red mottled orange and black, fine to medium sub-angular to angular gravel, low plasticity clay		MD				RESIDUAL SOIL		
				D00650 6.50-7.00 m					SC	Clayey SAND trace gravel, fine to coarse grained, brown mottled orange, medium plasticity clay, fine sub-rounded gravel		D						
				S00700 SPT 7.00-7.45 m 8,14,19 N=33		399.7	7		CI	Sandy CLAY, medium plasticity, pale grey-brown-orange mottled black, fine grained sand		H						

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance
ranging to
refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 23/07/2021
Project Name: Inland Rail B2G	Completed: 26/07/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 330132.5 m E 6911959.0 m N	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 406.73 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: R.Welsh

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
ADN		Not Observed		D00800 8.00-8.50 m		397.7	9		CI	Sandy CLAY, medium plasticity, pale grey-brown-orange mottled black, fine grained sand (continued) Becoming brown mottled black, fine to coarse grained sand, trace fine sub-angular gravel Becoming grey-orange mottled red and black, trace fine to medium sub-rounded to sub-angular gravel	M (<PL)	H				
				S00850 SPT 8.50-8.85 m 10,15,7/50mm N=22/200mm												
				D00950 9.50-10.00 m												
				S01000 SPT 10.00-10.45 m 10,20,30/145mm N=50/295mm												
						396.7	10		CI-CH	Silty CLAY with sand trace gravel, medium to high plasticity, brown mottled pale grey and red, fine to coarse grained sand, fine sub-angular gravel					RESIDUAL SOIL	
									SP-SC	Gravelly SAND with clay, fine to coarse grained, grey-red-brown mottled black, fine to medium sub-rounded to sub-angular gravel	M					
						395.7	11			Continued on cored borehole sheet						
						394.7	12									
						393.7	13									
						392.7	14									
						391.7	15									

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	406.73 m
		Datum:	AHD
		Operator:	R.Welsh



310-03-BH3026 Depth Range: 1.00 - 1.45 m



310-03-BH3026 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	406.73 m
		Datum:	AHD
		Operator:	R.Welsh



310-03-BH3026 Depth Range: 4.00 - 4.45 m

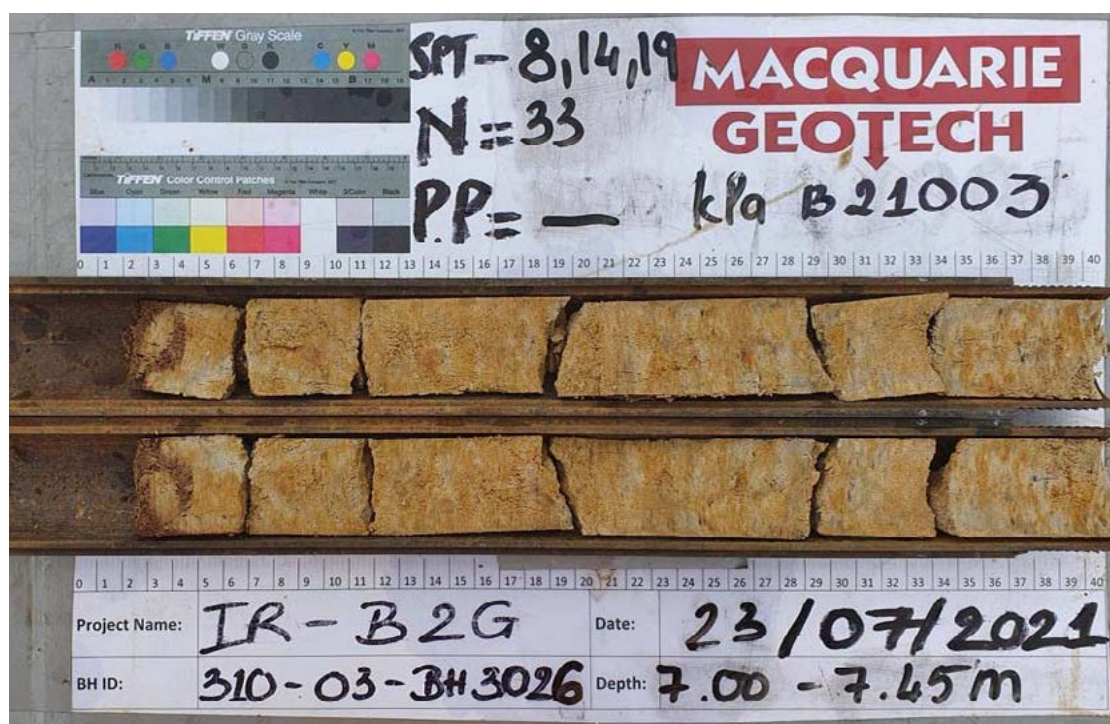


310-03-BH3026 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	406.73 m
		Datum:	AHD
		Operator:	R.Welsh



310-03-BH3026 Depth Range: 7.00 - 7.45 m



310-03-BH3026 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 406.73 m
Datum: AHD Operator: R.Welsh



310-03-BH3026 Depth Range: 10.00 - 10.45 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 23/07/2021												
Project Name: Inland Rail B2G		Completed: 26/07/2021												
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran												
Hole Coordinates: 330132.5 m E 6911959.0 m N		Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°												
Barrel Type and Length: HQ 4.15 m		RL Surface: 406.73 m												
		Datum: AHD												
		Operator: R.Welsh												
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
							9							
							10							
									Continued from non-cored borehole sheet					
			100		0		11		Extremely weathered CONGLOMERATE recovered as gravelly sandy CLAY, medium to high plasticity, brown and pale grey mottled orange and black, fine to coarse grained sand, fine to coarse rounded to sub-rounded gravel	xw			- 11.20: PP In-situ =120 kPa	
							12		SANDSTONE: fine to medium grained, massive, brown mottled grey, trace irregular carbonaceous laminations and wisps				- 12.40: PP In-situ =140 kPa	
							13		NO CORE 1.17m				- 13.59: PP In-situ =70 kPa	
			61		0		14		Extremely weathered CONGLOMERATE recovered as gravelly sandy CLAY, medium to high plasticity, brown and pale grey mottled orange and black, fine to coarse grained sand, fine to coarse rounded to sub-rounded gravel, with rounded cobbles	xw				
							15							
			100		0									
Method		Water		Graphic Log/Core Loss		Weathering		Strength						
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High						
Support		T - Timbering												

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 406.73 m
Barrel Type and Length: HQ 4.15 m Bearing: Datum: AHD Operator: R.Welsh

Drilling Information								Rock Substance					Rock Mass Defects								
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
											EL VL L M H VH EH	30 100 300 1000 3000	Particular		General						
HQ3		Not Observed	100		0	389.7	17	○ ○													

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 406.73 m
Barrel Type and Length: HQ 4.15 m Bearing: Datum: AHD Operator: R.Welsh

Drilling Information							Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
										EL VL L M H VH EH		30 100 300 3000	Particular	General		
HQ3	Not Observed	100	60	72	75	381.7	25		SANDSTONE: fine to coarse grained, pale brown and pale grey mottled orange, massive with indistinct thin beds and laminations carbonaceous material.(continued)					BP, 5°, CN, UN, VR JT, 20°, Clay VNR, IR, VR BP, 10°, CN, UN, VR		
						380.7	26						BP, 10°, CN, PR, RF BP, 15°, CN, UN, VR BP, 10°, CN, UN, RF			
						379.7	27						JT, 5°, CN, UN, VR BP, 15°, CN, UN, VR BP, 5°, CN, UN, VR SM, 10°, Clay VNR, IR, VR JT, 65°, CN, IR, VR BP, 5°, Clay CT, UN, RF BP, 5°, Clay VNR, UN, VR			
						378.7	28			HW			JT, 20°, CN, IR, VR BP, 10°, CN, IR, VR BP, 5°, CN, IR, VR SM, 10°, Clay FILLED, UN, RF BP, 10°, Clay FILLED, UN, RF BP, 10°, Clay VNR, UN, RF BP, 5°, Clay VNR, UN, RF BP, 5°, CN, UN, RF			
						377.7	29						BP, 5°, CN, UN, RF BP, 5°, CN, UN, RF BP, 5°, CN, UN, RF SM, 5°, Clay sand FILLED, IR, VR			
						376.7	30						BP, 5°, CN, UN, VR BP, 5°, CN, PR, RF BP, 5°, Clay VNR, UN, VR JT, 15°, CN, IR, VR BP, 5°, Fe, UN, RF BP, 5°, Fe, UN, RF JT, 25°, Fe, ST, RF BP, 20°, CN, IR, VR JT, 10°, CN, IR, VR BP, 5°, CN, UN, RF BP, 5°, CN, UN, RF			
						375.7	31						BP, 5°, Fe, UN, VR BP, 10°, Fe, UN, RF JT, 55°, Clay and sand			
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Support T - Timbering Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 406.73 m
Barrel Type and Length: HQ 4.15 m Bearing: Datum: AHD Operator: R.Welsh

Drilling Information							Rock Substance					Rock Mass Defects																																																																																																																																																																																																																																
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral		Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling																																																																																																																																																																																																																													
HQ3		Not Observed	100		75	373.7	33		SANDSTONE: fine to coarse grained, pale brown and pale grey mottled orange, massive with indistinct thin beds and laminations carbonaceous material.(continued)	HW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General																																																																																																																																																																																																																				
							34		SILTSTONE (90%), fine grained, grey-pale brown mottled orange, very thinly bedded sandstone (10%).																																																																																																																																																																																																																																			</

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	406.73 m
Barrel Type and Length:	HQ 4.15 m	Bearing:		Datum:	AHD Operator: R.Welsh



PointID : 310-03-BH3026 Depth Range: 10.50 - 14.00 m



PointID : 310-03-BH3026 Depth Range: 14.00 - 18.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 4.15 m	RL Surface:	406.73 m
		Bearing:	
		Datum:	AHD
		Operator:	R.Welsh



PointID : 310-03-BH3026 Depth Range: 18.00 - 22.00 m



PointID : 310-03-BH3026 Depth Range: 22.00 - 26.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	23/07/2021
Project Name:	Inland Rail B2G	Completed:	26/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330132.5 m E 6911959.0 m N	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	406.73 m
Barrel Type and Length:	HQ 4.15 m	Bearing:		Datum:	AHD
				Operator:	R.Welsh



PointID : 310-03-BH3026 Depth Range: 26.00 - 30.00 m



PointID : 310-03-BH3026 Depth Range: 30.00 - 34.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330132.5 m E 6911959.0 m N

Commenced: 23/07/2021
Completed: 26/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ 4.15 m

Inclination: -90°
Bearing:

RL Surface: 406.73 m
Datum: AHD

Operator: R.Welsh



PointID : 310-03-BH3026 Depth Range: 34.00 - 36.00 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 09/08/2021
Project Name: Inland Rail B2G	Completed: 10/08/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 330274.8 m E 6911997.9 m N	Checked By: J. Boyle
Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°
Hole Diameter: 115 mm	Bearing:
	RL Surface: 405.30 m
	Datum: AHD
	Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
ADV				D00030 D 0.30-0.50 m U00050 U 0.50-1.00 m		404.3	1		CL-CI	TOPSOIL: Silty CLAY trace sand, medium to high plasticity, dark brown, fine grained sand, trace rootlets (<2mm) Silty CLAY, low to medium plasticity, dark brown and black					TOPSOIL
				S00100 1.00 m S00100 SPT 1.00-1.45 m 13,17,21 N=38		403.3	2			Below 2.00m colour change to brown mottled dark brown, trace fine grained sand		H			1.00: PP Samp >600 kPa
				D00200 D 2.00-2.50 m		402.3	3		CI	Sandy CLAY trace silt, medium plasticity, brown mottled back, fine grained sand, trace organic inclusions (<5%),					2.50: PP Samp >600 kPa
				S00250 2.50 m S00250 SPT 2.50-2.95 m 5,9,16 N=25		401.3	4		SP	fine to medium sand (sand increasing with depth)		VSt			
				D00350 D 3.50-4.00 m		400.3	5			SAND with clay, fine to medium grained, pale grey mottled orange, low plasticity clay					
				S00400 4.00-4.45 m 10,13,17 N=30		399.3	6		SC	Clayey SAND, fine to medium grained, pale grey and pale brown mottled orange, medium plasticity clay		D			
				D00500 D 5.00-5.50 m		398.3	7		SP	Gravelly SAND with clay, fine to coarse grained, brown mottled grey and pale brown, fine to medium sub-rounded to angular gravel Below 7.00m colour change to brown and pale grey mottled orange and black		MD to D			
			S00550 5.50-5.95 m 7,12,14 N=26												
			D00650 D 6.50-7.00 m												
			S00700 7.00-7.45 m 10,14,30/145mm N=44/295mm												

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

MG 4.02 LIB/LB Log MG BOREHOLE EXCL DCP MG 4.02 G.P.J. <<DrawingFile>> 26/02/2022 16:51 10.02.00.04 Dargel Lab and In Situ Tool - DGD [Lib: DGD-P 4.01.2 gpt 3.04 2016-07-02 Pjt: DGD-P 4.00.6 2017-11-25]

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 09/08/2021
Project Name: Inland Rail B2G	Completed: 10/08/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 330274.8 m E 6911997.9 m N	Checked By: J. Boyle
Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°
Hole Diameter: 115 mm	Bearing:
	RL Surface: 405.30 m
	Datum: AHD
	Operator: R. Welsh

Drilling Information				Soil Description										Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
ADW				D00800 D 8.00-8.50 m					SP	Gravelly SAND with clay, fine to coarse grained, brown mottled grey and pale brown, fine to medium sub-rounded to angular gravel (continued) Below 8.00m colour change to brown mottled black and orange	D	MD to D			ALLUVIAL
				S00850 SPT 8.50-8.95 m 8,8,12 N=20		396.3	9		CI-CH	Silty CLAY with sand trace gravel, medium to high plasticity, grey, fine to medium grained sand, fine, sub rounded gravel.	M-PL	VSt			
				D00950 D 9.50-10.00 m		395.3	10			trace fine grained sand					
				S01000 SPT 10.00-10.45 m 3,3,6 N=9		394.3	11								
				S01150 SPT 11.50-11.95 m 5,8,13 N=21		393.3	12			with fine grained sand, trace fine sub-angular gravel	M-PL to M>PL	St			
				S01300 SPT 13.00-13.45 m 4,6,9 N=15		392.3	13								
WB				S01450 SPT 14.50-14.95 m 4,9,15 N=24		391.3	14								
						390.3	15		CH	Sandy CLAY, high plasticity, brown mottled orange, fine grained sand	M<PL	VSt			

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal 	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss		Classification Symbols and Soil Descriptions	Plastic Limit	
C - Casing	Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System	< PL = PL < PL	

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 09/08/2021	
Project Name: Inland Rail B2G		Completed: 10/08/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 330274.8 m E 6911997.9 m N		Checked By: J. Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 405.30 m	
		Datum: AHD Operator: R. Welsh	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S01600 SPT 16.00-16.45 m 6,10,18 N=28		388.3	17		CH	Sandy CLAY, high plasticity, brown mottled orange, fine grained sand (continued)	M<PL	VSt			ALLUVIAL
				S01750 SPT 17.50-17.83 m 11,26,11/30mm N=37/180mm		387.3	18		SP	Gravelly SAND with clay, fine to coarse grained, grey brown mottled red orange, fine to medium sub-angular to angular gravel, low to medium plasticity clay	W	VD			RESIDUAL SOIL
						386.3	19			Continued on cored borehole sheet					
						385.3	20								
						384.3	21								
						383.3	22								
						382.3	23								

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 405.30 m
Datum: AHD Operator: R. Welsh



310-03-BH3027 Depth Range: 1.00 - 1.45 m



310-03-BH3027 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	405.30 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3027 Depth Range: 4.00 - 4.45 m



310-03-BH3027 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

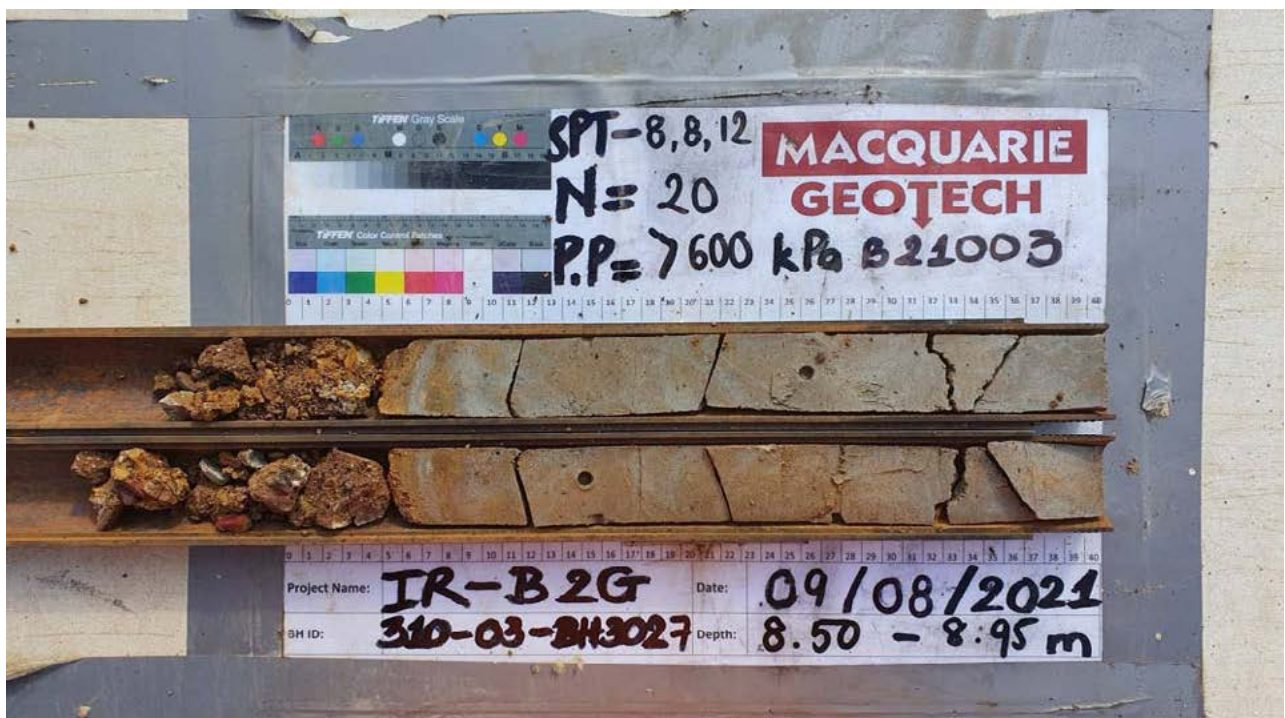
Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 405.30 m
Datum: AHD Operator: R. Welsh



310-03-BH3027 Depth Range: 7.00 - 7.45 m



310-03-BH3027 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 405.30 m
Datum: AHD Operator: R. Welsh



310-03-BH3027 Depth Range: 10.00 - 10.45 m



310-03-BH3027 Depth Range: 11.50 - 11.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	405.30 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3027 Depth Range: 13.00 - 13.45 m



310-03-BH3027 Depth Range: 14.50 - 14.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	405.30 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3027 Depth Range: 16.00 - 16.45 m



310-03-BH3027 Depth Range: 17.50 - 17.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	405.30 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3027 Depth Range: 19.90 - 20.35 m



310-03-BH3027 Depth Range: 21.50 - 21.94 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 405.30 m
Datum: AHD Operator: R. Welsh



310-03-BH3027 Depth Range: 27.30 - 27.69 m

Engineering Log - Cored Borehole

Project No.: B21003

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 405.30 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information						Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
			100	100					SANDSTONE, fine to coarse grained, grey orange mottled red brown and black, massive(continued)				
						380.3	25		Below 25.00m with organic inclusions (<5%)				
			87	36		379.3	26		CONGLOMERATE: matrix supported, fine to coarse grained sand, brown and pale grey mottled black, fine to coarse sub-rounded to rounded clasts, massive	XW			
						378.3	27		NO CORE 0.36m				
						377.3	28		SANDSTONE: Recovered as clayey SAND with gravel, fine to coarse grained, brown-orange mottled grey - dark brown, low plasticity clay, fine to coarse sub-rounded to rounded gravel SPT @ 27.30m 16, 27, 18/90mm N=R(HB)	HW			
			87	74		376.3	29		SANDSTONE, fine to coarse grained, pale brown and orange and white mottled pale grey and black, trace organic inclusions (<5%), massive				
						375.3	30			MW			JT, 50°, CN, UN, VR
						374.3	31						NON-INTACT

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss
Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 405.30 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General
HQ3			100		100	372.3	33		SANDSTONE, fine to coarse grained, pale brown and orange and white mottled pale grey and black, trace organic inclusions (<5%), massive(continued)	MW			IS, 5°, Clay FILLED, UN, VR	
						371.3	34						BP, 10°, Clay VNR, UN, VR BP, 5°, CN, IR, VR BP, 10°, CN, UN, VR BP, 5°, CN, UN, VR BP, 10°, CN, UN, VR BP, 10°, Clay VNR, UN, RF	
			100		85	370.3	35						BP, 5°, CN, UN, RF BP, 5°, CN, UN, VR JT, 20°, CN, UN, RF BP, 5°, CN, UN, RF	
						369.3	36						BP, 20°, Clay VNR, UN, VR BP, 5°, CN, IR, VR	
													NON-INTACT	
						368.3	37		Hole Terminated at 36.30 m Target depth					
						367.3	38							
						366.3	39							

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 4.2 m	RL Surface:	405.30 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Welsh



PointID : 310-03-BH3027 Depth Range: 18.40 - 22.00 m



PointID : 310-03-BH3027 Depth Range: 22.00 - 26.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 330274.8 m E 6911997.9 m N

Commenced: 09/08/2021
Completed: 10/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 405.30 m
Barrel Type and Length: HQ3 4.2 m Bearing: Datum: AHD Operator: R. Welsh



PointID : 310-03-BH3027 Depth Range: 26.00 - 30.00 m



PointID : 310-03-BH3027 Depth Range: 30.00 - 34.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	09/08/2021
Project Name:	Inland Rail B2G	Completed:	10/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	330274.8 m E 6911997.9 m N	Checked By:	J. Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	405.30 m
Barrel Type and Length:	HQ3 4.2 m	Bearing:		Datum:	AHD
				Operator:	R. Welsh



PointID : 310-03-BH3027 Depth Range: 34.00 - 36.30 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 12/08/2021	
Project Name: Inland Rail B2G		Completed: 13/08/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 324677.0 m E 6902250.0 m N		Checked By: J. Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 474.83 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: R. Welsh
Drilling Information			
Soil Description			
Observations			
Method	Penetration	Support	Water
Samples Tests Remarks	Recovery	RL (m)	Depth (m)
Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition Consistency Relative Density
Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
100	200	300	400
500			
ADN		Not Observed	
B00020 0.20-0.40 m		473.8	1
D00030 0.30-0.50 m			
U00050 0.50-1.00 m			
S00100 SPT 1.00-1.45 m 10,16,27 N=43			
D00200 2.00-2.50 m		472.8	2
S00250 SPT 2.50-2.73 m 14,16/80mm N=16/80mm		471.8	3
		470.8	4
		469.8	5
		468.8	6
		467.8	7
Method		Penetration	Water
AS - Auger Screwing	No resistance ranging to refusal	Level (Date)	U - Undisturbed Sample
RR - Rock Roller		Inflow	D - Disturbed Sample
WB- Washbore		Partial Loss	SPT - Standard Penetration Test
		Complete Loss	
Support		Graphic Log/Core Loss	Classification Symbols and Soil Descriptions
C - Casing	Core recovered (hatching indicates material)	Based on Unified Soil Classification System	
	Core loss		
Moisture Condition		Consistency/Relative Density	Plastic Limit
D - Dry	VS - Very Soft	< PL	< PL
M - Moist	S - Soft	= PL	= PL
W - Wet	F - Firm	> PL	> PL
	VSt - Very Stiff		
	H - Hard		
	VL - Very Loose		
	L - Loose		
	MD - Medium Dense		
	D - Dense		
	VD - Very Dense		

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	12/08/2021
Project Name:	Inland Rail B2G	Completed:	13/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324677.0 m E 6902250.0 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	474.83 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3312 Depth Range: 1.00 - 1.45 m



310-03-BH3312 Depth Range: 2.50 - 2.70 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324677.0 m E 6902250.0 m N

Commenced: 12/08/2021
Completed: 13/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 474.83 m
Barrel Type and Length: HQ3 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects						
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
											EL VL L M H VH EH	30 100 300 1000 3000			Particular	General			
							1												
							2												
									Continued from non-cored borehole sheet										
			100		86	471.8	3		SANDSTONE: fine to medium grained, pale brown and pale grey mottled orange and black, trace organic inclusions (<5%), massive.						BP, 20°, Clay FILLED, IR, RF IS, 10°, Clay FILLED, UN, RF				
							4								BP, 20°, CN, UN, RF JT, 75°, CN, UN, VR JT, 60°, CN, UN, VR JT, 45°, CN, UN, VR BP, 5°, Clay VNR, IR, RF BP, 10°, Fe SN, ST, RF				
			100		89	469.8	5			HW									
						468.8	6								BP, 5°, Fe SN, IR, VR				
			100		59	467.8	7		Extremely weathered SILTSTONE: Recovered as Gravelly CLAY: medium plasticity, brown and grey and purple red mottled orange and black, fine to medium sub-rounded to sub-angular gravel, some organic inclusions (<10%), and ironstone inclusions (<5%). SILTSTONE: fine grained, grey mottled orange, with ironstain inclusions (<10%), massive.	XW				JT, 75°, CN, IR, RF BP, 10°, Fe SN, PR, RF BP, 5°, Fe SN, PR, RF BP, 5°, Fe SN, PR, RF BP, 10°, Fe SN, PR, RF BP, 15°, Fe SN, PR, RF BP, 10°, Fe SN, PR, RF					
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Support T - Timbering Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																			

Engineering Log - Cored Borehole

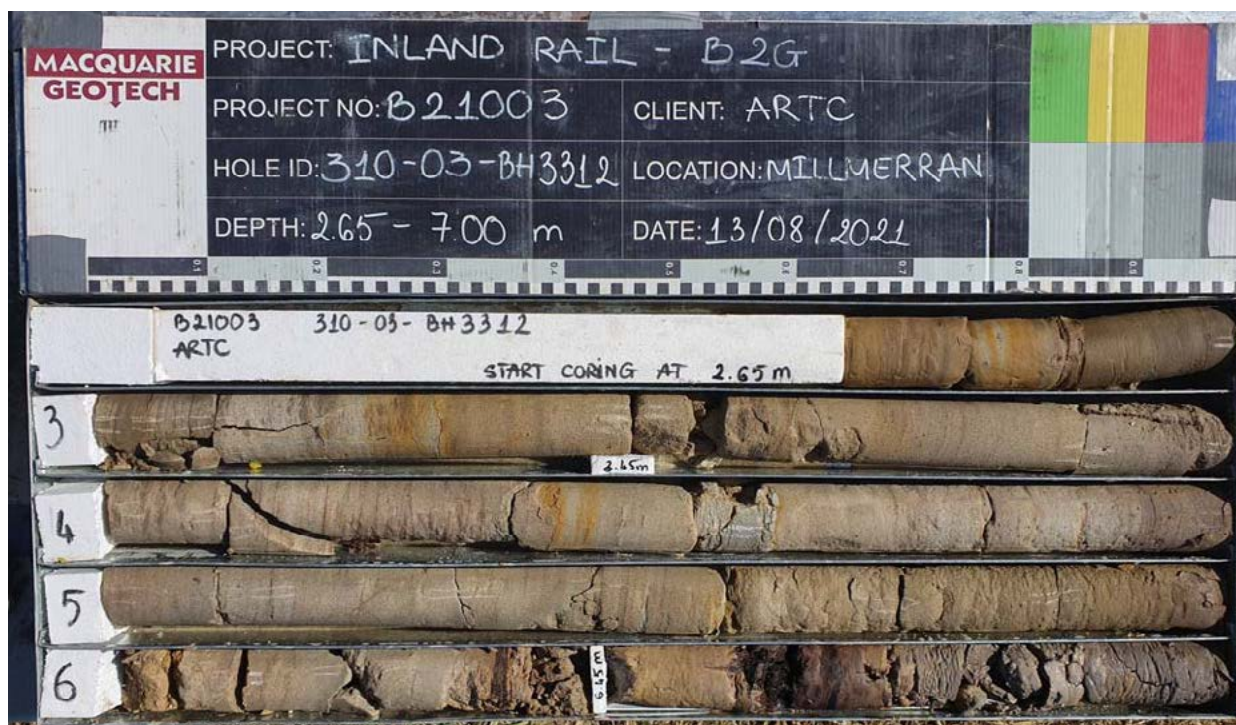
Project No.: B21003

Client: ARTC		Commenced: 12/08/2021												
Project Name: Inland Rail B2G		Completed: 13/08/2021												
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran												
Hole Coordinates: 324677.0 m E 6902250.0 m N		Checked By: J. Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°												
Barrel Type and Length: HQ3 3 m		RL Surface: 474.83 m												
		Datum: AHD												
		Operator: R. Welsh												
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
			100		59		465.8	9	SILTSTONE: fine grained, grey mottled orange, with ironstain inclusions (<10%), massive.(continued)	XW			BP, 10°, Fe SN, PR, RF BP, 15°, Fe SN, PR, RF BP, 15°, Fe SN, PR, RF BP, 5°, Fe SN, UN, RF BP, 5°, CN, UN, RF BP, 5°, Clay FILLED, UN, RF	
							464.8	10	SANDSTONE: fine to medium grained, grey mottled pale brown and black, trace organic inclusions (<5%).					
			100		100		463.8	11	SANDSTONE: Recovered as Clayey SAND: fine grained, pale brown and grey mottled black, low plasticity clay. SPT 9.38 - 9.49m 20/100mm (HB) N= 20/100mm (R)	HW			BP, 20°, CN, UN, RF	
							462.8	12	SANDSTONE: medium grained, grey mottled pale brown and orange, massive.					
							461.8	13	SANDSTONE: fine to medium grained, pale grey mottled brown, some calcium carbonate inclusions (<5%).				BP, 5°, Fe SN, PR, VR JT, 75°, Fe SN, IR, VR IS, 5°, FILLED, UN, VR IS, 5°, FILLED, UN, VR	
							460.8	14	SANDSTONE: fine grained, grey mottled brown, massive.				IS, 5°, FILLED, UN, VR	
			100		83		459.8	15	COAL: black mottled pale brown, with thinly laminated mudstone.	MW			BP, 10°, CN, UN, RF IS, 5°, Clay FILLED, UN, RF BP, 5°, CN, IR, VR	
									SILTSTONE: grey, interbedded sandstone, fine grained.				BP, 5°, Clay VNR, UN, RF	
									Hole Terminated at 15.45 m Target depth					
Method		Water		Graphic Log/Core Loss		Weathering		Strength						
AS - Auger Screwing WB - Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High						

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	12/08/2021				
Project Name:	Inland Rail B2G	Completed:	13/08/2021				
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran				
Hole Coordinates:	324677.0 m E 6902250.0 m N	Checked By:	J. Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	474.83 m		
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3312 Depth Range: 2.65 - 7.00 m



PointID : 310-03-BH3312 Depth Range: 7.00 - 11.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324677.0 m E 6902250.0 m N

Commenced: 12/08/2021
Completed: 13/08/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3 3 m

Inclination: -90°
Bearing:

RL Surface: 474.83 m
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3312 Depth Range: 9.38 - 9.48 m



PointID : 310-03-BH3312 Depth Range: 11.00 - 15.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 19/07/2021
Project Name: Inland Rail B2G	Completed: 20/07/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 324817.7 m E 6902568.6 m N	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 474.55 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description							Observations														
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations													
AD/V			Not Observed	D00020 0.20-0.50 m		473.5	1		CL	FILL: Sandy silty CLAY, low plasticity, pale brown, fine sand		VSt			FILL													
				D00050 0.50-1.00 m						Silty CLAY, low plasticity, pale brown mottled white					* RESIDUAL SOIL													
				S00050 SPT 0.50-0.95 m 8,10,11 N=21 PP 0.50 m >600 kPa S00100 SPT 1.00-1.45 m 7,12,14 N=26 PP 1.00 m >600 kPa D00200 2.00-2.50 m S00250 SPT 2.50-2.95 m 10,23,27 N=50						CH					Silty CLAY, high plasticity, pale brown mottled white-orange	*												
				CI						Silty CLAY with sand trace gravels, medium plasticity, brown mottled orange, fine to medium grained sand, fine to medium sub-rounded to sub-angular gravel.					M (<PL)	EXTREMELY WEATHERED BEDROCK												
				From 2.50m to 3.50m colour changed to pale brown-grey mottled orange						H																		
																GP	Clayey GRAVEL with sand: fine to coarse, sub angular, orange brown and grey, fine to medium grained sand	D	VD	EXTREMELY WEATHERED BEDROCK								
				S00400 SPT 4.00-4.14 m 13/135mm HB						SP					Gravelly SAND with silt trace clay: fine to coarse grained, brown mottled orange, fine to medium sub-rounded to sub-angular gravel, low plasticity clay													
				Continued on cored borehole sheet																								
																			469.5	5								
																			468.5	6								
						467.5	7																					

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

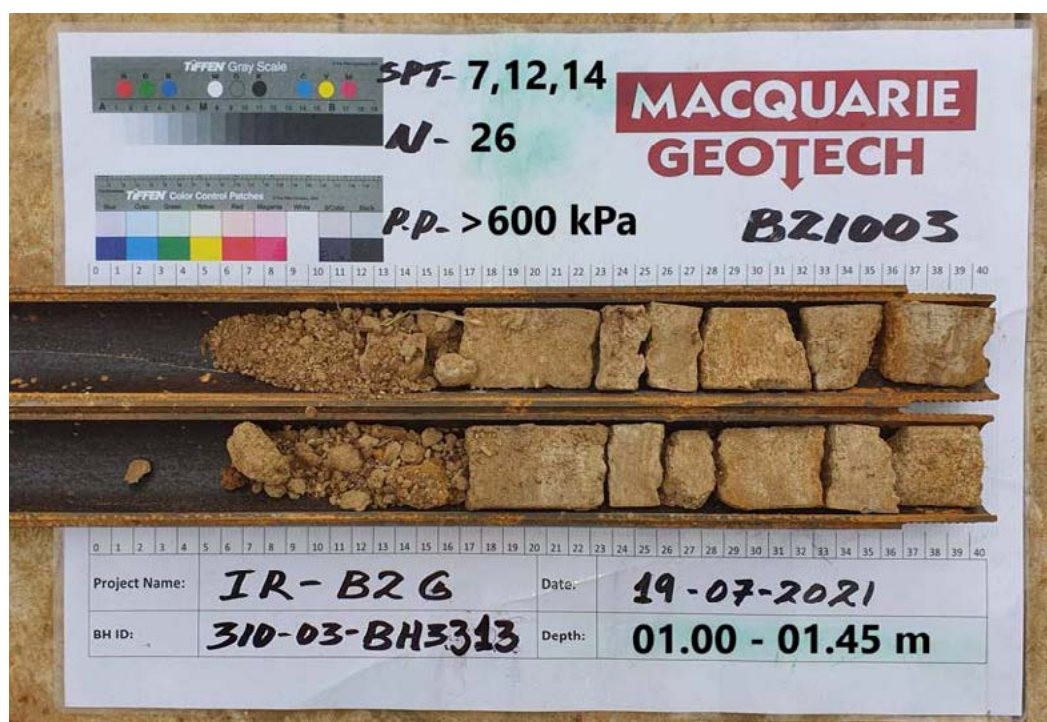
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	19/07/2021
Project Name:	Inland Rail B2G	Completed:	20/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324817.7 m E 6902568.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	474.55 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3313 Depth Range: 0.50 - 0.95 m



310-03-BH3313 Depth Range: 1.00 - 1.45 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	19/07/2021
Project Name:	Inland Rail B2G	Completed:	20/07/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran
Hole Coordinates:	324817.7 m E 6902568.6 m N	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	474.55 m
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3313 Depth Range: 2.50 - 2.95 m



310-03-BH3313 Depth Range: 4.00 - 4.14 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324817.7 m E 6902568.6 m N

Commenced: 19/07/2021
Completed: 20/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 474.55 m
Barrel Type and Length: HQ3 Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling				
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General			
							473.5	1									
							472.5	2									
							471.5	3									
							470.5	4									
									Continued from non-cored borehole sheet								
HQ3		Not Observed	100		0	469.5	5		Extremely weathered SANDSTONE: Recovered as silty gravel, medium to coarse, pale grey and pale brown mottled orange and red, sub-rounded to sub-angular	XW							
										SANDSTONE, fine grained, pale grey and orange mottled pale red	HW						
										Extremely weather SANDSTONE: Recovered as silty gravel, fine to coarse, black - dark brown mottled orange, sub-rounded to sub-angular	XW						
			83		50	468.5	6		SILTSTONE, fine grained, dark grey-black and pale red mottled orange, with thin lamination sandstone, massive, organic inclusions (<5%)	HW			JT, 20°, CN, UN, RF				
										NO CORE 0.36m							
			100		96	467.5	7		SILTSTONE, fine grained, dark grey-black and pale red mottled orange, with laminated sandstone, massive, organic inclusions (<5%)	HW			SM, 5°, Clay FILLED, UN, RF				
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Support T - Timbering Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																	

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324817.7 m E 6902568.6 m N

Commenced: 19/07/2021
Completed: 20/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 474.55 m
Barrel Type and Length: HQ3 Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance					Rock Mass Defects								
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral				Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
										EL VL L M H VH EH	30	100	300	1000	3000	Particular	General			
HQ3		Not Observed	100		96	465.5	9	x x x x x	SILTSTONE, fine grained, dark grey-black and pale red mottled orange, with laminated sandstone, massive, organic inclusions (<5%)(continued)	HW	●						BP, 5°, CN, UN, S			
							9	x x x x x									BP, 5°, Clay FILLED, IR, RF			
							9	x x x x x									BP, 5°, CN, UN, RF			
							10	x x x x x									BP, 5°, Fe VNR, UN, RF			
							10	x x x x x									BP, 5°, Fe VNR, UN, RF			
			10	x x x x x	BP, 15°, Clay VNR, ST, RF															
			11	x x x x x	Extremely weathered SANDSTONE: Recovered as clayey SAND with gravel fine grained, brown-orange mottled red, low plasticity clay, fine to medium sub-angular to angular gravel	XW									BP, 5°, Fe VNR, UN, RF					
			11	x x x x x	SANDSTONE (85%), fine grained, yellow-pale brown mottled orange and purple, thinly bedded siltstone (15%), massive.	MW									BP, 5°, Fe VNR, UN, RF					
			11	x x x x x		JT, 75°, CN, UN, RF														
			12	x x x x x	NO CORE 0.18m	BP, 5°, CN, IR, RF														
			12	x x x x x	SANDSTONE (85%), fine grained, yellow-pale brown mottled orange and purple, thinly bedded siltstone (15%), massive.	MW									BP, 5°, CN, UN, RF					
			13	x x x x x																BP, 5°, CN, UN, RF
			13	x x x x x																IS, 5°, Clay FILLED, IR, RF
			14	x x x x x	Below 13.17m change in colour to grey and yellow orange mottled purple and pale brown, organic inclusions (<5%)	HW														SM, 5°, Rock Fragments FILLED, IR, RF
			14	x x x x x																JT, 70°, CN, IR, RF
14	x x x x x															JT, 60°, CN, PR, RF				
15	x x x x x															JT, 30°, Rock Fragments FILLED, PR, RF				
15	x x x x x															JT, 40°, CN, PR, RF				
15	x x x x x															JT, 80°, Fe VNR, IR, RF				
15	x x x x x															JT, 60°, CN, PR, RF				
Hole Terminated at 15.50 m Target depth Hole grouted to surface.																				
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water ☒ Level (Date) ☐ Inflow ☐ Partial Loss ▲ Complete Loss Support T - Timbering Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																				

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324817.7 m E 6902568.6 m N

Commenced: 19/07/2021
Completed: 20/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3

Inclination: -90°
Bearing:

RL Surface: 474.55 m
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3313 Depth Range: 4.25 - 8.00 m



PointID : 310-03-BH3313 Depth Range: 8.00 - 12.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 324817.7 m E 6902568.6 m N

Commenced: 19/07/2021
Completed: 20/07/2021
Logged By: T. Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3

Inclination: -90°
Bearing:

RL Surface: 474.55 m
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3313 Depth Range: 12.00 - 15.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326108.1 m E 6907398.5 m N

Commenced: 21/12/2022
Completed: 22/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 470.60 m
Hole Diameter: 125 mm Bearing: Datum: AHD Operator: R.Welsh

Drilling Information							Soil Description							Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations				
ADT		Not Observed		D00050 D 0.20-0.50 m U00050 U 0.50-0.80 m 0.80 m		469.6	1		CI	Sandy Silty CLAY: medium plasticity, brown, fine to coarse grained sand, with rootlets Silty CLAY trace sand: medium plasticity, dark brown, fine to medium grained sand	D					TOPSOIL					
						468.6	2									COLLUVIAL SOIL					
				S00100 SPT 1.00-1.45 m 4,6,12 N=18 B00120 B 1.20-1.60 m												0.50: PP Samp >600 kPa					
																1.00: PP Samp >600 kPa					
				S00250 SPT 2.50-2.95 m 4,10,16 N=26 D00300 D 3.00-3.10 m		467.6	3			Sandy CLAY: medium plasticity, dark brown, fine to coarse grained sand, with seams of silty clay						2.50: PP Samp >600 kPa					
				S00400 SPT 4.00-4.45 m 10,13,21 N=34		466.6	4		CI	Sandy CLAY trace gravel: medium plasticity, dark brown mottled orange-brown and red, fine to coarse grained sand, fine, subangular gravel	M (=PL)	H				RESIDUAL SOIL >600 kPa					
	465.6	5																			
									SP	Silty SAND: fine to medium grained sand, grey mottled orange-brown, low plasticity fines	D	D					EXTREMELY WEATHERED MATERIAL				
										Continued on cored borehole sheet											
						464.6	6														
						463.6	7														

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Support
C - Casing

Penetration
 No resistance ranging to refusal

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326108.1 m E 6907398.5 m N

Commenced: 21/12/2022
Completed: 22/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: 470.60 m
Datum: AHD Operator: R.Welsh



310-03-BH3314 Depth Range: 1.00 - 1.45 m



310-03-BH3314 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	21/12/2022
Project Name:	Inland Rail B2G	Completed:	22/12/2022
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	J.Cooper
Hole Coordinates:	326108.1 m E 6907398.5 m N	Checked By:	C. Green
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	470.60 m
		Datum:	AHD
		Operator:	R.Welsh



310-03-BH3314 Depth Range: 4.00 - 4.45 m



310-03-BH3314 Depth Range: 5.50 - 5.95 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 21/12/2022			
Project Name: Inland Rail B2G		Completed: 22/12/2022			
Hole Location: N1 - Canning Creek to Millmeran		Logged By: J.Cooper			
Hole Coordinates: 326108.1 m E 6907398.5 m N		Checked By: C. Green			
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 470.60 m		
Barrel Type and Length: HQ3 3 m		Bearing:	Datum: AHD Operator: R.Welsh		
Drilling Information		Rock Substance			
Method	Support	Water	TCR (%)		
SCR (%)	RQD (%)	RL (m)	Depth (m)		
Graphic Log		Material Description rock type: grain characteristics, colour, structure, minor components			
Weathering		Strength Is(50) ● - Axial ○ - Diametral			
Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
Particular		General			
HQ3		Not Observed			
100		33			
469.6		468.6			
467.6		466.6			
465.6		464.6			
463.6		462.6			
460.6		458.6			
456.6		454.6			
452.6		450.6			
448.6		446.6			
444.6		442.6			
440.6		438.6			
436.6		434.6			
430.6		428.6			
426.6		424.6			
420.6		418.6			
416.6		414.6			
410.6		408.6			
406.6		404.6			
400.6		398.6			
396.6		394.6			
390.6		388.6			
386.6		384.6			
380.6		378.6			
376.6		374.6			
370.6		368.6			
366.6		364.6			
360.6		358.6			
356.6		354.6			
350.6		348.6			
346.6		344.6			
340.6		338.6			
336.6		334.6			
330.6		328.6			
326.6		324.6			
320.6		318.6			
316.6		314.6			
310.6		308.6			
306.6		304.6			
300.6		298.6			
296.6		294.6			
290.6		288.6			
286.6		284.6			
280.6		278.6			
276.6		274.6			
270.6		268.6			
266.6		264.6			
260.6		258.6			
256.6		254.6			
250.6					

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 21/12/2022												
Project Name: Inland Rail B2G		Completed: 22/12/2022												
Hole Location: N1 - Canning Creek to Millmeran		Logged By: J.Cooper												
Hole Coordinates: 326108.1 m E 6907398.5 m N		Checked By: C. Green												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 470.60 m											
Barrel Type and Length: HQ3 3 m		Bearing:	Datum: AHD Operator: R.Welsh											
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
HQ3		Not Observed	100		99	461.6	9		SANDSTONE: fine grained, pale brown, thinly bedded at approx. 20 degrees, with laminations and seams of clay up to 20mm thick, pale grey(continued) Silty CLAY, grey mottled orange-brown (Ex. W SILTSTONE)	HW XW			Particular JT, 50°, CLAY SN, PR, S BP, 20°, CLAY VNR, PR, S BP, 20°, CLAY VNR, PR, S BP, 20°, CLAY VNR, PR, S BP, 10°, CLAY VNR, PR, RF IS, 20°, CLAY SN, UN, RF	General
						460.6	10		SILTSTONE: pale brown mottled orange-brown, fine grained, chert nodule inclusions, up to 50mm diameter	HW			JT, 45°, CLAY VNR, UN, S	
						459.6	11		Hole Terminated at 10.00 m Target depth					
						458.6	12							
						457.6	13							
						456.6	14							
						455.6	15							
Method		Water		Graphic Log/Core Loss		Weathering		Strength						
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High						
Support		T - Timbering												

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326108.1 m E 6907398.5 m N

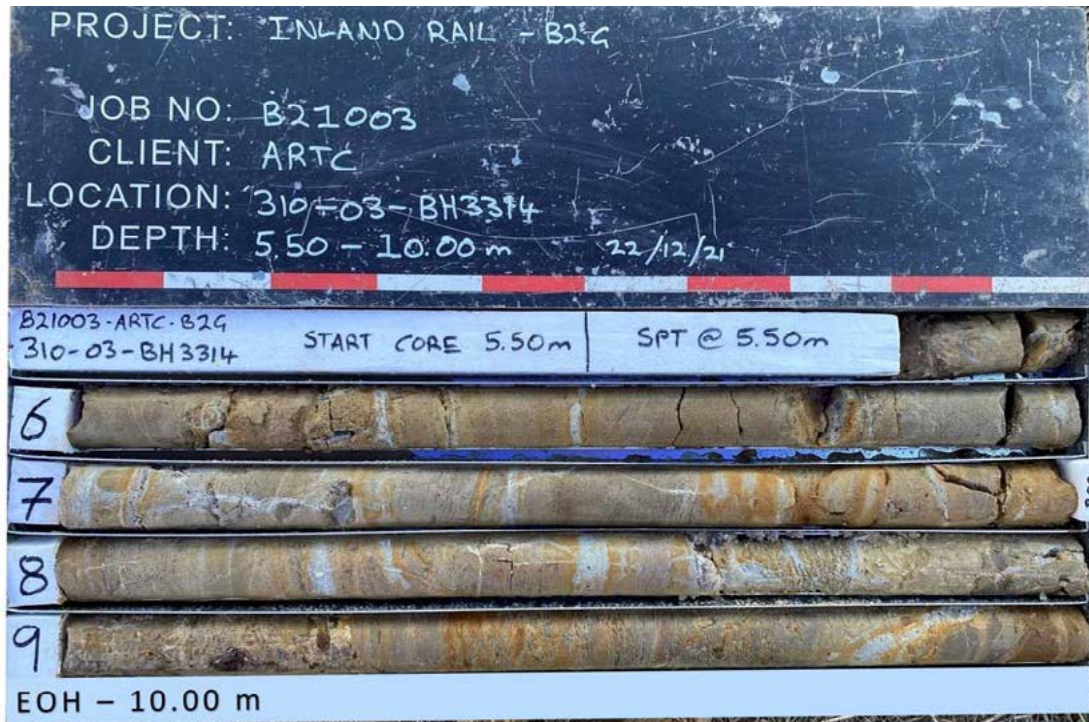
Commenced: 21/12/2022
Completed: 22/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ3 3 m

Inclination: -90°
Bearing:

RL Surface: 470.60 m
Datum: AHD

Operator: R.Welsh



PointID : 310-03-BH3314 Depth Range: 5.50 - 10.00 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC	Commenced: 14/12/2021
Project Name: Inland Rail B2G	Completed: 15/12/2021
Hole Location: N1 - Canning Creek to Millmeran	Logged By: T. Tran
Hole Coordinates: 326383.1 m E 6908071.9 m N	Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track	Inclination: -70°	RL Surface: 481.89 m
Hole Diameter: 125 mm	Bearing: 290°	Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
A/D/T		Not Observed		D00030 D 0.30-0.50 m		481.0	1		CI	TOPSOIL: sandy CLAY, high plasticity, dark brown, fine to medium grained sand, trace rootlets (<1mm) sandy CLAY trace gravel, medium plasticity, dark brown mottled white, fine to coarse grained sand, fine sub-rounded gravel (calcrete) sandy CLAY, low to medium plasticity, brown, fine grained sand, trace carbonate soil	M (<PL)	VSt		x	TOPSOIL
				B00050 B 0.50-1.00 m											
				D00050 D 0.50-1.00 m											
				D00150 D 1.50-2.00 m											
				D00250 D 2.50-3.00 m		480.0	2			From 1.50m: Fine to medium sub-rounded gravel (calcrete), some concrete nodules, sand increasing with depth	M (<PL)			x	RESIDUAL SOIL 0.30: PP Samp =280 kPa 0.50: PP Samp =280 kPa
						479.1	3			Continued on cored borehole sheet					2.50: PP Samp =350 kPa
						478.1	4								
						477.2	5								
						476.3	6								
						475.3	7								
						474.4									

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326383.1 m E 6908071.9 m N

Commenced: 14/12/2021
Completed: 15/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 481.89 m
Barrel Type and Length: HQ 3 m Bearing: 290° Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling		Particular	General
						481.0	1									
						480.0	2									
						479.1	3		Continued from non-cored borehole sheet							
						478.1	4		sandy CLAY trace gravel, medium plasticity, brown mottled grey and orange, fine to coarse grained sand, fine to coarse sub-rounded to sub-angular gravel, some quartz intrusion, trace calcrete nodules and coal/organic							
						477.2	5									
						476.3	6		NO CORE							
						475.3	7									
						474.4			clayey SAND trace gravel, fine to coarse grained, brown mottled grey and black, low plasticity clay, fine sub-angular gravel							

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326383.1 m E 6908071.9 m N

Commenced: 14/12/2021
Completed: 15/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 481.89 m
Barrel Type and Length: HQ 3 m Bearing: 290° Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General
HQ	Not Observed	100	62	0	72	473.4	9		CLAY trace sand and gravel, low to medium plasticity, white mottled orange brown, fine to coarse grained sand, fine to coarse sub-rounded to sub-angular gravel					
							9		SANDSTONE, fine grained, brown and white mottled orange, interbedded with siltstone	HW				
							9		Extremely weathered SILTSTONE, recovered as silty CLAY, low plasticity, white mottled orange-brown	XW				
							10		Extremely weathered SILTSTONE, recovered as silty CLAY, low plasticity, white mottled orange-brown	HW				
							10		SANDSTONE, fine grained, brown mottled orange and purple-black, trace organic inclusions (<5%)	MW			BP, 20°, CN, UN, RF	
							11						JT, 65°, CN, PR, RF	
							11						JT, 90°, CN, UN, RF	
							11						BP, 20°, CN, UN, RF	
							12		SANDSTONE, fine grained, brown mottled orange and black, trace organic inclusions (<5%)	HW			BP, 20°, FE CLAY VNR, UN, RF	
							12						BP, 20°, CLAY VNR, UN, RF	
							12		SANDSTONE, fine to medium grained, pale brown and pale grey mottled white and orange, trace organic inclusions (<5%)	HW			BP, 20°, FE SN, UN, RF	
							12						JT, 45°, CN, PR, RF	
							12						BP, 30°, FE SN, UN, VR	
							12						SM, 30°, CLAY FILLED, UN, VR, <=20 mm	
							12						SM, 15°, CLAY FILLED, UN, VR, <=90 mm	
							13		12.97-13.02m: Extremely weathered SANDSTONE	XW			BP, 10°, FE SN, UN, VR	
							13		SANDSTONE, fine grained, pale brown-grey mottled orange, thinly bedded siltstone (<10%), fairly ironstained, trace organic inclusions (5%)				JT, 65°, FE CLAY VNR, PR, VR	
							13						JT, 5°, CN, UN, VR	
							13						JT, 85°, FE SN, UN, RF	
							14		13.96-14.04m: Iron oxide CHERT	HW			BP, 20°, CN, UN, RF	
							14						JT, 20°, FE SN, IR, VR	
							14						JT, 60°, CN, PR, RF	
							14						JT, 70°, CN, UN, RF	
							15						JT, 50°, FE SN, UN, RF	
							15						JT, 30°, CLAY VNR, UN, RF	
							15						DB	
							15						BP, 10°, CN, UN, RF	
							15						BP, 10°, CN, UN, RF	
							15						JT, 70°, FE CLAY VNR, PR, RF	
							15						BP, 20°, CLAY CT, UN, RF	
							15						JT, 45°, CN, UN, VR	
							15						JT, 40°, CN, UN, RF	

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326383.1 m E 6908071.9 m N

Commenced: 14/12/2021
Completed: 15/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	481.89 m	
Barrel Type and Length:	HQ 3 m	Bearing:	290°	Datum:	AHD	Operator: R. Welsh

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC Project Name: Inland Rail B2G Hole Location: N1 - Canning Creek to Millmeran Hole Coordinates: 326383.1 m E 6908071.9 m N										Commenced: 14/12/2021 Completed: 15/12/2021 Logged By: T. Tran Checked By: J.Cooper																			
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ 3 m										Inclination: -70° Bearing: 290°										RL Surface: 481.89 m Datum: AHD Operator: R. Welsh									
Drilling Information										Rock Substance										Rock Mass Defects									
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling									
HQ		Not Observed	67		64						EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General					
						458.4	25		SILTSTONE, grey, interbedded with sandstone (<10%)(continued) NO CORE	SW - MW																			
						451.8	31		SILTSTONE, grey Hole Terminated at 25.10 m Target depth	SW - MW																			

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Support

T - Timbering

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	14/12/2021
Project Name:	Inland Rail B2G	Completed:	15/12/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	326383.1 m E 6908071.9 m N	Checked By:	J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	481.89 m
Barrel Type and Length:	HQ 3 m	Bearing:	290°	Datum:	AHD Operator: R. Welsh



PointID : 310-03-BH3316 Depth Range: 3.00 - 7.00 m



PointID : 310-03-BH3316 Depth Range: 7.00 - 12.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	14/12/2021				
Project Name:	Inland Rail B2G	Completed:	15/12/2021				
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran				
Hole Coordinates:	326383.1 m E 6908071.9 m N	Checked By:	J.Cooper				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	481.89 m		
Barrel Type and Length:	HQ 3 m	Bearing:	290°	Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3316 Depth Range: 12.00 - 17.00 m



PointID : 310-03-BH3316 Depth Range: 17.00 - 22.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	14/12/2021				
Project Name:	Inland Rail B2G	Completed:	15/12/2021				
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	T. Tran				
Hole Coordinates:	326383.1 m E 6908071.9 m N	Checked By:	J.Cooper				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	481.89 m		
Barrel Type and Length:	HQ 3 m	Bearing:	290°	Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3316 Depth Range: 22.00 - 25.10 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC		Commenced: 13/12/2021	
Project Name: Inland Rail B2G		Completed: 14/12/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 326528.2 m E 6908434.6 m N		Checked By: J.Cooper	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -70°	
Hole Diameter: 125 mm		RL Surface: 483.12 m	
		Bearing: 110°	
		Datum: AHD	
		Operator: R. Welsh	

Drilling Information				Soil Description				Observations											
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations				
A/D/T		Not Observed		D00030 D 0.30-0.50 m	482.2	482.2	1		CH	TOPSOIL: CLAY trace sand, high plasticity, dark brown, fine grained sand, some rootlets (<1mm)	M	F - St		x	TOPSOIL				
				B00050 B 0.50-1.00 m						CLAY trace sand, high plasticity, dark brown-grey, fine to coarse grained sand, trace carbonate soil					(=PL)			RESIDUAL SOIL	
				D00050 D 0.50-1.00 m						CLAY trace sand trace gravel, medium plasticity, pale brown mottled grey and orange, fine to coarse grained sand, fine to medium sub-rounded gravel, trace carbonate soil					M	VSt - H			>180 kPa
																	0.50: PP Samp		
																	>450 kPa		
				D00150 D 1.50-2.00 m	481.2	2			trace fine to medium sub-angular gravel	F - St									
				D00250 D 2.50-3.00 m	480.3	3		CL	CLAY trace silt, low plasticity, pale grey and orange	M	(<PL)				EXTREMELY WEATHERED MATERIAL				
				D00350 D 3.50-4.00 m	479.4	4			4.00: silt content increasing with depth	St									
				D00450 D 4.50-5.00 m	478.4	5													
					477.5	6			Continued on cored borehole sheet										
					476.5	7													
					5.6														

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 13/12/2021	
Project Name: Inland Rail B2G		Completed: 14/12/2021	
Hole Location: N1 - Canning Creek to Millmeran		Logged By: T. Tran	
Hole Coordinates: 326528.2 m E 6908434.6 m N		Checked By: J.Cooper	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -70°	
Barrel Type and Length: HQ 3 m		RL Surface: 483.12 m	
		Datum: AHD	
		Operator: R. Welsh	

Drilling Information				Rock Substance				Rock Mass Defects						
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
										EL VL L M H VH EH	30 100 300 1000 3000	Particular	General	
						482.2	1							
						481.2	2							
						480.3	3							
						479.4	4							
						478.4	5							
									Continued from non-cored borehole sheet					
			100	0		477.5	6		Extremely weathered material, recovered as sandy CLAY, low to medium plasticity, orange-brown and white mottled red, fine grained sand (PP >150 kPa @ 5.60m)					
			100	0		476.5	7		Extremely weathered SANDSTONE, fine grained, pale brown-grey mottled orange and black, heavily ironstained, recovered as clayey SAND, fine grained, low plasticity CLAY	XW				
						475.6								

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326528.2 m E 6908434.6 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 483.12 m
Barrel Type and Length: HQ 3 m Bearing: 110° Datum: AHD Operator: R. Welsh

Drilling Information							Rock Substance					Rock Mass Defects																	
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)			Defect Description thickness, type, inclination, planarity, roughness, coating/infilling										
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General					
HQ3	Not Observed	100	100	0	19	474.7	9		Extremely weathered SANDSTONE, fine grained, pale brown-grey mottled orange and black, heavily ironstained, recovered as clayey SAND, fine grained, low plasticity CLAY(continued) Iron oxide CHERT	XW																			
						473.7	10																						
						472.8	11																						
						471.8	12																						
						470.9	13																						
						470.0	14																						
						469.0	15																						
						468.1																							
Method		Water		Graphic Log/Core Loss		Weathering		Strength																					
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		▽ Level (Date) ▽ Inflow △ Partial Loss ◄ Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																					
Support		T - Timbering																											

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Project No.: B21003

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	483.12 m
Barrel Type and Length:	HQ 3 m	Bearing:	110°	Datum:	AHD
				Operator:	R. Welsh

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326528.2 m E 6908434.6 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 483.12 m
Barrel Type and Length: HQ 3 m Bearing: 110° Datum: AHD Operator: R. Welsh

Drilling Information						Rock Substance						Rock Mass Defects													
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral						Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling				
HQ3	Not Observed	100	100	52	30	459.6	25		Extremely weathered material (SHALE), recovered as silty CLAY, low to medium plasticity, grey-pale brown(continued) thinly bedded COAL, shiny black	XW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General	
							26		SILTSTONE, fine grained, grey, interbedded with sandstone (<30%)	MW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	FZ JT, 65°, CN, UN, S BP, 30°, CN, UN, S BP, 20°, CN, UN, S IS, 20°, CLAY FILLED, UN, S, <=30 mm		
							27		SHALE/MUDSTONE, grey and purple-brown mottled white	HW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	JT, 65°, CN, UN, S BP, 30°, CN, UN, S BP, 30°, CN, UN, S JT, 85°, CN, PR, S JT, 70°, CN, PR, S BP, 20°, CN, PR, S SM, 40°, CLAY FILLED, UN, S, <=35 mm		
							28		COAL, shiny black-purple	SW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	JT, 40°, CN, PR, S BP, 10°, CN, UN, S BP, 10°, CN, UN, S BP, 20°, CN, UN, RF BP, 30°, CN, UN, RF BP, 30°, CN, UN, RF JT, 40°, CN, UN, RF BP, 10°, CN, UN, RF		
							29		SILTSTONE, fine grained, grey and white mottled black, interbedded sandstone (<30%), trace organic inclusions (<5%)	SW - MW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	JT, 5°, CN, UN, S JT, 45°, CN, UN, S JT, 50°, CN, UN, S BP, 20°, CN, UN, RF JT, 10°, CN, UN, RF BP, 20°, CN, UN, RF BP, 35°, CN, UN, RF JT, 45°, CLAY VNR, UN, S BP, 20°, CN, UN, S		
							30		COAL, black and purple-brown, shiny	FR - SW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	FZ JT, 85°, CN, PR, S JT, 45°, CN, ST, S FZ JT, 85°, CN, PR, S FZ, 20°, CN, PR, S BP, 30°, CN, UN, RF BP, 30°, CLAY VNR, UN, S		
							31		Interbedded SILTSTONE and SANDSTONE, fine grained, grey mottled pale brown-white	SW	EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	BP, 30°, CN, UN, S JT, 5°, CN, UN, S SM, 30°, CLAY FILLED, UN, S, <=25 mm BP, 30°, CN, PR, S BP, 30°, CN, PR, S FZ JT, 40°, CLAY VNR, UN, S FZ, CN, IR, S JT, 65°, CN, IR, S JT, 65°, CN, UN, S FZ JT, 45°, CLAY VNR, UN, S BP, 20°, CN, UN, RF JT, 45°, CN, UN, RF DB		
							31.10		Hole Terminated at 31.10 m Target depth		EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							453.0				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							454.0				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							454.9				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							455.9				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							456.8				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							457.7				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							458.7				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
							459.6				EL	VL	L	M	H	VH	EH	30	100	300	1000	3000			
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Support T - Timbering Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High																									

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/12/2021				
Project Name:	Inland Rail B2G	Completed:	14/12/2021				
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran				
Hole Coordinates:	326528.2 m E 6908434.6 m N	Checked By:	J.Cooper				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	483.12 m		
Barrel Type and Length:	HQ 3 m	Bearing:	110°	Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3317 Depth Range: 5.50 - 9.00 m



PointID : 310-03-BH3317 Depth Range: 9.00 - 14.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	13/12/2021
Project Name:	Inland Rail B2G	Completed:	14/12/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	326528.2 m E 6908434.6 m N	Checked By:	J.Cooper

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-70°	RL Surface:	483.12 m
Barrel Type and Length:	HQ 3 m	Bearing:	110°	Datum:	AHD Operator: R. Welsh



PointID : 310-03-BH3317 Depth Range: 14.00 - 19.00 m



PointID : 310-03-BH3317 Depth Range: 19.00 - 24.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326528.2 m E 6908434.6 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: T. Tran
Checked By: J.Cooper

Drill Model and Mounting: Comacchio 305/Track Inclusion: -70° RL Surface: 483.12 m
Barrel Type and Length: HQ 3 m Bearing: 110° Datum: AHD Operator: R. Welsh



PointID : 310-03-BH3317 Depth Range: 24.00 - 29.00 m



PointID : 310-03-BH3317 Depth Range: 29.00 - 31.10 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326805.8 m E 6909174.5 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 461.72 m
Hole Diameter: 125 mm Bearing: 290° Datum: AHD Operator: J.Komung

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T		Not Observed		D00030 D 0.30-0.50 m		460.8	1		CI	TOPSOIL: silty sandy CLAY, medium plasticity, dark brown, fine grained sand, trace rootlets (<1mm) silty CLAY with sand, medium plasticity, orange brown, fine to medium grained sand	M (>PL)	F			TOPSOIL RESIDUAL SOIL * 0.50: PP Samp >600 kPa
				D00050 D 0.50-1.00 m											
				B00060 B 0.60-1.00 m											
				D00120 D 1.20-1.50 m											
				D00250 D 2.50-2.70 m		459.8	2			From 1.70m: Sand content increasing with depth					
						458.9	3			Continued on cored borehole sheet					
						458.0	4								
						457.0	5								
						456.1	6								
						455.1	7								
						454.2									

Method

AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
 Inflow
 Partial Loss
 Complete Loss

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)
 Core loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Plastic Limit

< PL
= PL
< PL

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326805.8 m E 6909174.5 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 461.72 m
Barrel Type and Length: HQ 3 m Bearing: 290° Datum: AHD Operator: J.Komung

Drilling Information							Rock Substance					Rock Mass Defects												
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral				Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling					
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General
HQ3																								
				100		0																		
				100		9																		

Engineering Log - Cored Borehole

Project No.: B21003

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326805.8 m E 6909174.5 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track Inclin: -70° RL Surface: 461.72 m
Barrel Type and Length: HQ 3 m Bearing: 290° Datum: AHD Operator: J.Komung

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
										EL VL L M H VH EH		30 100 300 1000 3000	Particular	General
HQ3	Not Observed	100	100	75	100	445.7	17		SANDSTONE: pale grey mottled orange-brown, fine grained, bedding at 10 to 30 deg, interbedded with CLAY, dark grey, laminations spaced 5-20 mm, (continued) From 16.40 to 16.50m: CHERT seam From 16.75 to 17.20m: Sandstone becoming massive.	SW			BP, 15°, Clay VNR, PR, S JT, 15°, CN, PR, RF BP, 15°, Clay VNR, PR, S BP, 15°, Clay VNR, PR, S	
						444.8	18						BP, 15°, Clay VNR, PR, S JT, 65°, CN, PR, RF	
						443.9	19		COAL, black, vitreous				BP, 15°, Clay VNR, PR, S JT, 85°, CN, UN, RF BP, 15°, Clay VNR, PR, S BP, 15°, Clay VNR, PR, S BP, 10°, Clay VNR, PR, S JT, 25°, Clay CNR, UN, RF JT, 50°, CN, PR, RF JT, 50°, CN, PR, RF BP, 5°, CN, PR, RF BP, 5°, CN, PR, RF DB BP, 5°, CN, PR, RF BP, 10°, CN, UN, RF BP, 10°, CN, UN, RF BP, 10°, CN, PR, RF BP, 10°, CN, PR, RF BP, 15°, CN, PR, RF BP, 15°, CN, PR, RF JT, 75°, Clay VNR, PR, S JT, 65°, Clay VNR, PR, S BP, 15°, CN, PR, RF JT, 55°, CN, PR, RF IS, 10°, Clay SN, PR, S IS, 10°, Clay SN, PR, S, =40 mm	
						442.9	20		SILTSTONE: dark grey, very thinly bedded at approx. 30deg, interbedded with MUDSTONE, dark grey and black, 5-10mm, up to 10-20mm thick				BP, 10°, CN, PR, S BP, 10°, CN, PR, S JT, 65°, Clay VNR BP, 10°, CN, PR, S BP, 10°, CN, PR, S	
						442.0	21							
						439.2	22		Hole Terminated at 21.20 m Target depth					
						440.1	23							
						441.0								
						442.0								
						443.9								
						444.8								
						445.7								

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326805.8 m E 6909174.5 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ 3 m

Inclination: -70°
Bearing: 290°

RL Surface: 461.72 m
Datum: AHD

Operator: J.Komung



PointID : 310-03-BH3318 Depth Range: 3.00 - 7.00 m



PointID : 310-03-BH3318 Depth Range: 7.00 - 12.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326805.8 m E 6909174.5 m N

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ 3 m

Inclination: -70°
Bearing: 290°

RL Surface: 461.72 m
Datum: AHD

Operator: J.Komung



PointID : 310-03-BH3318 Depth Range: 12.00 - 17.00 m



PointID : 310-03-BH3318 Depth Range: 17.00 - 21.20 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326742.1 m E 6908847.9 m N

Commenced: 14/12/2022
Completed: 15/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

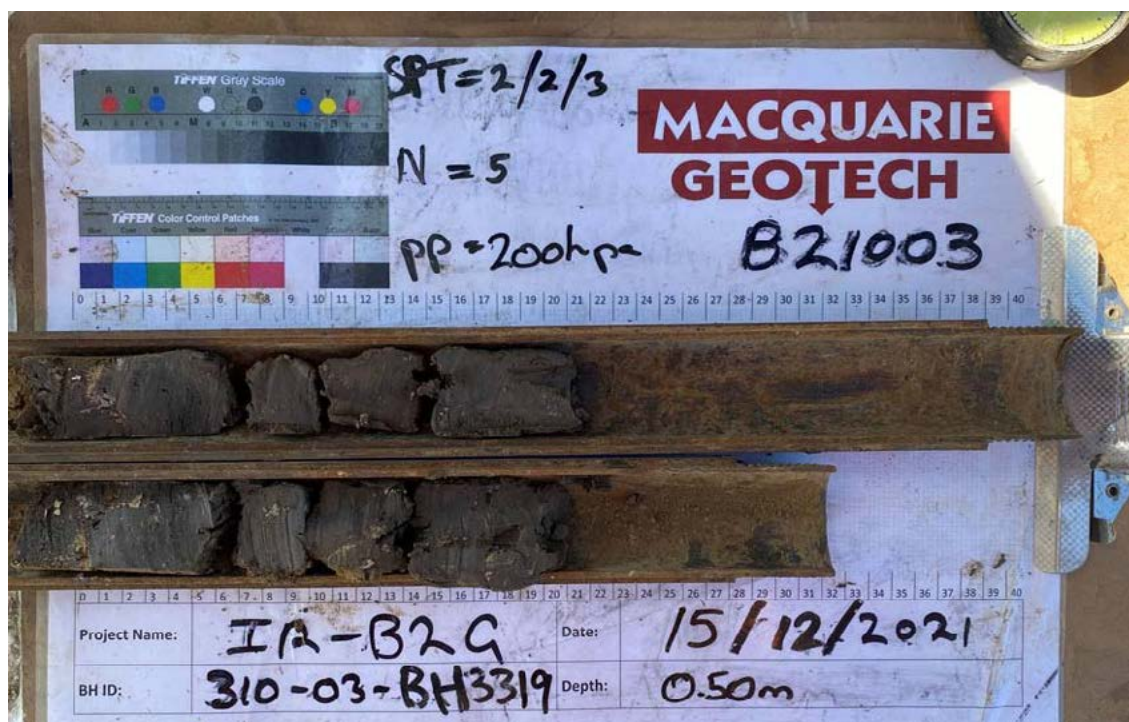
RL Surface: 471.50 m
Datum: AHD Operator: J.Komung

Drilling Information							Soil Description						Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T			Not Observed	D00020 D 0.20-0.50 m S00050 SPT 0.50-0.95 m 2,2,3 N=5 B00060 B 0.60-1.00 m D00120 D 1.20-1.50 m U00150 U 1.50-2.00 m		470.5	1		CI	TOPSOIL: Silty Sandy CLAY, medium plasticity, dark brown, fine grained sand, trace rootlets (<1mm) Silty CLAY trace sand, medium plasticity, orange brown, fine to medium grained sand	D	St	100 200 300 400 500	TOPSOIL COLLUVIAL SOIL
									0.50: PP Samp =200 kPa					
									RESIDUAL SOIL					
									1.50: PP Samp =400 kPa					
				D00250 D 2.50-2.70 m S00300 SPT 3.00-3.45 m 4,11,17 N=28 D00350 D 3.50-3.80 m		468.5	3		CI	Sandy CLAY, medium plasticity, brown, fine to medium grained sand	M (=PL)		3.00: PP Samp >600 kPa	
				CI	Silty CLAY trace sand and gravels, medium plasticity, brown mottled yellow and red, fine to coarse grained sand, fine to medium, sub-angular gravels (chert)	H								
				CI	Silty CLAY, medium plasticity, pale brown									

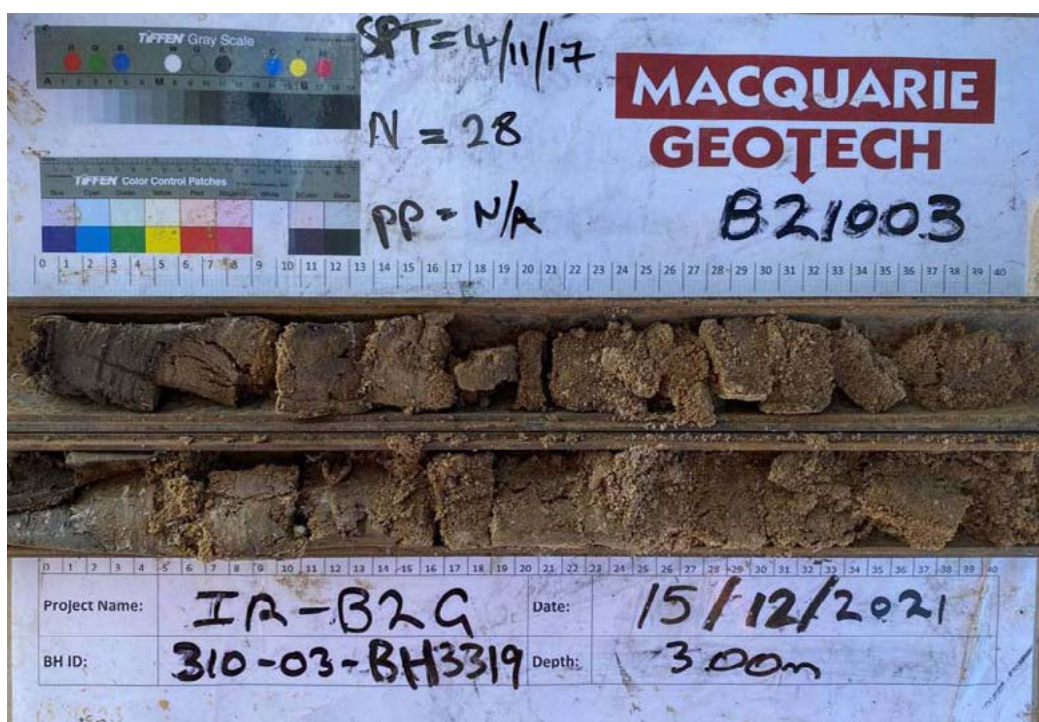
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	14/12/2022
Project Name:	Inland Rail B2G	Completed:	15/12/2022
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	J.Cooper
Hole Coordinates:	326742.1 m E 6908847.9 m N	Checked By:	C. Green
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	471.50 m
		Datum:	AHD
		Operator:	J.Komung



310-03-BH3319 Depth Range: 0.50 - 0.95 m



310-03-BH3319 Depth Range: 3.00 - 3.45 m

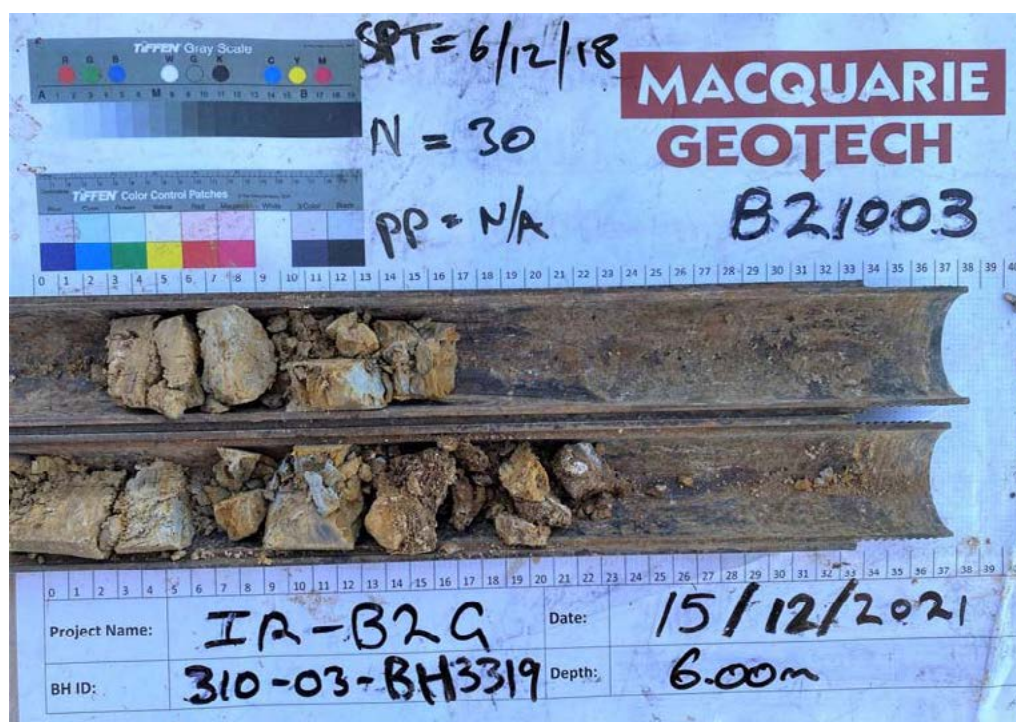
Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	14/12/2022
Project Name:	Inland Rail B2G	Completed:	15/12/2022
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	J.Cooper
Hole Coordinates:	326742.1 m E 6908847.9 m N	Checked By:	C. Green
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	471.50 m
		Datum:	AHD
		Operator:	J.Komung



310-03-BH3319 Depth Range: 4.50 - 4.95 m



310-03-BH3319 Depth Range: 6.00 - 6.45 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326742.1 m E 6908847.9 m N

Commenced: 14/12/2022
Completed: 15/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: 471.50 m
Datum: AHD Operator: J.Komung



310-03-BH3319 Depth Range: 7.50 - 7.95 m

Engineering Log - Cored Borehole

Project No.: B21003

[illegible]

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326742.1 m E 6908847.9 m N

Commenced: 14/12/2022
Completed: 15/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 471.50 m
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: J.Komung

Drilling Information								Rock Substance					Rock Mass Defects											
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)			Defect Description thickness, type, inclination, planarity, roughness, coating/infilling					
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General
HQ3		Not Observed	59		22	462.5	9		depth At 7.80m: SANDSTONE seam, 50mm thick. SILTSTONE, brown mottled grey, thinly bedded at 0-5 deg.(continued) At 8.20m: CHERT nodules, up to 30mm diameter From 8.25m: Becoming brown mottled grey with depth NO CORE	HW													BP, 5°, CLAY VNR, PR, S BP, 5°, CN, PR, RF BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S JT, 60°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S Non Intact	
							10		SILTSTONE, brown mottled grey, thinly bedded at 0-5 deg. Organic material lense, dark grey 5mm thick.	XW													BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S BP, 5°, CLAY VNR, UN, S	
							11		SILTSTONE, dark brown-grey, thinly bedded at 0-5 deg. Fe stained	HW													BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S BP, 5°, CLAY VNR, PR, S	
									Hole Terminated at 11.15 m Target depth															
						459.5	12																	
						458.5	13																	
						457.5	14																	
						456.5	15																	
Method			Water			Graphic Log/Core Loss			Weathering			Strength												
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel			Level (Date) Inflow Partial Loss Complete Loss			 Core loss			FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil			(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High												
Support			T - Timbering																					

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 326742.1 m E 6908847.9 m N

Commenced: 14/12/2022
Completed: 15/12/2022
Logged By: J.Cooper
Checked By: C. Green

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ 3 m

Inclination: -90°
Bearing:

RL Surface: 471.50 m
Datum: AHD

Operator: J.Komung



PointID : 310-03-BH3319 Depth Range: 7.07 - 11.15 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: No survey
Hole Diameter: 125 mm Bearing: Datum: AHD Operator: R. Welsh

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T				D00030 D 0.30-0.50 m B00040 B 0.40-0.70 m 2 x buckets U00050 U 0.50-0.76 m B00100 B 1.00-1.20 m 2 x buckets S00100 SPT 1.00-1.45 m 4,5,7 N=12 D00150 D 1.50-2.00 m U00232 U 2.00-2.32 m SPT 2.50-2.95 m 7,12,16 N=28			1		CI	TOPSOIL: sandy silty CLAY trace gravel, medium plasticity, dark brown, fine grained sand, fine to coarse sub-rounded to sub-angular gravel, trace rootlets (<1mm)	M (>PL)	VSt		x	TOPSOIL
				CI-CH			silty CLAY trace sand, medium plasticity, dark brown, fine grained sand		ALLUVIAL SOIL						
				2					CLAY with sand, medium to high plasticity, dark brown mottled orange and white, fine to coarse grained sand, trace carbonate soil			x	0.50: PP Samp =320 kPa		
															1.00: PP Samp =290 kPa
WB					S00400 SPT 4.00-4.45 m 3,4,8 N=12			4				M (=PL)			H
				5											
				S00550 SPT 5.50-5.95 m 3,8,10 N=18						6					
				S00700 SPT 7.00-7.45 m 8,15,28 N=43	7										

Method
AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration
 No resistance ranging to refusal

Support
C - Casing

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client: ARTC				Commenced: 15/11/2021			
Project Name: Inland Rail B2G				Completed: 16/11/2021			
Hole Location: N1 - Canning Creek to Millmerran				Logged By: T. Tran			
Hole Coordinates: 326571.7 m E 6908622.4 m N				Checked By: J. Boyle			
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°		RL Surface: No survey			
Hole Diameter: 125 mm		Bearing:		Datum: AHD		Operator: R. Welsh	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S00850 SPT 8.50-8.95 m 5,5,14 N=19			9		CI	silty CLAY, medium plasticity, pale grey and brown - orange mottled red (continued)	M (<PL)	VSt to H			EXTREMELY WEATHERED MATERIAL 8.90: PP Samp =450 kPa
									CI-CH	silty CLAY trace gravel, medium to high plasticity, pale grey mottled orange and black, fine to coarse sub-angular gravel, trace organic inclusion (Extremely weathered material)					
							10			Continued on cored borehole sheet					*
							11								
							12								
							13								
							14								
							15								

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL			

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: No survey
Datum: AHD Operator: R. Welsh



310-03-BH3364 Depth Range: 1.00 - 1.45 m



310-03-BH3364 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	15/11/2021
Project Name:	Inland Rail B2G	Completed:	16/11/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	326571.7 m E 6908622.4 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	No survey
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3364 Depth Range: 4.00 - 4.45 m



310-03-BH3364 Depth Range: 5.50 - 5.95 m

Engineering Log - Borehole

Project No.: B21003

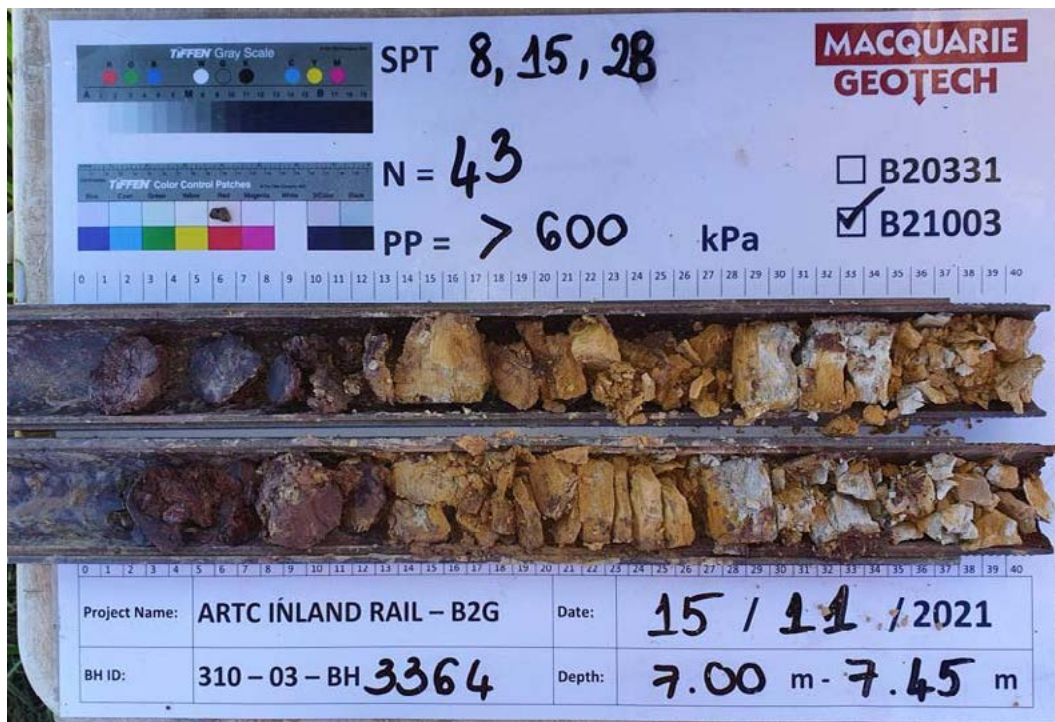
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 125 mm

Inclination: -90°
Bearing:

RL Surface: No survey
Datum: AHD Operator: R. Welsh



310-03-BH3364 Depth Range: 7.00 - 7.45 m

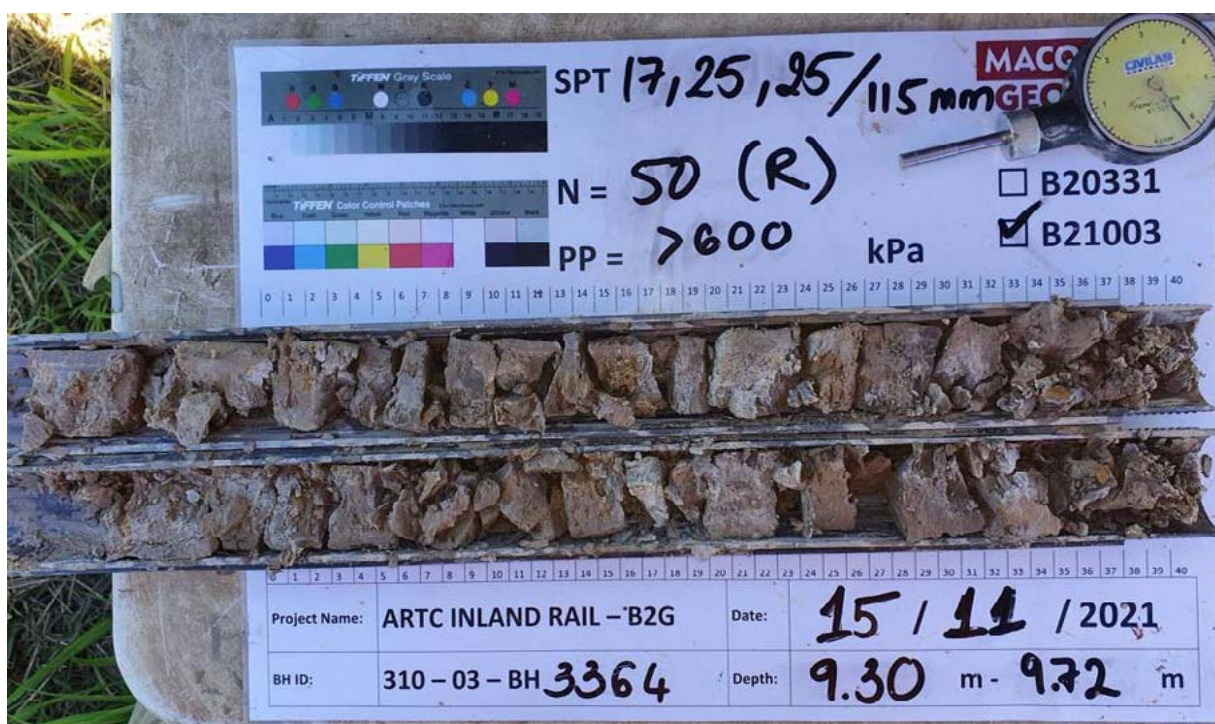


310-03-BH3364 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	15/11/2021
Project Name:	Inland Rail B2G	Completed:	16/11/2021
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran
Hole Coordinates:	326571.7 m E 6908622.4 m N	Checked By:	J. Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	125 mm	Bearing:	
		RL Surface:	No survey
		Datum:	AHD
		Operator:	R. Welsh



310-03-BH3364 Depth Range: 9.30 - 9.72 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: No survey
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects												
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral				Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling						
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General	
							9		Continued from non-cored borehole sheet																
			100		64		10		colour changing to grey mottled pale brown and orange SPT @ 9.30 - 9.72m 17, 25, 25/115mm N=R	XW													HB		
							11		silty CLAY trace gravel, medium to high plasticity, grey mottled pale brown and orange, fine to coarse sub-angular gravel, trace coal inclusion (Extremely weathered material)	HW													BP, 10°, CN, UN, S BP, 10°, FE SN, UN, S BP, 15°, CN, UN, S		
			89		48		12		Extremely weathered BRECCIA, recovered as gravelly CLAY, medium plasticity, pale brown mottled dark grey - purple, fine to coarse sub-angular to angular gravel														BP, 10°, FE SN, UN, RF		
							13		SILTSTONE, fine grained, grey and pale brown mottled purple - brown and orange and red, some ironstain COAL inclusion NO CORE														HB BP, 5°, CLAY CT, UN, S BP, 5°, FE SN, UN, RF BP, 5°, FE SN, UN, RF BP, 5°, CN, UN, S BP, 10°, CN, UN, RF IS, 5°, CLAY FILLED, UN, RF, ≈20 mm BP, 5°, FE CLAY VNR, UN, RF BP, 10°, CN, UN, RF BP, 15°, FE SN, UN, RF		
			100		60		14		SILTSTONE, fine grained, pale brown and grey mottled orange and purple - brown, heavily ironstained	HW													HB BP, 5°, FE SN, PR, RF JT, 45°, FE SN, UN, RF JT, 70°, CN, PR, S BP, 5°, FE SN, UN, RF BP, 10°, CLAY VNR, UN, RF BP, 5°, CLAY VNR, UN, RF BP, 5°, CN, PR, RF BP, 5°, CLAY VNR, UN, RF BP, 5°, FE SN, UN, RF BP, 5°, FE SN, UN, RF BP, 5°, CN, UN, RF BP, 5°, FE SN, UN, RF BP, 15°, FE SN, UN, RF BP, 15°, FE SN, UN, RF BP, 5°, FE SN, UN, RF		
							15		SANDSTONE, fine grained, pale grey - white and orange - brown															BP, 10°, FE SN, UN, RF BP, 5°, FE SN, UN, RF BP, 5°, CLAY VNR, PR, RF JT, 50°, FE CLAY VNR, UN, RF BP, 5°, CN, UN, RF	
			100		65				SHALE, fine grained, pale brown and grey mottled orange, some ironstain	MW to HW															
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel								Water ▨ Level (Date) ▤ Inflow ▥ Partial Loss ▴ Complete Loss			Graphic Log/Core Loss ▨ Core recovered (hatching indicates material) ▥ Core loss			Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil				Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High							
								T - Timbering																	

Method
AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: No survey
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information								Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral		Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling		
											EL VL L M H VH EH	30 100 300 1000 3000	Particular	General			
HQ3			100		65		17		SHALE, fine grained, pale brown and grey mottled orange, some ironstain(continued)	MW to HW			JT, 60°, FE CLAY VNR, UN, RF BP, 5°, CN, UN, RF BP, 5°, FE SN, PR, S JT, 65°, CN, UN, RF JT, 70°, FE SN, UN, RF BP, 10°, FE SN, PR, S BP, 10°, FE SN, PR, S BP, 5°, FE CLAY CT, UN, VR BP, 5°, FE SN, UN, RF BP, 5°, FE SN, PR, S HB BP, 5°, CLAY VNR, UN, RF BP, 5°, CN, UN, S HB				
							18		SHALE, fine grained, grey - dark grey				JT, 85°, FE SN, UN, RF BP, 5°, CN, UN, RF BP, 10°, CN, UN, RF BP, 10°, CLAY VNR, UN, RF BP, 5°, CN, UN, RF BP, 10°, CN, PR, S BP, 10°, CN, PR, S BP, 10°, FE SN, UN, RF JT, 45°, FE SN, UN, RF BP, 10°, FE SN, UN, RF BP, 5°, FE SN, UN, RF BP, 10°, CN, PR, S BP, 10°, CN, PR, S JT, 25°, FE SN, PR, S BP, 5°, CN, PR, S JT, 65°, FE SN, PR, RF BP, 10°, CN, PR, S BP, 5°, CN, UN, RF JT, 40°, CN, UN, S BP, 10°, FE CLAY VNR, PR, S JT, 30°, FE SN, UN, RF BP, 10°, CN, PR, S BP, 5°, CLAY VNR, UN, VR HB JT, 45°, FE SN, UN, S HB				
			100		94		20		SANDSTONE, fine grained, grey mottled black, trace coal inclusion SILTSTONE, fine grained, pale grey mottled pale brown	SW to MW			JT, 30°, FE SN, PR, S BP, 10°, FE SN, PR, S BP, 5°, FE SN, PR, S BP, 5°, CN, UN, RF BP, 5°, CN, PR, S BP, 5°, CN, PR, S BP, 10°, CN, UN, RF BP, 10°, CN, UN, RF BP, 10°, CN, IR, RF BP, 5°, CN, UN, RF HB				
							21		SHALE, fine grained, dark grey		●						
							22		COAL, very thinly bedded								
							22		SILTSTONE, fine grained, pale grey mottled pale brown	SW							
			100		95		23		SANDSTONE, fine grained, pale grey		●						
Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel								Water ▬ Level (Date) ▽ Inflow ◁ Partial Loss ◼ Complete Loss		Graphic Log/Core Loss ▨ Core recovered (hatching indicates material) ▩ Core loss		Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High			
Support T - Timbering																	

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: No survey
Barrel Type and Length: HQ 3 m Bearing: Datum: AHD Operator: R. Welsh

Drilling Information						Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
			100		95		25		SHALE, fine grained, pale grey mottled pale brown(continued)	SW			Particular
			100		70		26		SHALE, fine grained, grey mottled pale brown and purple - brown	MW			General
							27		Extremely weathered zone	XW			
							28		COAL, thickly bedded	MW			
			100		62		29		SANDSTONE, fine grained, grey mottled black, trace organic inclusion	SW			
							30		SHALE, fine grained, grey mottled black, trace organic inclusion				
							31		SHALE, fine grained, grey mottled purple - brown	MW to HW			
									medium bedded COAL, some laminated siltstone/claystone				
									SHALE, fine grained, grey and pale brown				
			100		70				COAL interbedded with SHALE, black and pale brown - purple				
									SHALE, fine grained, grey mottled purple - brown, some laminated coal				

Method

AS - Auger Screwing
WB - Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Support

T - Timbering

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength

(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC		Commenced: 15/11/2021	
Project Name: Inland Rail B2G		Completed: 16/11/2021	
Hole Location: N1 - Canning Creek to Millmerran		Logged By: T. Tran	
Hole Coordinates: 326571.7 m E 6908622.4 m N		Checked By: J. Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ 3 m		RL Surface: No survey	
		Datum: AHD	
		Operator: R. Welsh	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
HQ3			100		70		33		SHALE, fine grained, grey mottled purple - brown, some laminated coal(continued)		○		
									COAL, medium bedded, black mottled purple - brown				
							34		Hole Terminated at 33.50 m Target depth				
							35						
							36						
							37						
							38						
							39						

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	15/11/2021				
Project Name:	Inland Rail B2G	Completed:	16/11/2021				
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran				
Hole Coordinates:	326571.7 m E 6908622.4 m N	Checked By:	J. Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	No survey		
Barrel Type and Length:	HQ 3 m	Bearing:		Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3364 Depth Range: 9.30 - 14.00 m



PointID : 310-03-BH3364 Depth Range: 14.00 - 19.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client:	ARTC	Commenced:	15/11/2021				
Project Name:	Inland Rail B2G	Completed:	16/11/2021				
Hole Location:	N1 - Canning Creek to Millmerran	Logged By:	T. Tran				
Hole Coordinates:	326571.7 m E 6908622.4 m N	Checked By:	J. Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	No survey		
Barrel Type and Length:	HQ 3 m	Bearing:		Datum:	AHD	Operator:	R. Welsh



PointID : 310-03-BH3364 Depth Range: 19.00 - 24.00 m



PointID : 310-03-BH3364 Depth Range: 24.00 - 29.00 m

Engineering Log - Cored Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmerran
Hole Coordinates: 326571.7 m E 6908622.4 m N

Commenced: 15/11/2021
Completed: 16/11/2021
Logged By: T. Tran
Checked By: J. Boyle

Drill Model and Mounting: Comacchio 305/Track
Barrel Type and Length: HQ 3 m

Inclination: -90°
Bearing:

RL Surface: No survey
Datum: AHD

Operator: R. Welsh



PointID : 310-03-BH3364 Depth Range: 29.00 - 33.50 m

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329560.6 m E 6911801.8 m N

Commenced: 08/08/2021
Completed: 12/08/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL170
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 410.19 m
Datum: AHD Operator: B.Boga

Drilling Information							Soil Description							Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
ADV		Not Observed		D00000 D 0.00-0.50 m J000000		409.2	1		CI	TOPSOIL: Silty CLAY: medium plasticity, dark brown, trace rootlets less than 2mm	M (<PL)	VSt				TOPSOIL	
				D00050 D 0.00-0.20 m J00050						Silty CLAY: medium plasticity, dark brown						ALLUVIAL SOIL	
				D00090 0.50-1.00 m J00090						below 1.0m trace white nodules calcium precipitates							
				S00100 SPT 1.00-1.45 m 9,11,11 N=22						below 1.50m becoming high plasticity							
				S00150 SPT 1.50-1.95 m 5,10,12 N=22													
				D00250 D 2.50-3.00 m													
				S00345 SPT 3.00-3.45 m 8,8,10 N=18						below 3.0m becoming sandy, colour changes to brown with grey and black nodules							
				D00400 D 4.00-4.00 m													
				S00450 SPT 4.50-4.95 m 6,10,15 N=25													
				D00550 D 5.50-6.00 m													
S00600 SPT 6.00-6.45 m 4,8,11 N=19																	
D00700 D 7.00-7.50 m																	
S00750 SPT 7.50-7.95 m 9,9,14				CI	Sandy CLAY: medium plasticity clay, brown mottled grey with black nodules, fine to medium grained sand.							RESIDUAL SOIL					

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

MG 4.02 LUB L8 Log MG BOREHOLE EXCL DCP MG 4.02 GPJ <<DrawingFile>> 2602/2022 17:02 10.02.00.04 Daugel Lab and In Situ Tool - DGD [Lib: DGD-P 4.01.2 dpt 3.04 2016-07-02 Pjt: DGD-P 4.00.6 2017-11-25]

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal 	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss		Classification Symbols and Soil Descriptions	Plastic Limit	
C - Casing	Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System	< PL = PL < PL	

Engineering Log - Borehole

Project No.: B21003

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329560.6 m E 6911801.8 m N

Commenced: 08/08/2021
Completed: 12/08/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL170
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 410.19 m
Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/V				N=23		401.2	9		CI	Sandy CLAY: medium plasticity clay, brown mottled grey with black nodules, fine to medium grained sand. (continued)		VSt			RESIDUAL SOIL
				D00850 D 8.50-9.00 m											
				S00900 SPT 9.00-9.45 m 7,10,16 N=26											
				D01000 D 10.00-10.50 m											
				1050 SPT 10.50-10.95 m 14,18,27 N=45											
				D01150 D 11.50-12.00 m											
				S01200 SPT 12.00-12.45 m 10,13,16 N=29											
				D01300 D 13.00-13.50 m											
				S01350 SPT 13.50-13.95 m 7,8,15 N=23											
				D01450 D 14.50-15.00 m											
S01500 SPT 15.00-15.45 m 7,10,14 N=24															
Hole Terminated at 15.45 m Target depth															

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	 No resistance ranging to refusal	 Level (Date)  Inflow  Partial Loss  Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	 Core recovered (hatching indicates material)  Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	329560.6 m E 6911801.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	410.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3605 Depth Range: 1.00 - 1.45 m



310-03-BH3605 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	329560.6 m E 6911801.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	410.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3605 Depth Range: 3.00 - 3.45 m



310-03-BH3605 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	329560.6 m E 6911801.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	410.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3605 Depth Range: 6.00 - 6.45 m



310-03-BH3605 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	329560.6 m E 6911801.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	410.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3605 Depth Range: 9.00 - 9.45 m



310-03-BH3605 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B21003

Client:	ARTC	Commenced:	08/08/2021
Project Name:	Inland Rail B2G	Completed:	12/08/2021
Hole Location:	N1 - Canning Creek to Millmeran	Logged By:	M.Faustino
Hole Coordinates:	329560.6 m E 6911801.8 m N	Checked By:	J.Boyle
Drill Model and Mounting:	CRS XL170	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	410.19 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3605 Depth Range: 12.00 - 12.45 m



310-03-BH3605 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B21003

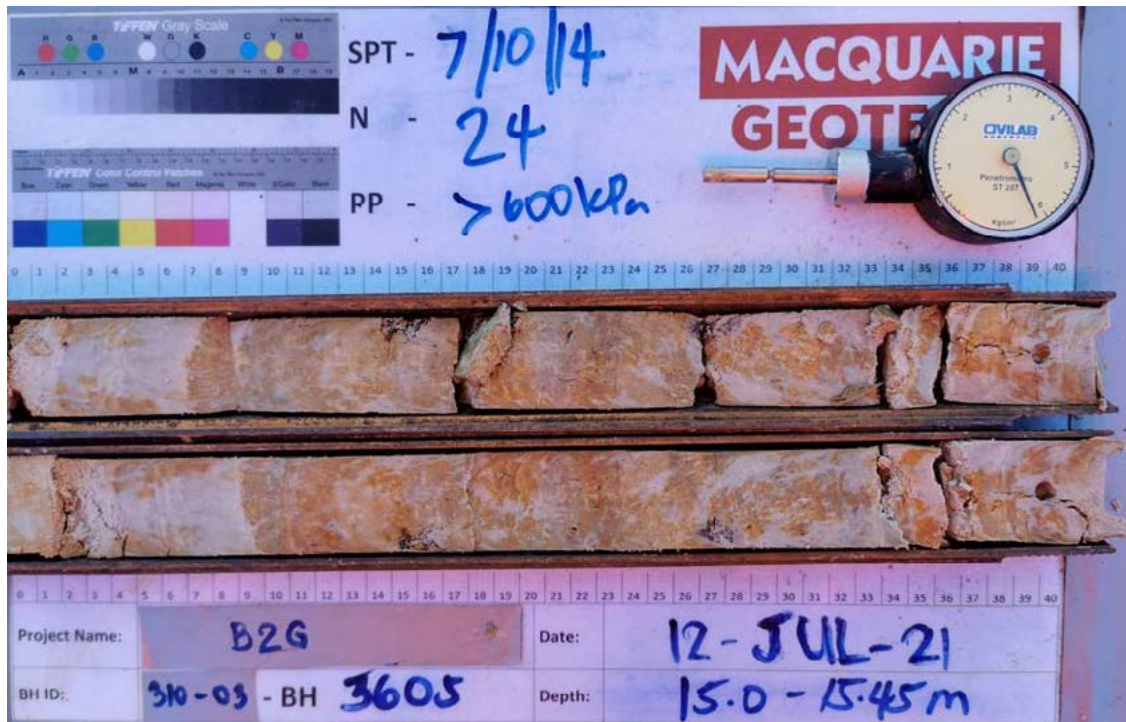
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: N1 - Canning Creek to Millmeran
Hole Coordinates: 329560.6 m E 6911801.8 m N

Commenced: 08/08/2021
Completed: 12/08/2021
Logged By: M.Faustino
Checked By: J.Boyle

Drill Model and Mounting: CRS XL170
Hole Diameter: 115 mm

Inclination: -90°
Bearing:

RL Surface: 410.19 m
Datum: AHD Operator: B.Boga



310-03-BH3605 Depth Range: 15.00 - 15.45 m

POSITION : E: 321709.5, N: 6881578.0 ()

SURFACE ELEVATION : 323.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

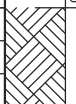
METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 16/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE

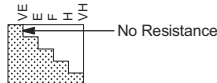
EXCAVATION INFORMATION				MATERIAL							
VE PENETRATION F H	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER 100 200 300 400 kPa	STRUCTURE & Other Observations
	Not Observed		0.0			TOPSOIL Silty CLAY: low to medium plasticity, dark brown; with rootlets.			</		

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321709.5, N: 6881578.0 ()

SURFACE ELEVATION : 323.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 16/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3088 - 1 Depth Range: 0.00 - 3.30 m



310-03-TP3088 - 2 Depth Range: 0.00 - 3.30 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321709.5, N: 6881578.0 ()

SURFACE ELEVATION : 323.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 16/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3088 - 3 Depth Range: 0.00 - 3.30 m



310-03-TP3088 - 4 Depth Range: 0.00 - 3.30 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321831.6, N: 6882513.0 ()

SURFACE ELEVATION : 325.61 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE

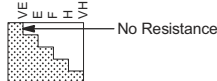
EXCAVATION INFORMATION				MATERIAL									
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
		Not Observed		0.0			TOPSOIL Silty CLAY: low to medium plasticity, dark brown; with rootlets; trace rootlets.					TOPSOIL	
			0.40m B00040	325.1		0.30m	Sandy CLAY trace gravel: high plasticity, brown; sand fine to coaease grained; gravel fine to coarse, sub rounded.	M (~PL)	VSt			ALLUVIAL SOIL	
			0.5						St				
			0.80m	324.6		0.80m	CLAY with sand: medium plasticity, orange-brown mottled grey; sand fine to medium.		VSt				
			1.00m D00100	1.0					St				
			1.20m	324.1				M (>PL)					
			1.5										
			323.6						VSt				
			2.0	323.6		2.00m	Sandy CLAY: low to medium plasticity, orange-brown mottled grey; sand fine to medium.						
			2.20m D00220	2.2									
2.40m	323.1					M (~PL)	H						
2.5													
322.6													
3.0	322.6												
				3.00m			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
				3.5									
				4.0									

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321831.6, N: 6882513.0 ()

SURFACE ELEVATION : 325.61 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3089 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3089 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321831.6, N: 6882513.0 ()

SURFACE ELEVATION : 325.61 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3089 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3089 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 321935.5, N: 6883588.0 ()

SURFACE ELEVATION : 327.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

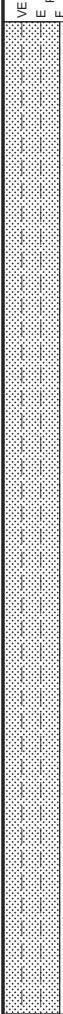
METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE

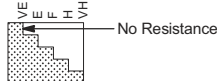
EXCAVATION INFORMATION				MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
		0.30m	D00030	0.30m		TOPSOIL Silty CLAY: low to medium plasticity, dark brown; trace rootlets (<2mm).						TOPSOIL
		0.50m		0.50m			CLAY: low plasticity, brown.	St				ALLUVIAL SOIL
				0.50m	CH	w-PL	VSt					
				1.00m		Sandy CLAY trace gravel: medium grained, pale orange-brown; sand fine to medium grained; gravel fine to coarse, sub-rounded to sub-angular (calcareous nodules).						
				1.50m		1.50m: Clay content decreasing with depth						
				2.00m	SC	w<PL	H					
				2.50m		02.50m Gravel absent						
				2.70m								
				3.00m		3.00m						
								Hole Terminated at 3.00 m Target depth Testpit reinstated to surface				

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321935.5, N: 6883588.0 ()

SURFACE ELEVATION : 327.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3090 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3090 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321935.5, N: 6883588.0 ()

SURFACE ELEVATION : 327.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3090 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3090 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 321935.5, N: 6883588.0 ()

SURFACE ELEVATION : 327.80 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3090 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 321959.0, N: 6883931.0 ()

SURFACE ELEVATION : 328.15 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE

EXCAVATION INFORMATION						MATERIAL						
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER KPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed			0.0			TOPSOIL Silty CLAY: low to medium plasticity, dark brown; trace rootlets.	M (~PL)	St			TOPSOIL	
			0.20m			Silty CLAY: medium plasticity, dark brown; trace rootlets.					ALLUVIAL SOIL	
		0.40m B00040	0.40m		CI	CLAY: medium to high plasticity, brown.						
		0.80m	0.80m		CI-CH							
		1.20m D00120	1.10m			Sandy CLAY trace gravel: medium grained, orange-brown; sand fine to medium grained; gravel fine, sub rounded.						
		1.50m	1.50m									
			2.00m		CI							
		2.60m D00260	2.50m			2.50m: Clay content decreasing with depth Gravel absent						
		2.80m	3.00m			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
					3.00m							
			3.5									
			4.0									

PHOTOGRAPHS
NOTES

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified Classification System	VS - Very Soft
X Existing Excavation		D - Disturbed Sample		S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		F - Firm
B Bulldozer Blade		MC - Moisture Content	MOISTURE D - Dry M - Moist W - Wet M > PL- Moisture Content > Plastic Limit M ~ PL- Moisture Content = Plastic Limit M < PL- Moisture Content < Plastic Limit	St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)		VSt - Very Stiff
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)		H - Hard
				VL - Very Loose
				L - Loose
				MD - Medium Dense
				D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 321959.0, N: 6883931.0 ()

SURFACE ELEVATION : 328.15 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3091 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3091 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 321959.0, N: 6883931.0 ()

SURFACE ELEVATION : 328.15 (AHD)

EQUIPMENT TYPE : 22T Excavator

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 15/06/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.00 m WIDE



310-03-TP3091 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3091 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322380.6, N: 6888411.8 ()

SURFACE ELEVATION : 337.09 (AHD)

EQUIPMENT TYPE : Backhoe

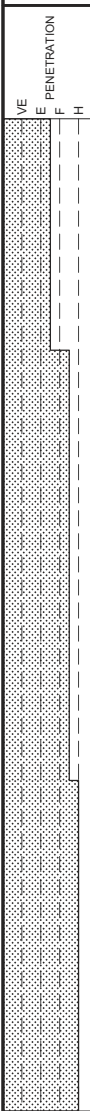
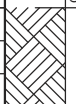
METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE

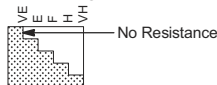
EXCAVATION INFORMATION				MATERIAL									
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER 100 200 300 400 kPa	STRUCTURE & Other Observations
		Not Observed	0.0		TOPSOIL: Silty CLAY with sand: medium to high plasticity, black and grey brown, fine to medium grained sand, trace rootlets <2mm)						TOPSOIL		
			0.30m										
			0.5	CI	Silty CLAY with sand: medium plasticity, grey brown, fine to medium grained, trace calcareous nodules	M (<PL)	F						
			0.70m										
			0.80m	B-B000080									
			1.00m										
			1.60m	B-B00160									
			1.80m										
			2.00m										
			2.70m	B-B00270									
3.00m													
				3.00m			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
				3.5									

PHOTOGRAPHS
NOTES

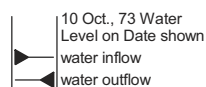
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322380.6, N: 6888411.8 ()

SURFACE ELEVATION : 337.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE



310-03-TP3096 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3096 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322380.6, N: 6888411.8 ()

SURFACE ELEVATION : 337.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE



310-03-TP3096 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3096 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322489.5, N: 6888864.3 ()

SURFACE ELEVATION : 344.99 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.90 m LONG 1.50 m WIDE

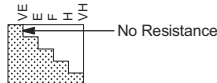
EXCAVATION INFORMATION					MATERIAL									
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed				0.0			TOPSOIL Sandy silty CLAY: medium plasticity, black, fine to coarse grained sand, trace rootlets (<2mm)						TOPSOIL	
				0.20m			Silty CLAY with sand: medium plasticity, grey brown mottled white, fine grained sand.						ALLUVIAL SOIL	
				0.50m	CI		Silty CLAY trace sand: high plasticity, grey brown, fine to medium grained sand.		F					
				0.70m					St					
				1.0	CH		Below 0.90m: colour tending to dark red brown.		VSt					
				1.20m									>>X 1.00: PP In-situ >600 kPa	
				1.40m										
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PHOTOGRAPHS
NOTES

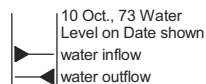
METHOD

- N Natural Exposure
- X Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

- U - Undisturbed Sample
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- PP - Pocket Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

- D - Dry
- M - Moist
- W - Wet
- M > PL - Moisture Content > Plastic Limit
- M ~ PL - Moisture Content = Plastic Limit
- M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322489.5, N: 6888864.3 ()

SURFACE ELEVATION : 344.99 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.90 m LONG 1.50 m WIDE



310-03-TP3097 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3097 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322489.5, N: 6888864.3 ()

SURFACE ELEVATION : 344.99 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.90 m LONG 1.50 m WIDE



310-03-TP3097 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3097 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322489.5, N: 6888864.3 ()

SURFACE ELEVATION : 344.99 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.90 m LONG 1.50 m WIDE



310-03-TP3097 - 5 Depth Range: 0.00 - 3.00 m

MG 4.02 LIB.GLB Log MG TEST P/T MG 4.02 GPJ <DrawingFile> 26/02/2022 17:24 10/02/2004 Dated Lib and in Situ Test - DGD | Lib DGD P 4.01 2 dtd 3.04 2018-07-02 P/L DGD P 4.00 6 2017-11-25

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322732.6, N: 6889594.5 ()

SURFACE ELEVATION : 348.41 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

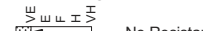
LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE

EXCAVATION INFORMATION					MATERIAL							
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 0 100 200 300 400	STRUCTURE & Other Observations
		D-D00000	0.0			TOPSOIL: Gravelly SAND with clay and silt: fine to medium grained, grey brown, fine to medium sub-angular to sub-rounded, low plasticity clay, trace rootlets (<2mm)	M (<PL)	F			TOPSOIL	
		0.20m	0.30m			Silty CLAY with sand trace gravel: high plasticity, black, fine to medium grained sand, fine sub rounded gravel					ALLUVIAL SOIL	
		0.50m	0.5			Below 0.70m brown mottled dark grey					0.50: PP Samp =200 kPa	
		0.80m	0.8			Below 1.00m trace fine to medium sub-angular to angular gravel						
		0.90m	0.9									
		1.00m	1.0									
		1.40m	1.4									
		1.60m	1.6									
		2.30m	2.3			Sandy silty CLAY: low to medium plasticity, brown mottled grey, fine to medium grained sand					ALLUVIAL SOIL	
		2.50m	2.5			Hole Terminated at 2.50 m Refusal - Very Slow Progress Testpit reinstated to surface						
			3.0									
			3.5									
			4.0									
			4.5									

PHOTOGRAPHS
NOTES

METHOD	PENETRATION 	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified	VS - Very Soft
X Existing Excavation		D - Disturbed Sample	Classification System	S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		F - Firm
B Bulldozer Blade		MC - Moisture Content	MOISTURE	St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)	D - Dry	Vst - Very Stiff
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)	M - Moist	H - Hard
			W - Wet	VL - Very Loose
			M > PL- Moisture Content > Plastic Limit	L - Loose
			M ~ PL- Moisture Content = Plastic Limit	MD - Medium Dense
			M < PL- Moisture Content < Plastic Limit	D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 322732.6, N: 6889594.5 ()

SURFACE ELEVATION : 348.41 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3098 - 1 Depth Range: 0.00 - 2.50 m



310-03-TP3098 - 2 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322732.6, N: 6889594.5 ()

SURFACE ELEVATION : 348.41 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3098 - 3 Depth Range: 0.00 - 2.50 m



310-03-TP3098 - 4 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 322732.6, N: 6889594.5 ()

SURFACE ELEVATION : 348.41 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3098 - 5 Depth Range: 0.00 - 2.50 m



310-03-TP3098 - 6 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 323522.1, N: 689155.1 ()

SURFACE ELEVATION : 354.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE

EXCAVATION INFORMATION				MATERIAL								
VE PENETRATION F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 300 400	STRUCTURE & Other Observations
	Not Observed	D-D00000	0.0		SM	TOPSOIL: Silty SAND trace clay: fine to medium grained, dark brown, low plasticity clay, trace rootlets (<2mm)	D	L			TOPSOIL	
		0.20m	Silty SAND trace clay: fine to medium grained, dark brown, low plasticity clay			RESIDUAL SOIL						
		0.40m	Silty CLAY trace sand: high plasticity, dark grey, fine to medium grained sand									
		0.60m B-B00060									0.60: PP Samp =320 kPa	
		0.80m										
		1.0m										
		1.20m	Sandy CLAY trace gravel: medium plasticity, brown mottled grey and white, fine to medium grained sand, fine sub angular gravels.									
		1.50m B-B00150										
		1.70m										
											1.80m	
			2.0									
			2.5									
			3.0									
			3.5									
			4.0									

PHOTOGRAPHS
NOTES

METHOD	PENETRATION  No Resistance	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified	VS - Very Soft
X Existing Excavation		D - Disturbed Sample	Classification System	S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		F - Firm
B Bulldozer Blade		MC - Moisture Content	MOISTURE	St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)	D - Dry	Vst - Very Stiff
		VS - Vane Shear; P-Peak,	M - Moist	H - Hard
		R-Remoulded (uncorrected kPa)	W - Wet	VL - Very Loose
			M > PL- Moisture Content > Plastic Limit	L - Loose
			M ~ PL- Moisture Content = Plastic Limit	MD - Medium Dense
			M < PL- Moisture Content < Plastic Limit	D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 323522.1, N: 6891555.1 ()

SURFACE ELEVATION : 354.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE



310-03-TP3101 - 1 Depth Range: 0.00 - 1.80 m



310-03-TP3101 - 2 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323522.1, N: 6891555.1 ()

SURFACE ELEVATION : 354.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE



310-03-TP3101 - 3 Depth Range: 0.00 - 1.80 m



310-03-TP3101 - 4 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323522.1, N: 6891555.1 ()

SURFACE ELEVATION : 354.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 3.90 m LONG 1.20 m WIDE



310-03-TP3101 - 5 Depth Range: 0.00 - 1.80 m



310-03-TP3101 - 6 Depth Range: 0.00 - 1.80 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323753.2, N: 6892100.6 ()

SURFACE ELEVATION : 365.31 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE

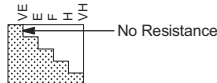
EXCAVATION INFORMATION					MATERIAL										
VE	E	F	H	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO-METER kPa 100 200 300 400	STRUCTURE & Other Observations	
				Not Observed	D-D00000	0.0			TOPSOIL: Clayey GRAVEL with sand: fine to coarse sub-angular to angular, dark brown, low to medium plasticity clay, fine to medium grained sand, trace rootlets (<2mm)					TOPSOIL	
						0.20m									
							364.8			Gravelly CLAY: low to medium plasticity, black, fine to coarse sub-angular to angular gravel					
							0.5			Silty CLAY with sand and gravel: high plasticity, brown mottled black, fine to coarse grained sand, fine to coarse sub-angular gravel.	w-PL	S to F			
						0.70m B-B00070 U-U00070								X	
						0.90m						VSt			
							364.3								
						1.10m									
							363.8								
							1.5			Sandy silty CLAY trace gravel: low to medium plasticity, brown mottled yellow, fine to medium grained sand, fine to medium sub-angular gravel	w<PL	H			
						363.3									
						2.0									
						362.8			Silty SAND: fine grained, pale grey mottled yellow						
						2.5									
						362.3									
						3.0									
						3.00m									
									Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
						361.8									
						3.5									
						4.0									

PHOTOGRAPHS
NOTES

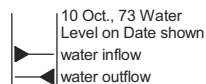
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323753.2, N: 6892100.6 ()

SURFACE ELEVATION : 365.31 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3102 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3102 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323753.2, N: 6892100.6 ()

SURFACE ELEVATION : 365.31 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3102 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3102 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323753.2, N: 6892100.6 ()

SURFACE ELEVATION : 365.31 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3102 - 5 Depth Range: 0.00 - 3.00 m



310-03-TP3102 - 6 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323940.0, N: 6893597.0 ()

SURFACE ELEVATION : 372.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.60 m WIDE

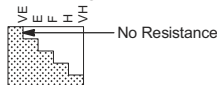
EXCAVATION INFORMATION					MATERIAL									

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323940.0, N: 6893597.0 ()

SURFACE ELEVATION : 372.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.60 m WIDE



310-03-TP3103 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3103 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323940.0, N: 6893597.0 ()

SURFACE ELEVATION : 372.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.60 m WIDE



310-03-TP3103 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3103 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323940.0, N: 6893597.0 ()

SURFACE ELEVATION : 372.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm toothed

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.60 m WIDE



310-03-TP3103 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324017.0, N: 6894223.6 ()

SURFACE ELEVATION : 380.95 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.20 m WIDE

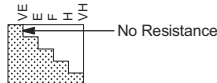
EXCAVATION INFORMATION				MATERIAL									
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed		D-D00000	0.0		TOPSOIL: Clayey gravelly SAND: fine to coarse grained, pale brown, low to medium plasticity clay, fine to medium sub-angular to angular gravel							TOPSOIL	
		0.20m			Gravelly SAND with clay: fine to coarse grained, pale brown, fine to medium sub-angular to angular gravel, ow to medium plasticity clay	D	L				ALLUVIAL SOIL		
		0.50m	380.4		Silty CLAY trace sand: high plasticity, black, fine grained sand	M (>PL)	St					0.50: PP Samp =210 kPa	
		U-U00050	0.5										
		0.70m			Sandy silty CLAY: high plasticity, pale brown mottled black, fine grained sand								
		B-B00070	0.70m										
		0.90m	379.9										
			1.0		Silty SAND trace clay: fine to medium grained, grey brown	M (<PL)	VSt						
			1.20m										
			1.5			M	VD						
	1.60m												
	1.70m												
	B-B00170												
	1.90m	378.9											
		2.0		Sandy CLAY: medium plasticity, orange brown and grey, fine to medium grained sand									
	2.30m												
	B-B00230												
	2.50m	378.4											
		2.5											
												</	

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324017.0, N: 6894223.6 ()

SURFACE ELEVATION : 380.95 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.20 m WIDE



310-03-TP3104 - 1 Depth Range: 0.00 - 2.50 m



310-03-TP3104 - 2 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324017.0, N: 6894223.6 ()

SURFACE ELEVATION : 380.95 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.20 m WIDE



310-03-TP3104 - 3 Depth Range: 0.00 - 2.50 m



310-03-TP3104 - 4 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324017.0, N: 6894223.6 ()

SURFACE ELEVATION : 380.95 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 02/09/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.00 m LONG 1.20 m WIDE



310-03-TP3104 - 5 Depth Range: 0.00 - 2.50 m



310-03-TP3104 - 6 Depth Range: 0.00 - 2.50 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324596.3, N: 6898928.0 ()

SURFACE ELEVATION : 436.98 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

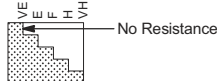
EXCAVATION INFORMATION					MATERIAL									
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed				0.0			TOPSOIL Silty CLAY trace sand: medium to high plasticity, black, fine grained sand, trace rootlets(<2mm)					TOPSOIL		
				0.20m		Silty CLAY: high plasticity, yellow brown mottled black.		St		ALLUVIAL SOIL				
				0.50m	B00050			VSt						
				0.80m										
				1.00m	B00100		Below 0.80m: trace fine grained sand, colour tending to yellow brown.							
				1.20m		CH		w<PL	H			>>X	1.00: PP Samp >600 kPa	
				1.50m	D00150		Below 1.50m: Sand increasing with depth.							
				2.00m	D00200									
				2.50m	D00250									
				3.00m										
				4.0										
				4.33.5										
				5.0										

PHOTOGRAPHS
NOTES

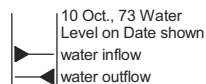
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324596.3, N: 6898928.0 ()

SURFACE ELEVATION : 436.98 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3108 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3108 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech



Macquarie Geotech

MG 4.02 LIB.GLB Log MG TEST PIT MG 4.02.GPJ <<DrawingFile>> 26/02/2022 17:28 10.02.00.04 Datgel Lab and In Situ Tool - DGD | Lib: DGD-T-P 4.01.2 dpt 3.04 2018-07-02 Pri: DGD-T-P 4.00.6 2017-11-25

POSITION : E: 324596.3, N: 6898928.0 ()

SURFACE ELEVATION : 436.98 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3108 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324653.4, N: 6899349.1 ()

SURFACE ELEVATION : 437.12 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

EXCAVATION INFORMATION					MATERIAL																		
VE E F H		GROUND WATER LEVELS		SAMPLES & FIELD TESTS		ELEVATION (RL) DEPTH (M)		GRAPHIC LOG		CLASSIFICATION SYMBOL		MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components		MOISTURE CONDITION		CONSISTENCY RELATIVE DENSITY		DCP Blows/100mm 5 10 15 20		POCKET PENETROMETER kPa 100 200 300 400		STRUCTURE & Other Observations	
						0.0						TOPSOIL Silty CLAY trace sand: high plasticity, black, fine to medium grained sand, trace rootlets (<2mm)										TOPSOIL	
				0.50m U00050 0.60m B00060		0.5						0.30m Silty CLAY: high plasticity, red brown mottled black, fine to medium grained sand.				Vst						ALLUVIAL SOIL	
				0.80m						CH		Below 0.60m: colour tending to brown.											
				1.00m		1.0						1.20m										1.00: PP Samp >600 kPa	
				1.20m B00120								Sandy CLAY trace gravel: medium to high plasticity, brown mottled white, fine to coarse grained sand, fine to medium, sub angular to angular gravels											
				1.50m D00200		1.5				CI-CH												1.50: PP Samp >600 kPa	
						2.0						Sandy SILT: low to medium plasticity clay, pale brown mottled white, fine to medium grained.										RESIDUAL SOIL	
				2.50m D00250		2.5				ML													
				3.00m		3.0																	
				3.10m D00310								3.10m Highly weathered low to medium strength SANDSTONE: fine grained, off-white. Recovered as gravelly SAND with cobbles.										HIGHLY WEATHERED BEDROCK	
				3.30m								3.30m Hole Terminated at 3.30 m Target depth Testpit reinstated to surface											
						3.5																	
						3.6																	

POSITION : E: 324653.4, N: 6899349.1 ()

SURFACE ELEVATION : 437.12 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3109 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3109 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324653.4, N: 6899349.1 ()

SURFACE ELEVATION : 437.12 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3109 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3109 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324653.4, N: 6899349.1 ()

SURFACE ELEVATION : 437.12 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3109 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324729.1, N: 6899976.0 ()

SURFACE ELEVATION : 441.02 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE

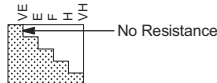
EXCAVATION INFORMATION				MATERIAL								
VE PENETRATION F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
		Not Observed	0.0		TOPSOIL Silty CLAY with sand: medium to high plasticity, black, fine to medium grained sand, trace rootlets (<2mm)	M (<PL)	F to St			TOPSOIL		
			0.30m D00030		Silty CLAY trace sand: high plasticity, dark brown, fine to medium grained sand.					ALLUVIAL SOIL		
			0.50m U00050 0.60m B00060		Silty CLAY with sand trace gravel: high plasticity, brown, fine grained sand, trace fine to medium sub-angular gravel.					1.00: PP Samp =350 kPa		
			0.90m		Below 1.00m: trace fine to coarse grained sand.							
			1.00m									
			1.20m		Sandy silty CLAY: medium plasticity clay, brown, fine to medium grained.							
			2.00m D00200		Below 2.00m: with fine to medium sub-angular to angular gravel.							
			2.50m D00250									
			3.00m									
			3.30m		Hole Terminated at 3.30 m Target depth Testpit reinstated to surface							
437.5												

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324729.1, N: 6899976.0 ()

SURFACE ELEVATION : 441.02 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3110 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3110 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324729.1, N: 6899976.0 ()

SURFACE ELEVATION : 441.02 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3110 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3110 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324729.1, N: 6899976.0 ()

SURFACE ELEVATION : 441.02 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 26/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3110 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324774.9, N: 6900328.6 ()

SURFACE ELEVATION : 448.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE

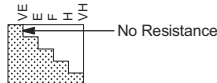
EXCAVATION INFORMATION				MATERIAL									
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed				0.0			TOPSOIL Silty CLAY with sand trace gravel: medium plasticity, dark brown, fine to coarse grained sand, fine to medium sub-angular gravel, with rootlets (<2mm)					TOPSOIL	
				0.30m			Silty CLAY trace sand and gravel: high plasticity, dark brown mottled white, trace rootlets (<2mm), fine to medium sand, fine, subrounded gravel.					ALLUVIAL SOIL	
		0.60m B00060		0.5						F			
									St				
		0.80m		1.0		CH			VSt			X	0.80: PP Samp =450 kPa
		1.50m B00150		1.5			1.50m	Silty CLAY with sand trace gravel: high plasticity, brown mottled orange, fine grained sand, fine to medium sub-angular gravel.				26	
		1.80m		2.0		CH							

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324774.9, N: 6900328.6 ()

SURFACE ELEVATION : 448.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3111 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3111 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324774.9, N: 6900328.6 ()

SURFACE ELEVATION : 448.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3111 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3111 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324774.9, N: 6900328.6 ()

SURFACE ELEVATION : 448.09 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3111 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324797.1, N: 6900581.0 ()

SURFACE ELEVATION : 446.62 (AHD)

EQUIPMENT TYPE : Backhoe

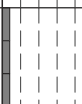
METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

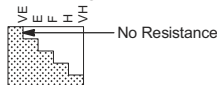
EXCAVATION INFORMATION				MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 300 400	STRUCTURE & Other Observations
Not Observed				0.0			TOPSOIL: Sandy silty CLAY; medium plasticity, dark brown, fine grained sand, trace rootlets (<2mm).					TOPSOIL
		0.30m		0.30m		Silty CLAY with sand trace gravel; medium to high plasticity, dark brown mottled red, fine trained sand, fine sub-rounded to sub-angular gravel.	F	St			ALLUVIAL SOIL	
		0.50m	CI-CH									
		0.80m		0.80m		Sandy silty CLAY; low to medium plasticity, dark brown and mottled orange brown and white (CaCo3), fine to medium grained sand.	VSt					
		1.00m										
		1.50m	CL-CI			Below 1.50m : brown grey mottled black.	H					
		1.80m										
		2.40m										
		2.60m										
						2.40m		Gravelly SAND with clay; fine to coarse grained, pale brown, fine to coarse sub-rounded to sub-angular gravel, low to medium plasticity clay, with sub-angular cobble (< 150mm).				
				2.60m								
				3.0	SP			M	VD			
				3.30m			Hole Terminated at 3.30 m Target depth Testpit reinstated to surface					

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324797.1, N: 6900581.0 ()

SURFACE ELEVATION : 446.62 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3112 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3112 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324797.1, N: 6900581.0 ()

SURFACE ELEVATION : 446.62 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3112 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3112 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324797.1, N: 6900581.0 ()

SURFACE ELEVATION : 446.62 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3112 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324791.4, N: 6900809.0 ()

SURFACE ELEVATION : 458.39 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

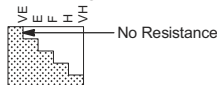
EXCAVATION INFORMATION						MATERIAL									
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations		
Not Observed				0.0			TOPSOIL: Sandy silty CLAY; medium plasticity, dark brown, fine grained sand, trace rootlets (<2mm).					TOPSOIL			
				0.20m D00020 0.30m		0.30m	Silty CLAY trace sand; high plasticity, grey mottled black, fine grained sand.	M (~PL) to M (<PL)	St VSt			ALLUVIAL SOIL			
				0.40m D00040											
				0.60m											
				0.70m D00070 0.80m B00080											
				0.90m 1.00m		0.70m	Silty CLAY trace sand; medium plasticity, pale brown mottled black and orange, fine grained sand.	M (<PL)	H		>>X 0.90: PP In-situ >600 kPa	RESIDUAL SOIL			
				457.4											
				1.5											
				2.0											
				2.30m D00230		2.20m	Extremely weathered SILTSTONE very low strength recovered as: Silty CLAY with sand; low plasticity, grey pale brown mottled orange, fine to medium grained sand.					EXTREMELY WEATHERED BEDROCK			
	2.50m														
	455.9														
	455.4														
	3.0		3.00m	Hole Terminated at 3.00 m Target depth Testpit reinstated to surface											
	454.9														

PHOTOGRAPHS
NOTES

METHOD

- N Natural Exposure
- X Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

- U - Undisturbed Sample
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- PP - Pocket Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

- D - Dry
- M - Moist
- W - Wet
- M > PL- Moisture Content > Plastic Limit
- M ~ PL- Moisture Content = Plastic Limit
- M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- Vst - Very Stiff
- H - Hard
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324791.4, N: 6900809.0 ()

SURFACE ELEVATION : 458.39 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3113 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3113 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324791.4, N: 6900809.0 ()

SURFACE ELEVATION : 458.39 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3113 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3113 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324791.4, N: 6900809.0 ()

SURFACE ELEVATION : 458.39 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3113 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324751.1, N: 6900988.0 ()

SURFACE ELEVATION : 461.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE

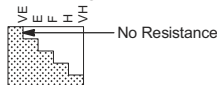
EXCAVATION INFORMATION					MATERIAL									
VE E F H				GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed					0.0		0.30m	TOPSOIL: Silty CLAY with sand: low to medium plasticity, dark brown, fine grained sand, trace rootlets (<2mm).	M (~PL) to M (<PL)	St				
					0.20m D00020 0.30m									
					0.40m D00040	CH	0.70m	Silty CLAY trace gravel: high plasticity, dark brown mottled white, fine to medium sub-rounded to sub-angular gravel.						
					0.60m									
					0.70m B00070									
					1.00m	CH	0.70m	Silty CLAY trace sand and gravels: high plasticity, pale brown mottled black, fine to medium grained sand, fine, sub rounded gravels.						
					1.30m D00130									
					1.50m									
					2.00m D00200	CH		Below 1.30m: pale brown grey mottled orange.						
					2.20m									
2.50m D00250														
3.00m	CL-CI	2.50m	Sandy CLAY: low to medium plasticity, pale brown mottled orange, fine grained sand.	M (<PL)	H									
					3.20m		Hole Terminated at 3.20 m Target depth Testpit reinstated to surface							
					4.58.0									

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324751.1, N: 6900988.0 ()

SURFACE ELEVATION : 461.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3114 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3114 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324751.1, N: 6900988.0 ()

SURFACE ELEVATION : 461.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3114 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3114 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324751.1, N: 6900988.0 ()

SURFACE ELEVATION : 461.46 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.40 m LONG 1.60 m WIDE



310-03-TP3114 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324581.9, N: 6901668.0 ()

SURFACE ELEVATION : 454.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE

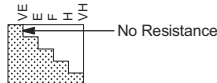
EXCAVATION INFORMATION				MATERIAL							
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
				0.0			TOPSOIL: Silty CLAY trace sand and gravel; medium plasticity, black brown, fine grained sand, fine to medium sub-angular gravel, trace rootlets (<2mm).				TOPSOIL
				453.8			0.30m				
			0.50m B-B00050	0.5			Silty CLAY trace sand trace gravel; high plasticity, pale brown, fine to medium grained sand, fine to medium sub-rounded to sub-angular gravel. Below 0.40m: trace fine to medium CaCO3 nodules.	M (>PL) to M (~PL)	F		
			0.80m								
			1.00m D-D00100	1.0							0.80: PP Samp =375 kPa
				453.3							1.00: PP Samp >600 kPa
				1.5							
			1.50m D-D00150	1.5				M (<PL)	VSt		
				452.8							
			2.00m	2.0							2.00: PP Samp >600 kPa
				452.3							
			2.40m D-D00240	2.4			COBBLE with gravel and clay; sub-angular to angular <250mm, pale brown, fine to coarse sub-angular to angular gravel, medium plasticity clay, trace fine to coarse grained sand.	M	VD		
			2.60m	2.5							
				451.8							
				3.0			Hole Terminated at 2.60 m Target depth Testpit reinstated to surface				
				450.8							
				3.5							
				4.0							
PHOTOGRAPHS NOTES											
METHOD		PENETRATION		SAMPLES & FIELD TESTS		CLASSIFICATION SYMBOLS & SOIL DESCRIPTION			CONSISTENCY/ RELATIVE DENSITY		
N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper		 WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow		U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content PP - Pocket Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)		Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet M > PL - Moisture Content > Plastic Limit M ~ PL - Moisture Content = Plastic Limit M < PL - Moisture Content < Plastic Limit			VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense		

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324581.9, N: 6901668.0 ()

SURFACE ELEVATION : 454.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3115 - 1 Depth Range: 0.00 - 2.60 m



310-03-TP3115 - 2 Depth Range: 0.00 - 2.60 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324581.9, N: 6901668.0 ()

SURFACE ELEVATION : 454.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3115 - 3 Depth Range: 0.00 - 2.60 m



310-03-TP3115 - 4 Depth Range: 0.00 - 2.60 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324581.9, N: 6901668.0 ()

SURFACE ELEVATION : 454.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 24/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3115 - 5 Depth Range: 0.00 - 2.60 m

POSITION : E: 324589.8, N: 6901940.7 ()

SURFACE ELEVATION : 455.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.40 m WIDE

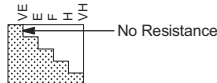
EXCAVATION INFORMATION					MATERIAL										
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed			D-D00000	0.0			TOPSOIL: silty CLAY; medium to high plasticity, black, trace rootlets (<2mm).							TOPSOIL	
			0.20m		0.20m	Silty CLAY trace sand; high plasticity, pale brown, mottled black fine grained sand.	M (<PL) to M (~PL)	F					ALLUVIAL SOIL		
			0.50m	454.9	0.5								0.40: PP In-situ =240 kPa		
			U-U00050 0.60m D-D00060			Below 0.60m : grey orange brown.									
			0.80m	454.4										0.90: PP In-situ =410 kPa	
			B-B00080 0.90m												
			1.00m	1.0											
			1.80m	453.9	1.5										
			B-B00180	453.4											
			2.00m	453.3	2.0										
D-D00200															
2.50m	452.9	2.5													
	452.4														
	451.9	3.0													
									</						

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324589.8, N: 6901940.7 ()

SURFACE ELEVATION : 455.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.40 m WIDE



310-03-TP3116 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3116 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324589.8, N: 6901940.7 ()

SURFACE ELEVATION : 455.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.40 m WIDE



310-03-TP3116 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3116 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324589.8, N: 6901940.7 ()

SURFACE ELEVATION : 455.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.40 m WIDE



310-03-TP3116 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 324740.7, N: 6902395.0 ()

SURFACE ELEVATION : 469.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE

EXCAVATION INFORMATION				MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed				0.0			TOPSOIL: silty CLAY trace sand and gravel; medium plasticity, black, fine grained sand, fine to medium sub-rounded gravel, trace rootlets (<2mm).					TOPSOIL
		0.30m D00030		0.30m			Silty CLAY with sand trace gravels; high plasticity, black brown mottled white, fine to coarse grained sand, fine to medium sub-angular gravel.	M (<PL) to M (~PL)	F			ALLUVIAL SOIL
		0.60m B00060 U00060		0.5		CH	Below 0.60m : brown mottled white.		VSt		X	0.50: PP In-situ =200 kPa
		0.90m		0.90m								
		1.00m D00100		1.0								
				1.20m								
		1.50m B00150		1.5		CH	Silty CLAY trace sand; high plasticity, pale brown, fine to coarse grained sand.	M (<PL)	H		X	1.40: PP In-situ >600 kPa
		1.70m										
		2.00m D00200		2.0		CI	Silty CLAY with sand; medium plasticity, yellow brown, fine to coarse grained sand.					
		2.50m D00250		2.5		SM	Silty SAND; fine grained, yellow brown.	M	VD			
		3.00m		3.00m			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface					
				3.5								

PHOTOGRAPHS
NOTES

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified	VS - Very Soft
X Existing Excavation		D - Disturbed Sample	Classification System	S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		F - Firm
B Bulldozer Blade		MC - Moisture Content		St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)		VSt - Very Stiff
		VS - Vane Shear; P-Peak,		H - Hard
		R-Remoulded (uncorrected kPa)		VL - Very Loose
				L - Loose
				MD - Medium Dense
				D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 324740.7, N: 6902395.0 ()

SURFACE ELEVATION : 469.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3117 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3117 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324740.7, N: 6902395.0 ()

SURFACE ELEVATION : 469.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE



310-03-TP3117 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3117 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324740.7, N: 6902395.0 ()	SURFACE ELEVATION : 469.63 (AHD)	
EQUIPMENT TYPE : Backhoe	METHOD :	
DATE EXCAVATED : 02/08/2021	LOGGED BY : V.Chandrasena	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 4.80 m LONG 1.50 m WIDE		



310-03-TP3117 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 325042.1, N: 6903075.2 ()

SURFACE ELEVATION : 465.88 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

EXCAVATION INFORMATION						MATERIAL																					
VE E F H		GROUND WATER LEVELS		SAMPLES & FIELD TESTS		ELEVATION (RL) DEPTH (M)		GRAPHIC LOG		CLASSIFICATION SYMBOL		MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components		MOISTURE CONDITION		CONSISTENCY RELATIVE DENSITY		DCP Blows/100mm 5 10 15 20		POCKET PENETROMETER kPa 0 100 200 300 400		STRUCTURE & Other Observations					
		Not Observed		0.0						TOPSOIL: silty CLAY trace sand; low to medium plasticity, black, fine to medium grained sand, trace rootlets (<2mm).												TOPSOIL					
				0.20m						Silty CLAY trace sand; high plasticity, grey black mottled white (CaCO3), fine to medium grained sand.		M (<PL) to M (~PL)		F						X		ALLUVIAL SOIL					
				0.50m U-U00050 0.60m D-D00060		0.5						Silty CLAY with sand; high plasticity, black grey, fine grained sand.		M (~PL)		St						X		0.60: PP In-situ =290 kPa			
				0.80m		0.8						Below 1.00m: with fine grained sand.		M (~PL)		St											
				0.90m		0.9																					
				1.00m B-B00100		1.0																		X		1.00: PP In-situ =370 kPa	
				1.20m		1.2																					
						1.5						Below 1.60m: sandy, fine to medium grained.															
				1.70m B-B00170		1.7																					
				1.90m		1.9																					
				2.00m D-D00200		2.0						2.00m		Sandy silty CLAY; medium plasticity, dark brown, fine grained sand.		M (<PL)											
						2.5						2.60m		Sandy silty CLAY; low to medium plasticity, grey brown and orange brown, fine to medium grained sand.													
2.80m D-D00280		2.8																									
3.00m		3.0						3.00m		Hole Terminated at 3.00 m Target depth Testpit reinstated to surface																	
		3.5																									
		4.0																									

PHOTOGRAPHS
NOTES

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified Classification System	VS - Very Soft
X Existing Excavation		D - Disturbed Sample		S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample	F - Firm	St - Stiff
B Bulldozer Blade		MC - Moisture Content	MOISTURE D - Dry M - Moist W - Wet M > PL- Moisture Content > Plastic Limit M ~ PL- Moisture Content = Plastic Limit M < PL- Moisture Content < Plastic Limit	VSt - Very Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)		H - Hard
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)		VL - Very Loose
	WATER 			L - Loose
				MD - Medium Dense
				D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 325042.1, N: 6903075.2 ()

SURFACE ELEVATION : 465.88 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3118 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3118 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 325042.1, N: 6903075.2 ()

SURFACE ELEVATION : 465.88 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3118 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3118 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 325042.1, N: 6903075.2 ()

SURFACE ELEVATION : 465.88 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 02/08/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3118 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 325883.3, N: 6905145.5 ()

SURFACE ELEVATION : 455.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.00 m LONG 1.50 m WIDE

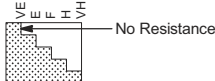
EXCAVATION INFORMATION				MATERIAL											
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations			
		Not Observed	0.10m D00010	0.0			TOPSOIL Silty CLAY with sand: medium to high plasticity, black, fine to coarse grained sand, trace rootlets (<2mm)	w-PL	F			TOPSOIL			
			0.20m D00020	0.20m			Silty CLAY trace sand: high plasticity, grey brown, fine to medium grained sand.					ALLUVIAL SOIL			
			0.40m	455.0			Below 0.40m: colour tending to dark grey.								
			0.60m B00060	0.5											
			0.80m												
			0.90m	454.5								X	0.80: PP Samp =300 kPa		
			1.30m D00130	1.0			Sandy silty CLAY: medium plasticity, black grey, fine grained sand.								
			1.50m	454.0			Below 1.60m: colour tending to black grey mottled orange brown.								
			2.00m D00200	1.5											
			2.30m	453.5											
2.70m D00270	2.0						X	2.00: PP Samp =550 kPa							
3.00m	453.0														
	452.5														
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PHOTOGRAPHS
NOTES

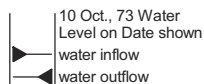
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 325883.3, N: 6905145.5 ()

SURFACE ELEVATION : 455.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.00 m LONG 1.50 m WIDE



310-03-TP3119 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3119 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 325883.3, N: 6905145.5 ()

SURFACE ELEVATION : 455.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.00 m LONG 1.50 m WIDE



310-03-TP3119 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3119 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 325883.3, N: 6905145.5 ()

SURFACE ELEVATION : 455.51 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.00 m LONG 1.50 m WIDE



310-03-TP3119 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 326029.8, N: 6906228.8 ()

SURFACE ELEVATION : 458.11 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE

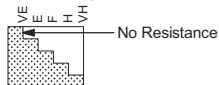
EXCAVATION INFORMATION				MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed				0.0			TOPSOIL Clayey silty SAND: fine grained, black brown, low to medium plasticity clay, with rootlets (<2mm)					TOPSOIL
		0.30m					SAND trace silt and clay: fine to medium grained, black brown, low to medium plasticity clay.	W	L			ALLUVIAL SOIL
		0.60m					Silty CLAY with sand: high plasticity, black, fine to medium grained sand, with roots (<20mm)		D			
		0.80m							VSt			
		1.10m										>>X 1.10: PP Samp >600 kPa
		1.30m										
		1.50m							H			
		2.00m										
		2.20m										>>X 2.20: PP Samp >600 kPa
		2.60m										
				3.00m			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface					
				454.6								

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
Vst - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326029.8, N: 6906228.8 ()

SURFACE ELEVATION : 458.11 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3120 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3120 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326029.8, N: 6906228.8 ()

SURFACE ELEVATION : 458.11 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3120 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3120 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326029.8, N: 6906228.8 ()

SURFACE ELEVATION : 458.11 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.70 m LONG 1.50 m WIDE



310-03-TP3120 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 326994.1, N: 6909568.5 ()

SURFACE ELEVATION : 449.58 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.40 m LONG 1.60 m WIDE

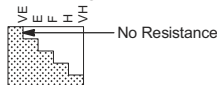
EXCAVATION INFORMATION					MATERIAL								
VE PENETRATION F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
		Not Observed		0.0			FILL: Gravelly CLAY: medium to high plasticity, pale brown and dark grey, fine to coarse sub-angular to angular gravel, with rootlets (<2mm)					FILL	
				449.1		0.30m	CLAY with sand: high plasticity, pale brown mottled grey, fine grained sand, trace calcareous inclusions		F to St			ALLUVIAL SOIL	
			0.50m U00050	0.5							X	0.50: PP Samp =350 kPa	
			0.70m B00070										
			0.90m	448.6		CH							
			1.00m	1.0								X	1.00: PP Samp >600 kPa
				448.1					VSt				
				1.5				1.50m					
				447.6					M (<PL)				
				2.0									
		2.50m B00250	2.5		CI-CH								
		2.70m						H					
			446.6	3.0									
				3.10m			Hole Terminated at 3.10 m Target depth Testpit reinstated to surface						
				446.1									
				3.5									
				4.0									

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326994.1, N: 6909568.5 ()

SURFACE ELEVATION : 449.58 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.40 m LONG 1.60 m WIDE



310-03-TP3126 - 1 Depth Range: 0.00 - 3.10 m



310-03-TP3126 - 2 Depth Range: 0.00 - 3.10 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326994.1, N: 6909568.5 ()

SURFACE ELEVATION : 449.58 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J. Boyle

EXCAVATION DIMENSIONS : 5.40 m LONG 1.60 m WIDE



310-03-TP3126 - 3 Depth Range: 0.00 - 3.10 m



310-03-TP3126 - 4 Depth Range: 0.00 - 3.10 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 326994.1, N: 6909568.5 ()	SURFACE ELEVATION : 449.58 (AHD)
EQUIPMENT TYPE : Backhoe	METHOD : 450mm Toothed Bucket
DATE EXCAVATED : 07/09/2021	LOGGED BY : T. Tran
EXCAVATION DIMENSIONS : 5.40 m LONG 1.60 m WIDE	CHECKED BY : J.Boyle



310-03-TP3126 - 5 Depth Range: 0.00 - 3.10 m

MG 4.02 LIB.GLB Log MG TEST P/T MG 4.02 GPJ <DrawingFile> 26/02/2022 17:40 10/02/2004 Dated Lib and in Situ Test - DGD | Lib DGD P 4.01 2 dtd 3.04 2018-07-02 P/L DGD P 4.00 6 2017-11-25

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 327060.7, N: 6909733.1 ()

SURFACE ELEVATION : 444.50 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.50 m WIDE

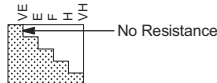
EXCAVATION INFORMATION				MATERIAL								
VE PENETRATION E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
		Not Observed		0.0			TOPSOIL Silty CLAY with sand: medium to high plasticity, black, fine to medium grained sand.					TOPSOIL
			0.20m	D00020			Silty CLAY trace sand: high plasticity, grey brown mottled black, fine grained sand.		St			ALLUVIAL SOIL
			0.40m		444.0	CH						
			0.50m	D00050	0.5		Silty Sandy CLAY trace gravels, highb plasticity, pale brown mottled black, fine to coarse grained sand, fine, sub rounded gravels.		VSt			
			0.60m									
			0.70m	B00070		CH						
			0.90m		443.5							>>X 0.90: PP Samp >600 kPa
					1.0		Sandy silty CLAY: medium plasticity, brown, fine to coarse grained sand.					
					443.0				w<PL			
			1.50m	D00150	1.5					H		
				1.80m		CI						
		2.00m		442.5							>>X 1.80: PP Samp >600 kPa	
				2.0								
				442.0								
		2.50m	D00250	2.5		SC	Clayey SAND: fine to coarse grained, pale brown, medium plasticity clay.	M	VD			
				441.5								
		3.00m		3.0			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface					
				441.0								
				3.5								
				4.0								

PHOTOGRAPHS
NOTES

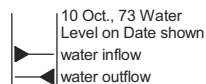
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 327060.7, N: 6909733.1 ()

SURFACE ELEVATION : 444.50 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.50 m WIDE



310-03-TP3127 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3127 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 327060.7, N: 6909733.1 ()

SURFACE ELEVATION : 444.50 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.50 m WIDE



310-03-TP3127 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3127 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 327060.7, N: 6909733.1 ()

SURFACE ELEVATION : 444.50 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.50 m WIDE



310-03-TP3127 - 5 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 327395.0, N: 6910402.9 ()

SURFACE ELEVATION : 434.55 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.60 m WIDE

EXCAVATION INFORMATION								MATERIAL																			
VE E F H				GROUND WATER LEVELS		SAMPLES & FIELD TESTS		ELEVATION (RL) DEPTH (M)		GRAPHIC LOG		CLASSIFICATION SYMBOL		MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components		MOISTURE CONDITION		CONSISTENCY		RELATIVE DENSITY		DCP Blows/100mm 5 10 15 20		POCKET PENETRO- METER kPa 100 200 300 400		STRUCTURE & Other Observations	
				Not Observed		0.0				CH CH Cl-CH		TOPSOIL Sandy silty CLAY with gravel: medium to high plasticity, brown black, fine to coarse grained sand, fine to medium sub-angular to angular gravel, trace rootlets (<2mm)		M (<PL)		F St VSt H						TOPSOIL					
						0.30m		Silty CLAY with sand: high plasticity, black, fine to medium grained sand.				ALLUVIAL SOIL															
						0.50m B00050		Silty CLAY with sand: high plasticity, pale brown, fine to medium grained sand.				0.80: PP Samp =300 kPa															
						0.80m		Sandy silty CLAY: medium to high plasticity, pale brown, fine to medium grained sand.																			
						0.90m		Below 1.50m: fine to coarse grained sand.																			
						1.50m D00150		Below 2.00m: trace fine to medium sub-angular to angular gravel.																			
						2.00m D00200																					
						2.20m																					
						2.50m D00250																					
						3.00m		3.00m				Hole Terminated at 3.00 m Target depth Testpit reinstated to surface															
						431.0																					

PHOTOGRAPHS
NOTES

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified Classification System	VS - Very Soft
X Existing Excavation		D - Disturbed Sample		S - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample	F - Firm	St - Stiff
B Bulldozer Blade		MC - Moisture Content		VSt - Very Stiff
R Ripper	WATER 	PP - Pocket Penetrometer (UCS kPa)	D - Dry	H - Hard
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)	W - Wet	VL - Very Loose
			M > PL- Moisture Content > Plastic Limit	L - Loose
			M ~ PL- Moisture Content = Plastic Limit	MD - Medium Dense
			M < PL- Moisture Content < Plastic Limit	D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 327395.0, N: 6910402.9 ()

SURFACE ELEVATION : 434.55 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.60 m WIDE



310-03-TP3128 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3128 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 327395.0, N: 6910402.9 ()

SURFACE ELEVATION : 434.55 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.60 m WIDE



310-03-TP3128 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3128 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 327395.0, N: 6910402.9 ()

SURFACE ELEVATION : 434.55 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.60 m WIDE



310-03-TP3128 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 328091.8, N: 6911136.2 ()

SURFACE ELEVATION : 423.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.50 m WIDE

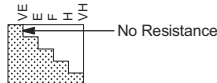
EXCAVATION INFORMATION					MATERIAL									
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Observed				0.0			TOPSOIL Silty CLAY with sand: medium plasticity, black and brown, fine to medium grained sand, trace rootlets (<2mm)						TOPSOIL	
				0.20m	CI	Silty CLAY with sand: medium plasticity, red brown, fine to medium grained sand.					ALLUVIAL SOIL			
			0.40m	B00040		0.40m	Silty Sandy CLAY: medium to high plasticity, black fine to coarse grained sand, fine, sub rounded gravels.	St						
			0.5											
			0.80m											
			0.90m	422.4			Below 0.90m: colour tending to red brown, trace fine to medium grained sand.				X	0.80: PP Samp =275 kPa		
			1.0		CI-CH									
			1.50m	421.9			Below 1.60m: colour tending to grey brown.	M (<PL)						
			1.80m											
			2.00m	421.4		2.00m	Sandy silty CLAY: medium plasticity, grey brown, fine to medium grained sand.				X	1.80: PP Samp >600 kPa		
	2.0													
2.50m	420.9		2.5	CI										
	2.5													
3.00m	420.4		3.0				Hole Terminated at 3.00 m Target depth Testpit reinstated to surface							
	3.0													
	419.9		3.5											
	3.5													
	4.0													

PHOTOGRAPHS
NOTES

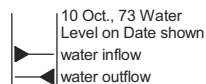
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 328091.8, N: 6911136.2 ()

SURFACE ELEVATION : 423.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.50 m WIDE



310-03-TP3129 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3129 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 328091.8, N: 6911136.2 ()

SURFACE ELEVATION : 423.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.50 m WIDE



310-03-TP3129 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3129 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 328091.8, N: 6911136.2 ()

SURFACE ELEVATION : 423.44 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD :

DATE EXCAVATED : 21/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.50 m WIDE



310-03-TP3129 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 328790.7, N: 6911592.1 ()

SURFACE ELEVATION : 419.27 (AHD)

EQUIPMENT TYPE : Backhoe

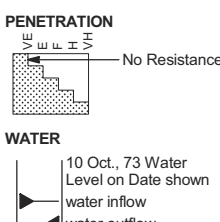
METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE

EXCAVATION INFORMATION				MATERIAL							
PENETRATION VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
				0.0			FILL: Silty SAND with gravel: fine to coarse grained, pale orange brown, fine to coarse sub-rounded to sub-angular gravel, trace rootlets (<1mm)				FILL
			0.40m B00040	418.8			Silty CLAY trace sand: high plasticity, red, fine grained sand	M (<PL)	VSt to H		ALLUVIAL SOIL 0.40: PP Samp >600 kPa
			0.70m	0.5		CH					
			1.00m B00100	418.3			Sandy GRAVEL with clay trace cobbles, fine to coarse, sub-angular to angular, pale brown and grey mottled orange, fine to coarse grained sand, sub-angular cobbles (<200mm)				RESIDUAL SOIL
			1.40m	1.0							
		Not Observed		417.8		GP		D	VD		
				1.5							
				417.3							
				2.0							
			2.40m B00240	416.8			Extremely weathered CONGLOMERATE very low strength: Recovered as gravelly SAND, fine to coarse grained, yellow grey mottled orange, fine to coarse sub-angular to angular gravel				EXTREMELY WEATHERED BEDROCK
			2.80m	2.5							
				416.3							
				3.0			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface				
				415.8							
				3.5							
				4.0							
PHOTOGRAPHS NOTES											
METHOD		PENETRATION		SAMPLES & FIELD TESTS			CLASSIFICATION SYMBOLS & SOIL DESCRIPTION		CONSISTENCY/ RELATIVE DENSITY		
N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper				U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content PP - Pocket Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)			Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet M > PL- Moisture Content > Plastic Limit M ~ PL- Moisture Content = Plastic Limit M < PL- Moisture Content < Plastic Limit		VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense		
See Explanatory Notes for details of abbreviations & basis of descriptions.											
Macquarie Geotech											

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 328790.7, N: 6911592.1 ()

SURFACE ELEVATION : 419.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE



310-03-TP3130 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3130 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 328790.7, N: 6911592.1 ()

SURFACE ELEVATION : 419.27 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE



310-03-TP3130 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 329017.2, N: 6911654.0 ()

SURFACE ELEVATION : 412.85 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE

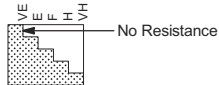
EXCAVATION INFORMATION					MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed		0.10m D00010 0.20m	B00040 0.50m B00050	0.0	CH	0.30m	TOPSOIL: Sandy SILT with clay: low to medium plasticity, grey, fine grained sand, trace rootlets (<2mm)						TOPSOIL
		0.40m		412.3			CLAY with sand: high plasticity, dark grey, fine grained sand						
		0.70m	B00080	0.5		1.00m	Below 0.80m becoming sandy CLAY, pale grey and brown	M (<PL)	St			X	0.50: PP Samp =310 kPa
		0.80m		411.8				St			X	1.00: PP Samp >600 kPa	
		1.40m D00140		1.0		1.50m	Clayey SAND: fine to coarse grained, brown and grey mottled orange, low to medium plasticity clay		H				RESIDUAL SOIL
		1.60m		411.3			At 1.80m calcrete nodule (~10mm)						
		2.20m B00220		1.5	SC								
		2.60m		410.8									
				2.0									
				410.3									
				2.5									
				409.8									
				3.0			Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
				409.3									

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 329017.2, N: 6911654.0 ()

SURFACE ELEVATION : 412.85 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE



310-03-TP3131 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3131 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 329017.2, N: 6911654.0 ()

SURFACE ELEVATION : 412.85 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE



310-03-TP3131 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3131 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 329017.2, N: 6911654.0 ()

SURFACE ELEVATION : 412.85 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 450mm Toothed Bucket

DATE EXCAVATED : 07/09/2021

LOGGED BY : T. Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 5.50 m LONG 1.60 m WIDE



310-03-TP3131 - 5 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION :	SURFACE ELEVATION :
EQUIPMENT TYPE : 8t backhoe	METHOD : 350mm Toothed Bucket
DATE EXCAVATED : 08/09/2021	LOGGED BY : T. Tran
CHECKED BY : J.Cooper	
EXCAVATION DIMENSIONS : 5.20 m LONG 1.40 m WIDE	

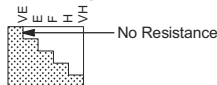
EXCAVATION INFORMATION				MATERIAL										
VE	E	F	H	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations
				Not Observed	0.10m D-D00010 0.20m	0.0			TOPSOIL: SILT with sand, pale brown, fine grained sand, some rootlets (<1mm)					TOPSOIL
						0.30m		sandy CLAY with gravel, medium plasticity, dark brown mottled orange and white, fine to coarse grained sand, fine sub-angular gravel					0.20: PP In-situ =550 kPa ALLUVIAL SOIL	
					0.50m B-B00050 U-U00050	0.5			At 00.50m: colour changing to brown mottled black, orange and white, trace carbonate					0.50: PP In-situ =350 kPa
					0.80m D-D00080									
					1.00m	1.0		CI		M (~PL)	St to VSt			1.00: PP In-situ =350 kPa
						1.5								
						2.0								
					2.30m D-D00230									
					2.50m	2.5		CI-CH		M (<PL)	VSt			
					2.80m B-B00280									
3.00m	3.0				3.00m		Hole Terminated at 3.00 m Target depth Testpit reinstated to surface							
						3.5								
						4.0								

PHOTOGRAPHS
NOTES

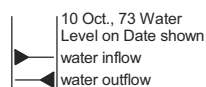
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL - Moisture Content > Plastic Limit
M ~ PL - Moisture Content = Plastic Limit
M < PL - Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION :	SURFACE ELEVATION :
EQUIPMENT TYPE : 8t backhoe	METHOD : 350mm Toothed Bucket
DATE EXCAVATED : 08/09/2021	LOGGED BY : T. Tran
EXCAVATION DIMENSIONS : 5.20 m LONG 1.40 m WIDE	CHECKED BY : J.Cooper



310-03-TP3137 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3137 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION :	SURFACE ELEVATION :
EQUIPMENT TYPE : 8t backhoe	METHOD : 350mm Toothed Bucket
DATE EXCAVATED : 08/09/2021	LOGGED BY : T. Tran
EXCAVATION DIMENSIONS : 5.20 m LONG 1.40 m WIDE	CHECKED BY : J.Cooper



310-03-TP3137 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3137 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION :	SURFACE ELEVATION :
EQUIPMENT TYPE : 8t backhoe	METHOD : 350mm Toothed Bucket
DATE EXCAVATED : 08/09/2021	LOGGED BY : T. Tran
EXCAVATION DIMENSIONS : 5.20 m LONG 1.40 m WIDE	CHECKED BY : J.Cooper



310-03-TP3137 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 323758.1, N: 6892432.2 ()

SURFACE ELEVATION : 371.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE

EXCAVATION INFORMATION				MATERIAL								
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
Not Observed		D00000	0.0		CI-CH	TOPSOIL Silty CLAY with sand trace gravel: medium to high plasticity, dark brown, fine to coarse grained sand, fine to medium sub-angular to angular gravel, with rootlets (<2mm)						TOPSOIL
		0.20m D00020	0.25m			Silty CLAY with sand trace gravel: medium to high plasticity, yellow brown, fine to coarse grained sand, fine to medium sub-angular to angular gravel.						St
		0.40m	371.1	CH	0.40m	Silty CLAY with sand: high plasticity, grey brown, fine to medium grained sand.	VSt				RESIDUAL SOIL	
		0.50m B00050	0.5									
		0.90m	370.6							0.80: PP In-situ >600 kPa		
		1.30m D00130	370.1									
		1.50m	1.5									
		1.80m D00180	369.6			Below 1.80m: trace sand.					1.80: PP Samp >600 kPa	
		2.00m	2.0									
		2.50m	369.1									
2.80m D00280	368.6					Extremely weathered SILTSTONE very low strength: recovered as Silty CLAY: medium plasticity, grey mottled orange.					EXTREMELY WEATHERED BEDROCK	
3.00m	3.0					Hole Terminated at 3.00 m Target depth Testpit reinstated to surface						
	368.1											

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

POSITION : E: 323758.1, N: 6892432.2 ()

SURFACE ELEVATION : 371.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3804 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3804 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323758.1, N: 6892432.2 ()

SURFACE ELEVATION : 371.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3804 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3804 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

Macquarie Geotech

POSITION : E: 323758.1, N: 6892432.2 ()

SURFACE ELEVATION : 371.63 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 23/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.50 m LONG 1.60 m WIDE



310-03-TP3804 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 323854.8, N: 6892575.3 ()

SURFACE ELEVATION : 370.65 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE

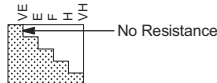
EXCAVATION INFORMATION				MATERIAL																							
VE E F H		GROUND WATER LEVELS		SAMPLES & FIELD TESTS		ELEVATION (RL) DEPTH (M)		GRAPHIC LOG		CLASSIFICATION SYMBOL		MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components		MOISTURE CONDITION		CONSISTENCY RELATIVE DENSITY		DCP Blows/100mm 5 10 15 20		POCKET PENETRO- METER 100 200 300 400 kPa		STRUCTURE & Other Observations					
Not Observed				0.30m D00030		0.30						TOPSOIL Silty CLAY with sand: high plasticity, black, fine to medium grained sand, with rootlets (<2mm), with cobble.										TOPSOIL					
				0.40m B00040		0.5						Silty CLAY trace sand: high plasticity, black, fine to medium grained sand.		F		St						ALLUVIAL SOIL					
				0.50m		0.70				CH		0.70m															
				0.70m		1.0				CI-CH		0.70m		Silty CLAY with sand trace gravel: medium plasticity, pale brown mottled orange, fine to coarse grained sand, trace fine to medium sub-rounded sub-angular gravel.													
				1.00m D00100		1.20						1.20m		Below 01.00m: trace sand, gravel absent.										1.00: PP Samp >600 kPa			
				1.20m		1.5								Silty CLAY with sand: medium to high plasticity, grey brown, fine to coarse grained sand.		M (<PL)		H						RESIDUAL SOIL			
				1.50m D00150		2.0				CH		2.00m															
				2.00m		2.20						2.20m															
				2.20m D00220		2.5																				2.20: PP Samp >600 kPa	
				2.50m D00250		2.70								2.70m		Extremely weathered SILTSTONE very low strength: recovered as Silty CLAY: high plasticity, grey.										EXTREMELY WEATHERED BEDROCK	
				3.00m		3.0				3.00m		Hole Terminated at 3.00 m Target depth Testpit reinstated to surface															
				3.5																							

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323854.8, N: 6892575.3 ()

SURFACE ELEVATION : 370.65 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE



310-03-TP3805 - 1 Depth Range: 0.00 - 3.00 m



310-03-TP3805 - 2 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323854.8, N: 6892575.3 ()

SURFACE ELEVATION : 370.65 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE



310-03-TP3805 - 3 Depth Range: 0.00 - 3.00 m



310-03-TP3805 - 4 Depth Range: 0.00 - 3.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 323854.8, N: 6892575.3 ()

SURFACE ELEVATION : 370.65 (AHD)

EQUIPMENT TYPE : Backhoe

METHOD : 600mm Toothed Bucket

DATE EXCAVATED : 22/07/2021

LOGGED BY : V.Chandrasena

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 4.60 m LONG 1.40 m WIDE



310-03-TP3805 - 5 Depth Range: 0.00 - 3.00 m

POSITION : E: 329339.2, N: 6911745.4 ()

SURFACE ELEVATION : 411.60 (AHD)

EQUIPMENT TYPE : Hand Auger

METHOD :

DATE EXCAVATED : 28/10/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS :

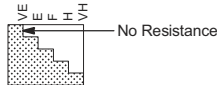
EXCAVATION INFORMATION						MATERIAL									
VE E F H			GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations		
Not Observed															
ES-E00000 0.10m															
0.20m ES-E00020 0.30m															
					0.0			SAND, fine to medium grained, yellow-brown		D			TOPSOIL		
					411.1			Hole Terminated at 0.30 m Target depth Hole reinstated to surface							
					0.5										
					410.6										
					1.0										
					410.1										
					1.5										
					409.6										
					2.0										
					409.1										
					2.5										
					408.6										
					3.0										
					408.1										
					3.5										
					4.0										

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324643.4, N: 6902160.9 ()

SURFACE ELEVATION : 470.82 (AHD)

EQUIPMENT TYPE : Hand Auger

METHOD :

DATE EXCAVATED : 28/10/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS :

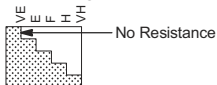
EXCAVATION INFORMATION					MATERIAL									
VE	E	F	H	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETROMETER	STRUCTURE & Other Observations
<														

PHOTOGRAPHS
NOTES

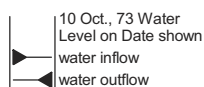
METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER



SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
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H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324700.7, N: 6902301.9 ()

SURFACE ELEVATION : 473.84 (AHD)

EQUIPMENT TYPE : Hand Auger

METHOD :

DATE EXCAVATED : 28/10/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS :

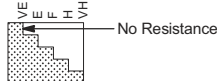
EXCAVATION INFORMATION					MATERIAL									
GROUND WATER LEVELS				SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations	
VE	E	F	H											
				Not Observed	ES-E00000 0.10m	0.0		FILL: Sandy silty CLAY, low plasticity, pale brown, fine sand					FILL	
						473.3			FILL: Sandy silty CLAY, low plasticity, pale brown, fine sand					
					0.50m	0.5								
				ES-E00050 0.60m			CL	Silty CLAY, low plasticity, pale brown mottled white	M (PL)	VSt			RESIDUAL SOIL	
								Hole Terminated at 0.60 m Target depth Hole reinstated to surface						
						472.8								
						1.0								
						472.3								
						1.5								
						471.8								
						2.0								
						471.3								
						2.5								
						470.8								
						3.0								
						470.3								
						3.5								
						4.0								

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
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M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic Limit

CONSISTENCY/
RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

POSITION : E: 324814.6, N: 6902572.1 ()

SURFACE ELEVATION : 474.53 (AHD)

EQUIPMENT TYPE : Hand Auger

METHOD :

DATE EXCAVATED : 28/10/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS :

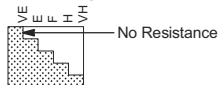
EXCAVATION INFORMATION					MATERIAL									
GROUND WATER LEVELS			SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations		
VE	E	F												
			Not Observed	ES-E00000 0.10m		CL	FILL: Sandy silty CLAY, low plasticity, pale brown, fine sand					FILL		
				ES-E00050 0.60m			0.5							Silty CLAY, low plasticity, pale brown mottled white
							Hole Terminated at 0.60 m Target depth Hole reinstated to surface							

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
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B - Bulk Disturbed Sample
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PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)

CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
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RELATIVE DENSITY

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L - Loose
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See Explanatory Notes for
details of abbreviations
& basis of descriptions.

Macquarie Geotech

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3029

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH138006 Lot.2RP16058 YandillaFILE / JOB NO : B20331
SHEET : 1 OF 4

POSITION : E: 337596.7, N: 6918433.1 (MGA94 Zone 56)

SURFACE ELEVATION : 379.47 (AHD)

EQUIPMENT TYPE : Excavator 14T

METHOD : 900mm bucket

DATE EXCAVATED : 02/03/2021

LOGGED BY : H.Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 2.30 m LONG 1.20 m WIDE

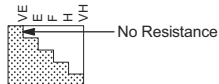
EXCAVATION INFORMATION					MATERIAL							
VE E F H		GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
		Not Encountered	0.40m B00040 x7	0.0		FILL Silty CLAY: high plasticity, black, with rootlets (<2mm)		F			REWORKED TOPSOIL	
			0.80m	0.20m		Silty CLAY: high plasticity, black.					ALLUVIAL SOIL	
			0.95m B00095 x5	0.5		CH	M (<PL)	St		0.40: PLT: Max Settlement: 12.18mm Maximum Applied Pressure: 140KPa 0.42: Field water content: 44.60% Temperature: 46.7 C		
			1.20m	0.95m		CI-CH	H					
				1.20m								
				378.0			Hole Terminated at 1.20 m Target depth					
				377.5								
				377.0								
				376.5								
				376.0								

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic LimitCONSISTENCY/
RELATIVE DENSITYVS - Very Soft
S - Soft
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VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very DenseSee Explanatory Notes for
details of abbreviations
& basis of descriptions.

POSITION : E: 337596.7, N: 6918433.1 (MGA94 Zone 56)	SURFACE ELEVATION : 379.47 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 02/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.30 m LONG 1.20 m WIDE		



310-03-BH3029-FFJV - 1 Depth Range: 0.00 m



310-03-BH3029-FFJV - 2 Depth Range: 0.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

POSITION : E: 337596.7, N: 6918433.1 (MGA94 Zone 56)	SURFACE ELEVATION : 379.47 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 02/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.30 m LONG 1.20 m WIDE		



310-03-BH3029-FFJV - 3 Depth Range: 0.00 m



310-03-BH3029-FFJV - 4 Depth Range: 0.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH138006 Lot.2RP16058 Yandilla

FILE / JOB NO : B20331
SHEET : 4 OF 4

POSITION : E: 337596.7, N: 6918433.1 (MGA94 Zone 56)	SURFACE ELEVATION : 379.47 (AHD)
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket
DATE EXCAVATED : 02/03/2021	LOGGED BY : H.Tran
EXCAVATION DIMENSIONS : 2.30 m LONG 1.20 m WIDE	CHECKED BY : J.Boyle



310-03-BH3029-FFJV - 5 Depth Range: 0.00 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 10/01/2021
Project Name: Inland Rail B2G	Completed: 12/01/2021
Hole Location: Approx. CH138006 - Yandilla	Logged By: V. Chandrasena
Hole Coordinates: 337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By: J.Boyle
Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°
Hole Diameter: 115 mm	RL Surface: 379.78 m
	Bearing: Datum: AHD
	Operator: J. Komung

Drilling Information							Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
AD/T				J00020 0.20-0.30 m PID 0.20 m 0.2 ppm J00050 0.50-0.60 m S00050 SPT 0.50-0.95 m 5,7,8 N=15 PP 0.50 m =540 kPa PID 0.50 m 0.7 ppm J00100 1.00-1.10 m U00100 1.00-1.45 m PID 1.00 m 4.1 ppm S00200 SPT 2.00-2.45 m 5,10,14 N=24 D00300 3.00-3.50 m S00350 SPT 3.50-3.95 m 5,10,13 N=23 PP 3.50 m >600 kPa D00450 4.50-5.00 m S00500 SPT 5.00-5.45 m 7,9,12 N=21 PP 5.00 m =570 kPa D00600 6.00-6.50 m S00650 SPT 6.50-6.95 m 7,11,15 N=26 PP 6.50 m =560 kPa D00750 7.50-8.00 m		378.8	1		CH	FILL: Silty CLAY trace sand, high plasticity, black, fine to medium grained sand, trace rootlets. Silty CLAY trace sand: high plasticity, black, fine to medium grained sand. Below 0.50m : grey brown, with fine to coarse grained sand.	M (<PL)	St					REWORKED TOPSOIL ALLUVIAL SOIL
						377.8	2		SM	Silty SAND trace clay: fine to medium grained, yellow brown, low to medium plasticity clay.	M	MD					
						376.8	3		CL-CI	Sandy silty CLAY: low to medium plasticity, grey brown mottled black, fine to coarse grained sand.							
						375.8	4		CH	Sandy silty CLAY trace gravel: high plasticity, dark grey brown, fine coarse grained sand, fine to medium sub-angular gravel.	M (<PL)						
						374.8	5		CI-CH	Silty CLAY with sand: medium to high plasticity, grey mottled red, fine to medium grained sand.							
						373.8	6				M (<PL) to M (~PL)	VSt					
						372.8	7				M (<PL)						
									CL-CI	Sandy silty CLAY trace gravel: low to medium plasticity, grey mottled white, fine to coarse grained sand, fine to medium sub-angular gravel.							
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Plastic Limit < PL = PL < PL																	

Client: ARTC						Commenced: 10/01/2021																																																																																									
Project Name: Inland Rail B2G						Completed: 12/01/2021																																																																																									
Hole Location: Approx. CH138006 - Yandilla						Logged By: V. Chandrasena																																																																																									
Hole Coordinates: 337596.7 m E 6918433.1 m N MGA94 Zone 56						Checked By: J.Boyle																																																																																									
Drill Model and Mounting: Comacchio 305/Track						Inclination: -90°		RL Surface: 379.78 m																																																																																							
Hole Diameter: 115 mm						Bearing:		Datum: AHD		Operator: J. Komung																																																																																					
Drilling Information						Soil Description						Observations																																																																																			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																																																																
AD/T				S00800 SPT 8.00-8.45 m 10,13,21 N=34 PP 8.00 m >600 kPa		370.8	9		CL-CI	Sandy silty CLAY trace gravel: low to medium plasticity, grey mottled white, fine to coarse grained sand, fine to medium sub-angular gravel. (continued)	M (<PL)	H			ALLUVIAL SOIL																																																																																
				D00900 9.00-9.50 m		369.8	10		SP	Sand trace gravel : fine to coarse grained, grey brown, fine to medium rounded to sub-rounded gravel.		D																																																																																			
				S00950 SPT 9.50-9.95 m 17,26,30 N=56		368.8	11					VD																																																																																			
				D01050 10.50-11.00 m		367.8	12																																																																																								
				S01100 SPT 11.00-11.45 m 21,26,22 N=48		366.8	13																																																																																								
				D01200 12.00-12.50 m		365.8	14																																																																																								
				S01250 SPT 12.50-12.95 m 10,12,18 N=30		364.8	15																																																																																								
				D01350 13.50-14.00 m																																																																																											
				S01400 SPT 14.00-14.45 m 5,10,10 N=20 PP 14.00 m >600 kPa																																																																																											
				D01500 15.00-15.50 m																																																																																											
WB				S01550 SPT 15.50-15.95 m 8,11,14					CI	Sandy silty CLAY: medium plasticity, brown mottled grey, fine grained sand.	M (>PL)				Standing Water Level - 12/01/2021																																																																																
Method AS - Auger Screwing RR - Rock Roller WB- Washbore																Penetration No resistance ranging to refusal																Water Level (Date) Inflow Partial Loss Complete Loss																Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test																Moisture Condition D - Dry M - Moist W - Wet																Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense															
Support C - Casing																Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss																Classification Symbols and Soil Descriptions Based on Unified Soil Classification System																Plastic Limit < PL = PL > PL																																															

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 10/01/2021						
Project Name: Inland Rail B2G										Completed: 12/01/2021						
Hole Location: Approx. CH138006 - Yandilla										Logged By: V. Chandrasena						
Hole Coordinates: 337596.7 m E 6918433.1 m N MGA94 Zone 56										Checked By: J.Boyle						
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°		RL Surface: 379.78 m				
Hole Diameter: 115 mm										Bearing:		Datum: AHD		Operator: J. Komung		
Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				N=25 PP 15.50 m >600 kPa					CI	Sandy silty CLAY: medium plasticity, brown mottled grey, fine grained sand. (continued)						
				D01650 16.50-17.00 m		362.8	17									
				S01700 SPT 17.00-17.45 m 8,12,15 N=27 PP 17.00 m =590 kPa		361.8	18					VSt				
				D01800 18.00-18.50 m		360.8	19			Below 18.50m : grey brown mottled red, with fine to coarse grained sand.	M (>PL)					
				S01850 SPT 18.50-18.95 m 10,12,12 N=24 PP 18.50 m >600 kPa		359.8	20			Below 20.00m : grey mottled yellow brown.						
				D01950 19.50-20.00 m		358.8	21									
				S02000 SPT 20.00-20.45 m 19,22,30 N=52 PP 20.00 m >600 kPa		357.8	22		SM	Silty SAND trace clay: fine grained, yellow brown mottled grey, low to medium plasticity clay. Below 21.80m : grey black.			D			
				D02250 22.50-23.00 m		356.8	23			Below 23.00m : grey mottled yellow and red.			VD			
				S02300 SPT 23.00-23.25 m 20,30/100mm,30/0mm HB N=60/100mm												
	Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density					
AS - Auger Screwing		No resistance ranging to refusal		Level (Date)		U - Undisturbed Sample		D - Dry		VS - Very Soft						
RR - Rock Roller				Inflow		D - Disturbed Sample		M - Moist		S - Soft						
WB- Washbore				Partial Loss		SPT - Standard Penetration Test		W - Wet		F - Firm						
				Complete Loss						VSt - Very Stiff						
										H - Hard						
										VL - Very Loose						
										L - Loose						
										MD - Medium Dense						
										D - Dense						
										VD - Very Dense						
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit										
C - Casing		Core recovered (hatching indicates material)		Based on Unified Soil Classification System		< PL										
		Core loss				= PL										
						< PL										

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 10/01/2021
Project Name: Inland Rail B2G	Completed: 12/01/2021
Hole Location: Approx. CH138006 - Yandilla	Logged By: V. Chandrasena
Hole Coordinates: 337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 379.78 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD
		Operator: J. Komung

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				D02400 24.00-24.50					SM	Silty SAND trace clay: fine grained, yellow brown mottled grey, low to medium plasticity clay. (continued)	W	VD		ALLUVIAL SOIL	
				S02450 SPT 24.50-24.95 13,13,17 N=30 PP 24.50 m >600 kPa		354.8	25		CI-CH	Silty CLAY trace sand: medium to high plasticity, purple grey, fine to medium grained sand.				RESIDUAL SOIL	
				D02550 25.50-26.00											
				S02600 SPT 26.00-26.45 8,9,16 N=25 PP 26.00 m >600 kPa		353.8	26				VSt			*	
				D02700 27.00-27.50											
				S02750 SPT 27.50-27.80 24,30 HB N=30/150mm PP 27.50 m >600 kPa		351.8	28			Below 27.50m : orange brown mottled grey and red black, with fine to coarse grained sand.	M (>PL) to M (=LL)			*	
				D02850 28.50-29.00											
				S02900 SPT 29.00-29.39 28,36,30/90mm N=66/240mm PP 29.00 m >600 kPa		350.8	29		CI	Extremely weathered lateritic siltstone recovered as: Silty CLAY with sand; medium plasticity, grey white mottled orange brown, fine to coarse grained sand.				* EXTREMELY WEATHERED MATERIAL	
				D03000 30.00-30.50								H			
				S03050 SPT 30.50-30.76 25,30/110mm HB N=30/110mm PP 30.50 m =550 kPa D03150 31.50-32.00		348.8	31							*	

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss		Classification Symbols and Soil Descriptions	Plastic Limit	
C - Casing	Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System	< PL = PL < PL	

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.78 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3029 Depth Range: 0.50 - 0.95 m

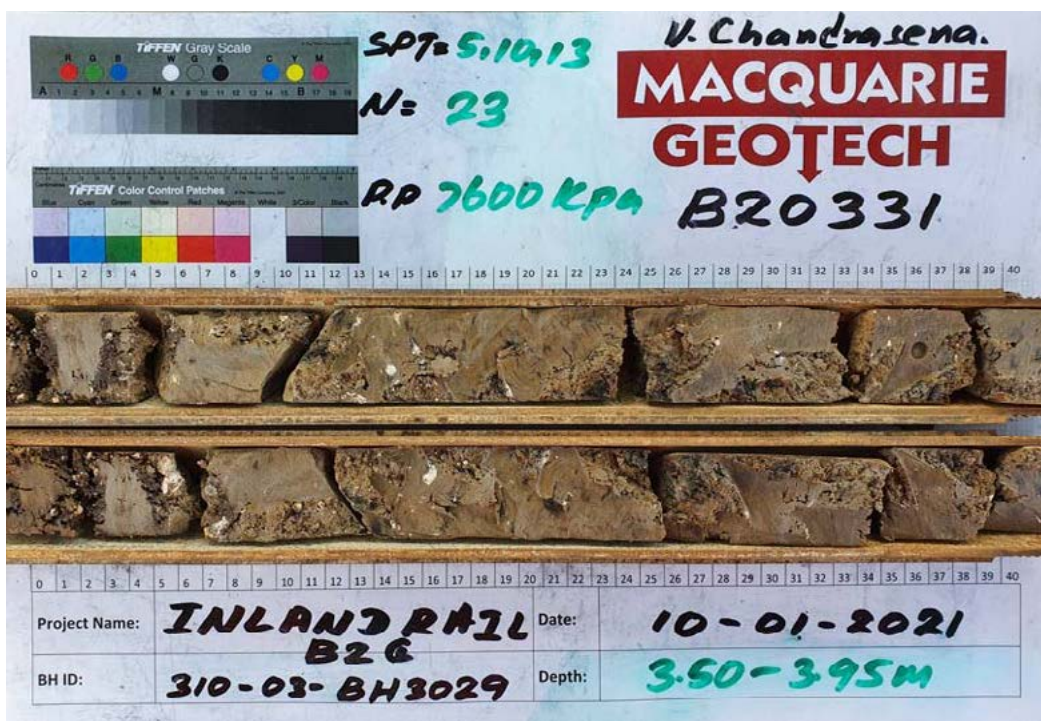


310-03-BH3029 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.78 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 3.50 - 3.95 m

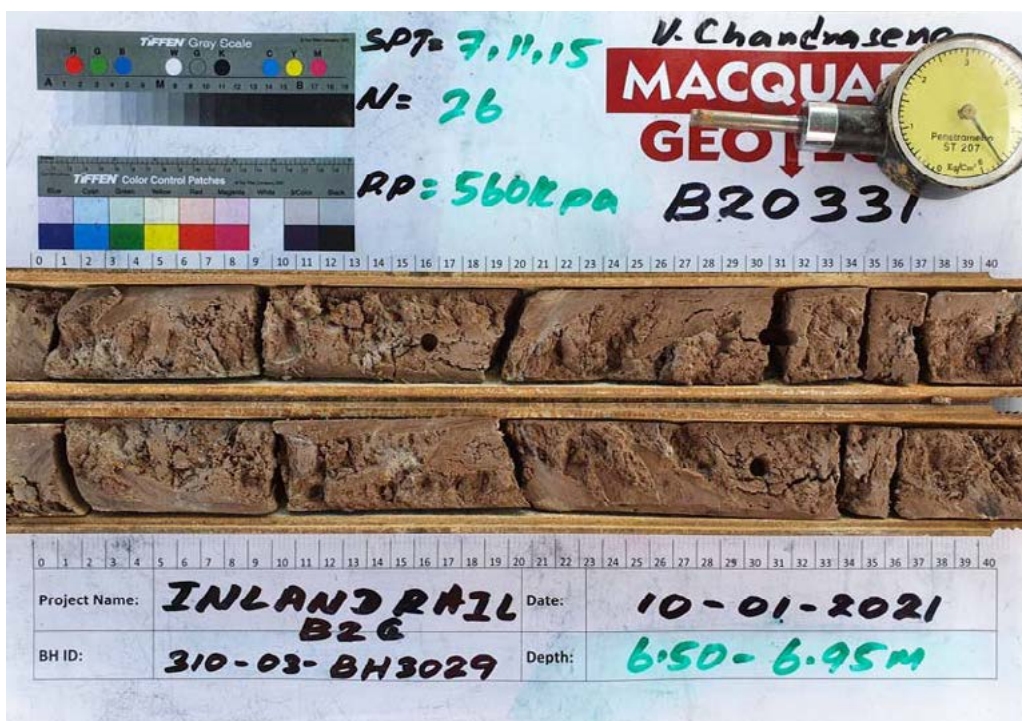


310-03-BH3029 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.78 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 6.50 - 6.95 m



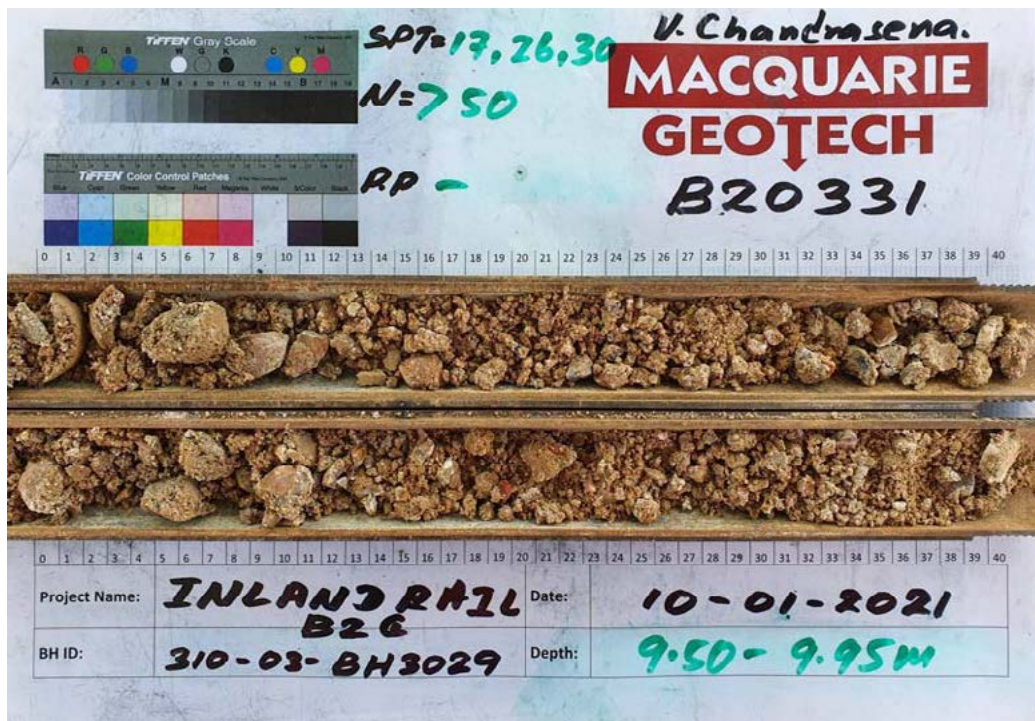
310-03-BH3029 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

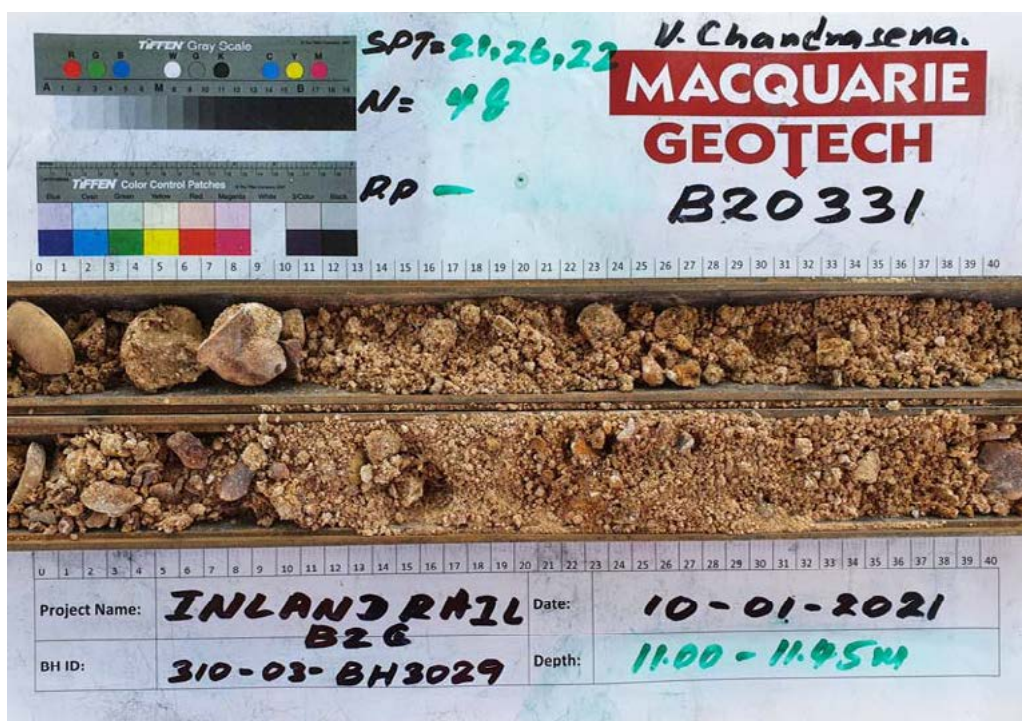
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.78 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3029 Depth Range: 9.50 - 9.95 m



310-03-BH3029 Depth Range: 11.00 - 11.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.78 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 12.50 - 12.95 m

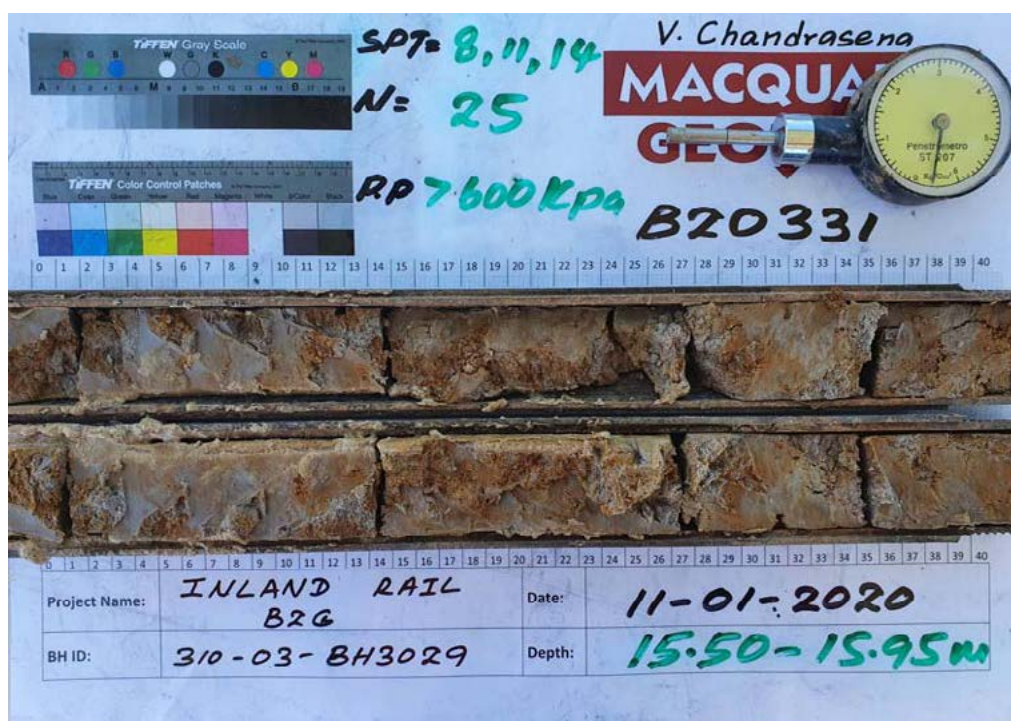


310-03-BH3029 Depth Range: 14.00 - 14.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.78 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 15.50 - 15.95 m



310-03-BH3029 Depth Range: 17.00 - 17.45 m

Engineering Log - Borehole

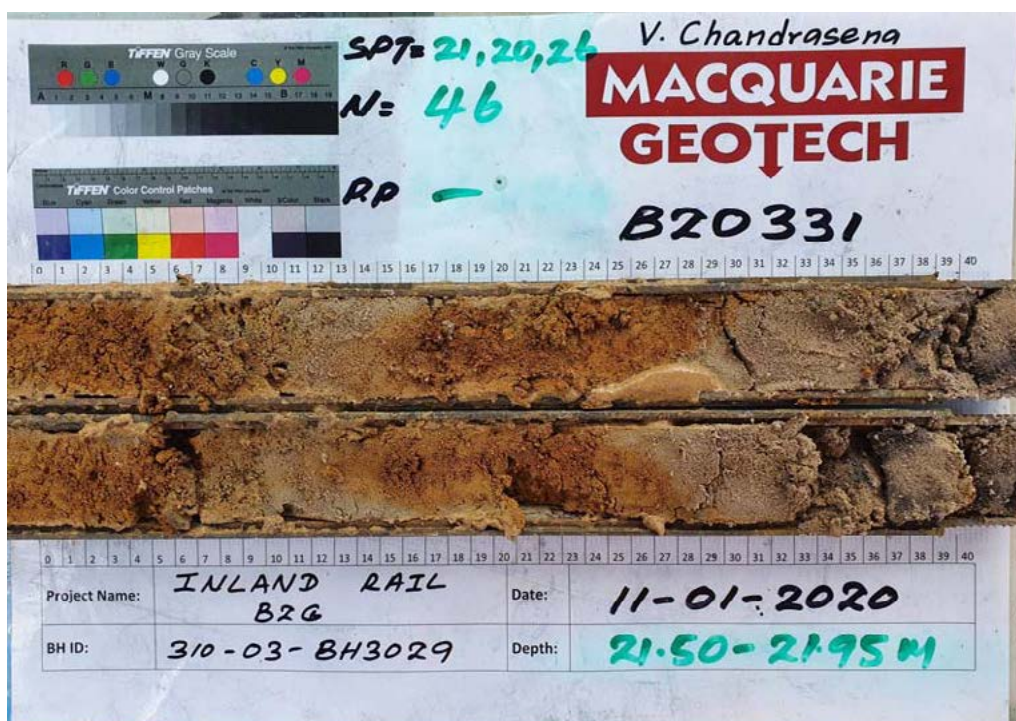
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.78 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3029 Depth Range: 20.00 - 20.45 m

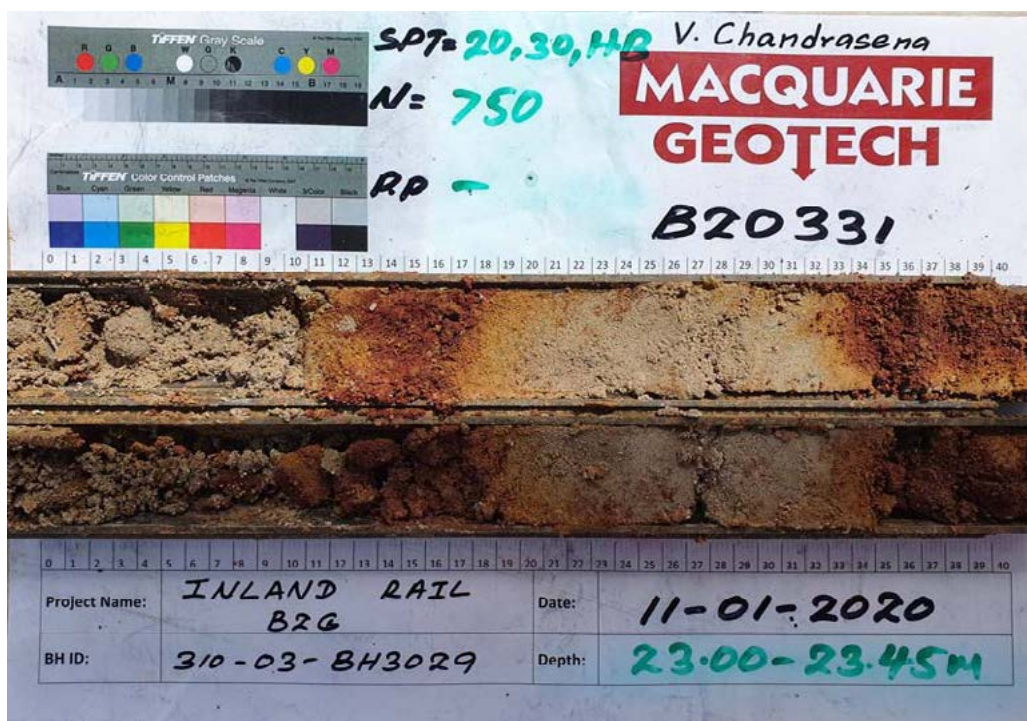


310-03-BH3029 Depth Range: 21.50 - 21.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.78 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 23.00 - 23.45 m



310-03-BH3029 Depth Range: 24.50 - 24.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.78 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3029 Depth Range: 26.00 - 26.45 m

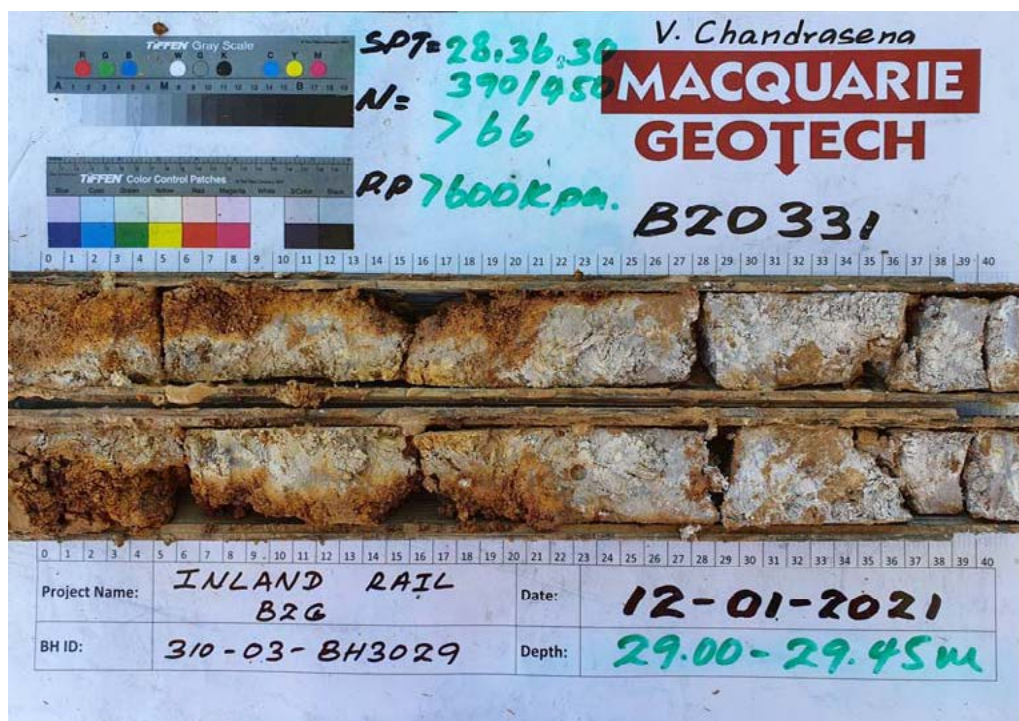


310-03-BH3029 Depth Range: 27.50 - 27.95 m

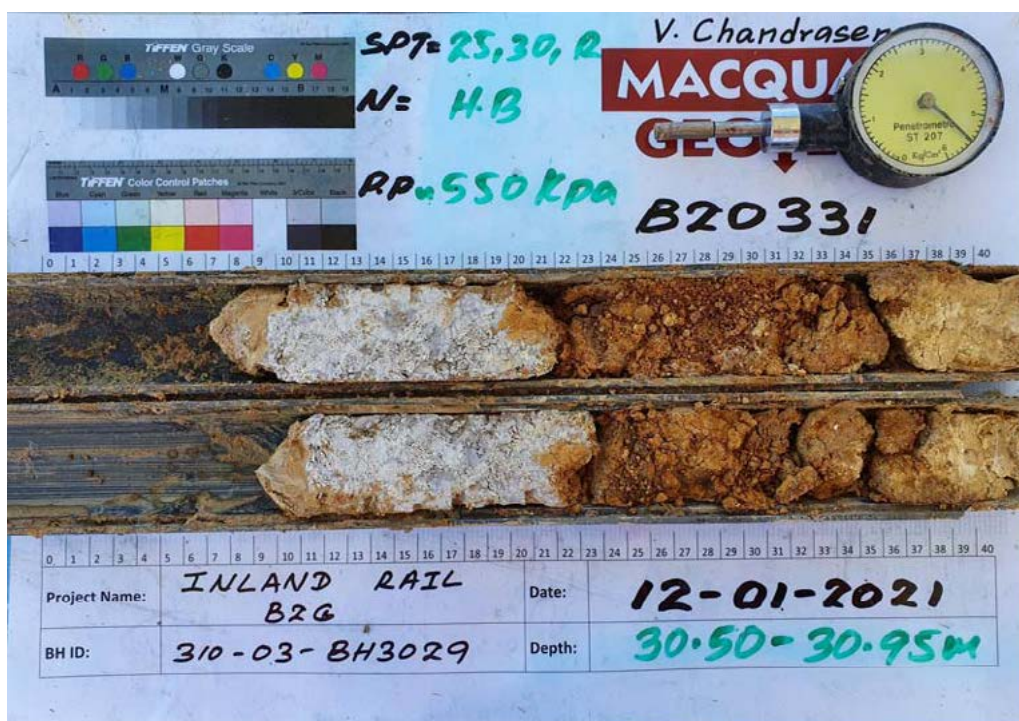
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.78 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 29.00 - 29.45 m



310-03-BH3029 Depth Range: 30.50 - 30.95 m

Engineering Log - Borehole

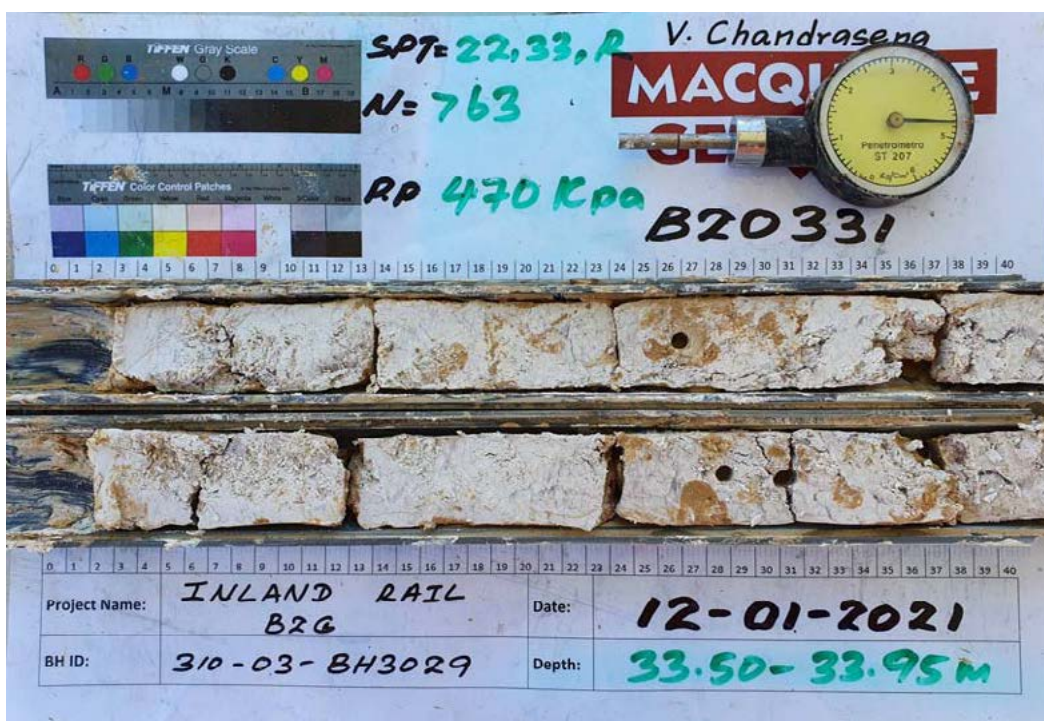
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.78 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3029 Depth Range: 32.00 - 32.45 m

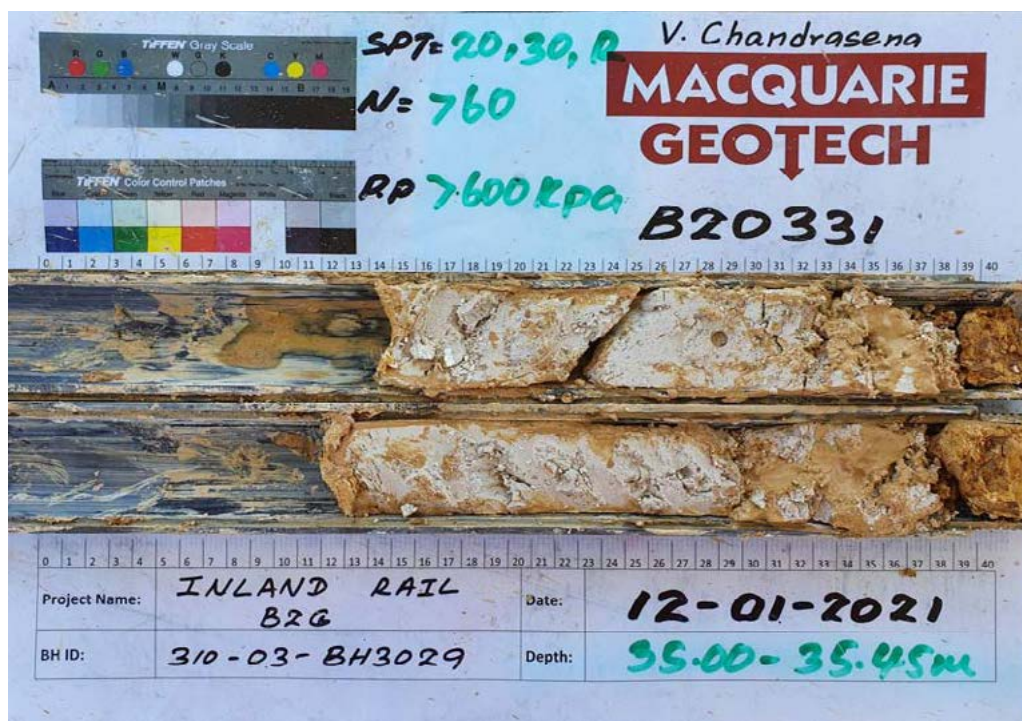


310-03-BH3029 Depth Range: 33.50 - 33.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2021
Hole Location:	Approx. CH138006 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	337596.7 m E 6918433.1 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.78 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3029 Depth Range: 35.00 - 35.45 m

MG 4.02 LIB.GLB Log MG BOREHOLE EXCL. DCP MG 4.02.GPJ <DrawingFile>> 28/04/2021 15:33 10.0.0000 Datalab Lab and In Situ Tool - DGD | Lib: DGD.T-P 4.01.2.dpl 3.04 2018-07-02 Pri: DGD.T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH138193 - Yandilla
Hole Coordinates: 337779.8 m E 6918490.3 m N MGA94 Zone 56

Commenced: 10/01/2021
Completed: 12/01/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.47 m
Hole Diameter: 96 - 114 mm Bearing: Datum: AHD Operator: L.Mallet

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				S00800 SPT 8.00-8.19 m 10.25/110mm N=R					CH	Gravelly sandy CLAY with silt; high plasticity, brown, fine to coarse grained sand, fine to coarse rounded to sub-angular gravel. (continued)		H		ALLUVIAL SOIL	
				D00900 D 9.00-9.50 m		370.5	9				(M (<PL))	VSt			
				S00950 SPT 9.50-9.95 m 10.14, 14 N=28		369.5	10		SC	Gravelly SAND with clay; fine to coarse grained, yellow brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with silty clay lenses up to 200mm.					
				D01050 D 10.50-11.00 m		368.5	11								
				S01100 SPT 11.00-11.45 m 8.12, 16 N=28		368.5	11					MD			
				D01200 D 12.00-12.50 m		367.5	12					D			
				S01250 SPT 12.50-12.95 m 10.6, 3 N=9 PP 12.81 m =280 kPa		366.5	13					St			
				D01350 D 13.50-14.00 m		365.5	14		CI	Silty sandy CLAY with gravel; medium plasticity, mottled brown grey, fine to medium grained sand, fine to medium rounded to sub-angular gravel.		D	MD		
				S01400 SPT 14.00-14.45 m 8.14, 21 N=35 PP 14.10 m >600 kPa		365.5	15								
				D01500 D 15.00-15.50 m		364.5	15					(M (<PL))	H		
			S01550 SPT 15.50-15.95 m 10.14, 20								(M (<PL)) / (M (<PL))			Standing Water Level - 10/01/2021	
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL															

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 10/01/2021
Project Name: Inland Rail B2G	Completed: 12/01/2020
Hole Location: Approx. CH138193 - Yandilla	Logged By: G.Meadows
Hole Coordinates: 337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 379.47 m
Hole Diameter: 96 - 114 mm	Bearing:	Datum: AHD Operator: L.Mallet

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				N=34 PP 15.80 m >600 kPa					CI	Silty sandy CLAY with gravel; medium plasticity, mottled brown grey, fine to medium grained sand, fine to medium rounded to sub-angular gravel. (continued)	M (~PL) / M (<PL)	H			RESIDUAL SOIL	
				D01650 D 16.50-17.00 m		362.5	17									
				S01700 SPT 17.00-17.45 m 9,13,16 N=29 PP 17.45 m =500 kPa		361.5	18				From 18.00m: Silty Sandy CLAY trace gravel, medium plasticity.	M (<PL)	VSt			
				D01800 D 18.00-18.50 m PP 18.20 m >600 kPa S01850 SPT 18.50-18.95 m 8,13,18 N=31		360.5	19				D	MD			18.50: 18.50-18.60; Sand lense up to 100mm, F-M grained, moist.	
				D01950 D 19.50-20.00 m		359.5	20									20.00: 20.00-20.13; Sand lense up to 113mm, F-M grained, moist.
				S02000 SPT 20.00-20.45 m 7,14,20 N=34 PP 20.45 m >600 kPa		358.5	21									
				D02100 D 21.00-21.50 m		357.5	22					M (<PL)	H			
				S02150 SPT 21.50-21.76 m 18,25/110mm N=R PP 21.76 m >600 kPa		356.5	23		CL-CI	SANDSTONE recovered as: Silty sandy CLAY; low plasticity, mottled orange red predominately white, fine grained sand.						EXTREMELY WEATHERED MATERIAL
				D02250 D 22.50-23.00 m												
				S02300 SPT 23.00-23.15 m 27/150 N=R PP 23.15 m >600 kPa												

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 10/01/2021	
Project Name: Inland Rail B2G		Completed: 12/01/2020	
Hole Location: Approx. CH138193 - Yandilla		Logged By: G.Meadows	
Hole Coordinates: 337779.8 m E 6918490.3 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 96 - 114 mm		RL Surface: 379.47 m	
		Bearing: Datum: AHD Operator: L.Mallet	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T				D02400 D 24.00-24.50 m S02450 SPT 24.50-24.76 m 16,25/110mm N=R PP 24.76 m >600 kPa		354.5	25		CL-CI	SANDSTONE recovered as: Silty sandy CLAY; low plasticity, mottled orange red predominately white, fine grained sand. (continued)	M (<PL)	H			EXTREMELY WEATHERED MATERIAL
						353.5	26			Continued on cored borehole sheet					
						352.5	27								
						351.5	28								
						350.5	29								
						349.5	30								
						348.5	31								

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

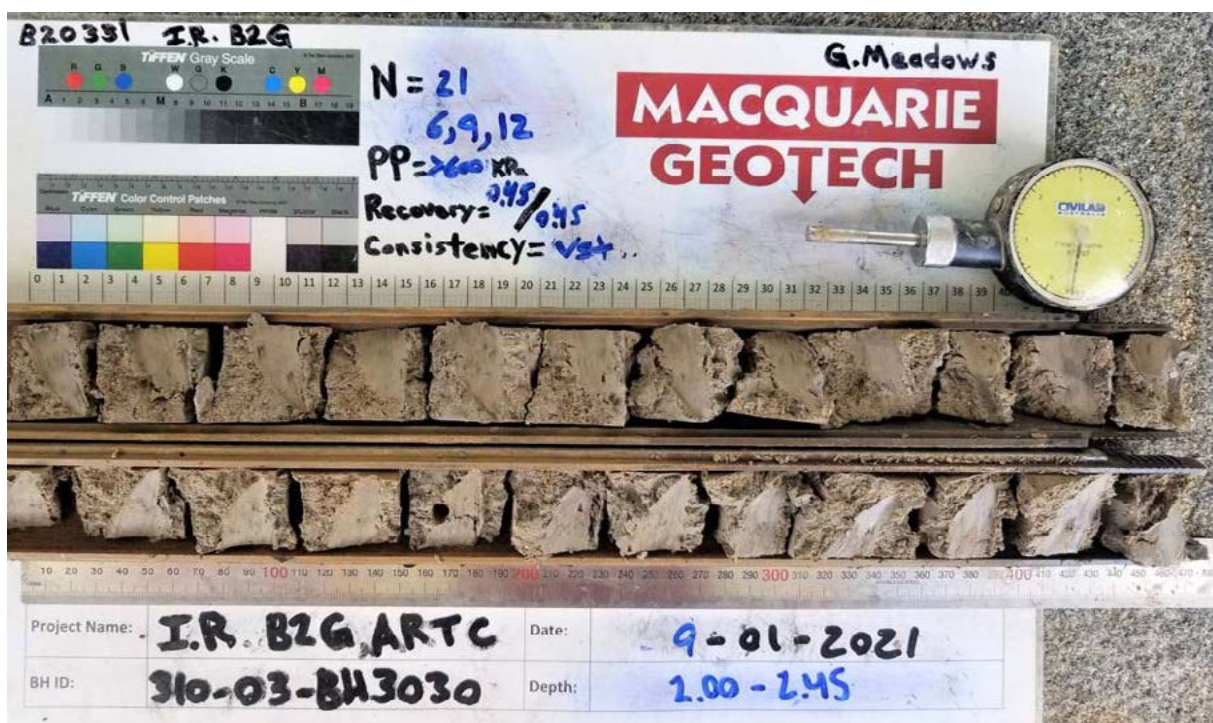
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD Operator: L.Mallet



310-03-BH3030 Depth Range: 0.50 - 0.95 m



310-03-BH3030 Depth Range: 2.00 - 2.45 m

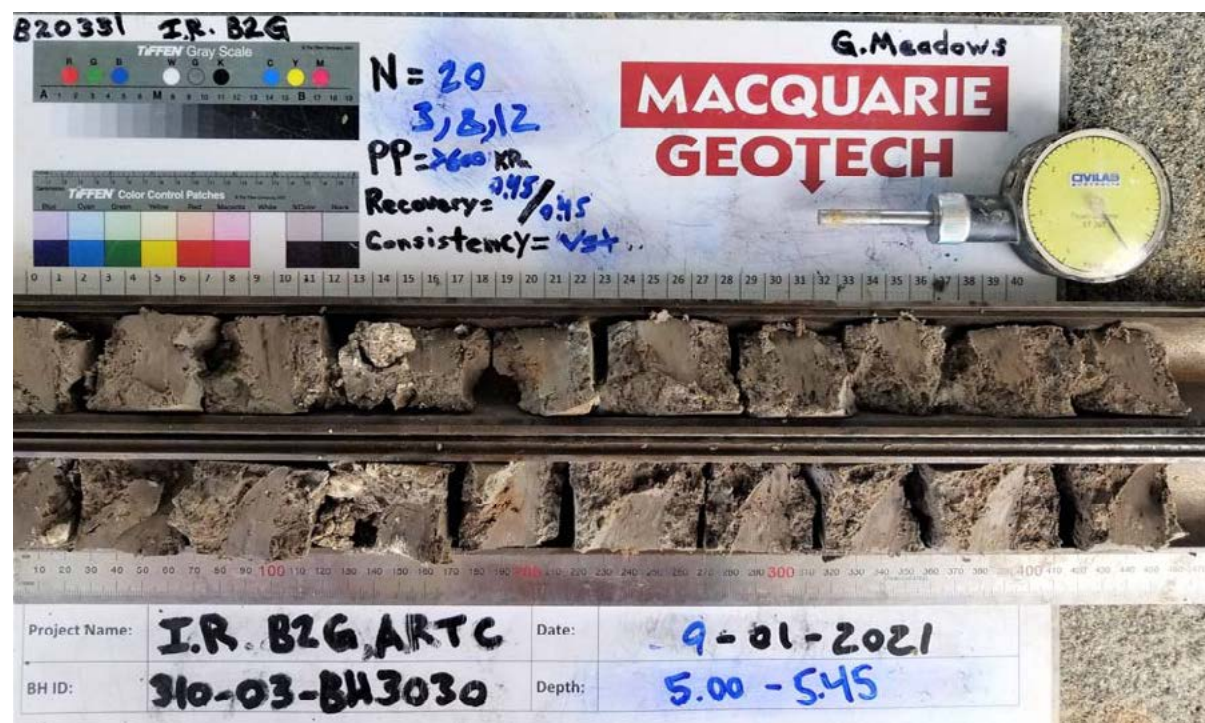
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021				
Project Name:	Inland Rail B2G	Completed:	12/01/2020				
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows				
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m		
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD	Operator:	L.Mallet



310-03-BH3030 Depth Range: 3.50 - 3.95 m



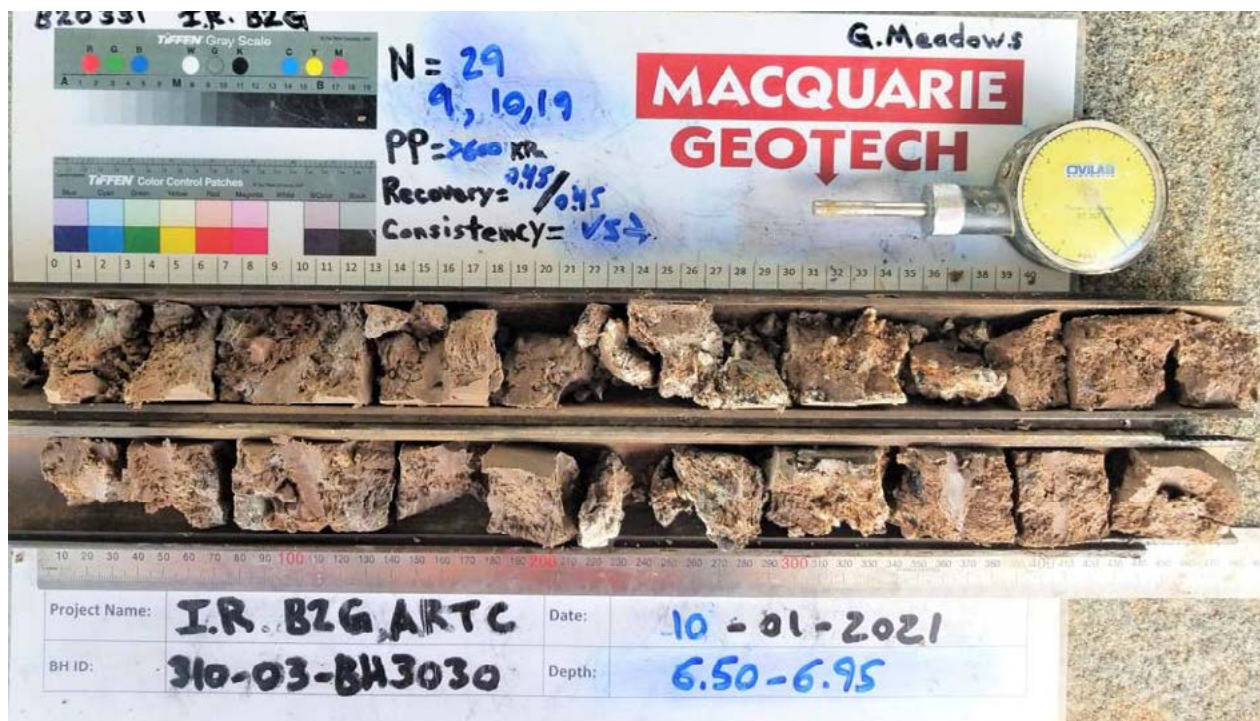
310-03-BH3030 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

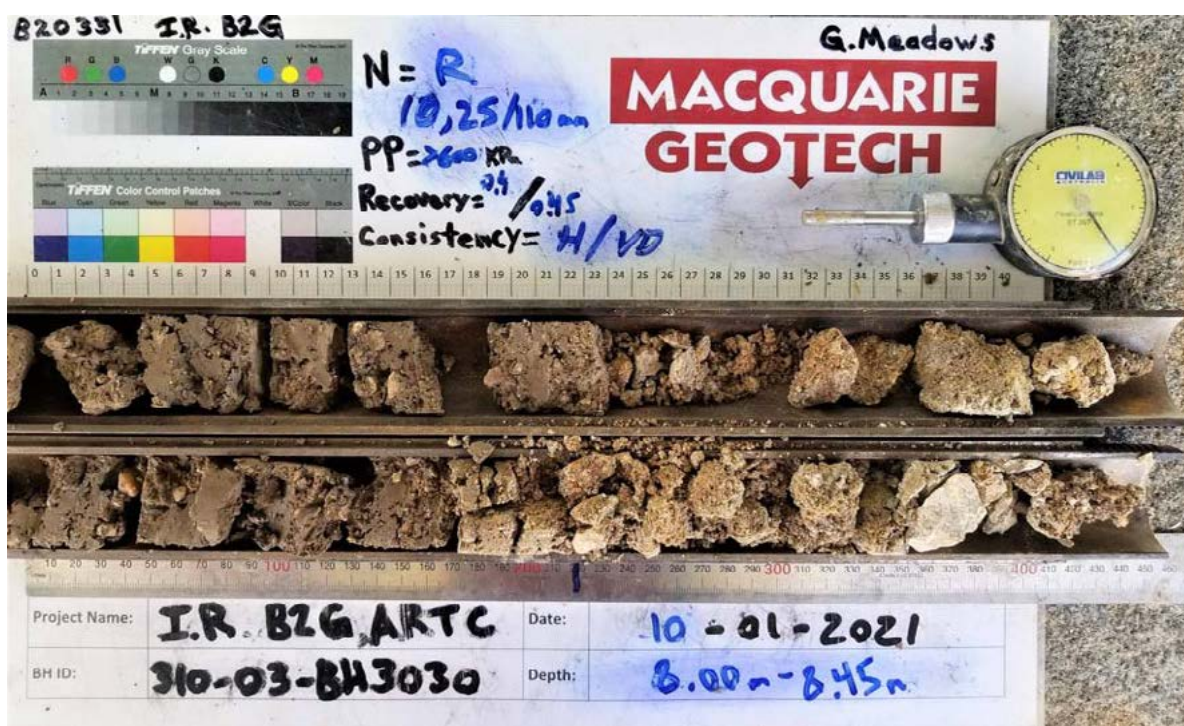
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD Operator: L.Mallet



310-03-BH3030 Depth Range: 6.50 - 6.95 m

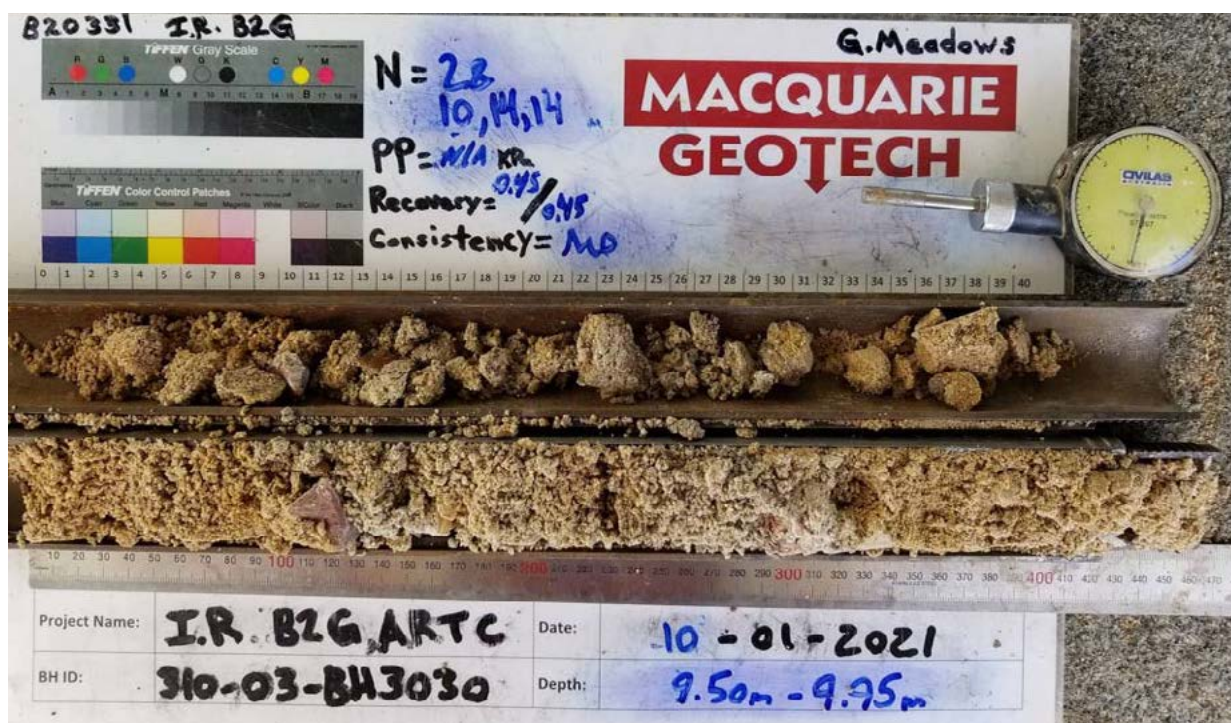


310-03-BH3030 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 114 mm	RL Surface:	379.47 m
		Bearing:	
		Datum:	AHD
		Operator:	L.Mallet



310-03-BH3030 Depth Range: 9.50 - 9.95 m

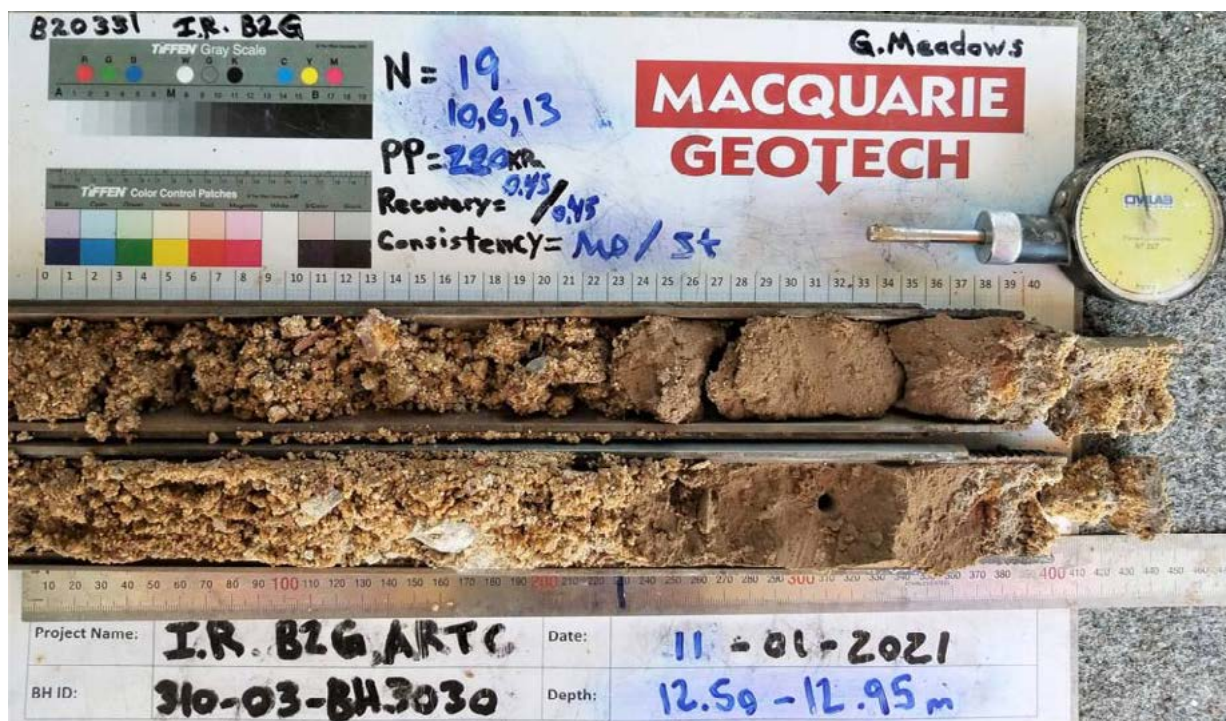


310-03-BH3030 Depth Range: 11.00 - 11.45 m

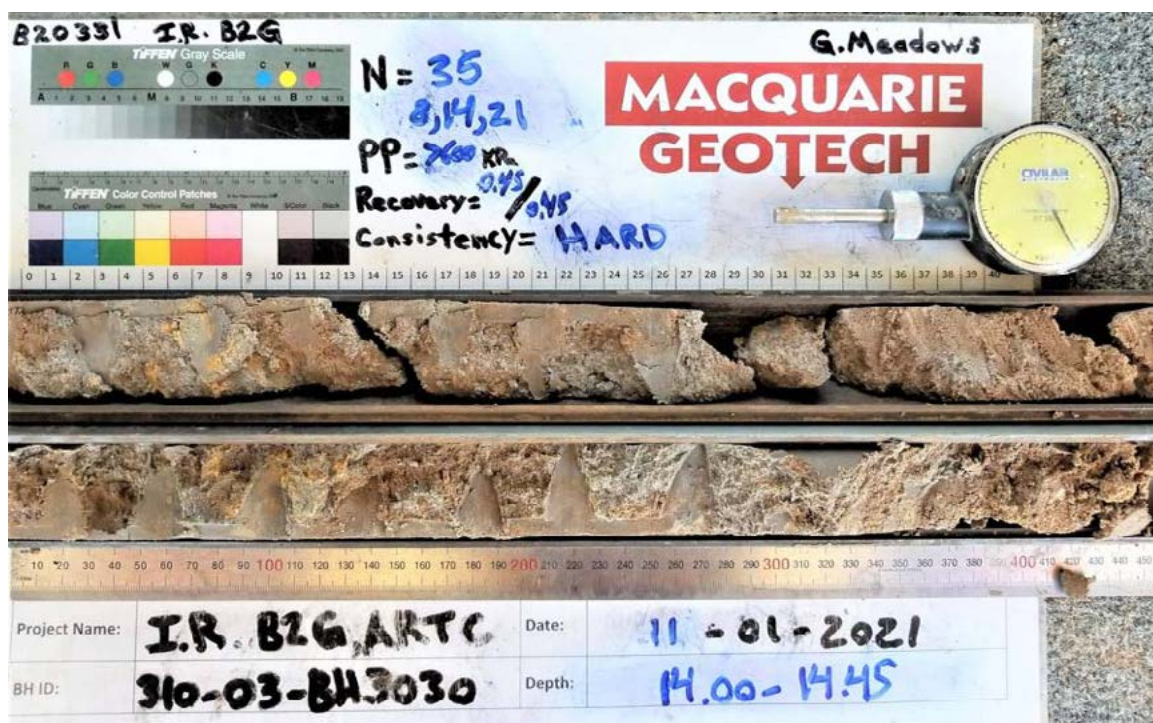
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021				
Project Name:	Inland Rail B2G	Completed:	12/01/2020				
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows				
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m		
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD	Operator:	L.Mallet



310-03-BH3030 Depth Range: 12.50 - 12.95 m



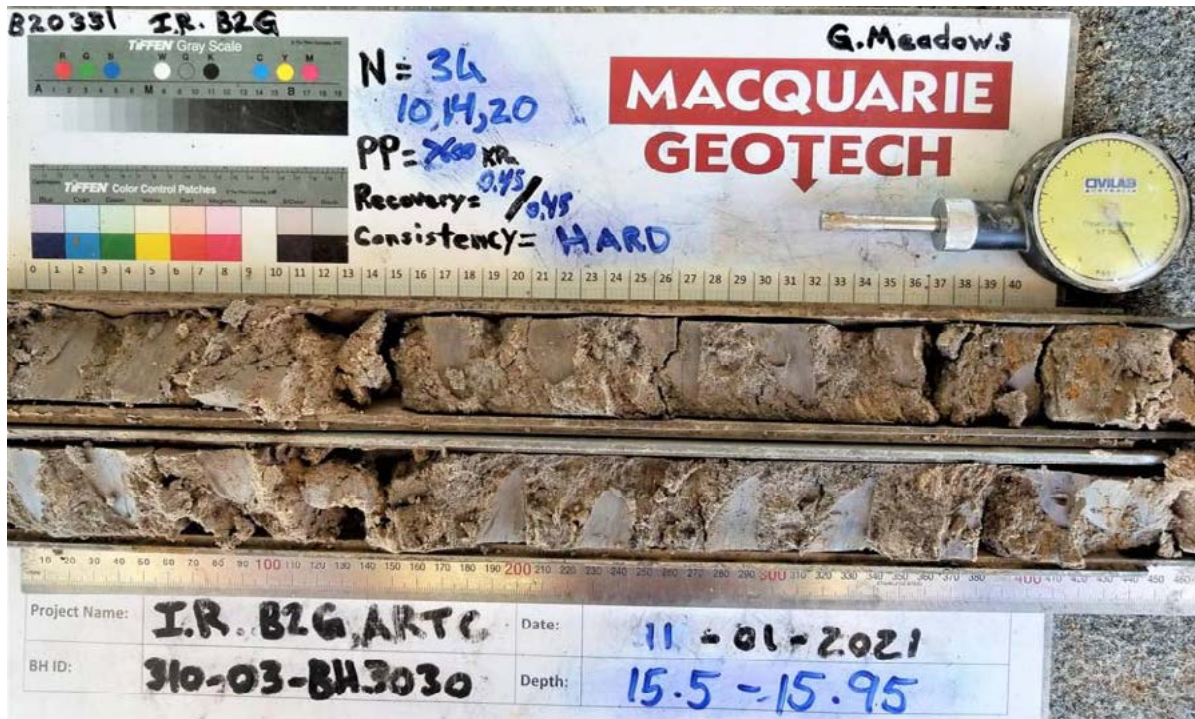
310-03-BH3030 Depth Range: 14.00 - 14.45 m

Engineering Log - Borehole

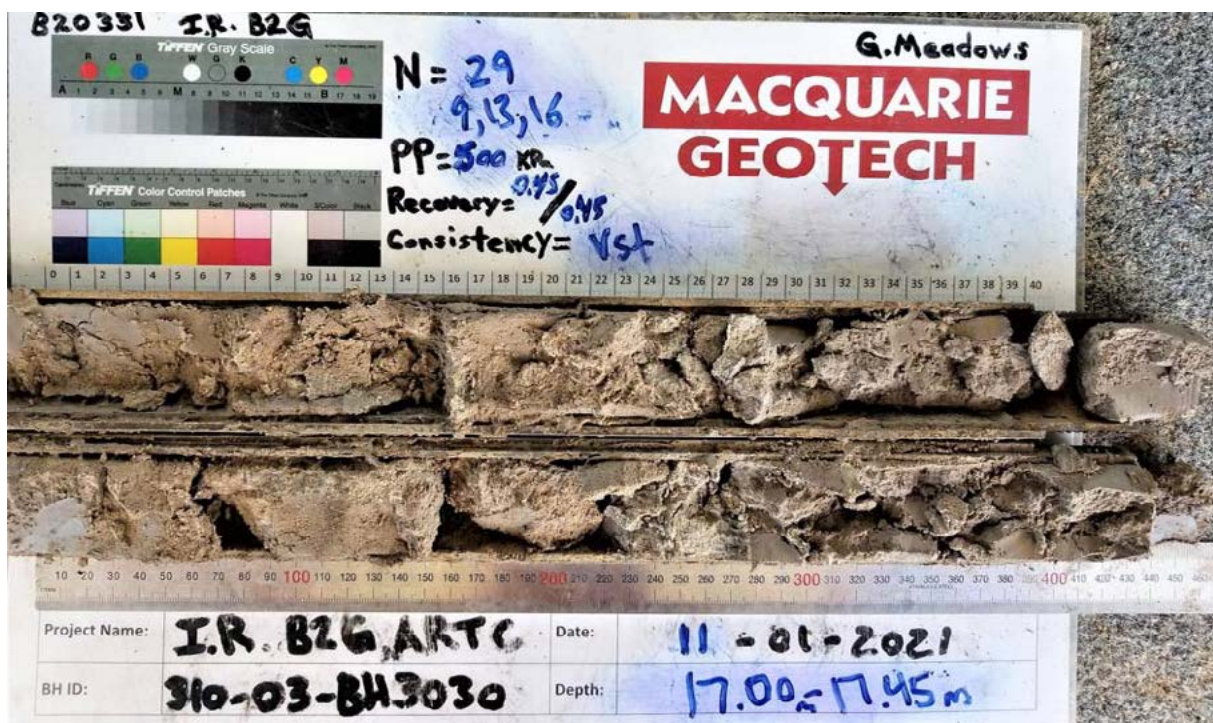
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD Operator: L.Mallet



310-03-BH3030 Depth Range: 15.50 - 15.95 m



310-03-BH3030 Depth Range: 17.00 - 17.45 m

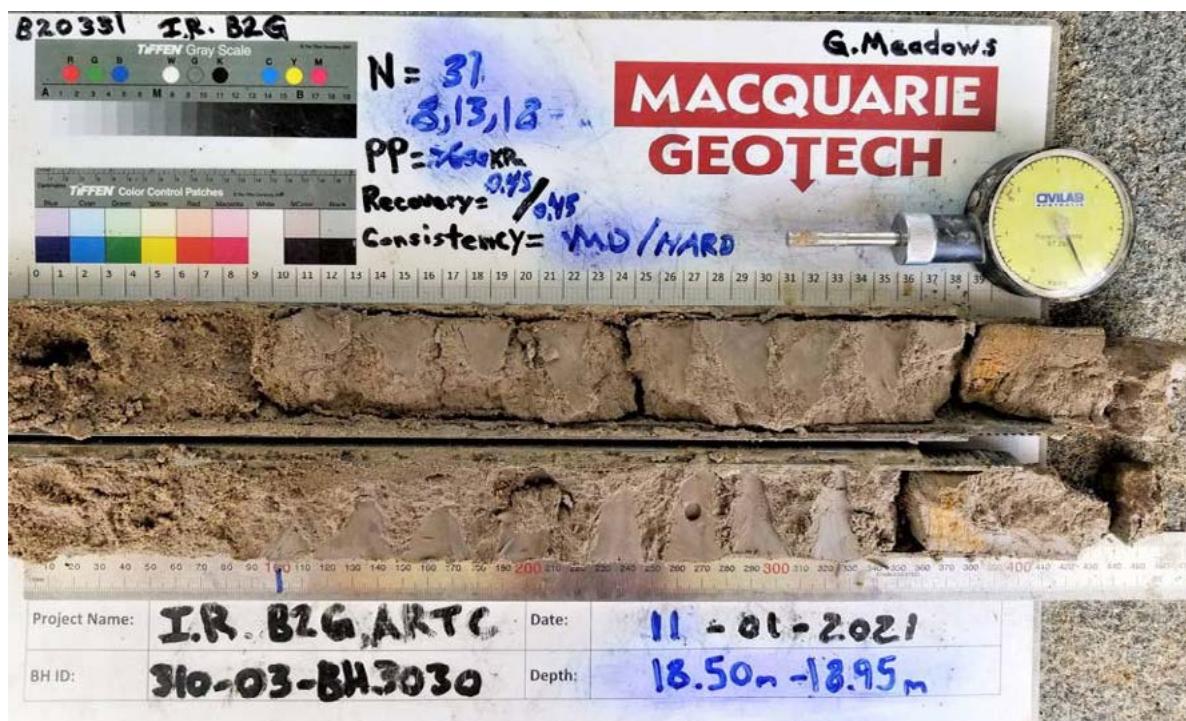
Engineering Log - Borehole

Project No.: B20331

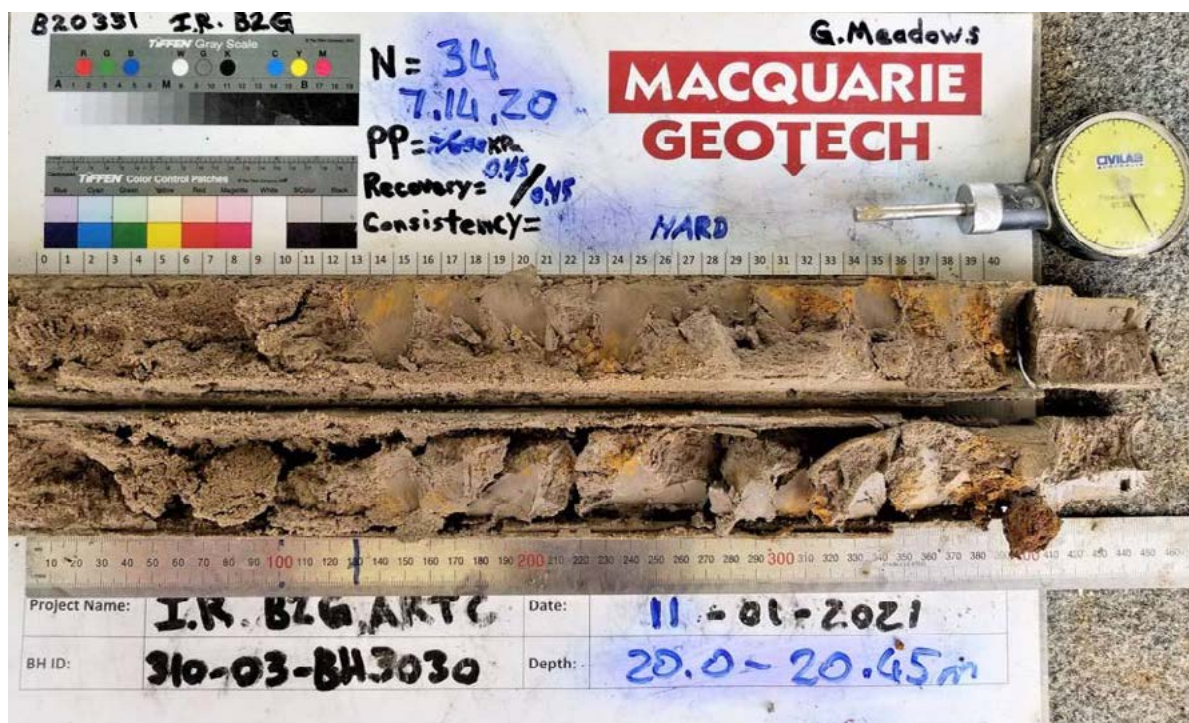
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH138193 - Yandilla
Hole Coordinates: 337779.8 m E 6918490.3 m N MGA94 Zone 56

Commenced: 10/01/2021
Completed: 12/01/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclination: -90° RL Surface: 379.47 m
Hole Diameter: 96 - 114 mm Bearing: Datum: AHD Operator: L.Mallet



310-03-BH3030 Depth Range: 18.50 - 18.95 m



310-03-BH3030 Depth Range: 20.00 - 20.45 m

Engineering Log - Borehole

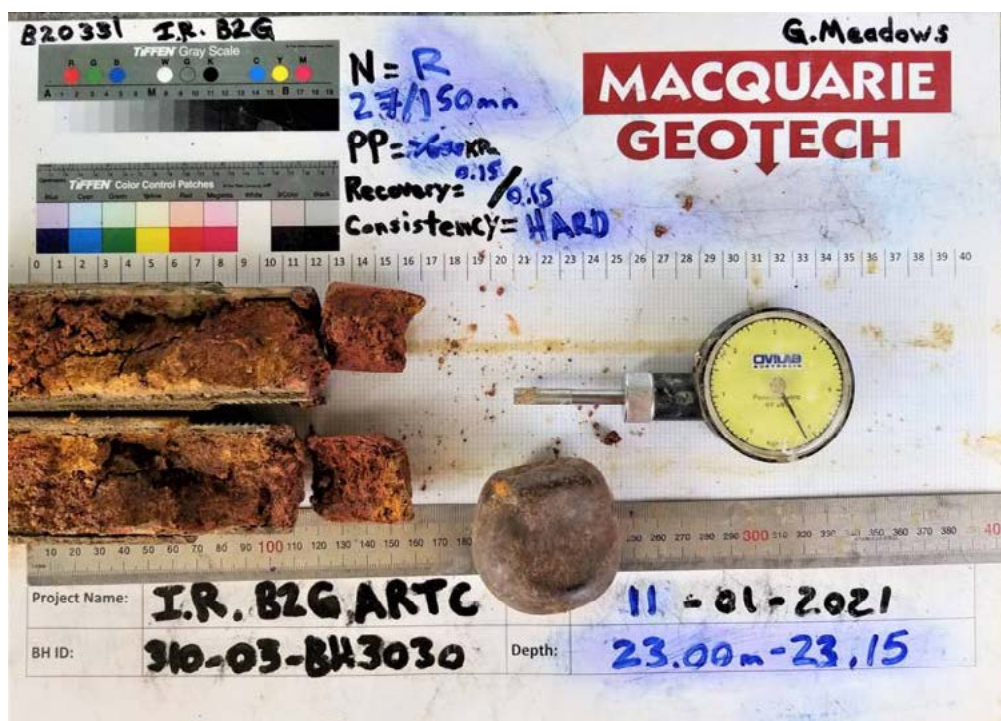
Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m
Hole Diameter:	96 - 114 mm	Bearing:		Datum:	AHD Operator: L.Mallet



310-03-BH3030 Depth Range: 21.50 - 21.76 m



310-03-BH3030 Depth Range: 23.00 - 23.15 m

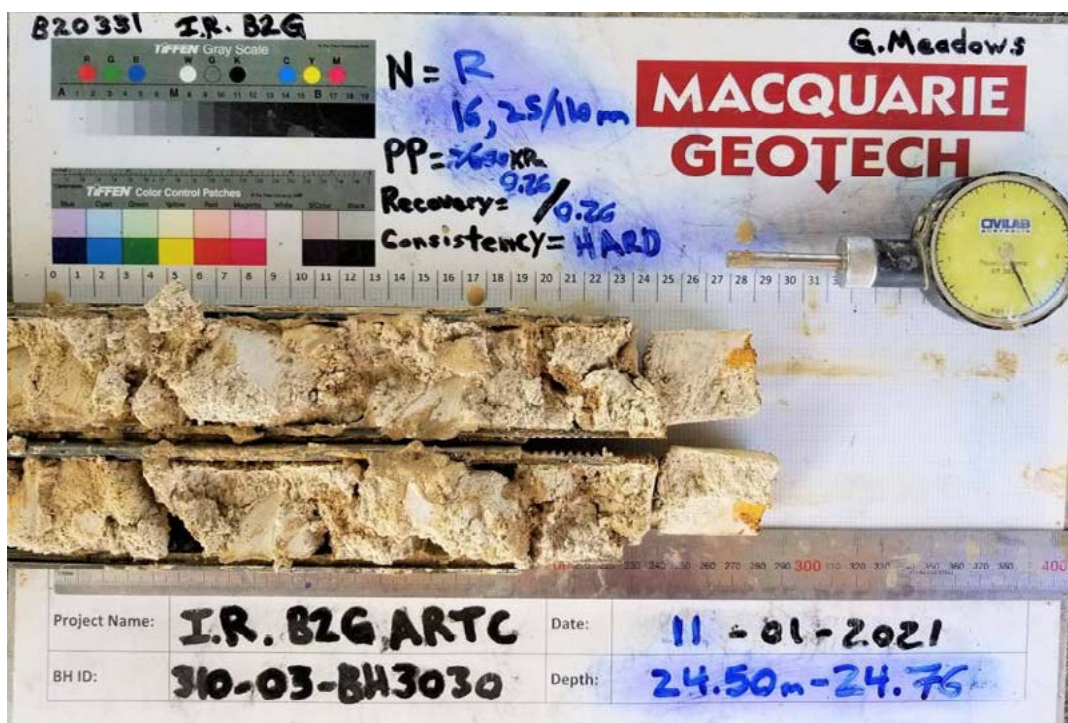
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 114 mm	Bearing:	
		RL Surface:	379.47 m
		Datum:	AHD
		Operator:	L.Mallet



310-03-BH3030



Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m	
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD	Operator: L.Mallet

Drilling Information							Rock Substance					Rock Mass Defects				
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling		Particular	General
						354.5	25		Continued from non-cored borehole sheet							
			100		0				SANDSTONE/SILTSTONE; fine grained, mottled orange red predominately white, indistinctly inclined and bedded.							
						353.5	26									
			100		0											
						352.5	27									
						351.5	28									
			100		0											
						350.5	29									
						349.5	30									
			100		0											
						348.5	31									

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Support
T - Timbering

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.47 m		
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD	Operator:	L.Mallet

Drilling Information							Rock Substance				Rock Mass Defects			
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
HQ3			100		0		33	XXXXXX	SANDSTONE/SILTSTONE; fine grained, mottled orange red predominately white, indistinctly inclined and bedded.(continued)	XW	VL			
			100		0		34	XXXXXX						
							35	XXXXXX						
							36		Hole Terminated at 35.33 m Target depth. Hole grouted to surface. Hole grouted to surface.					
							37							
							38							
							39							

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Support
T - Timbering

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 3 m	RL Surface:	379.47 m
		Bearing:	
		Datum:	AHD
		Operator:	L.Mallet



PointID : 310-03-BH3030 Depth Range: 25.00 - 28.00 m



PointID : 310-03-BH3030 Depth Range: 28.00 - 32.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/01/2021
Project Name:	Inland Rail B2G	Completed:	12/01/2020
Hole Location:	Approx. CH138193 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	337779.8 m E 6918490.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 3 m	RL Surface:	379.47 m
		Bearing:	
		Datum:	AHD
		Operator:	L.Mallet



PointID : 310-03-BH3030 Depth Range: 32.00 - 35.33 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 10/11/2020																			
Project Name: Inland Rail B2G										Completed: 15/11/2020																			
Hole Location: Approx. CH138701 - Yandilla										Logged By: H.Tran																			
Hole Coordinates: 338257.1 m E 6918639.3 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																			
Hole Diameter: 115 mm										RL Surface: 378.90 m																			
										Bearing: Datum: AHD Operator: J. Komung																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
AD/N				1 ES 0.10-0.20 m					CH	FILL: Silty CLAY with gravel: high plasticity, black, fine to medium sub-angular gravel.					REWORKED TOPSOIL ALLUVIAL SOIL														
				2 D 0.20-0.50 m						Silty CLAY: high plasticity, black.																			
				3 ES 0.40-0.50 m																									
				4 SPT 0.50-0.95 m		377.9	1																						
				3,4,6 N=10 PP 0.75 m =260 kPa																									
				5 ES 0.90-1.00 m		376.9	2				St																		
				6 U 1.50-1.95 m																									
				PP 1.95 m =520 kPa																									
				7 SPT 2.00-2.45 m																									
				2,4,5 N=9 PP 2.35 m =240 kPa		375.9	3		CH	CLAY with silt trace sand: high plasticity, pale grey, fine grained sand.																			
				8 D 3.00-3.50 m					CI-CH	At 3.50m: Unable to retrieve SPT shoe and sample. Recovered the sample as U75 from 3.50 to 3.95m.	M (<PL)																		
				9 U 3.50-3.95 m						Silty CLAY trace gravel: medium to high plasticity, pale grey, trace fine to medium sub-rounded to sub-angular gravel.																			
				SPT 3.50-3.95 m		374.9	4			Below 4.20m: trace fine grained sand.																			
				4,7,9 N=16 10 D 4.50-5.00 m																									
			11 SPT 5.00-5.45 m		373.9	5		CI	Silty CLAY with sand: medium plasticity, pale grey mottled black and yellow brown, fine grained sand.	VSt																			
			7,11,15 N=26 PP 5.30 m >600 kPa																										
			12 D 6.00-6.50 m		372.9	6		CI	Sandy CLAY trace gravel: medium plasticity, pale grey and yellow brown, fine to medium sub-rounded to sub-angular gravel.																				
			13 SPT 6.50-6.95 m																										
			10,18,21 N=39 PP 6.85 m >600 kPa		371.9	7					H																		
			14 D 7.20-8.00 m						SC	Sandy CLAY trace gravel: medium to high plasticity clay, dark brown, fine to coarse grained sand, fine to medium sub-rounded gravel.	D	D																	
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																													

MG 4.02 LIB.GLB Log MG BOREHOLE EXCL. DCP MG 4.02.GPJ <DrivingFile>> 28/04/2021 15:37 10.0.0.000 Datacel Lab and In Situ Tool - DGD | Lib: DGD.T-P 4.01.2.dpl 3.04 2018-07-02 Pri: DGD.T-P 4.00.6 2017-11-25

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 10/11/2020	
Project Name: Inland Rail B2G		Completed: 15/11/2020	
Hole Location: Approx. CH138701 - Yandilla		Logged By: H.Tran	
Hole Coordinates: 338257.1 m E 6918639.3 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 378.90 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: J. Komung

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				27 SPT 24.50-24.95 12,17,21 N=38 PP 24.75 m >600 kPa		353.9	25		CI	Silty CLAY trace sand: medium plasticity, grey and yellow brown, trace fine grained sand. (continued)	M (>PL)	H			RESIDUAL SOIL
				28 SPT 26.00-26.45 12,20,24 N=44 PP 26.35 m =570 kPa		352.9	26		CL-CI	Silty CLAY trace sand: low to medium plasticity, pale grey and dark yellow brown, fine grained sand.					
						351.9	27			Continued on cored borehole sheet					
						350.9	28								
						349.9	29								
						348.9	30								
						347.9	31								

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

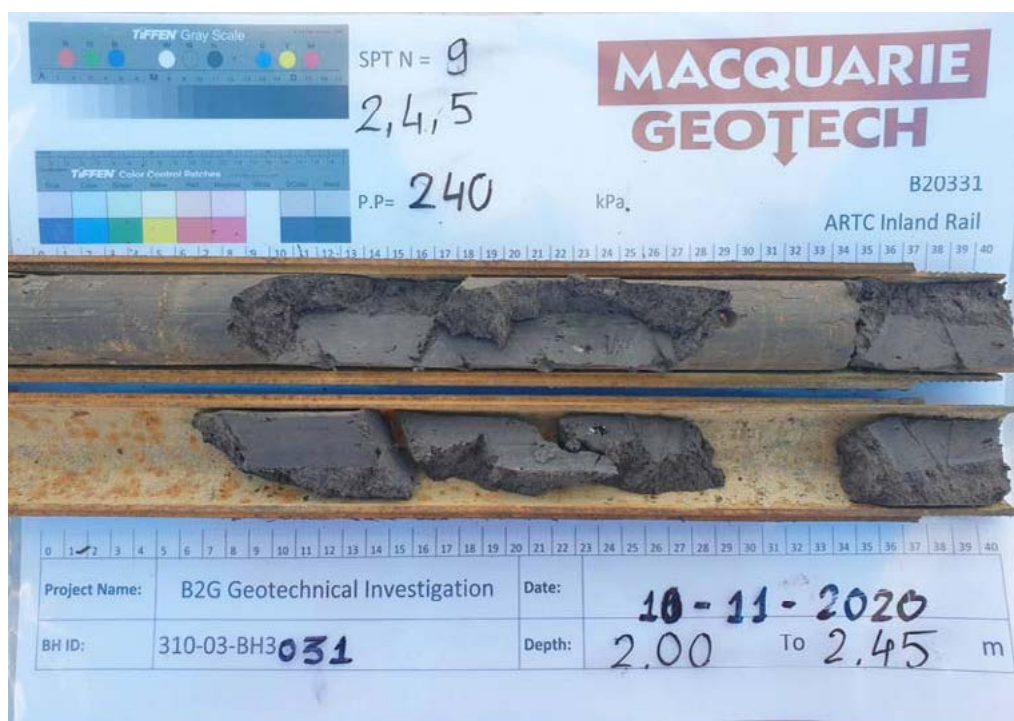
Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.90 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3031 Depth Range: 0.50 - 0.95 m



310-03-BH3031 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.90 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	J. Komung



310-03-BH3031 Depth Range: 3.50 - 3.95 m



310-03-BH3031 Depth Range: 6.50 - 6.95 m

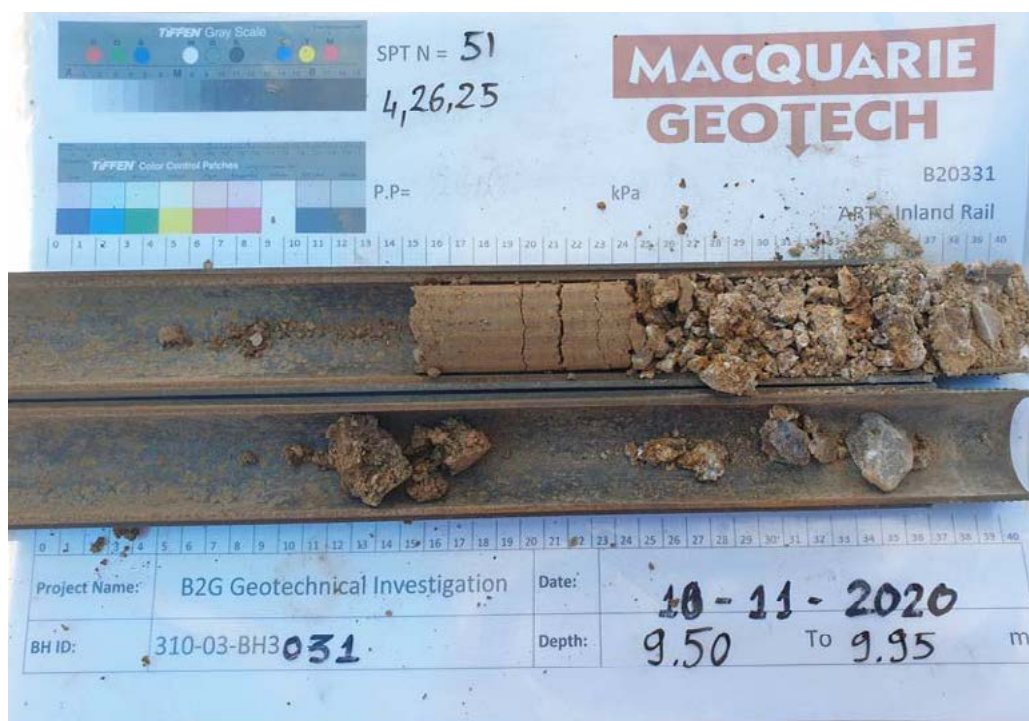
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	378.90 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3031 Depth Range: 8.00 - 8.33 m



310-03-BH3031 Depth Range: 9.50 - 9.95 m

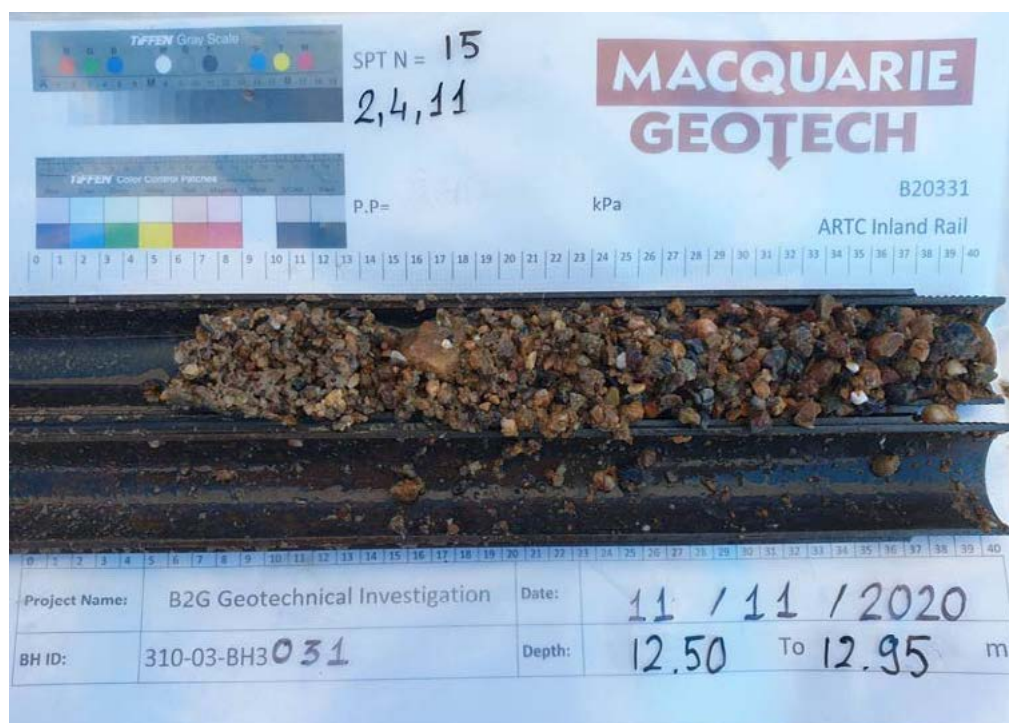
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.90 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3031 Depth Range: 11.00 - 11.45 m



310-03-BH3031 Depth Range: 12.50 - 12.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.90 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3031 Depth Range: 14.00 - 14.45 m



310-03-BH3031 Depth Range: 15.50 - 15.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.90 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	J. Komung



310-03-BH3031 Depth Range: 17.00 - 17.45 m



310-03-BH3031 Depth Range: 18.50 - 18.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	378.90 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3031 Depth Range: 20.00 - 20.45 m



310-03-BH3031 Depth Range: 21.50 - 21.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.90 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	J. Komung



310-03-BH3031 Depth Range: 23.00 - 23.45 m



310-03-BH3031 Depth Range: 24.50 - 24.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.90 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3031 Depth Range: 26.00 - 26.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 10/11/2020	
Project Name: Inland Rail B2G		Completed: 15/11/2020	
Hole Location: Approx. CH138701 - Yandilla		Logged By: H.Tran	
Hole Coordinates: 338257.1 m E 6918639.3 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ 4.15 m		RL Surface: 378.90 m	
		Datum: AHD	
		Operator: J. Komung	

Drilling Information						Rock Substance						Rock Mass Defects												
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)					Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General
						353.9	25																	
						352.9	26																	
									Continued from non-cored borehole sheet															
			100		0	351.9	27		(Cl) Sandy CLAY: medium plasticity, pale grey and dark yellow brown, fine grained sand.														- 26.60: PP In-situ >600 kPa - 26.75: PP In-situ >600 kPa - 26.95: PP In-situ =510 kPa - 27.15: PP In-situ >600 kPa - 27.30: PP In-situ >600 kPa - 27.45: PP In-situ >600 kPa - 27.60: PP In-situ >600 kPa - 27.75: PP In-situ >600 kPa - 27.95: PP In-situ >600 kPa - 28.15: PP In-situ >600 kPa - 28.30: PP In-situ >600 kPa - 28.45: PP In-situ >600 kPa - 28.60: PP In-situ =550 kPa - 28.75: PP In-situ =270 kPa - 28.95: PP In-situ =570 kPa - 29.15: PP In-situ >600 kPa - 29.30: PP In-situ >600 kPa - 29.45: PP In-situ =450 kPa - 29.70: PP In-situ =550 kPa - 29.90: PP In-situ =590 kPa - 30.15: PP In-situ >600 kPa - 30.30: PP In-situ >600 kPa - 30.45: PP In-situ =550 kPa - 30.60: PP In-situ =580 kPa - 30.70: PP In-situ >600 kPa - 30.90: PP In-situ =500 kPa - 31.15: PP In-situ =520 kPa - 31.30: PP In-situ =590 kPa - 31.45: PP In-situ =550 kPa - 31.60: PP In-situ =320 kPa - 31.75: PP In-situ =400 kPa - 31.90: PP In-situ =300 kPa	
			100		0	350.9	28																	
			100		0	349.9	29																	
						348.9	30																	
			100		0	347.9	31																	

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water ≡ Level (Date) ▽ Inflow △ Partial Loss ▲ Complete Loss	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
Support T - Timbering				

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 10/11/2020	
Project Name: Inland Rail B2G		Completed: 15/11/2020	
Hole Location: Approx. CH138701 - Yandilla		Logged By: H.Tran	
Hole Coordinates: 338257.1 m E 6918639.3 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ 4.15 m		RL Surface: 378.90 m	
		Datum: AHD	
		Operator: J. Komung	

Drilling Information						Rock Substance						Rock Mass Defects											
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)					Defect Description thickness, type, inclination, planarity, roughness, coating/infilling		
										EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General
HQ3			100		0	345.9	33		(CI) Sandy CLAY: medium plasticity, pale grey and dark yellow brown, fine grained sand.(continued)													~31.95: PP In-situ =510 kPa ~32.15: PP In-situ =320 kPa ~32.30: PP In-situ =550 kPa ~32.45: PP In-situ =590 kPa ~32.60: PP In-situ =200 kPa ~32.75: PP In-situ =300 kPa ~32.95: PP In-situ =320 kPa ~33.15: PP In-situ =320 kPa ~33.30: PP In-situ =450 kPa ~33.45: PP In-situ =320 kPa ~33.60: PP In-situ =250 kPa ~33.75: PP In-situ =390 kPa ~33.95: PP In-situ =430 kPa ~34.15: PP In-situ =520 kPa ~34.30: PP In-situ =300 kPa ~34.45: PP In-situ =440 kPa ~34.60: PP In-situ =260 kPa ~34.75: PP In-situ =500 kPa ~34.95: PP In-situ =280 kPa ~35.15: PP In-situ =590 kPa ~35.30: PP In-situ >600 kPa ~35.39: PP In-situ =200 kPa	
			100		0	344.9	34																
						343.9	35																
						342.9			(SC) Clayey SAND: fine to medium grained, pale grey and yellow brown.														
						342.9	36		Hole Terminated at 35.95 m Target depth. Hole grouted to surface. Hole grouted to surface.														
						341.9	37																
						340.9	38																
						339.9	39																

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
≡ Level (Date)
▽ Inflow
△ Partial Loss
◼ Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH138701 - Yandilla
Hole Coordinates: 338257.1 m E 6918639.3 m N MGA94 Zone 56

Commenced: 10/11/2020
Completed: 15/11/2020
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting:	Comacchio 305/Track
Barrel Type and Length:	HQ 4.15 m

Inclination: -90°
Bearing:

RL Surface:	378.90 m
Datum:	AHD

Operator: J. Komung



PointID : 310-03-BH3031 Depth Range: 26.45 - 29.00 m



PointID : 310-03-BH3031 Depth Range: 29.00 - 33.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH138701 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338257.1 m E 6918639.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 4.15 m	RL Surface:	378.90 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



PointID : 310-03-BH3031 Depth Range: 33.00 - 35.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.50 m		
Hole Diameter:	96 - 115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
ADV				1 D 0.00-0.50 m						FILL: Silty CLAY with gravel trace sand; high plasticity, black grey, fine to coarse sub-angular to angular gravel and ballast, fine to medium grained sand, with roots and plants detritus up to 15mm.				REWORKED TOPSOIL		
				2 ES 0.20-0.30 m												
				3 ES 0.50-0.60 m					CH	Silty CLAY trace sand and gravel; high plasticity, black grey, fine grained sand, fine subrounded to rounded gravel, with carbonate nodules up to 15mm, trace roots.				ALLUVIAL SOIL		
				4 SPT 0.50-0.95 m		378.5	1			becoming brown grey.						
				2,4,7 N=11 PP 0.58 m =150 kPa												
				5 D 1.00-1.50 m		377.5	2									
				6 ES 1.00-1.10 m												
				7 SPT 1.50-1.95 m												
				3,3,6 N=9 PP 1.85 m =170 kPa		376.5	3					St				
				8 D 2.50-3.00 m												
				9 SPT 3.00-3.45 m												
				3,4,7 N=11 PP 3.20 m =200 kPa		375.5	4		CI	Sandy silty CLAY with gravel; medium plasticity, brown grey, fine to coarse grained sand, fine rounded to sub-rounded gravel, with carbonate nodules up to 15mm, with black carbonaceous lenses up to 10mm.						
				10 D 4.00-4.50 m												
				11 U 4.50-4.90 m												
				12 SPT 4.90-5.35 m		374.5	5									
				5,6,10 N=16 PP 5.35 m >600 kPa												
			13 D 5.50-6.00 m		373.5	6		CL-CI	Silty sandy CLAY trace gravel; medium plasticity, mottled black brown grey, fine to medium grained sand, fine to medium rounded to sub-rounded gravel, with black carbonaceous lenses up to 10mm, with carbonate nodules up to 15mm.							
			14 SPT 6.00-6.45 m													
			5,8,13 N=21 PP 6.45 m >600 kPa		372.5	7										
			15 D 7.00-7.50 m													
			16 SPT 7.50-7.95 m					CL-CI	Silty sandy CLAY trace gravel; low to medium plasticity clay, mottled black brown grey, fine to medium grained sand, fine rounded to sub-rounded gravel.							
			9,15,18													
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL > PL																

Engineering Log - Borehole

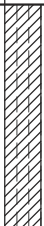
Project No.: B20331

Client: ARTC										Commenced: 10/11/2020																	
Project Name: Inland Rail B2G										Completed: 15/11/2020																	
Hole Location: Approx. CH139019 - Yandilla										Logged By: G.Meadows																	
Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56										Checked By: J.Boyle																	
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.50 m																	
Hole Diameter: 96 - 115 mm					Bearing:					Datum: AHD Operator: T.Lanaway																	
Drilling Information							Soil Description							Observations													
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations												
AD/V				N=33 PP 7.95 m >600 kPa		370.5	9		CL-CI	Silty sandy CLAY trace gravel; low to medium plasticity clay, mottled black brown grey, fine to medium grained sand, fine rounded to sub-rounded gravel. (continued)		H			ALLUVIAL SOIL												
				17 D 8.50-9.00 m																							
WB				18 SPT 9.00-9.45 m 6,14,18 N=32 PP 9.45 m >600 kPa		369.5	10		SP	Silty gravelly SAND; fine to coarse grained, yellow brown, fine to coarse rounded to sub-angular gravel, with calcium carbonate precipitates.	M (>PL)				*												
				19 SPT 11.00-11.45 m 9,13,21 N=34		368.5	11					D															
				20 SPT 12.00-12.45 m 9,11,15 N=26		367.5	12																				
				21 SPT 13.50-13.95 m 7,9,15 N=24		366.5	13		GP-GC	Clayey gravelly SAND; fine to coarse grained sand, yellow grey brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay.	W	MD			Standing Water Level - 14/11/2020												
				22 SPT 15.00-15.45 m 6,9,15 N=24		364.5	15		SC	Clayey SAND; fine to medium grained sand, mottled orange grey brown, low to medium plasticity clay, trace carbonaceous lenses up to 10mm, indistinctly very thinly laminated and inclined up to 35°.					Standing Water Level - 15/11/2020												
<table><tr><td>Method AS - Auger Screwing RR - Rock Roller WB - Washbore</td><td>Penetration No resistance ranging to refusal</td><td>Water Level (Date) Inflow Partial Loss Complete Loss</td><td>Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test</td><td>Moisture Condition D - Dry M - Moist W - Wet</td><td>Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</td></tr><tr><td>Support C - Casing</td><td>Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss</td><td>Classification Symbols and Soil Descriptions Based on Unified Soil Classification System</td><td>Plastic Limit < PL = PL < PL</td><td colspan="2"></td></tr></table>																Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		
Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense																						
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL																								

[illegible]

Engineering Log - Borehole

Project No.: B20331

Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH139019 - Yandilla Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56										Commenced: 10/11/2020 Completed: 15/11/2020 Logged By: G.Meadows Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track Hole Diameter: 96 - 115 mm										Inclination: -90° Bearing:										RL Surface: 379.50 m Datum: AHD Operator: T.Lanaway									
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
WB				28 SPT 24.00-24.45 8,20,22 N=42 PP 24.45 m >600 kPa		354.5	25		CL-CI	Silty CLAY with sand; low to medium plasticity, mottled red orange grey, fine to medium grained sand. (continued) becoming medium to high plasticity clay. becoming medium to high plasticity clay. (continued)	M (>PL)	H		100 200 300 400 500	RESIDUAL SOIL *														
				Continued on cored borehole sheet																									

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Support
C - Casing

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

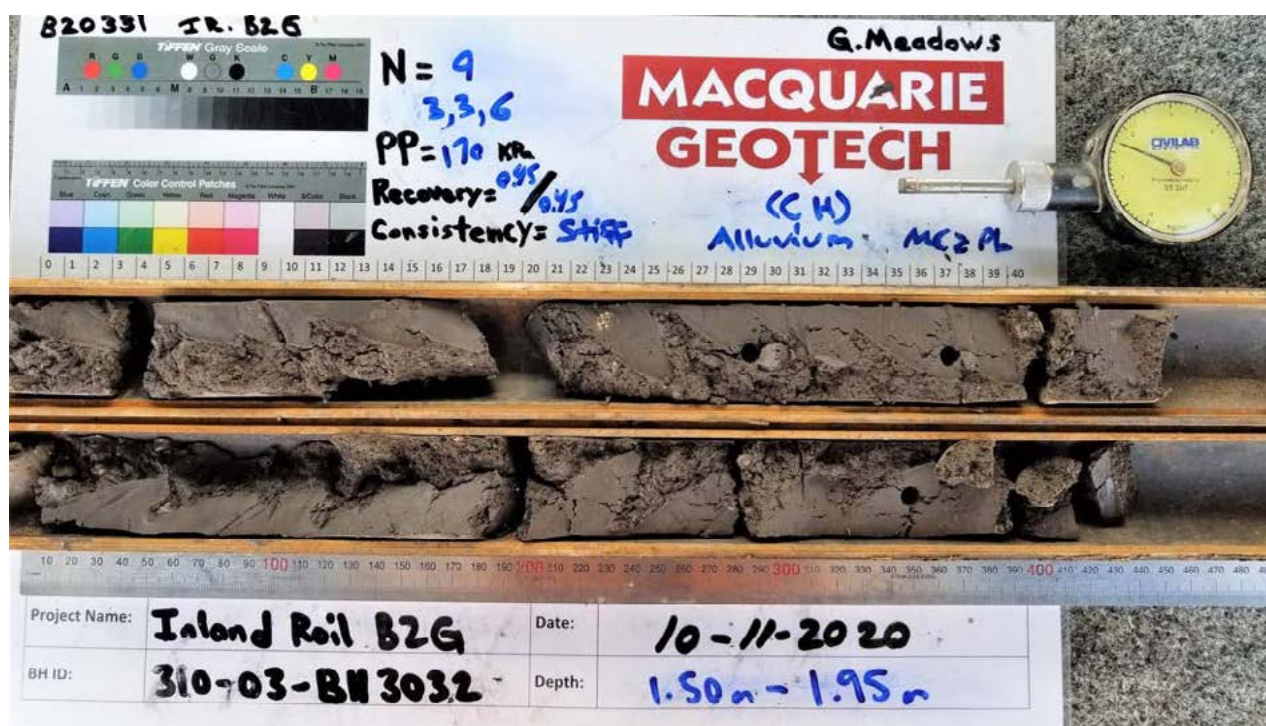
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH139019 - Yandilla
Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56

Commenced: 10/11/2020
Completed: 15/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 379.50 m
Hole Diameter: 96 - 115 mm Bearing: Datum: AHD Operator: T.Lanaway



310-03-BH3032 Depth Range: 0.50 - 0.95 m



310-03-BH3032 Depth Range: 1.50 - 1.95 m

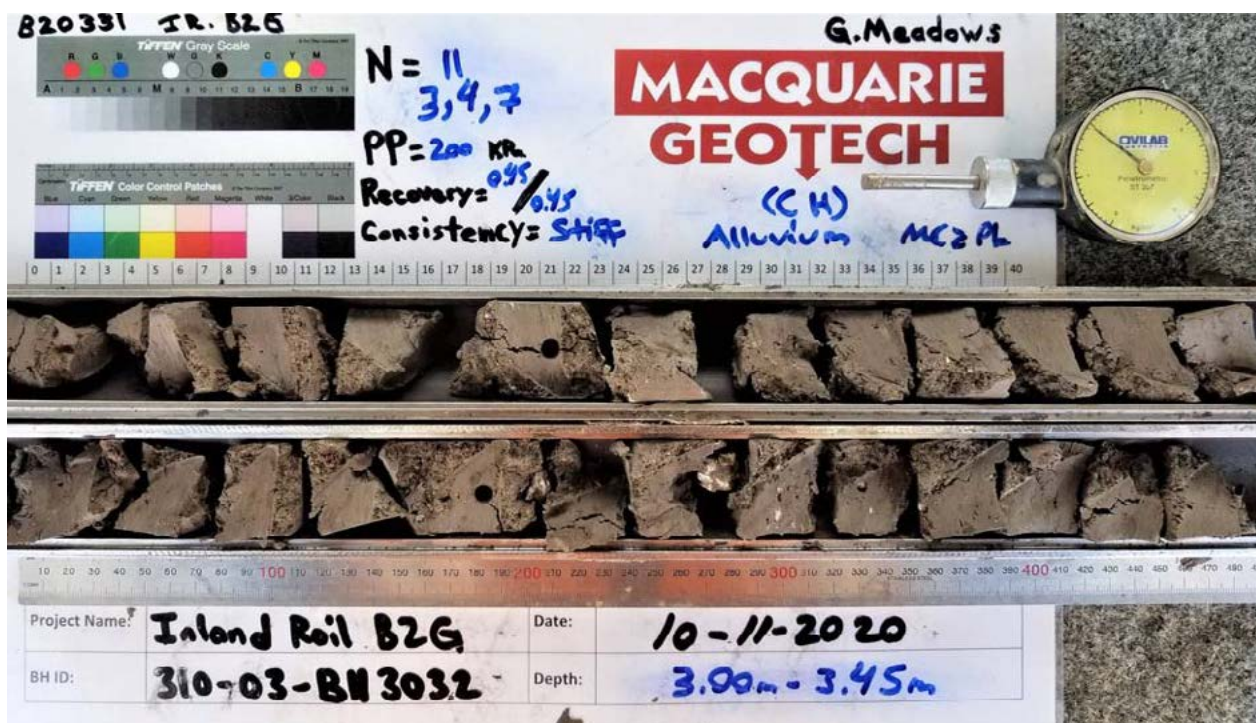
Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH139019 - Yandilla
Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56

Commenced: 10/11/2020
Completed: 15/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 379.50 m
Hole Diameter: 96 - 115 mm Bearing: Datum: AHD Operator: T.Lanaway



310-03-BH3032 Depth Range: 3.00 - 3.45 m



310-03-BH3032 Depth Range: 4.90 - 5.35 m

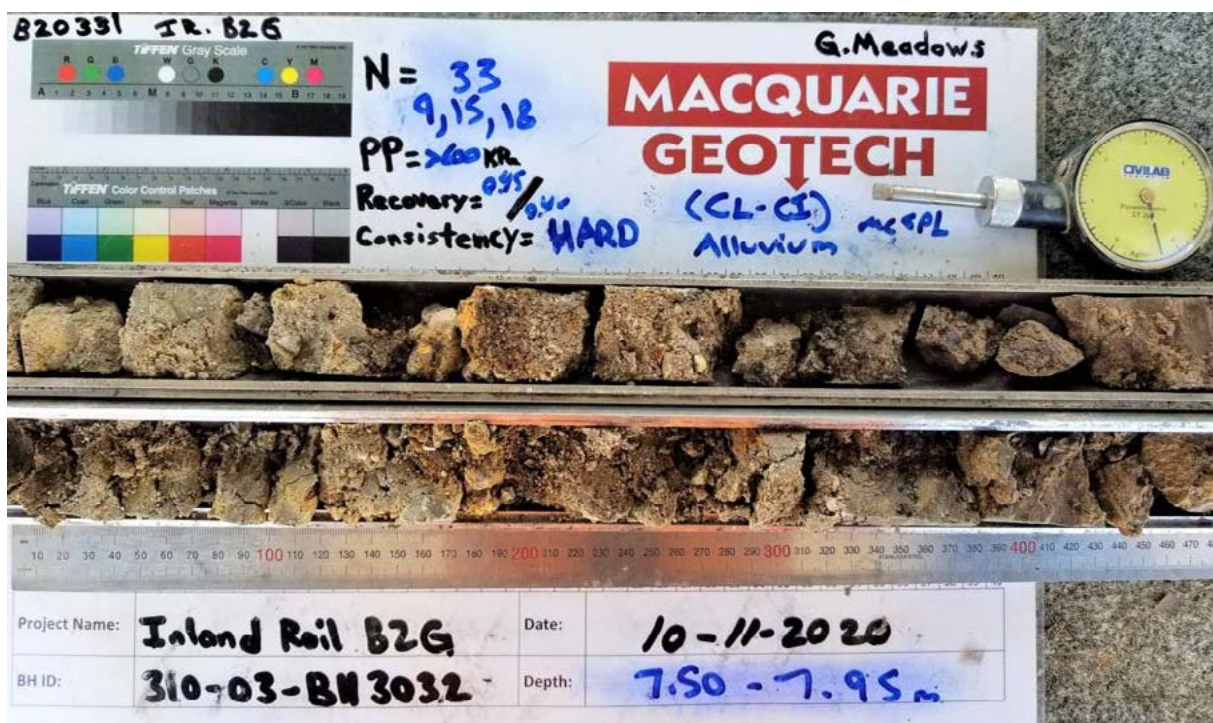
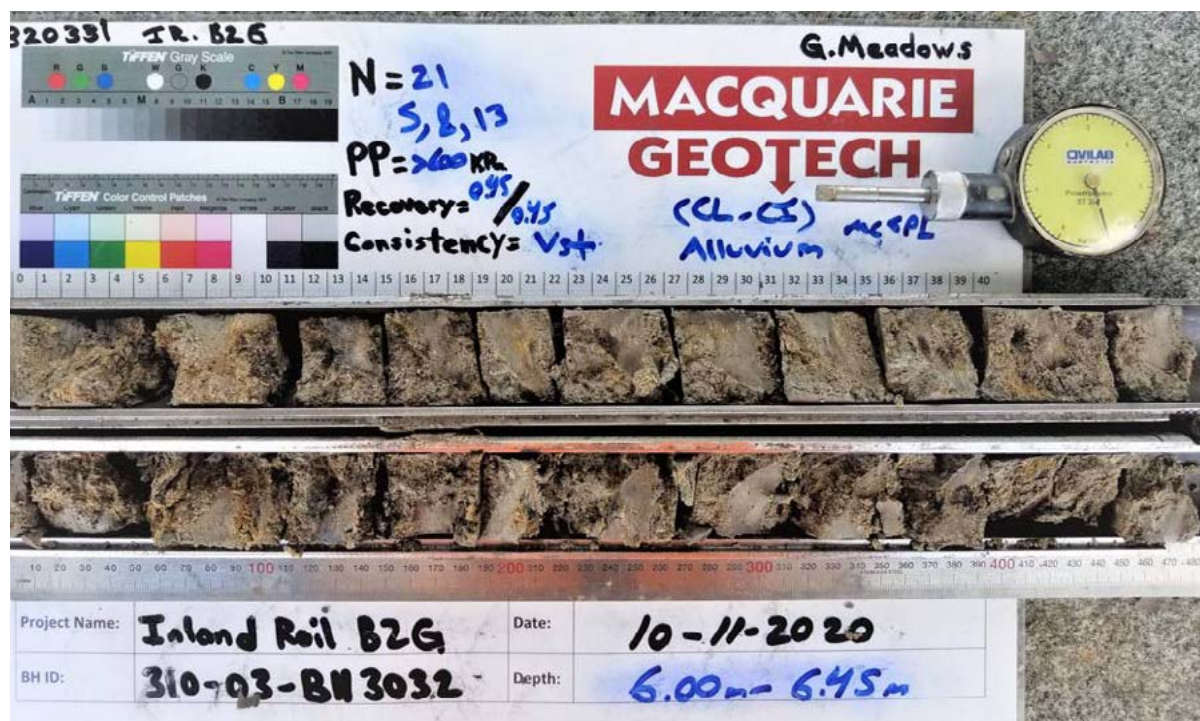
Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH139019 - Yandilla
Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56

Commenced: 10/11/2020
Completed: 15/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 379.50 m
Hole Diameter: 96 - 115 mm Bearing: Datum: AHD Operator: T.Lanaway



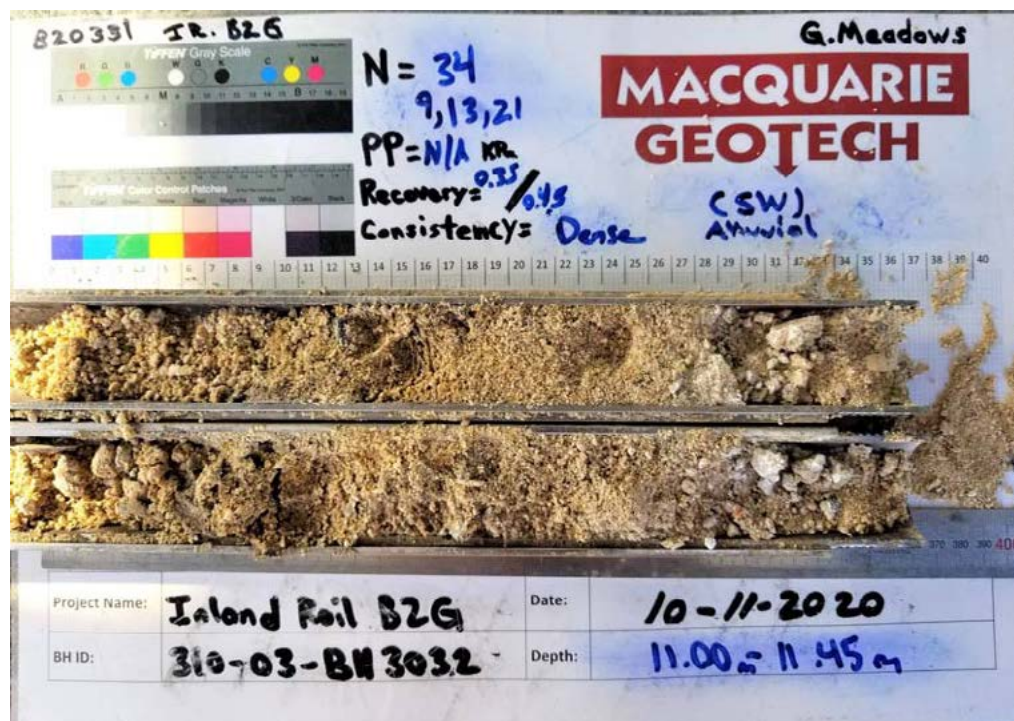
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 9.00 - 9.45 m



310-03-BH3032 Depth Range: 11.00 - 11.45 m

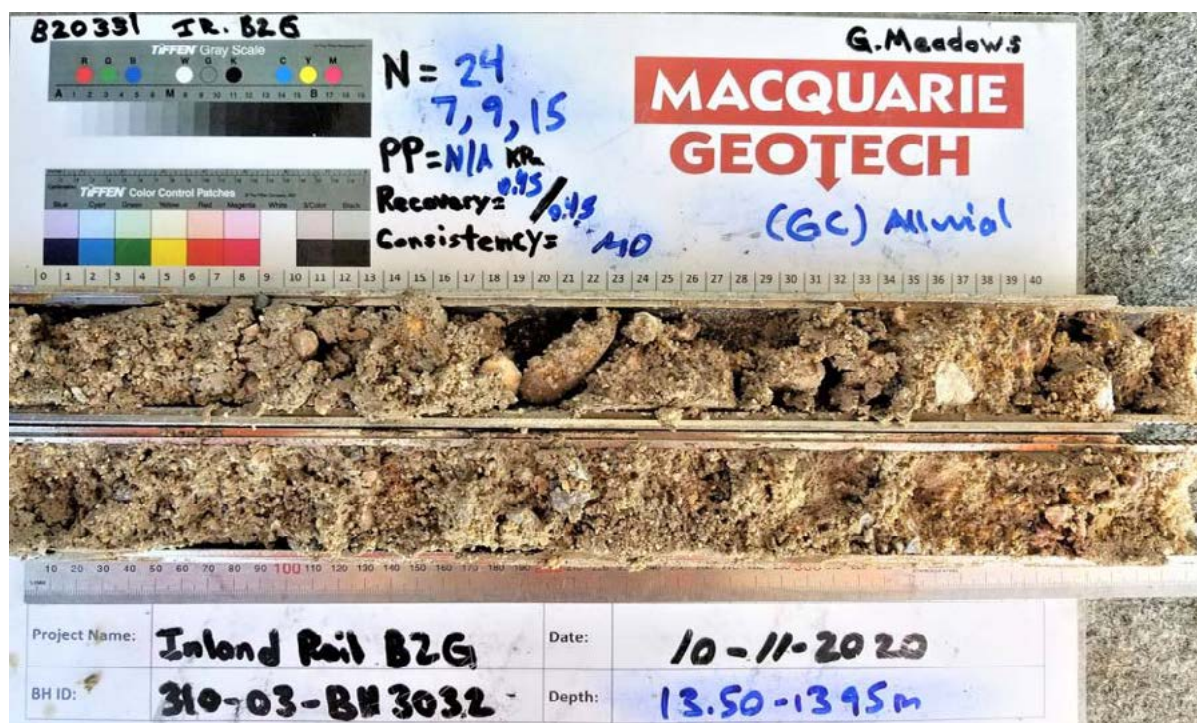
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	Bearing:	
		RL Surface:	379.50 m
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 12.00 - 12.45 m

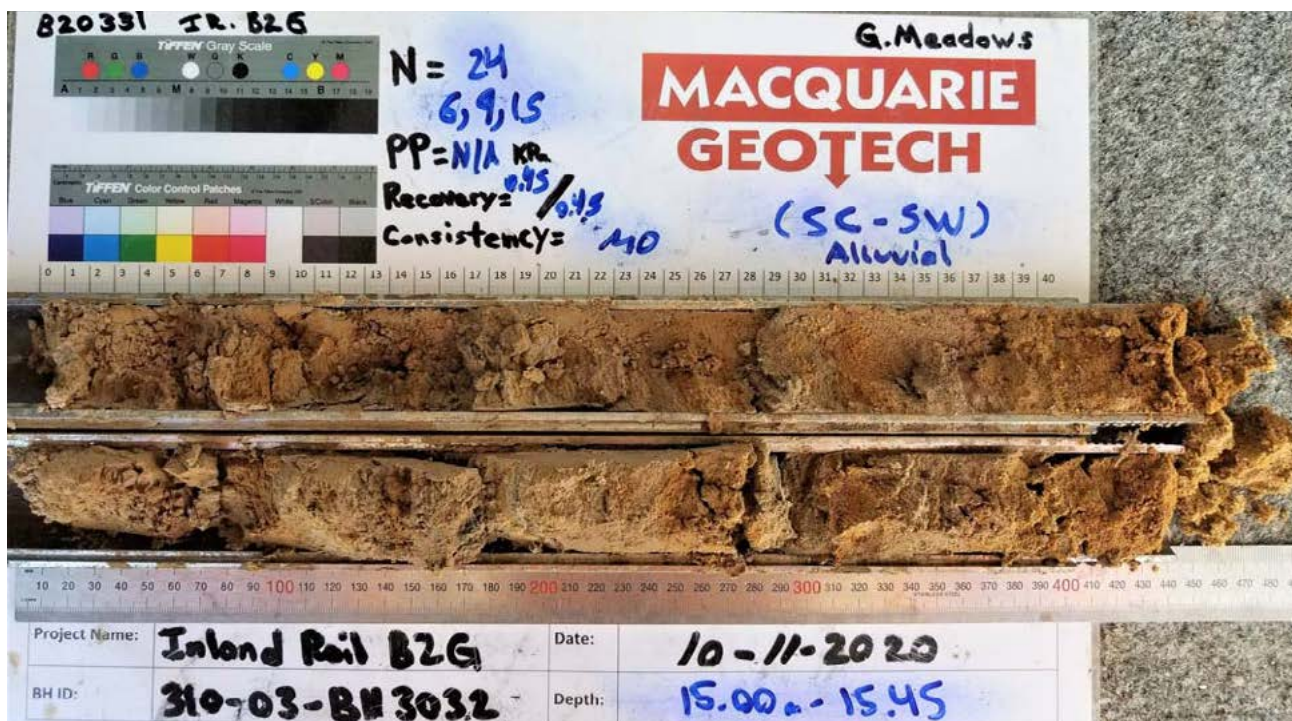


310-03-BH3032 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 15.00 - 15.45 m



310-03-BH3032 Depth Range: 16.50 - 16.95 m

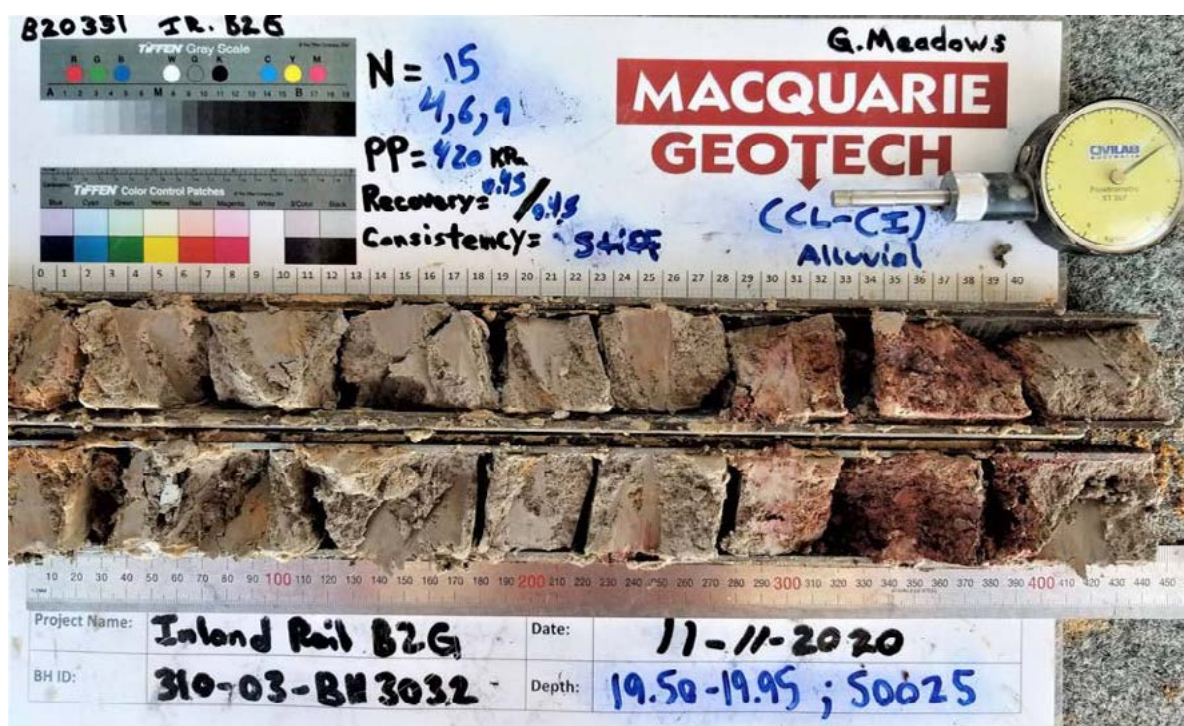
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 18.00 - 18.45 m



310-03-BH3032 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 21.00 - 21.45 m

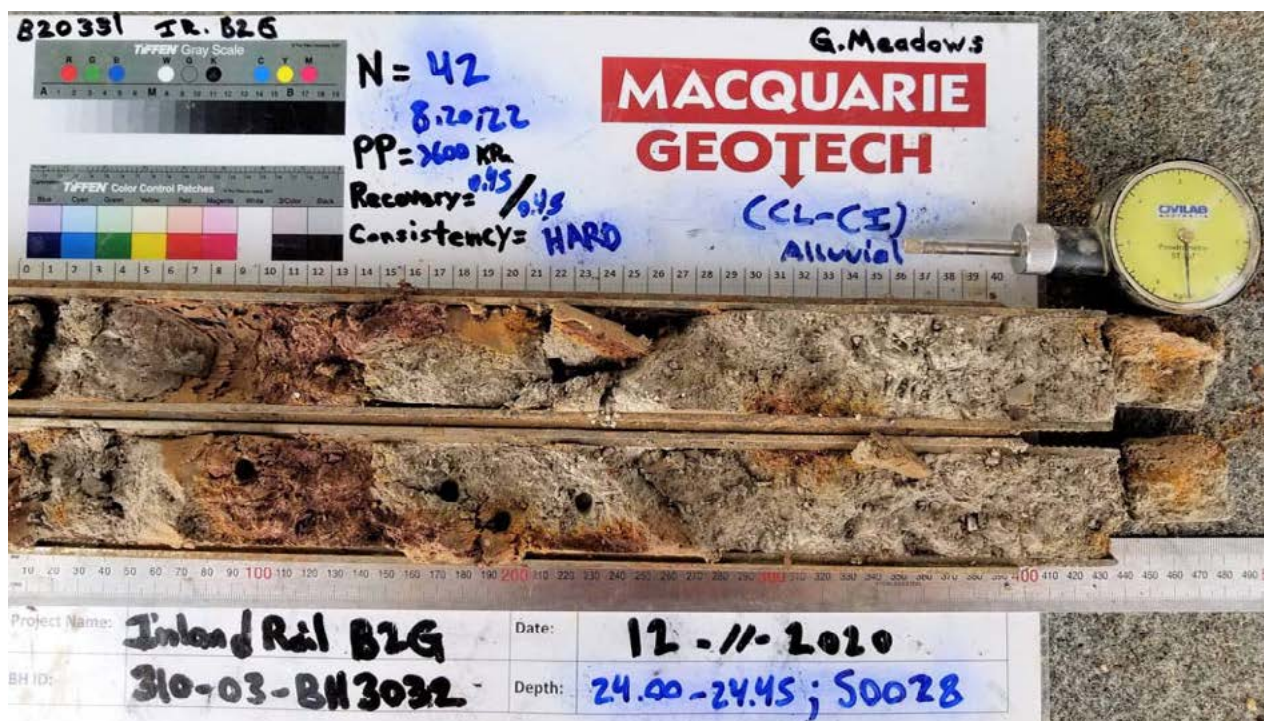


310-03-BH3032 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3032 Depth Range: 24.00 - 24.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH139019 - Yandilla Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56										Commenced: 10/11/2020 Completed: 15/11/2020 Logged By: G.Meadows Checked By: J.Boyle									
Drill Model and Mounting: Comacchio 305/Track Barrel Type and Length: HQ3 4.2 m										Inclination: -90° Bearing: RL Surface: 379.50 m Datum: AHD Operator: T.Lanaway									

Drilling Information							Rock Substance							Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral						Defect Spacing (mm)				Defect Description thickness, type, inclination, planarity, roughness, coating/infilling			
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General
						354.5	25																	
						353.5	26		Continued from non-cored borehole sheet (CL-Cl): Silty CLAY with sand; low to medium plasticity, grey mottled orange brown and pale grey, fine grained sand.															
			100		0	352.5	27																	
			100		0	351.5	28																	
			100		0	350.5	29																	
			100		0	349.5	30																	
			100		0	348.5	31																	

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water ▬ Level (Date) ▽ Inflow ▴ Partial Loss ▲ Complete Loss	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
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Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 10/11/2020	
Project Name: Inland Rail B2G		Completed: 15/11/2020	
Hole Location: Approx. CH139019 - Yandilla		Logged By: G.Meadows	
Hole Coordinates: 338546.8 m E 6918772.0 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ3 4.2 m		RL Surface: 379.50 m	
		Datum: AHD	
		Operator: T.Lanaway	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
HQ3		95% RETURN	100		0	346.5	33		(CL-CI): Silty CLAY with sand; low to medium plasticity, grey mottled orange brown and pale grey, fine grained sand.(continued)	RS	●		
			100		0	345.5	34						
						344.5	35						
						343.5	36		Hole Terminated at 35.30 m Target depth. Hole grouted to surface. Hole grouted to surface.				
						342.5	37						
						341.5	38						
						340.5	39						

Method
AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 4.2 m	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



PointID : 310-03-BH3032 Depth Range: 25.50 - 28.00 m



PointID : 310-03-BH3032 Depth Range: 28.00 - 32.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	10/11/2020
Project Name:	Inland Rail B2G	Completed:	15/11/2020
Hole Location:	Approx. CH139019 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338546.8 m E 6918772.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 4.2 m	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



PointID : 310-03-BH3032 Depth Range: 32.00 - 35.30 m

Engineering Log - Borehole

Project No.: B20331

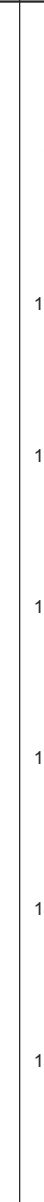
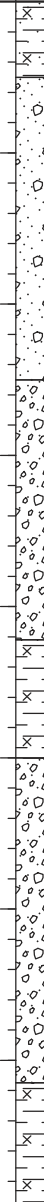
Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH139185 - Yandilla Hole Coordinates: 338680.8 m E 6918869.4 m N MGA94 Zone 56										Commenced: 15/11/2020 Completed: 17/11/2020 Logged By: G.Meadows Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track Hole Diameter: 96 - 115 mm					Inclination: -90° Bearing:					RL Surface: 379.57 m Datum: AHD					Operator: T.Lanaway							
Drilling Information								Soil Description										Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations							
AD/T				D00000 D 0.00-0.50 m J00020 0.20-0.30 m PID 0.20 m 0.5 ppm J00050 ES 0.50-0.60 m S00050 SPT 0.50-0.95 m 4,4,7 N=11 PP 0.59 m =320 kPa D00100 D 1.00-1.50 m J00100 ES 1.00-1.50 m S00150 SPT 1.50-1.95 m 2,3,4 N=7 PP 1.90 m =250 kPa U00250 U 2.50-2.90 m S00300 SPT 3.00-3.45 m 4,4,7 N=11 PP 3.30 m =320 kPa D00400 D 4.00-4.50 m PP 4.29 m =450 kPa S00450 SPT 4.50-4.95 m 4,6,9 N=15 D00550 D 5.50-6.00 m S00600 SPT 6.00-6.45 m 6,7,9 N=16 PP 6.27 m =490 kPa D00700 D 7.00-7.50 m S00750 SPT 7.50-7.95 m 7,11,14		378.6	1		CH	FILL: Silty CLAY with gravel trace sand; high plasticity, black grey, fine to coarse sub-angular to angular gravel and ballast, fine to medium grained sand, with roots and plants detritus up to 15mm. Silty CLAY trace sand and gravel; high plasticity, high plasticity, black grey, fine grained sand, fine subrounded to rounded gravel, with carbonate nodules up to 15mm, trace roots. <												

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.57 m		
Hole Diameter:	96 - 115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				N=25 PP 7.95 m =490 kPa					CI-CH	Silty gravelly SAND; fine to coarse grained, yellow brown, fine to coarse rounded to sub-angular gravel, with calcium carbonate precipitates.	M (~PL)	VSt			ALLUVIAL SOIL	
				SP					D							
				GP					MD							
				CL-CI					VSt							
				GP					D							
				CL-CI					VSt							
S00900 SPT 9.00-9.45 m 13,17,26 N=43	370.6	9											Standing Water Level - 17/11/2020			
S01050 SPT 10.50-10.95 m 8,7,16 N=23	369.6	10														
S01200 SPT 12.00-12.45 m 3,7,13 N=20 PP 12.36 m =250 kPa	368.6	11														
S01350 SPT 13.50-13.95 m 7,20,18 N=38	367.6	12														
S01500 SPT 15.00-15.45 m 5,8,11 N=19 PP 15.20 m >600 kPa	366.6	13														
	365.6	14														
	364.6	15														

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B20331

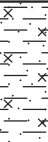
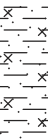
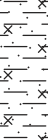
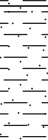
Client: ARTC										Commenced: 15/11/2020																			
Project Name: Inland Rail B2G										Completed: 17/11/2020																			
Hole Location: Approx. CH139185 - Yandilla										Logged By: G.Meadows																			
Hole Coordinates: 338680.8 m E 6918869.4 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																			
Hole Diameter: 96 - 115 mm										RL Surface: 379.57 m																			
										Bearing: Datum: AHD Operator: T.Lanaway																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
WB				S01650 SPT 16.50-16.95 m 7,9,13 N=22 PP 16.95 m =500 kPa		362.6	17		CL-CI	Silty CLAY with sand; low to medium plasticity, brown, fine to medium grained sand, with fine to medium grained. (continued)					ALLUVIAL SOIL														
									CI-CH	Silty CLAY trace sand; medium to high plasticity, grey to pale-grey, fine to medium grained sand, with fine to medium grained.																			
				S01800 SPT 18.00-18.45 m 10,12,15 N=27 PP 18.34 m >600 kPa		361.6	18		CL-CI	Silty sandy CLAY trace gravel; low to medium plasticity, grey brown, fine to medium grained sand, trace black carbonate staining.																			
									CL-CI	Sandy Silty CLAY; low to medium plasticity, mottled orange red brown grey, fine grained sand.					RESIDUAL SOIL														
				PP 19.36 m >600 kPa S01950 SPT 19.50-19.95 m 6,10,13 N=23		360.6	19																						
				PP 19.36 m >600 kPa S01950 SPT 19.50-19.95 m 6,10,13 N=23		359.6	20																						
				S02100 SPT 21.00-21.45 m 11,11,17 N=28 PP 21.35 m >600 kPa		358.6	21																						
				S02250 SPT 22.50-22.95 m 9,13,20 N=33 PP 22.95 m >600 kPa		357.6	22																						

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.57 m		
Hole Diameter:	96 - 115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway

Drilling Information							Soil Description							Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations				
WB				S02400 SPT 24.00-24.45 m 10,15,18 N=33 PP 24.45 m >600 kPa		354.6	25		CL-CI	Sandy Silty CLAY; low to medium plasticity, mottled orange red brown grey, fine grained sand. (continued)	M (<PL)	H			RESIDUAL SOIL				
				S02550 SPT 25.50-25.95 m 7,11,16 N=27 PP 25.95 m >600 kPa		353.6	26												
				S02700 SPT 27.00-27.45 m 10,13,18 N=31 PP 27.45 m >600 kPa		352.6	27												
				S02850 SPT 28.50-28.95 m 12,18,27 N=45 PP 28.95 m >600 kPa		350.6	29		CL-CI	Sandy CLAY with silt: low to medium plasticity, mottled orange red brown grey, fine grained sand.									28.50: Transition to EW rock ~28.50m
				S03000 SPT 30.00-30.45 m 10,15,20 N=35 PP 30.45 m >600 kPa		349.6	30		CH	Sandy CLAY with silt: high plasticity, mottled orange red brown grey, fine grained sand.									
				S03150 SPT 31.50-31.95 m 12,14,20		348.6	31												

Method AS - Auger Screwing RR - Rock Roller WB - Washbore		Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Sample and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	
Support C - Casing		Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss		Plastic Limit < PL = PL < PL		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System					

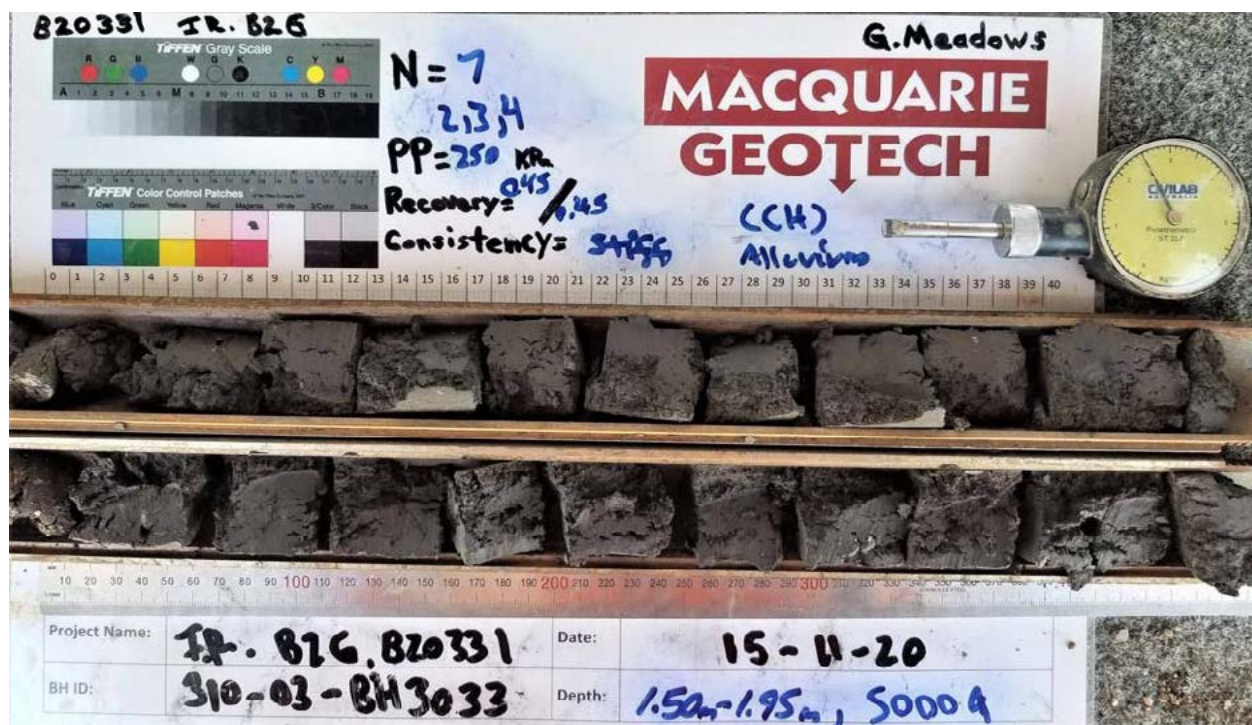
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 0.50 - 0.95 m



310-03-BH3033 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B20331

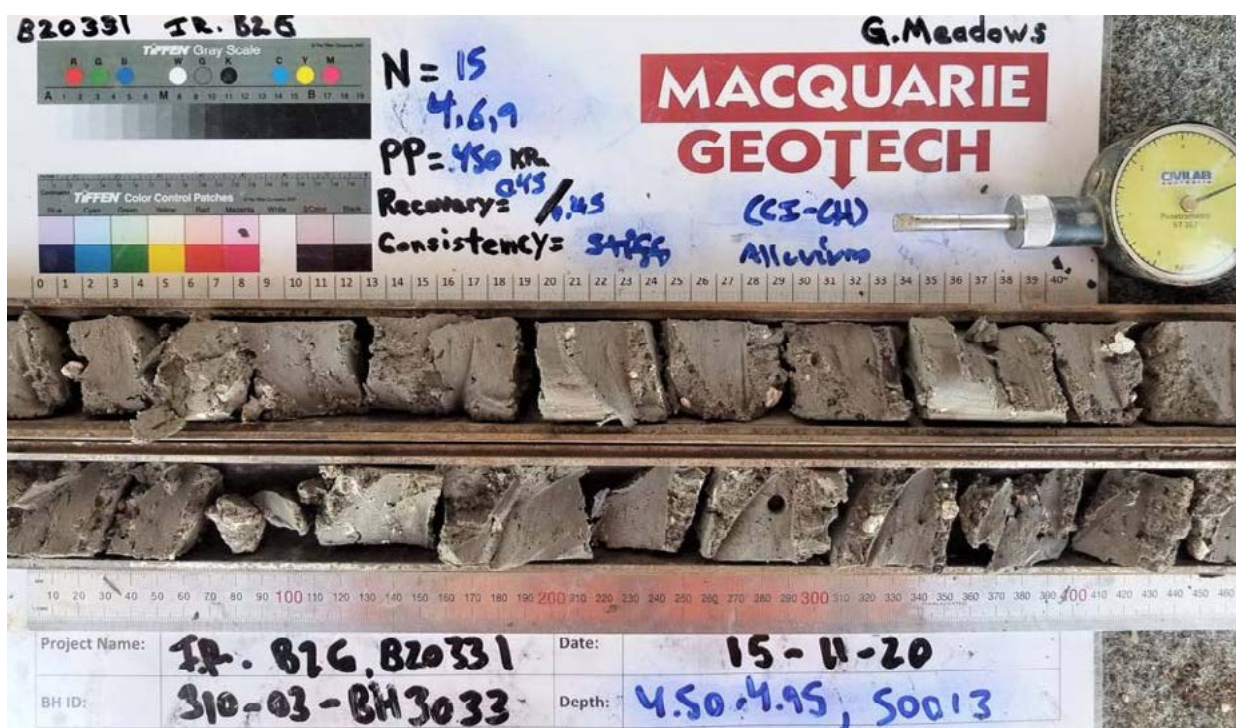
Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH139185 - Yandilla
Hole Coordinates: 338680.8 m E 6918869.4 m N MGA94 Zone 56

Commenced: 15/11/2020
Completed: 17/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.57 m
Hole Diameter: 96 - 115 mm Bearing: Datum: AHD Operator: T.Lanaway



310-03-BH3033 Depth Range: 3.00 - 3.45 m

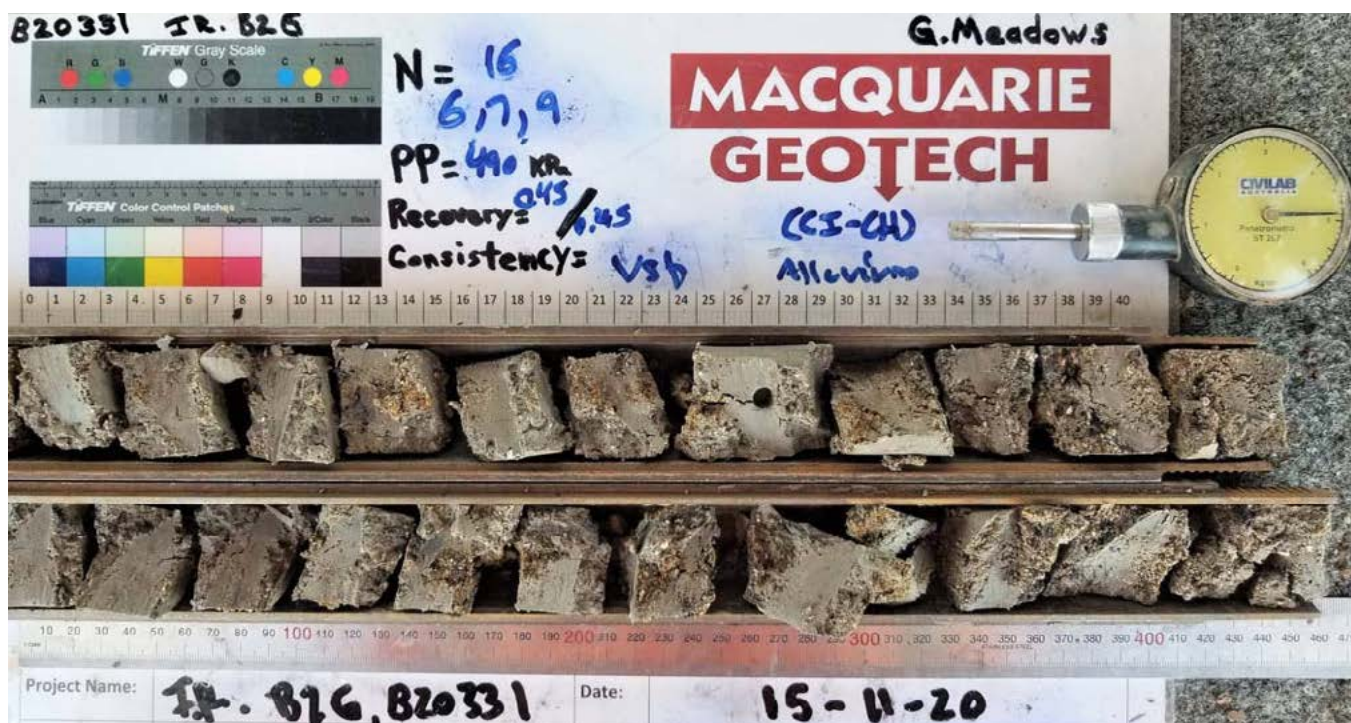


310-03-BH3033 Depth Range: 4.50 - 4.95 m

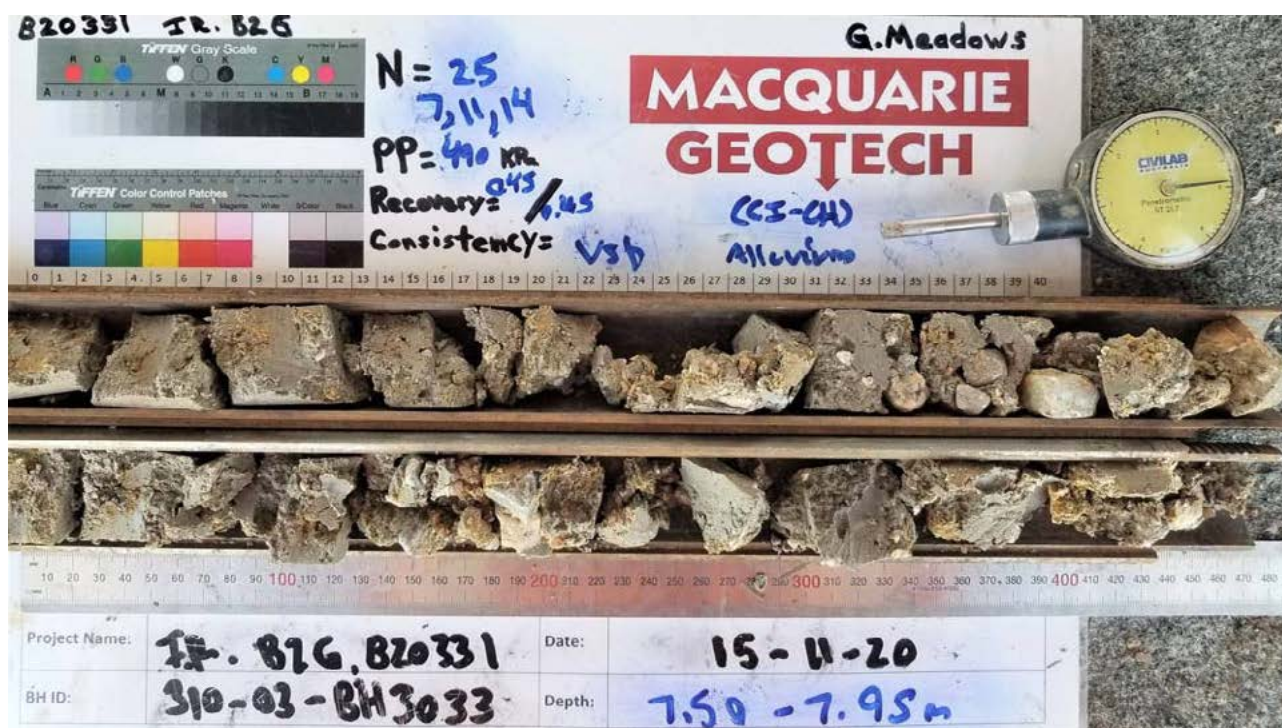
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 6.00 - 6.45 m



310-03-BH3033 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 9.00 - 9.45 m

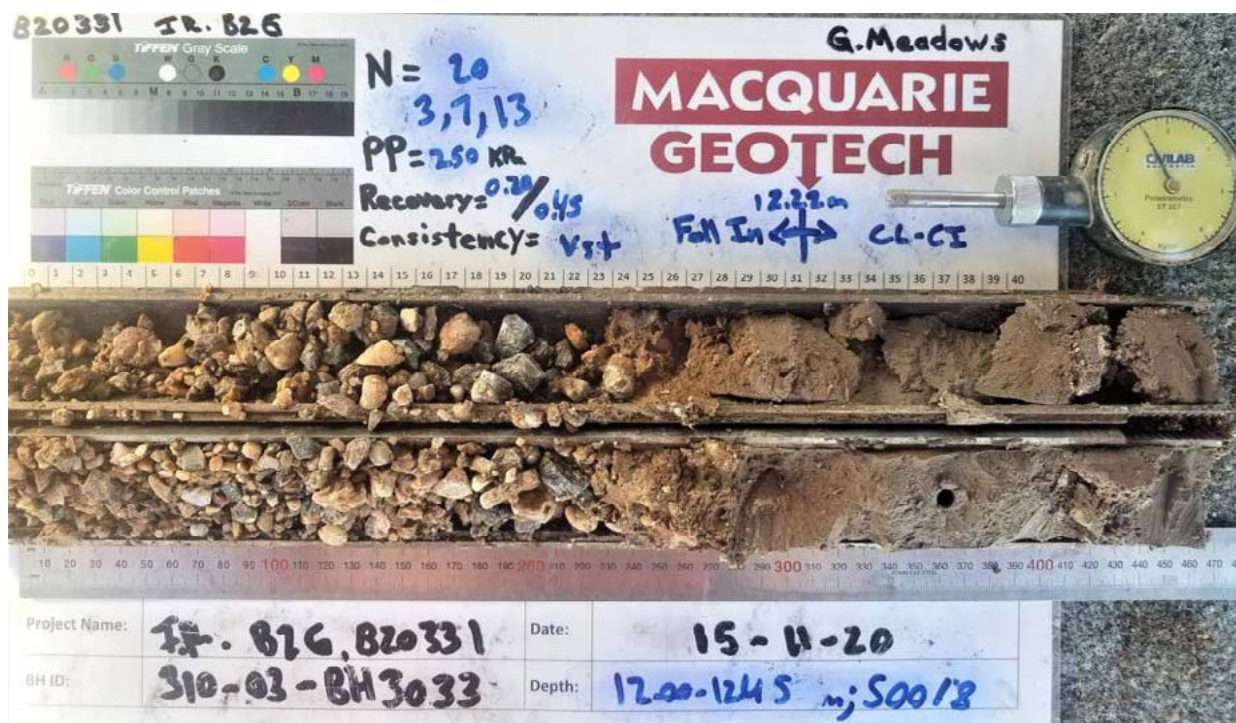


310-03-BH3033 Depth Range: 10.50 - 10.95 m

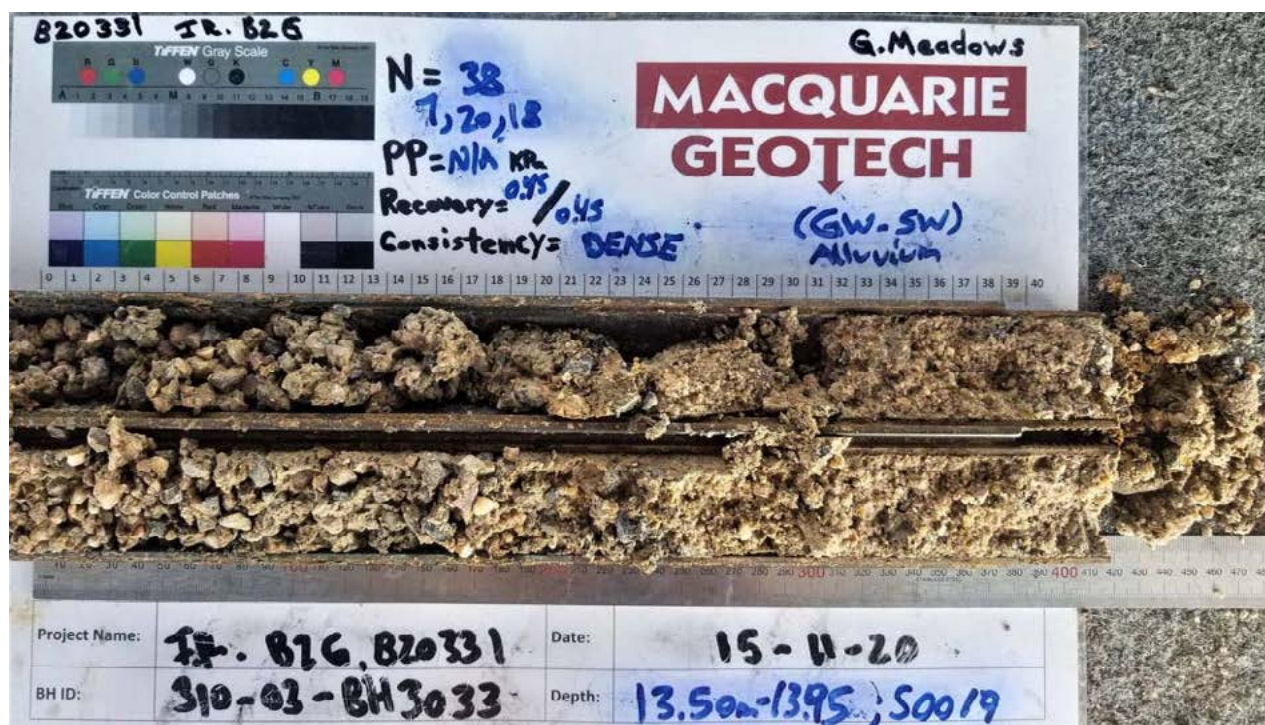
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 12.00 - 12.45 m



310-03-BH3033 Depth Range: 13.00 - 13.95 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH139185 - Yandilla
Hole Coordinates: 338680.8 m E 6918869.4 m N MGA94 Zone 56

Commenced: 15/11/2020
Completed: 17/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track
Hole Diameter: 96 - 115 mm

Inclination: -90°
Bearing:

RL Surface: 379.57 m
Datum: AHD

Operator: T.Lanaway



310-03-BH3033 Depth Range: 15.00 - 15.45 m

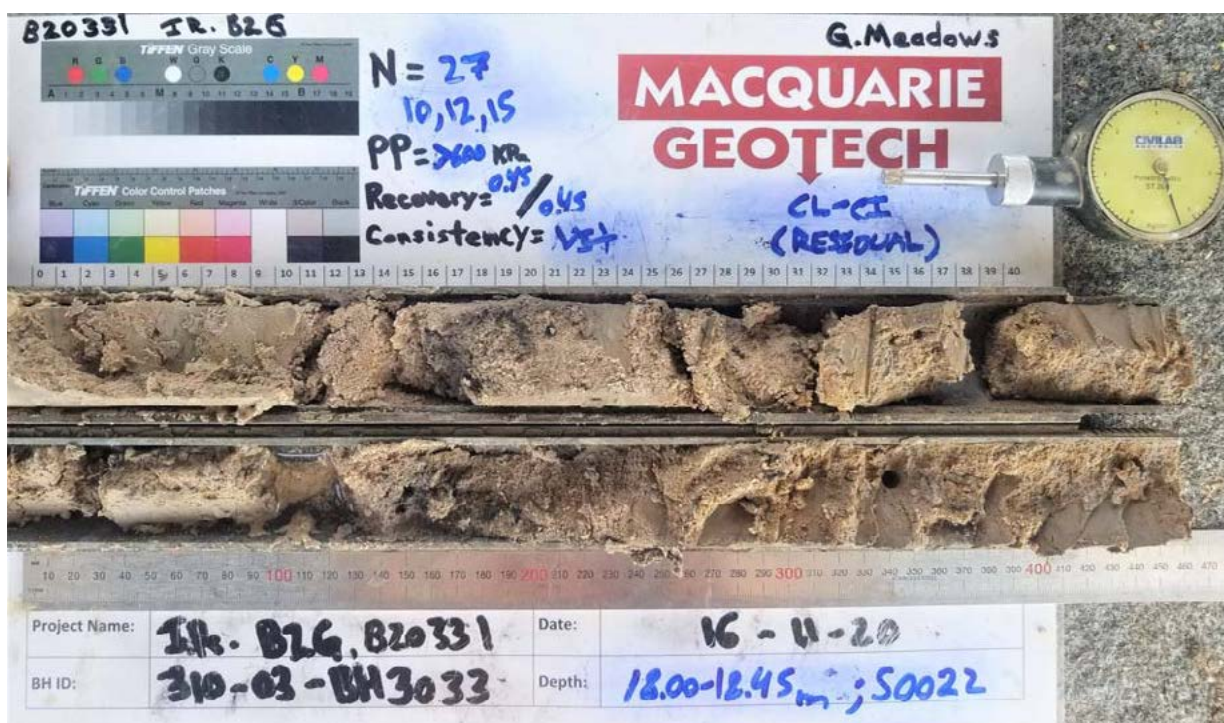


310-03-BH3033 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 18.00 - 18.45 m

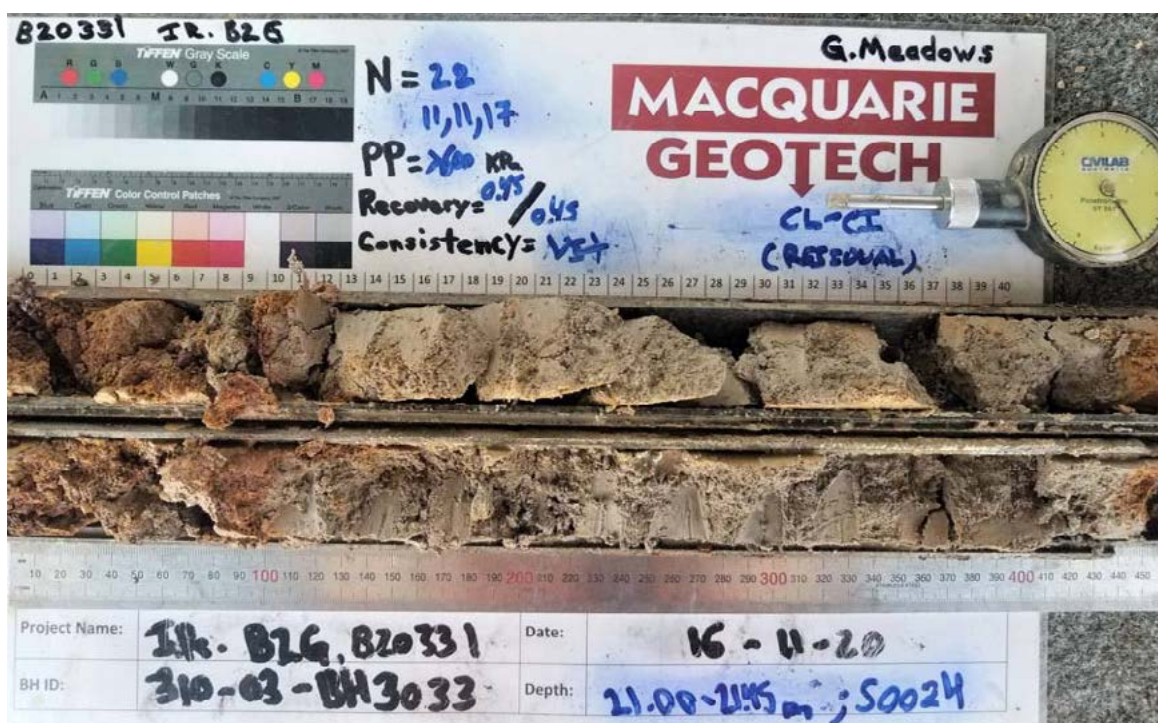


310-03-BH3033 Depth Range: 19.50 - 19.95 m

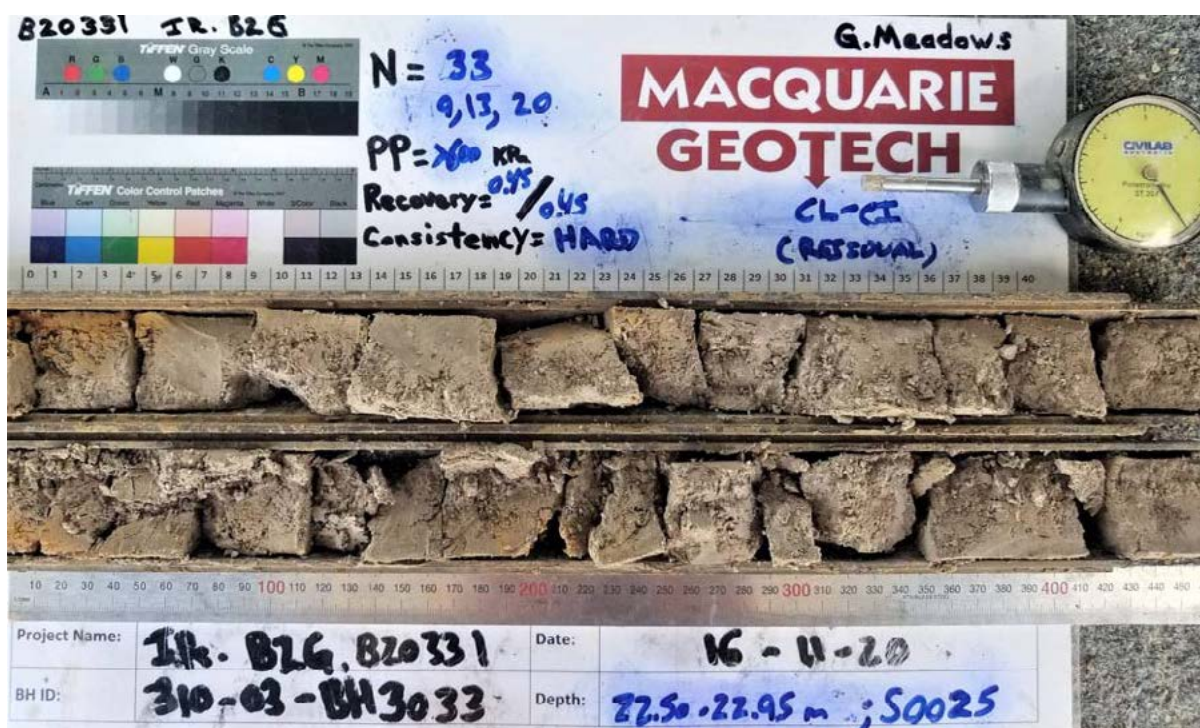
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 21.00 - 21.45 m

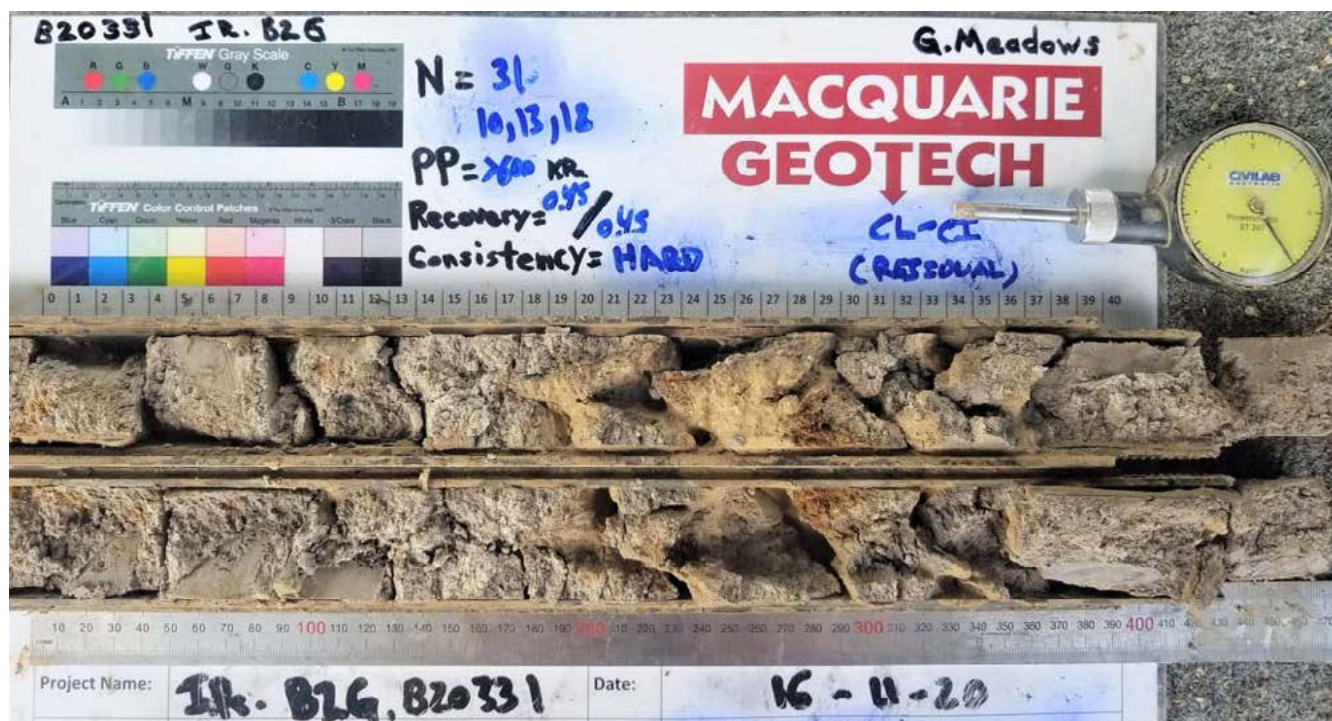


310-03-BH3033 Depth Range: 22.50 - 22.95 m

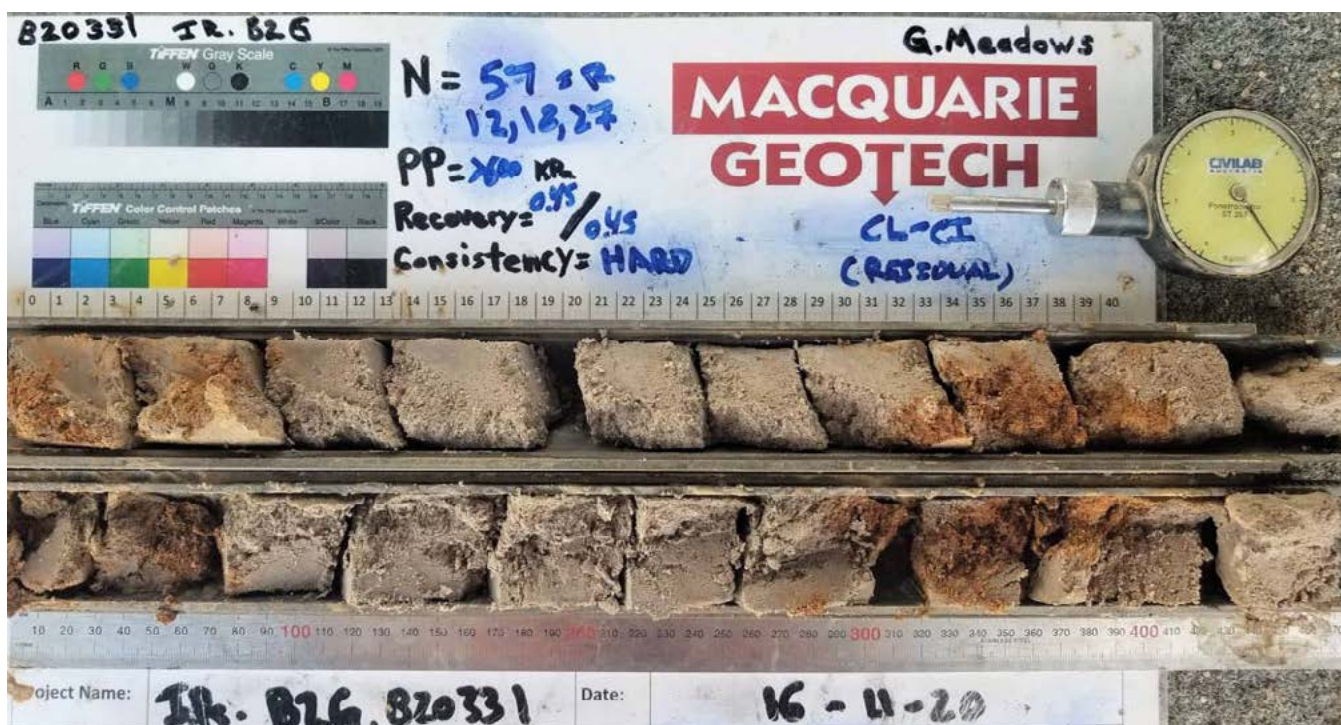
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 27.00 - 27.45 m



310-03-BH3033 Depth Range: 28.50 - 28.95 m

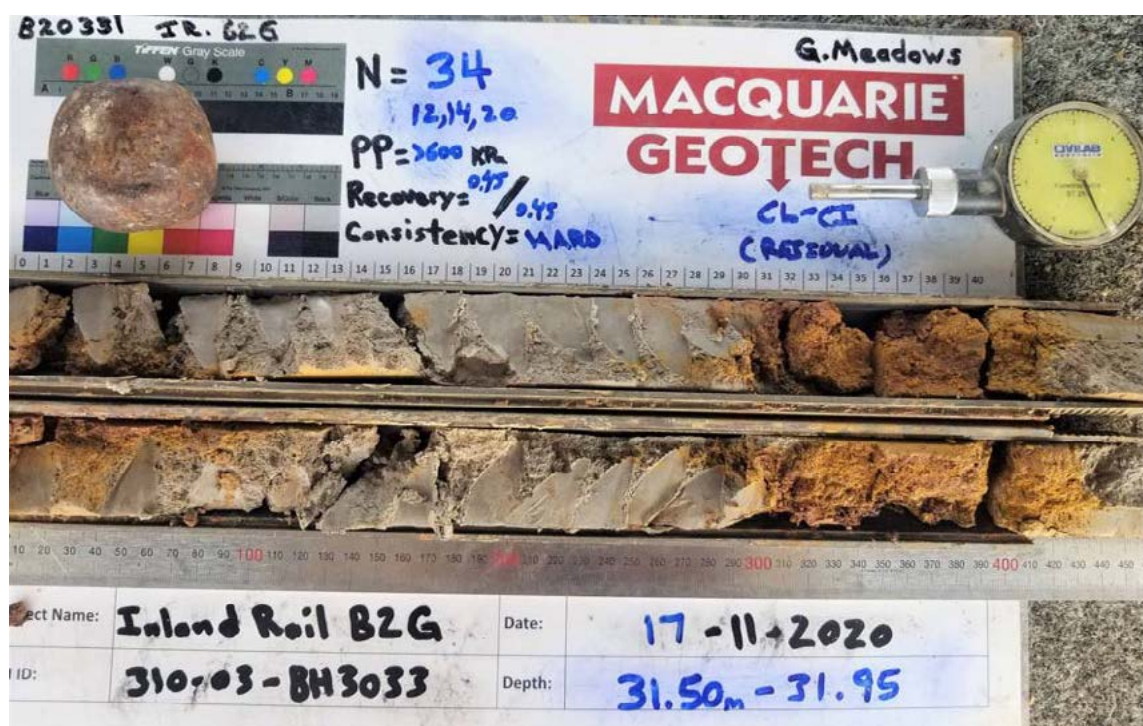
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	96 - 115 mm	RL Surface:	379.57 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3033 Depth Range: 30.00 - 30.45 m



310-03-BH3033 Depth Range: 31.50 - 31.95 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 15/11/2020	
Project Name: Inland Rail B2G		Completed: 17/11/2020	
Hole Location: Approx. CH139185 - Yandilla		Logged By: G.Meadows	
Hole Coordinates: 338680.8 m E 6918869.4 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ3 3 m		RL Surface: 379.57 m	
		Datum: AHD	
		Operator: T.Lanaway	

Drilling Information						Rock Substance						Rock Mass Defects												
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling											
										EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General	
Continued from non-cored borehole sheet																								
HQ3		95% RETURN	100		0		33		(CL-CI): Sandy Silty CLAY; low to medium plasticity, mottled orange red brown grey, fine grained sand.	XW														
			100		0		34																	
							35																	
							36																	
						37																		
						38																		
						39																		
Hole Terminated at 35.00 m Target depth. Hole grouted to surface. Hole grouted to surface.																								

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139185 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	338680.8 m E 6918869.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.57 m
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD Operator: T.Lanaway



PointID : 310-03-BH3033 Depth Range: 32.00 - 35.00 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 15/11/2020														
Project Name: Inland Rail B2G		Completed: 17/11/2020														
Hole Location: Approx. CH139338 - Yandilla		Logged By: H.Tran														
Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56		Checked By: J.Boyle														
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.70 m													
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: J. Komung													
Drilling Information				Soil Description				Observations								
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/N				J00010 ES 0.10-0.20 m D00030 D 0.30-0.50 m J00040 ES 0.40-0.50 m S00050 SPT 0.50-0.95 m 4,7,11 N=18 PP 0.80 m =540 kPa D00150 D 1.50-2.00 m S00200 SPT 2.00-2.45 m 3,5,6 N=11 PP 2.30 m =280 kPa		378.7	1		CH	FILL Silty CLAY trace gravel: high plasticity, black, fine to medium sub-angular gravel. Silty CLAY trace gravel: high plasticity, black, fine sub-rounded gravel.		VSt				REWORKED TOPSOIL ALLUVIAL SOIL
				D00300 D 3.00-3.50 m PP 3.40 m =470 kPa D00350 SPT 3.50-3.95 m 3,7,9 N=16		377.7	2		CI-CH	Silty CLAY trace sand and gravel: high plasticity, dark grey, fine to coarse grained sand, fine sub-rounded gravel.		St				
				D00450 D 4.50-5.00 m S00500 SPT 5.00-5.45 m 5,7,11 N=18 PP 5.30 m =540 kPa		376.7	3									
				D00600 D 6.00-6.50 m S00650 SPT 6.50-6.95 m 4,7,12 N=19 PP 6.80 m =560 kPa		375.7	4									
				D00750 D 7.50-8.00 m		374.7	5									
						373.7	6				Below 5.80m: trace fine to coarse grained sand and increasing with depth.		VSt			
						372.7	7		CI	Sandy CLAY: medium plasticity, grey, fine to coarse grained sand.						6.27: Water Level ~6.27m 16/11/2020 7:30am
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density						
AS - Auger Screwing RR - Rock Roller WB - Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense						
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit										
C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL										

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 15/11/2020															
Project Name: Inland Rail B2G		Completed: 17/11/2020															
Hole Location: Approx. CH139338 - Yandilla		Logged By: H.Tran															
Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56		Checked By: J.Boyle															
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.70 m														
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: J. Komung														
Drilling Information				Soil Description				Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
AD/V			IK	S00800 SPT 8.00-8.45 m 10,13,16 N=29 PP 8.20 m =580 kPa		370.7	9		CI	Clayey SAND trace gravel: fine to coarse grained, yellow brown, low to medium plasticity clay, fine to medium sub-rounded gravel.	M	VSt			ALLUVIAL SOIL Standing Water Level - 17/11/2020		
				D00900 D 9.00-9.50 m		369.7	10		SC								
WB			IK	S00950 SPT 9.50-9.95 m 8,9,10 N=19		369.7	10			Silty SAND trace gravel: fine to coarse grained, yellow brown, fine to medium sub-rounded gravel.		MD			Standing Water Level - 18/11/2020		
				S01100 SPT 11.00-11.45 m 12,19,20 N=39		368.7	11		SM								
				S01250 SPT 12.50-12.95 m 14,14,10 N=24		366.7	13		SP				W				
				S01400 SPT 14.00-14.45 m 6,12,12 N=24		365.7	14		SP				MD				
				S01550 SPT 15.50-15.95 m 8,13,18		364.7	15			SAND with gravel trace clay: fine to coarse grained, yellow brown and off-white, fine to medium rounded to sub-rounded gravel, low to medium plasticity clay.							
Method AS - Auger Screwing RR - Rock Roller WB - Washbore		Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense		Plastic Limit < PL = PL < PL		Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 15/11/2020										
Project Name: Inland Rail B2G										Completed: 17/11/2020										
Hole Location: Approx. CH139338 - Yandilla										Logged By: H.Tran										
Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56										Checked By: J.Boyle										
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.70 m										
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: J. Komung										
Drilling Information							Soil Description							Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations					
WB				N=31					SP	SAND with gravel trace clay: fine to coarse grained, yellow brown and off-white, fine to medium rounded to sub-rounded gravel, low to medium plasticity clay. (continued)	W	MD			ALLUVIAL SOIL					
				S01700 SPT 17.00-17.45 m 5,7,11 N=18 PP 17.20 m =460 kPa		362.7	17		CI	Silty CLAY trace sand: medium plasticity, dark brown and pale grey, fine grained sand.					RESIDUAL SOIL					
				S01850 SPT 18.50-18.95 m 7,8,12 N=20		361.7	18		CH	Silty CLAY trace sand: high plasticity, dark brown and pale grey, fine grained sand.		VSt								
				S02000 SPT 20.00-20.45 m 10,9,12 N=21		360.7	19		CL-CI	Sandy CLAY with gravel: low to medium plasticity, pale grey and dark red, fine grained sand, with fine to medium sub-rounded gravel.	M (>PL)									
				S02150 SPT 21.50-21.95 m 10,14,17 N=31		359.7	20		CL-CI	Silty CLAY: low to medium plasticity, pale grey.										
				D02300 SPT 23.00-23.45 m 14,16,24 N=40 PP 23.30 m >600 kPa		358.7	21					H								
						357.7	22													
						356.7	23													
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																				

Engineering Log - Borehole

Project No.: B20331

Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH139338 - Yandilla Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56						Commenced: 15/11/2020 Completed: 17/11/2020 Logged By: H.Tran Checked By: J.Boyle								
Drill Model and Mounting: Comacchio 305/Track Hole Diameter: 115 mm				Inclination: -90° Bearing:		RL Surface: 379.70 m Datum: AHD		Operator: J. Komung						
Drilling Information				Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S02450 SPT 24.50-24.95 14,17,21 N=38 PP 24.70 m >600 kPa		354.7	25		CL-CI	Silty CLAY: low to medium plasticity, pale grey. (continued)	M (>PL)	H	100	RESIDUAL SOIL
				S02600 SPT 26.00-26.45 13,20,24 N=44 PP 26.30 m >600 kPa		353.7	26			Continued on cored borehole sheet			100	
						352.7	27						200	
						351.7	28						300	
						350.7	29						400	
						349.7	30						500	
						348.7	31							

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Support

C - Casing

Penetration

No resistance ranging to refusal

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit

< PL
= PL
> PL

Engineering Log - Borehole

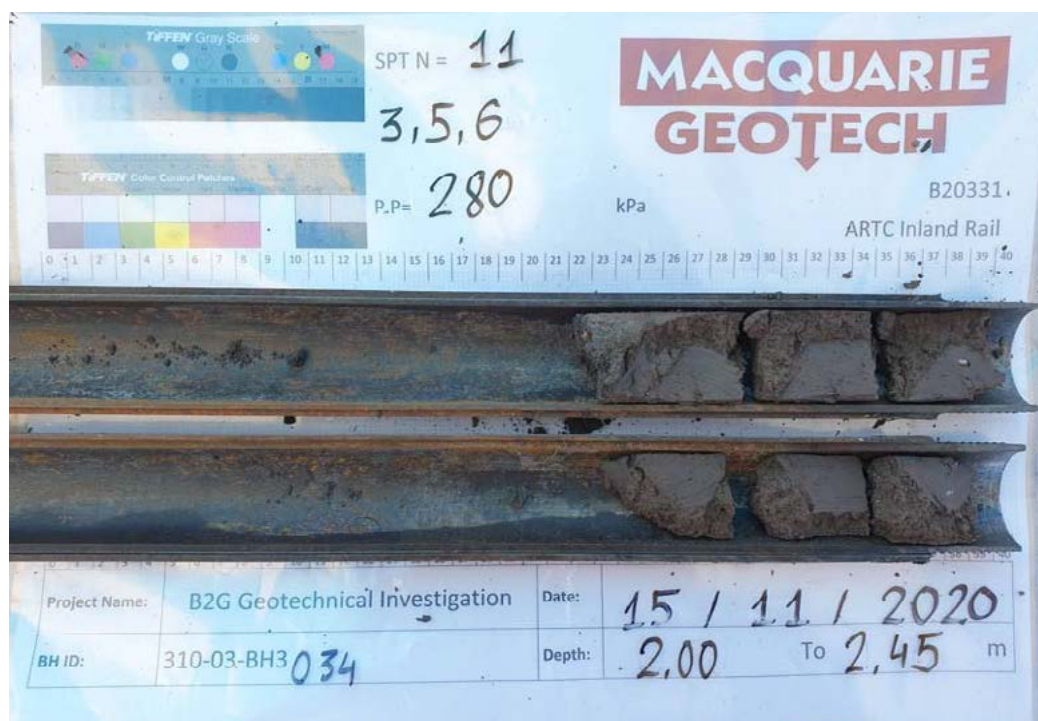
Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 0.50 - 0.95 m



310-03-BH3034 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.70 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3034 Depth Range: 3.50 - 3.95 m



310-03-BH3034 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 6.50 - 6.95 m



310-03-BH3034 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 9.50 - 9.95 m



310-03-BH3034 Depth Range: 11.00 - 11.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 12.50 - 12.95 m



310-03-BH3034 Depth Range: 14.00 - 14.45 m

Engineering Log - Borehole

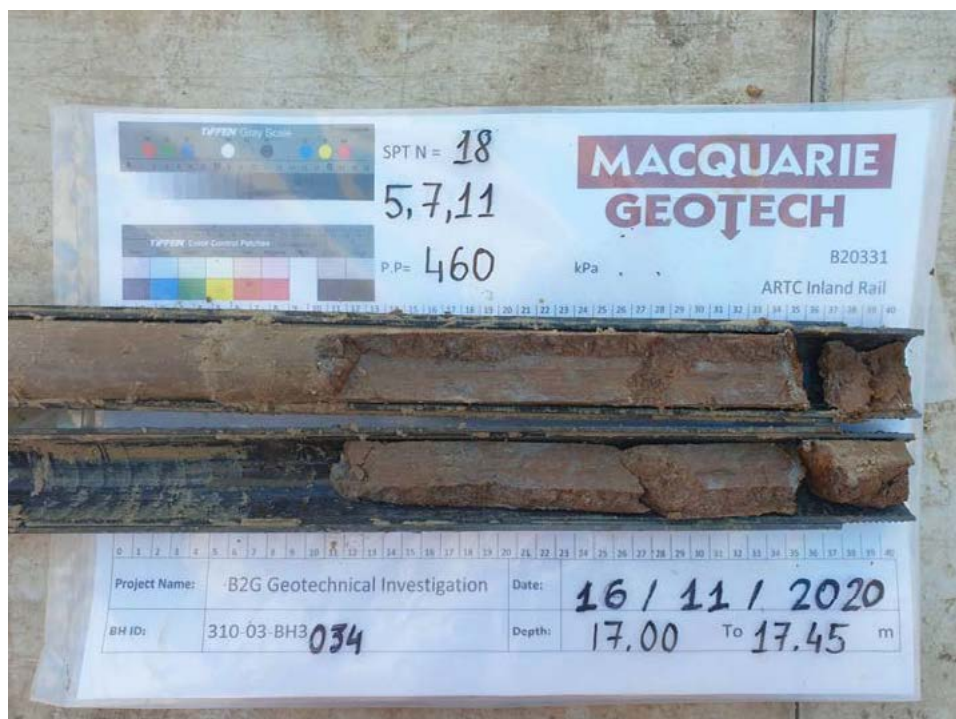
Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 15.50 - 15.95 m



310-03-BH3034 Depth Range: 17.00 - 17.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 18.50 - 18.95 m



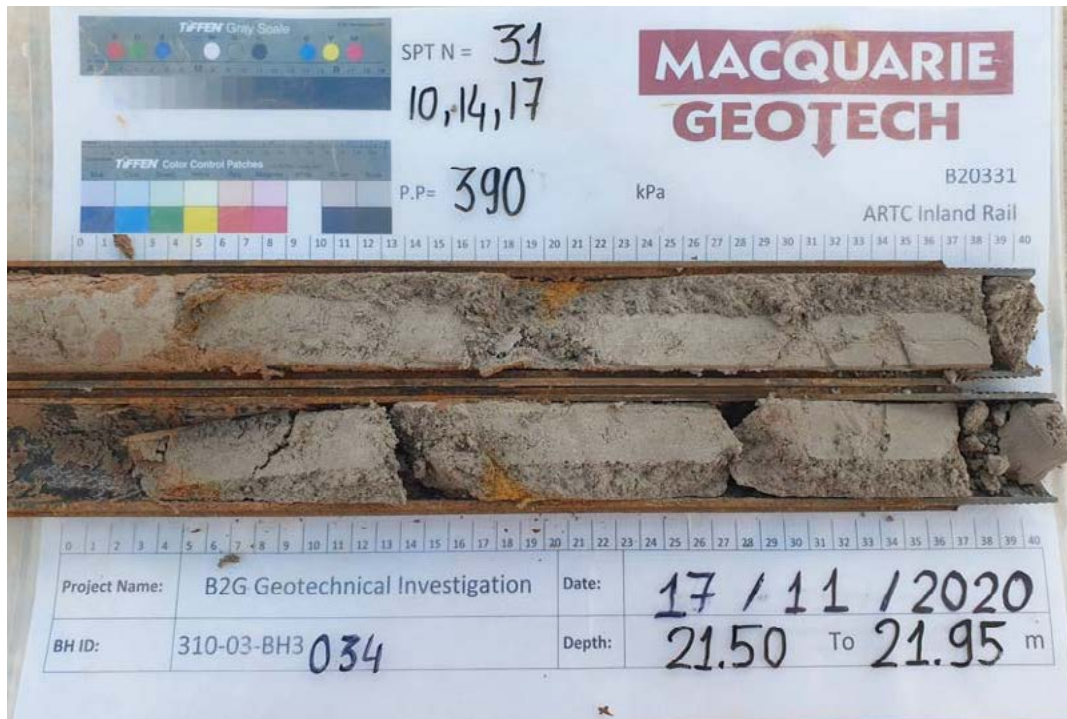
310-03-BH3034 Depth Range: 20.00 - 20.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 21.50 - 21.95 m



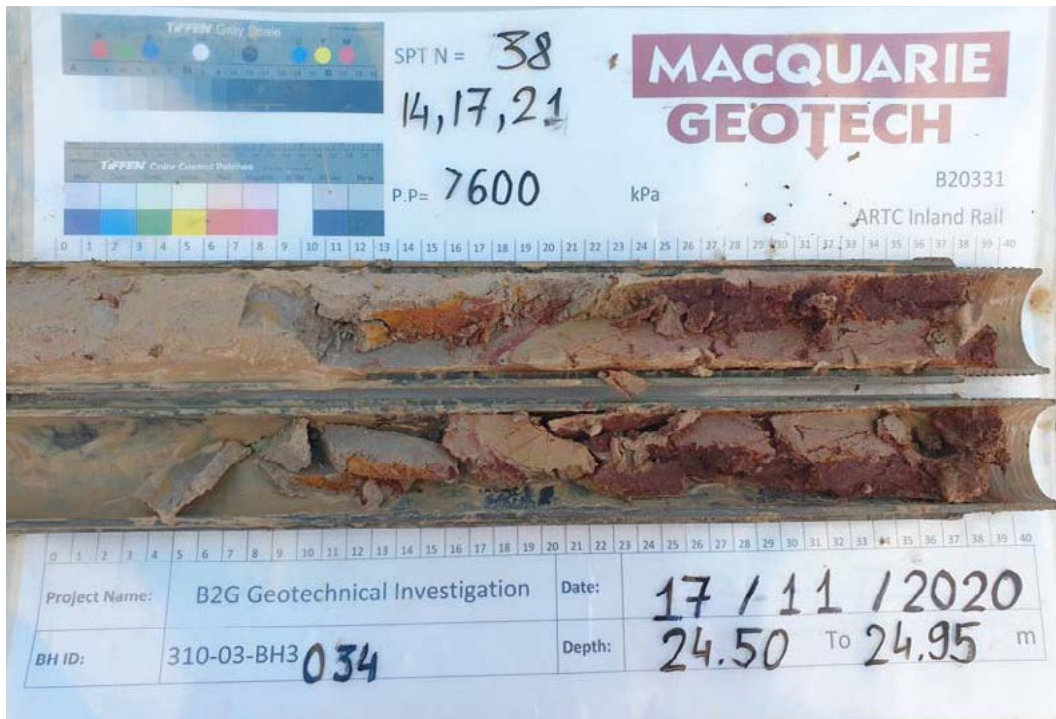
310-03-BH3034 Depth Range: 23.00 - 23.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 24.50 - 24.95 m



310-03-BH3034 Depth Range: 26.00 - 26.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.70 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3034 Depth Range: 27.50 - 27.95 m



310-03-BH3034 Depth Range: 29.00 - 29.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	J. Komung



310-03-BH3034 Depth Range: 30.50 - 30.95 m



310-03-BH3034 Depth Range: 32.00 - 32.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.70 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3034 Depth Range: 33.50 - 33.95 m



310-03-BH3034 Depth Range: 35.00 - 35.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 15/11/2020	
Project Name: Inland Rail B2G		Completed: 17/11/2020	
Hole Location: Approx. CH139338 - Yandilla		Logged By: H.Tran	
Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ 4.15 m		RL Surface: 379.70 m	
		Datum: AHD	
		Operator: J. Komung	

Drilling Information				Rock Substance				Rock Mass Defects						
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
						354.7	25							
						353.7	26							
									Continued from non-cored borehole sheet					
			100		0	352.7	27		Silty CLAY trace sand: medium plasticity, pale grey and yellow brown, fine grained sand.				-26.90: PP In-situ >600 kPa	
			67		0	351.7	28		From 28.00 to 29.50m: with fine grained sand.				-27.80: PP In-situ =130 kPa	
						350.7	29						-29.30: PP In-situ >600 kPa	
			67		0	349.7	30						-29.70: PP In-situ =590 kPa	
						348.7	31						-30.50: PP In-situ =540 kPa	
			67		47				SILTSTONE: pale grey and orange brown	XW			-30.80: PP In-situ >600 kPa	

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Support

T - Timbering

Strength
(indirect tensile strength)

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 15/11/2020																		
Project Name: Inland Rail B2G		Completed: 17/11/2020																		
Hole Location: Approx. CH139338 - Yandilla		Logged By: H.Tran																		
Hole Coordinates: 338799.2 m E 6918982.7 m N MGA94 Zone 56		Checked By: J.Boyle																		
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.70 m																	
Barrel Type and Length: HQ 4.15 m		Bearing:	Datum: AHD Operator: J. Komung																	
Drilling Information		Rock Substance		Rock Mass Defects																
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling							
HQ3			67		67	346.7	33		SILTSTONE: pale grey and orange brown(continued)	xw			Particular	General						
						345.7	34		(CI) Silty CLAY trace sand: medium plasticity, pale grey and yellow brown, fine grained sand.											
						344.7	35		Below 35.00m: no sand.											
						343.7	36		Hole Terminated at 35.45 m Target depth. Hole grouted to surface. Hole grouted to surface.											
						342.7	37													
						341.7	38													
						340.7	39													

Method

AS - Auger Screwing
WB- Washbore
HQ3 HQ3 Core Barrel
NQ3 NQ3 Core Barrel

Water

Level (Date)

Inflow

Partial Loss

Complete Loss

Support

T - Timbering

Graphic Log/Core Loss

Core recovered (hatching indicates material)

Core loss

Weathering

FR - Fresh
SW - Slightly Weathered
DW - Distinctly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength

(indirect tensile strength)
EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 4.15 m	RL Surface:	379.70 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



PointID : 310-03-BH3034 Depth Range: 26.50 - 29.00 m



PointID : 310-03-BH3034 Depth Range: 29.00 - 33.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	15/11/2020
Project Name:	Inland Rail B2G	Completed:	17/11/2020
Hole Location:	Approx. CH139338 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	338799.2 m E 6918982.7 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 4.15 m	RL Surface:	379.70 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



PointID : 310-03-BH3034 Depth Range: 33.00 - 35.45 m

POSITION : E: 339865.7, N: 6920650.9 (MGA94 Zone 56)

SURFACE ELEVATION : 379.45 (AHD)

EQUIPMENT TYPE : Excavator 14T

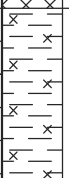
METHOD : 900mm bucket

DATE EXCAVATED : 03/03/2021

LOGGED BY : H.Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 2.30 m LONG 1.30 m WIDE

EXCAVATION INFORMATION							MATERIAL								
GROUNDWATER LEVELS				SAMPLES & FIELD TESTS		ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components		MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETRO-METER	STRUCTURE & Other Observations
VE	E	F	H										5 10 15 20	100 200 300 400	
				Not Encountered		0.0			FILL Silty CLAY with sand trace gravel: high plasticity, black, fine to coarse grained sand, fine to medium sub-rounded gravel.		F				REWORKED TOPSOIL
				0.70m B00070 x7		0.30m			Silty CLAY: high plasticity, black.						ALLUVIAL SOIL
				1.00m		0.5		CH		M (-PL)	St				0.40: PLT: Max Settlement: 10.52mm Maximum Applied Pressure: 140KPa 0.55: Field water content: 43.79% Temperature: 34.9 C
						0.75									
						1.0									
						1.25									
						1.5									
						1.75									
						2.0									
						2.25									
						2.5									
						2.75									
						3.0									
						3.25									
						3.5									
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						28									

PHOTOGRAPHS
NOTES

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure		U - Undisturbed Sample	Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet M > PL- Moisture Content > Plastic Limit M ~ PL- Moisture Content = Plastic Limit M < PL- Moisture Content < Plastic Limit	VS - Very Soft
X Existing Excavation		D - Disturbed Sample		F - Soft
BH Backhoe Bucket		B - Bulk Disturbed Sample		S - Firm
B Bulldozer Blade		MC - Moisture Content		St - Stiff
R Ripper		PP - Pocket Penetrometer (UCS kPa)		VSt - Very Stiff
		VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)		H - Hard
	WATER 			VL - Very Loose
				L - Loose
				MD - Medium Dense
				D - Dense
				VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3035

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH141331 Lot.5RP37103 Yandilla

FILE / JOB NO : B20331
SHEET : 2 OF 4

POSITION : E: 339865.7, N: 6920650.9 (MGA94 Zone 56)	SURFACE ELEVATION : 379.45 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.30 m LONG 1.30 m WIDE		



310-03-BH3035-FFJV - 1 Depth Range: 0.00 m



310-03-BH3035-FFJV - 2 Depth Range: 0.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

POSITION : E: 339865.7, N: 6920650.9 (MGA94 Zone 56)	SURFACE ELEVATION : 379.45 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.30 m LONG 1.30 m WIDE		



310-03-BH3035-FFJV - 3 Depth Range: 0.00 m



310-03-BH3035-FFJV - 4 Depth Range: 0.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

POSITION : E: 339865.7, N: 6920650.9 (MGA94 Zone 56)	SURFACE ELEVATION : 379.45 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.30 m LONG 1.30 m WIDE		



310-03-BH3035-FFJV - 5 Depth Range: 0.00 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 24/11/2020
Project Name: Inland Rail B2G	Completed: 28/11/2020
Hole Location: Approx. CH141331 - Yandilla	Logged By: V. Chandrasena
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Hanjin DB8	Inclination: -90°	RL Surface: 376.81 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: R. Adamson

Drilling Information							Soil Description							Observations	
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
AD/T				D00020 0.20-0.50 m					CH	FILL: Silty CLAY; high plasticity, black, trace rootlets and plant decays.					REWOKED TOPSOIL
				J00020 0.20-0.30 m						Silty CLAY trace sand and gravel: high plasticity, black; fine to coarse grained sand; fine sub-rounded to sub-angular gravel.					ALLUVIAL SOIL
				J00050 0.50-0.60 m											
				U00050 0.50-0.95 m		375.8	1				M (<PL) to M (~PL)	F to St			
				J00100 1.00-1.10 m											
				S00100 SPT 1.00-1.45 m											
				2,3,5 N=8 PP 1.35 m =180 kPa		374.8	2								
				D00150 1.50-2.50 m					CH	Silty CLAY: high plasticity, brown mottled white, fine to coarse grained sand.					
				S00250 SPT 2.50-2.95 m											
				6,9,12 N=21 PP 2.80 m >600 kPa		373.8	3				M (<PL)				
			D00300 3.00-4.00 m												
			S00400 SPT 4.00-4.45 m		372.8	4			SC	Clayey SAND with gravel; fine to coarse grained, dark brown, low to medium plasticity clay, fine to medium rounded to sub-angular gravel.		VSt			
			4,8,10 N=18 D00450 4.50-5.50 m												
			S00550 SPT 5.50-5.95 m		371.8	5									
			5,10,14 N=24 D00600 6.00-7.00 m												
			S00700 SPT 7.00-7.45 m		370.8	6					D to M				
			10,14,18 N=32 D00750 7.50-8.50 m												
					369.8	7									
										Below 7.50m : becoming Clayey SAND trace gravel.	M				

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 24/11/2020
Project Name: Inland Rail B2G	Completed: 28/11/2020
Hole Location: Approx. CH141331 - Yandilla	Logged By: V. Chandrasena
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Hanjin DB8	Inclination: -90°	RL Surface: 376.81 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: R. Adamson

Drilling Information							Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
AD/T				D00750 7.50-8.50 m					SC	Clayey SAND with gravel; fine to coarse grained, dark brown, low to medium plasticity clay, fine to medium rounded to sub-angular gravel. (continued)						ALLUVIAL SOIL	
				S00850 SPT 8.50-8.95 m 8,14,13 N=27 D00900 9.00-10.00 m		367.8	9			Below 8.50m : colour tending to yellow pale brown.	M						
												MD to D					
				S01000 SPT 10.00-10.45 m 8,19,23 N=42 D01050 10.50-11.50 m		366.8	10			Below 10.0m : no trace clay is observed.							
				S01150 SPT 11.50-11.95 m 12,16,18 N=34 D01200 12.00-13.00 m		364.8	12				D to M	D					
									SW	SAND trace clay and gravel; fine to coarse grained, yellow pale brown, low to medium plasticity clay, fine to medium rounded to sub-angular gravel.						Standing Water Level - 24/11/2020	
				S01300 SPT 13.00-13.45 m 6,13,13 N=26 D01350 13.50-14.50 m		363.8	13										
				S01450 SPT 14.50-14.95 m 7,9,6 N=15 D01500 15.00-16.00 m		361.8	15		SC-SM	Clayey silty SAND trace gravel; fine to coarse grained, dark brown, low to medium plasticity clay, fine to medium sub-rounded gravel.	W						

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	 No resistance ranging to refusal	 Level (Date)  Inflow  Partial Loss  Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss		Classification Symbols and Soil Descriptions	Plastic Limit	
C - Casing	 Core recovered (hatching indicates material)  Core loss		Based on Unified Soil Classification System	< PL = PL < PL	

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

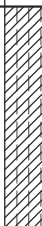
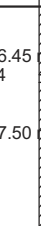
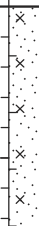
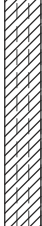
Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 24/11/2020										
Project Name: Inland Rail B2G										Completed: 28/11/2020										
Hole Location: Approx. CH141331 - Yandilla										Logged By: V. Chandrasena										
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56										Checked By: J.Boyle										
Drill Model and Mounting: Hanjin DB8					Inclination: -90°					RL Surface: 376.81 m										
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: R. Adamson										
Drilling Information					Soil Description										Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations					
AD/T				S01600 SPT 16.00-16.45 m 10,13,14 N=27 D01650 16.50-17.50 m		359.8	17		SC-SM	Clayey silty SAND trace gravel; fine to coarse grained, dark brown, low to medium plasticity clay, fine to medium sub-rounded gravel. (continued) Below 16.25m : tending to SAND trace clay and gravel.	W	MD				ALLUVIAL SOIL				
				S01750 SPT 17.50-17.95 m 5,8,9 N=17 PP 17.70 m ≤300 kPa D01800 18.00-19.00 m					CL-CI	Sandy silty CLAY trace gravel; low to medium plasticity, brown, fine to medium grained sand, fine to medium sub-rounded gravel.								RESIDUAL SOIL		
				S01900 SPT 19.00-19.45 m 4,7,9 N=16 PP 19.30 m =220 kPa D01950 19.50-20.50 m						Becoming low plasticity clay.		VSt								
				S02050 SPT 20.50-20.95 m 6,10,12 N=22					SM	Silty SAND trace clay; fine to medium grained, pale brown, low to medium plasticity clay.	M (>PL)									
				S02200 SPT 22.00-22.45 m 5,9,17 N=26																
				S02350 SPT 23.50-23.95 m 11,17,20																
WB						354.8	22													
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration  No resistance ranging to refusal Water  Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss  Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL > PL																				

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/11/2020	
Project Name: Inland Rail B2G		Completed: 28/11/2020	
Hole Location: Approx. CH141331 - Yandilla		Logged By: V. Chandrasena	
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Hanjin DB8		Inclination: -90°	RL Surface: 376.81 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: R. Adamson

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=37					SM	Silty SAND trace clay; fine to medium grained, pale brown, low to medium plasticity clay. (continued)		MD		RESIDUAL SOIL
				S02500 SPT 25.00-25.45 m 6,12,15 N=27		351.8	25		Below 25.0m : becoming clayey silty SAND trace gravel.		VSt			
						350.8	26			Continued on cored borehole sheet				
						349.8	27							
						348.8	28							
						347.8	29							
						346.8	30							
						345.8	31							

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC				Commenced:	24/11/2020	
Project Name:	Inland Rail B2G				Completed:	28/11/2020	
Hole Location:	Approx. CH141331 - Yandilla				Logged By:	V. Chandrasena	
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56				Checked By:	J.Boyle	
Drill Model and Mounting:	Hanjin DB8		Inclination:	-90°	RL Surface:	376.81 m	
Hole Diameter:	115 mm		Bearing:		Datum:	AHD	Operator: R. Adamson



310-03-BH3035 Depth Range: 1.00 - 1.45 m



310-03-BH3035 Depth Range: 2.50 - 2.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC				Commenced:	24/11/2020	
Project Name:	Inland Rail B2G				Completed:	28/11/2020	
Hole Location:	Approx. CH141331 - Yandilla				Logged By:	V. Chandrasena	
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56				Checked By:	J.Boyle	
Drill Model and Mounting:	Hanjin DB8		Inclination:	-90°	RL Surface:	376.81 m	
Hole Diameter:	115 mm		Bearing:		Datum:	AHD	Operator: R. Adamson



310-03-BH3035 Depth Range: 4.00 - 4.45 m



310-03-BH3035 Depth Range: 5.50 - 5.95 m

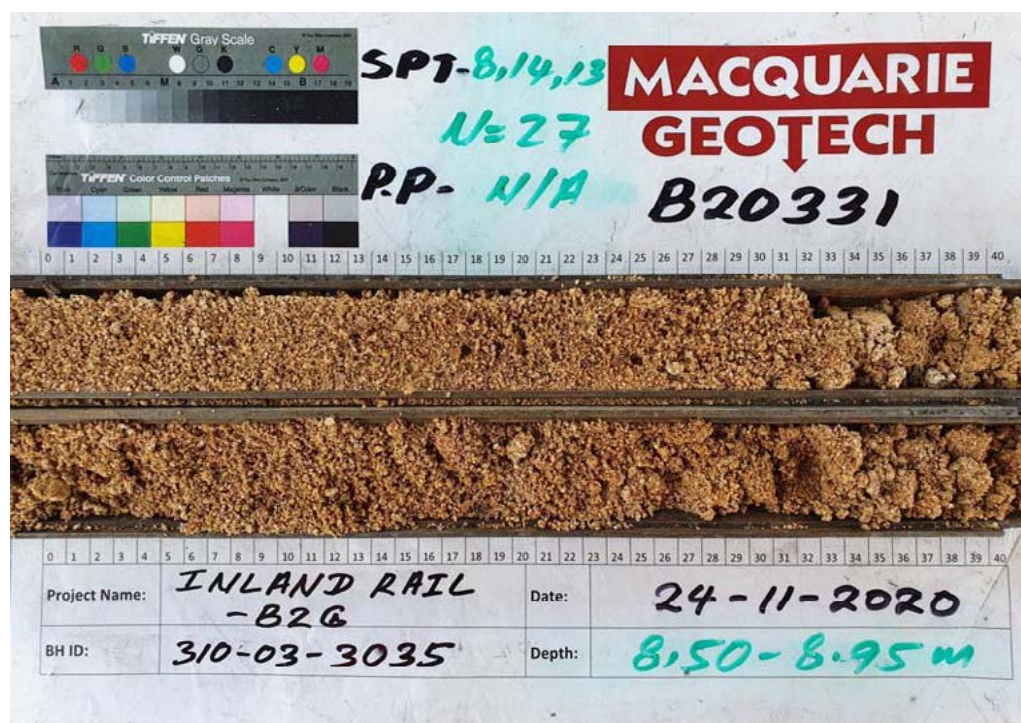
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	376.81 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Adamson



310-03-BH3035 Depth Range: 7.00 - 7.45 m



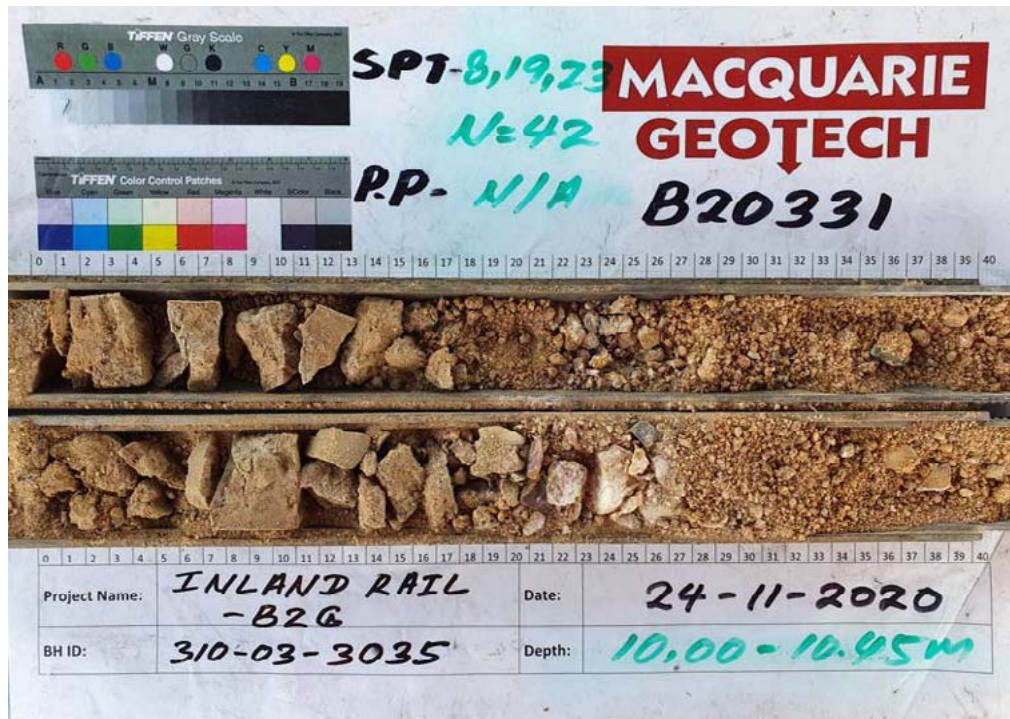
310-03-BH3035 Depth Range: 8.50 - 8.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	R. Adamson



310-03-BH3035 Depth Range: 10.00 - 10.45 m



310-03-BH3035 Depth Range: 11.50 - 11.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020				
Project Name:	Inland Rail B2G	Completed:	28/11/2020				
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena				
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m		
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator:	R. Adamson



310-03-BH3035 Depth Range: 13.00 - 13.45 m

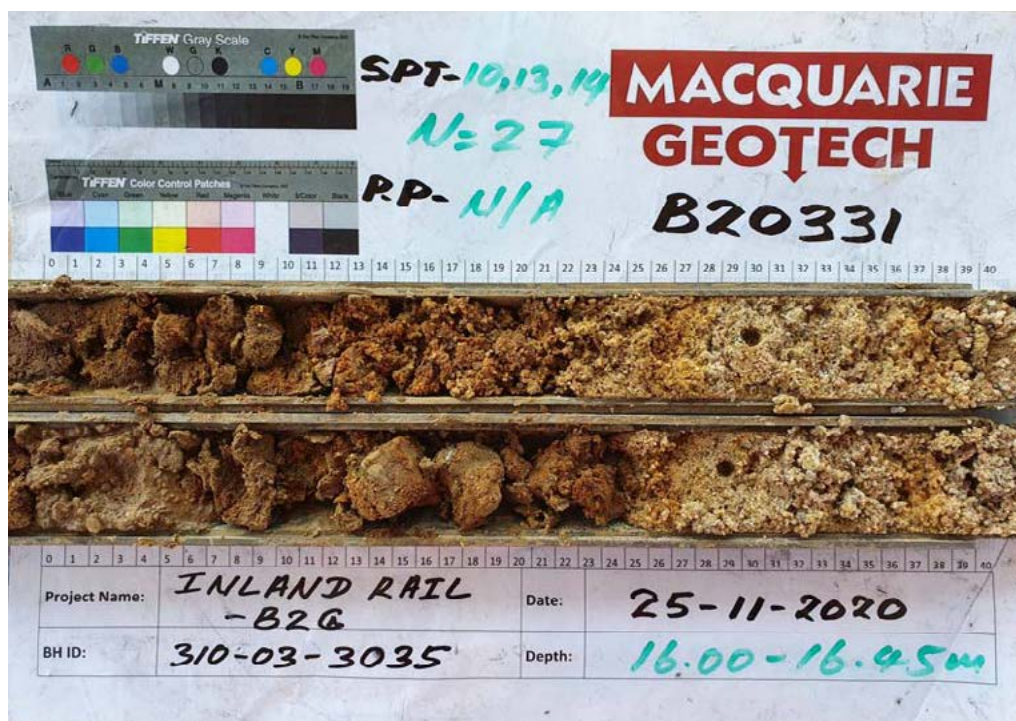


310-03-BH3035 Depth Range: 14.50 - 14.95 m

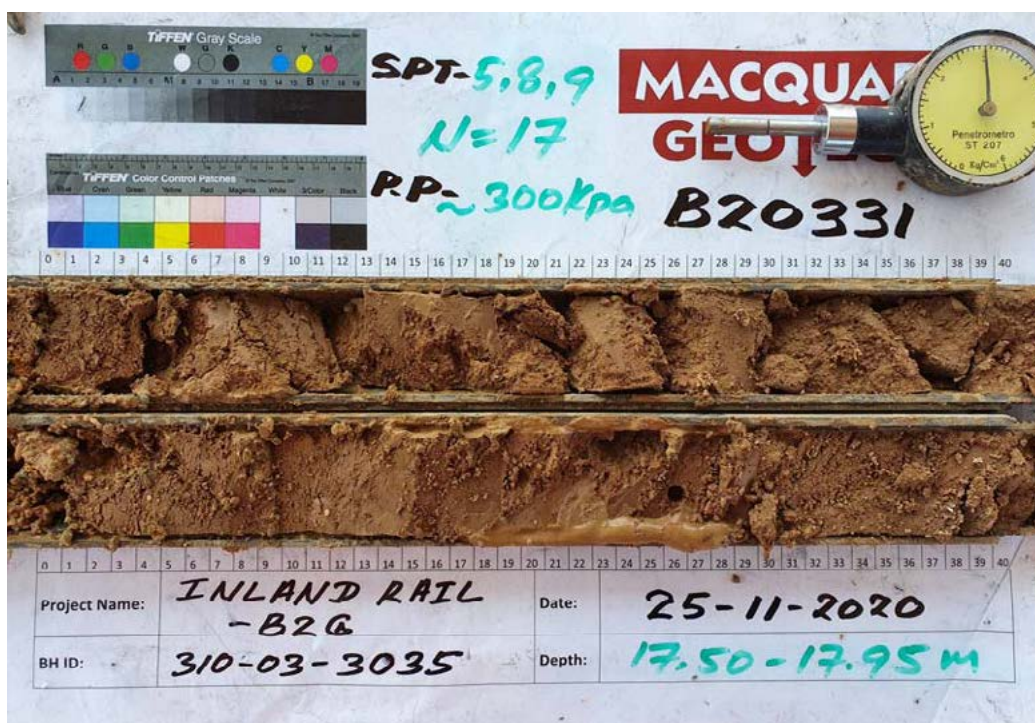
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC				Commenced:	24/11/2020	
Project Name:	Inland Rail B2G				Completed:	28/11/2020	
Hole Location:	Approx. CH141331 - Yandilla				Logged By:	V. Chandrasena	
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56				Checked By:	J.Boyle	
Drill Model and Mounting:	Hanjin DB8		Inclination:	-90°	RL Surface:	376.81 m	
Hole Diameter:	115 mm		Bearing:		Datum:	AHD	Operator: R. Adamson



310-03-BH3035 Depth Range: 16.00 - 16.45 m



310-03-BH3035 Depth Range: 17.50 - 17.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	R. Adamson



310-03-BH3035 Depth Range: 19.00 - 19.45 m

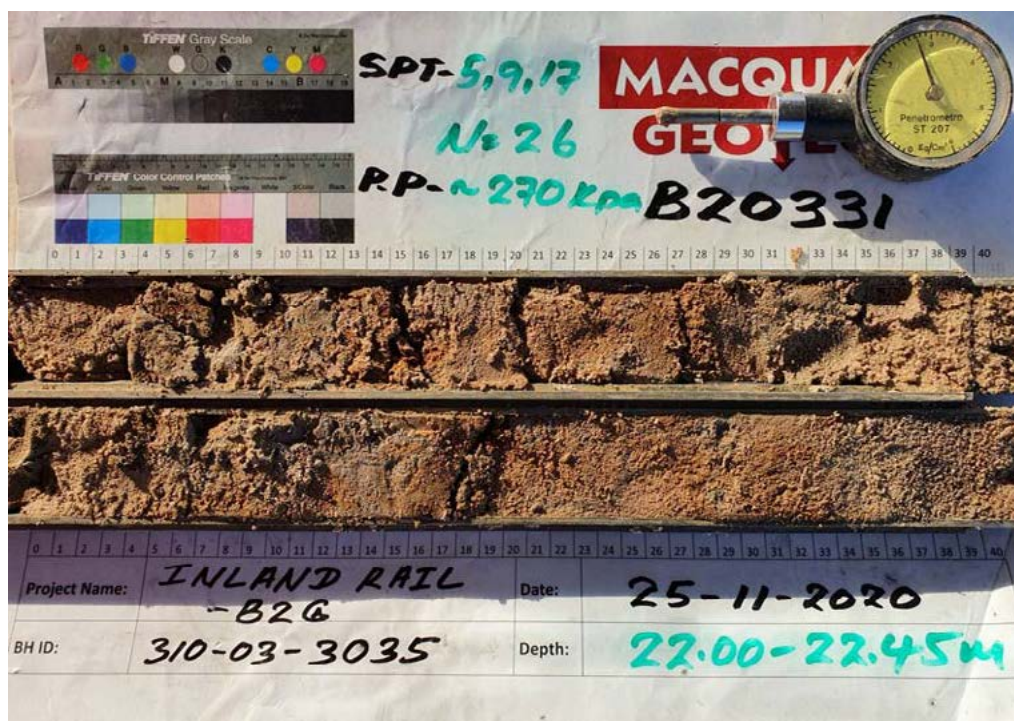


310-03-BH3035 Depth Range: 20.50 - 20.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	376.81 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Adamson



310-03-BH3035 Depth Range: 22.00 - 22.45 m



310-03-BH3035 Depth Range: 23.50 - 23.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	R. Adamson



310-03-BH3035 Depth Range: 25.00 - 25.45 m



310-03-BH3035 Depth Range: 26.50 - 26.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: R. Adamson



310-03-BH3035 Depth Range: 30.00 - 30.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/11/2020	
Project Name: Inland Rail B2G		Completed: 28/11/2020	
Hole Location: Approx. CH141331 - Yandilla		Logged By: V. Chandrasena	
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Hanjin DB8		Inclination: -90°	
Barrel Type and Length: HQ3 3 m		RL Surface: 376.81 m	
		Datum: AHD	
		Operator: R. Adamson	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
						351.8	25						
						350.8	26						
									Continued from non-cored borehole sheet				
			0		0	349.8	27		SILTSTONE recovered as: Silty CLAY with sand; low to medium plasticity, brown grey mottled orange, fine to medium grained sand.				-26.75: PP In-situ =530 kPa
			100		0	348.8	28						-27.85: PP In-situ >600 kPa
			45		0	347.8	29						
						346.8	30		Below 30.0m : colour change to orange brown mottled grey.				-30.35: PP In-situ >600 kPa
			100		0	345.8	31						-31.20: PP In-situ >600 kPa

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water Level (Date) Inflow Partial Loss Complete Loss	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
Support T - Timbering				

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/11/2020											
Project Name: Inland Rail B2G		Completed: 28/11/2020											
Hole Location: Approx. CH141331 - Yandilla		Logged By: V. Chandrasena											
Hole Coordinates: 339865.7 m E 6920650.9 m N MGA94 Zone 56		Checked By: J.Boyle											
Drill Model and Mounting: Hanjin DB8		Inclination: -90°	RL Surface: 376.81 m										
Barrel Type and Length: HQ3 3 m		Bearing:	Datum: AHD Operator: R. Adamson										
Drilling Information		Rock Substance		Rock Mass Defects									
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
HQ3			100		0		33	XXXXXX	SILTSTONE recovered as: Silty CLAY with sand; low to medium plasticity, brown grey mottled orange, fine to medium grained sand.(continued)				
							34	XXXXXX	Below 32.7m : colour tending to orange brown mottled red.	xw			- 32.90: PP In-situ >600 kPa
							35	XXXXXX					- 33.20: PP In-situ >600 kPa
							36		Hole Terminated at 35.10 m Target depth. Hole grouted to surface. Hole grouted to surface.				- 34.90: PP In-situ >600 kPa
							37						
							38						
							39						
Method		Water		Graphic Log/Core Loss		Weathering		Strength					
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High					
Support		T - Timbering											

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	376.81 m
Barrel Type and Length:	HQ3 3 m	Bearing:		Datum:	AHD Operator: R. Adamson



PointID : 310-03-BH3035 Depth Range: 26.50 - 29.00 m



PointID : 310-03-BH3035 Depth Range: 29.00 - 33.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141331 - Yandilla	Logged By:	V. Chandrasena
Hole Coordinates:	339865.7 m E 6920650.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°
Barrel Type and Length:	HQ3 3 m	RL Surface:	376.81 m
		Bearing:	
		Datum:	AHD
		Operator:	R. Adamson



PointID : 310-03-BH3035 Depth Range: 33.00 - 35.10 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH141577 - Yandilla
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56

Commenced: 24/11/2020
Completed: 26/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.45 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: T.Lanaway

Drilling Information							Soil Description							Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations			
AD/T				8,14,17 N=31					SC						ALLUVIAL SOIL			
				D00850 8.50-9.00 m		370.5	9		SC	Clayey SAND trace gravel; fine to coarse grained, mottled grey yellow orange brown, low to medium plasticity clay, with clay lenses up to 50mm, fine to coarse rounded to sub-angular gravel.	D	D						
				S00900 SPT 9.00-9.45 m 12,16,22 N=38		369.5	10											
				D01000 10.00-10.50 m		368.5	11		CL-CI	Sandy silty CLAY with gravel; medium to high plasticity, orange grey brown, fine to medium grained sand, fine rounded to sub-rounded gravel.	M (<PL)	VSt						
				S01050 SPT 10.50-10.95 m 8,11,10 N=21		368.5	12		SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with clay lenses up to 50mm.	D	MD						
				D01150 11.50-12.00 m		367.5	13		CL-CI	Sandy CLAY with gravel; low to medium plasticity, mottled grey yellow brown, fine to coarse grained sand, fine to coarse sub-rounded to sub-angular gravel.	M (<PL)	VSt						
				S01200 SPT 12.00-12.45 m 12,14,14 N=28		366.5	14		SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse sub-rounded to sub-angular gravel, low to medium plasticity clay.					AEOLIAN SOIL			
				D01300 13.00-13.50 m		365.5	15											
				S01350 SPT 13.50-13.95 m 10,15,20 N=35		365.5												
				D01500 SPT 15.00-15.45 m 12,14,15 N=29		364.5			SC	Clayey SAND trace gravel; fine to coarse grained, mottled grey, yellow brown, low to medium plasticity clay, fine to medium sub-rounded to sub-angular gravel.					ALLUVIAL SOIL			
									SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse sub-rounded to sub-angular gravel, low to medium plasticity clay.	W	MD			Standing Water Level - 25/11/2020			
Method AS - Auger Screwing RR - Rock Roller WB - Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																		

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/11/2020														
Project Name: Inland Rail B2G		Completed: 26/11/2020														
Hole Location: Approx. CH141577 - Yandilla		Logged By: G.Meadows														
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56		Checked By: J.Boyle														
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°														
Hole Diameter: 115 mm		RL Surface: 379.45 m														
		Bearing: Datum: AHD Operator: T.Lanaway														
Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				S01650 SPT 16.50-16.95 m 6,7,15 N=22		362.5	17		SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse sub-rounded to sub-angular gravel, low to medium plasticity clay. (continued)	W	MD			ALLUVIAL SOIL	
								SC	Clayey SAND trace gravel; fine to coarse grained, mottled grey, yellow brown, low to medium plasticity clay, fine to medium sub-rounded to sub-angular gravel.							
									SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse sub-rounded to sub-angular gravel, low to medium plasticity clay.						
				S01800 SPT 18.00-18.45 m 8,14,15 N=29 PP 18.18 m =220 kPa		361.5	18		CL-CI	Sandy silty CLAY with gravel; medium to high plasticity, orange grey brown, fine to medium grained sand, fine rounded to sub-rounded gravel.	M (-PL)	VSt	x			
									SC	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with clay lenses up to 50mm.	(-PL)	MD				
									CL-CI	Clayey gravelly SAND; fine to coarse grained, mottled grey yellow orange brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with clay lenses up to 50mm.	M (-PL)				RESIDUAL SOIL	
									CL-CI	Sandy silty CLAY with gravel; medium to high plasticity, orange grey brown, fine to medium grained sand, fine rounded to sub-rounded gravel.						
				S01950 SPT 19.50-19.95 m 6,10,15 N=25 PP 19.95 m =550 kPa		359.5	20			Silty CLAY with sand; low to medium plasticity, mottled orange brown grey, fine grained sand.		VSt		x		
				S02050 SPT 20.50-20.95 m 6,11,17 N=28 S02100 SPT 21.00-21.45 m 5,7,7 N=14 PP 21.45 m =450 kPa		358.5	21				M (<PL)			x		
													St to VSt			
				S02250 SPT 22.50-22.95 m 6,11,17 N=28 PP 22.95 m =560 kPa		357.5	22									

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH141577 - Yandilla
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56

Commenced: 24/11/2020
Completed: 26/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.45 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: T.Lanaway

Drilling Information							Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				S02400 SPT 24.00-24.45 m 7,11,13 N=24 PP 24.27 m =300 kPa		354.5	25		CL-CI	Silty CLAY with sand; low to medium plasticity, mottled orange brown grey, fine grained sand. (continued)	M (<PL)	VSt		100	RESIDUAL SOIL	
				S02550 SPT 25.50-25.95 m 8,11,14 N=25 PP 25.74 m =490 kPa		353.5	26		200							
				S02700 SPT 27.00-27.45 m 8,19,21 N=40 PP 27.45 m >600 kPa		352.5	27		300							
				S02850 SPT 28.50-28.95 m 12,18,29 N=47 PP 28.95 m >600 kPa		351.5	28		400							
				S03000 SPT 30.00-30.45 m 15,21,29 N=50 PP 30.45 m >600 kPa		349.5	30		500							
						348.5	31			From 27.00m: high plasticity clay.						
									CL-CI	Extremely weathered SILTSTONE: Recovered as Silty CLAY with sand; low to medium plasticity, mottled red orange white, fine grained sand, indistictly laminated and inclined up to 15°.		H			EXTREMELY WEATHERED MATERIAL	
Continued on cored borehole sheet																

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

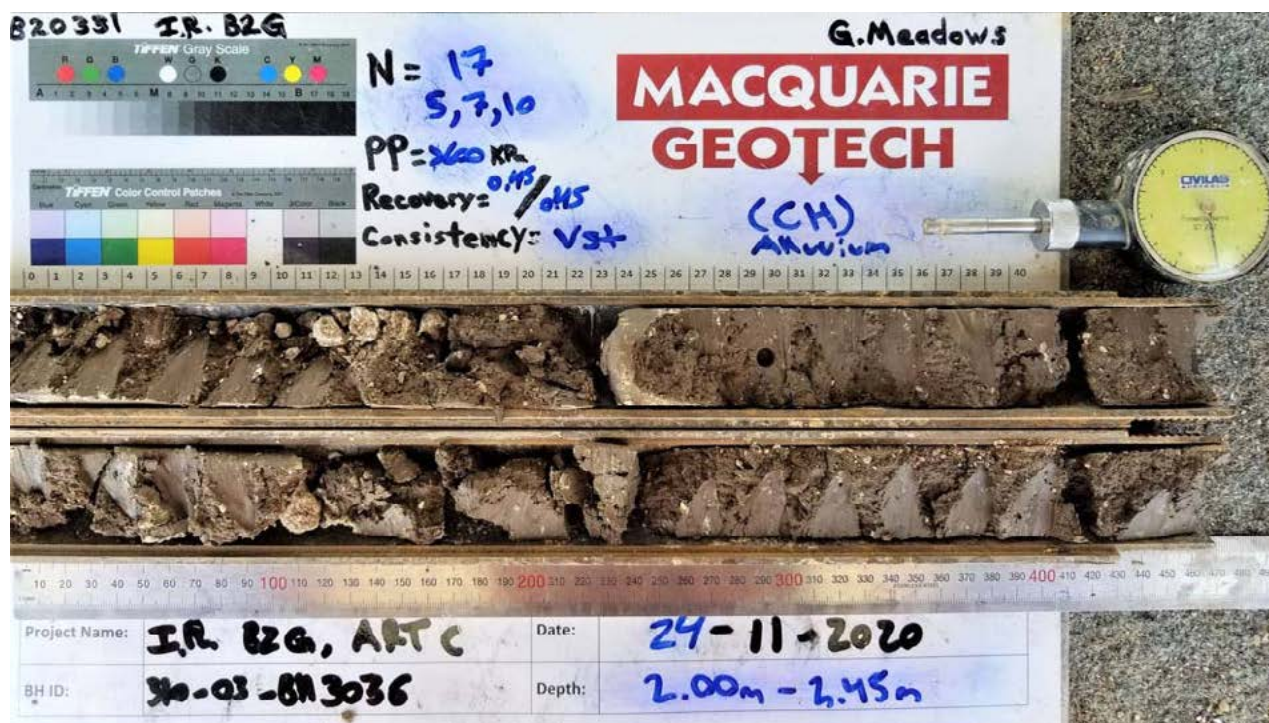
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3036 Depth Range: 0.50 - 0.95 m

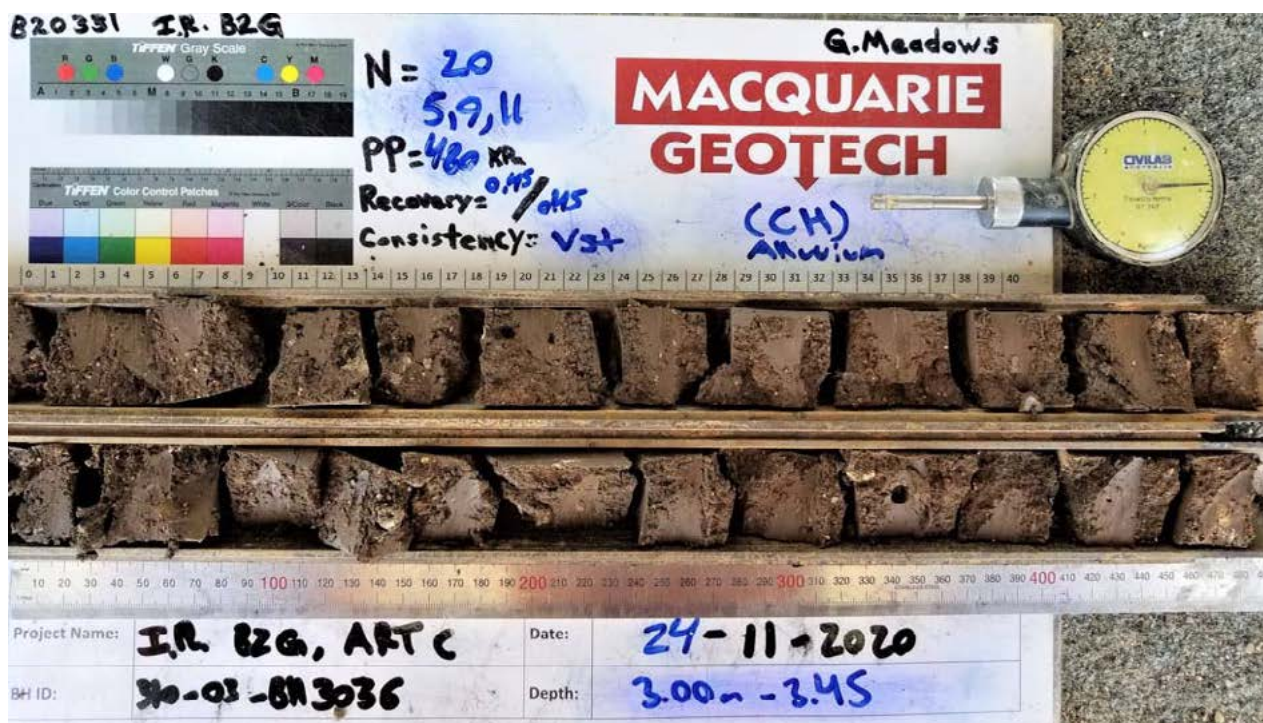


310-03-BH3036 Depth Range: 2.00 - 2.45 m

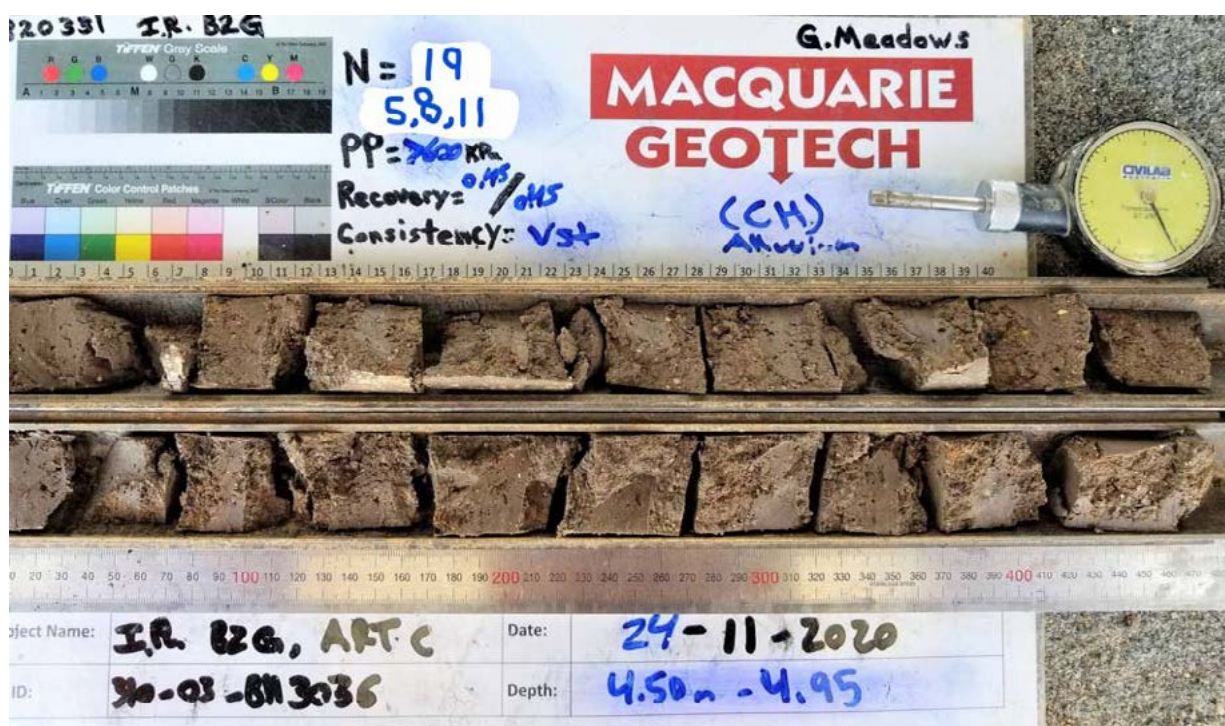
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3036 Depth Range: 3.00 - 3.45 m

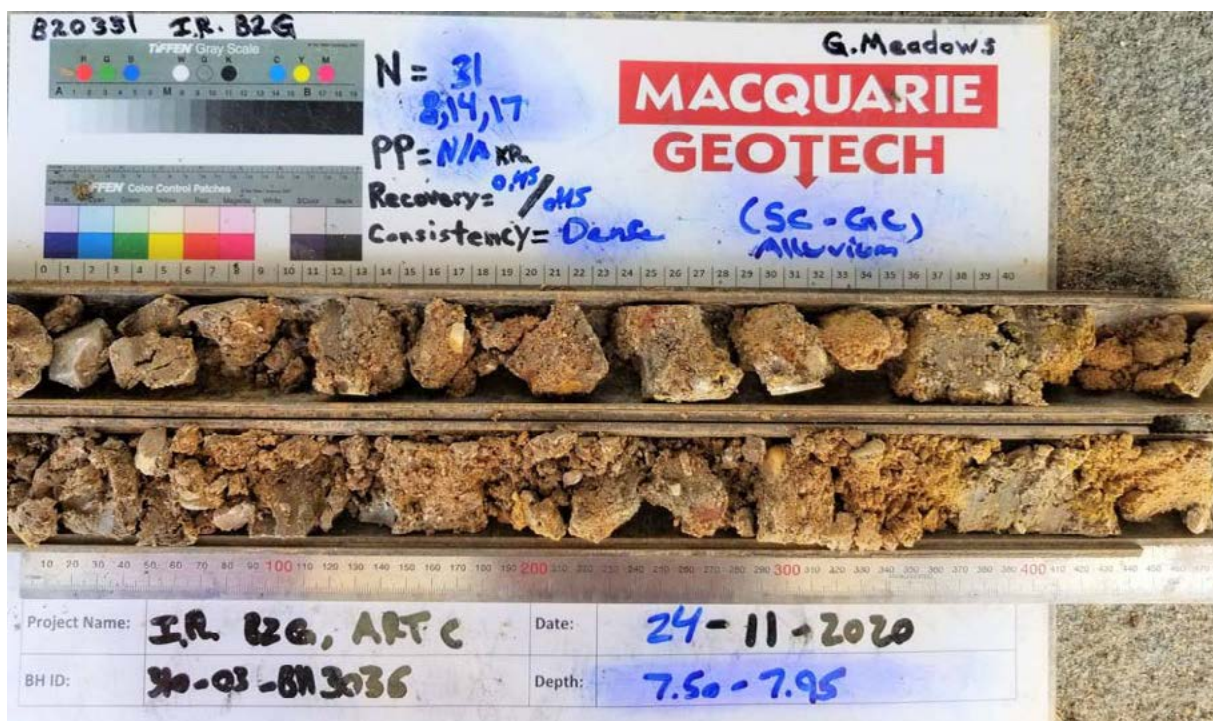


310-03-BH3036 Depth Range: 4.50 - 4.95 m

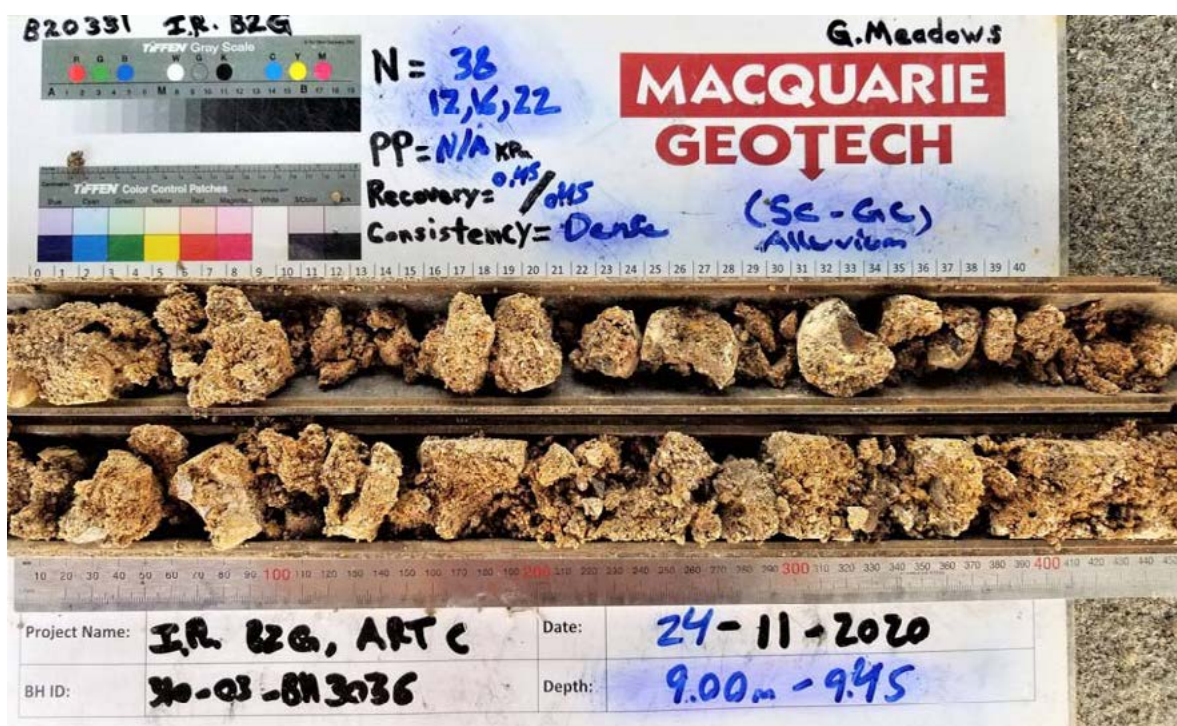
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020				
Project Name:	Inland Rail B2G	Completed:	26/11/2020				
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows				
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.45 m		
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway



310-03-BH3036 Depth Range: 7.50 - 7.95 m

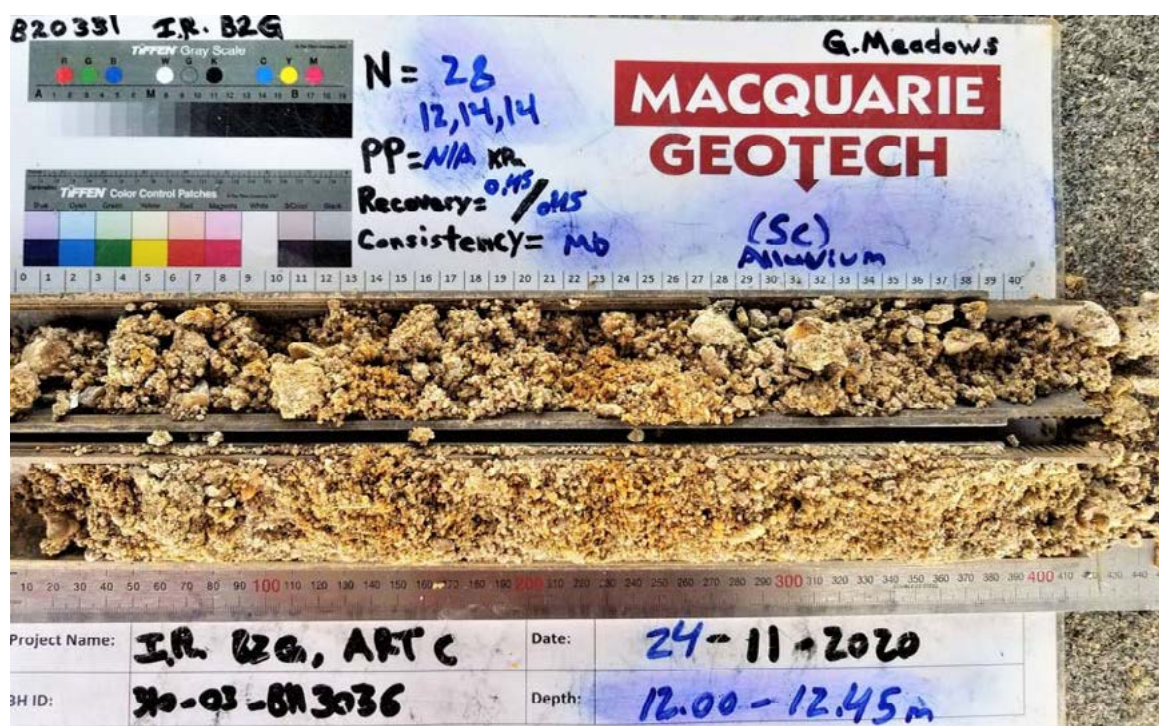
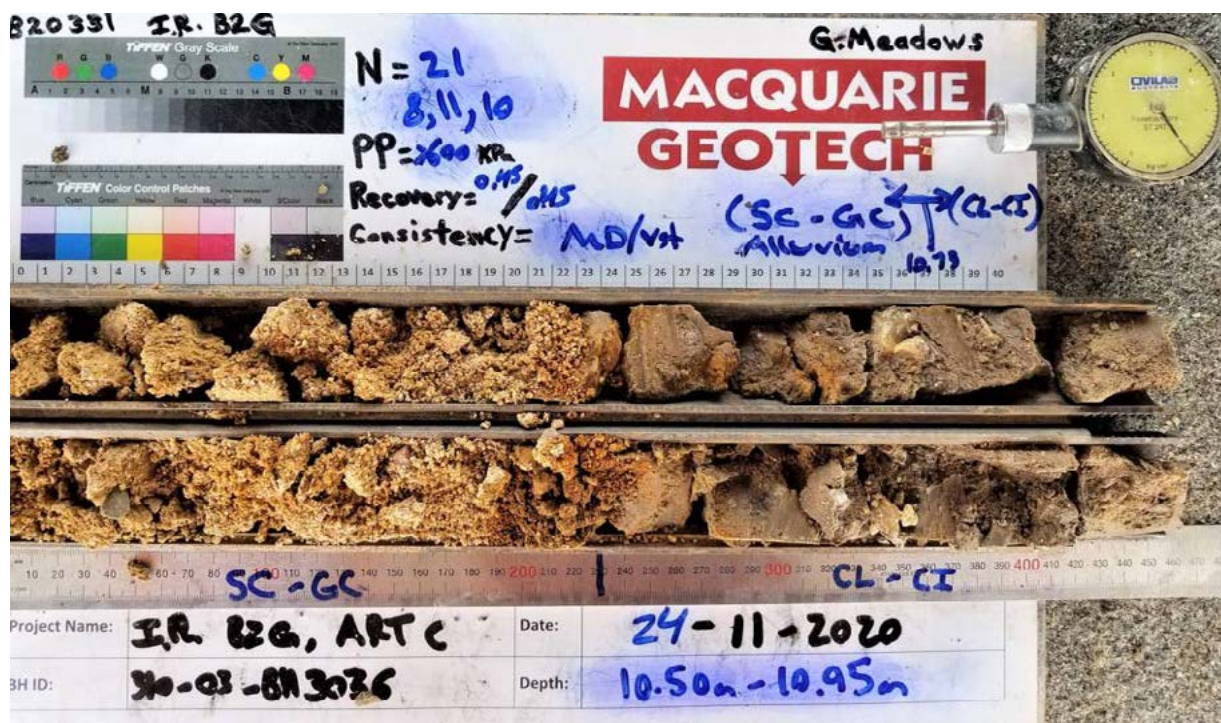


310-03-BH3036 Depth Range: 9.00 - 9.45 m

Engineering Log - Borehole

Project No.: B20331

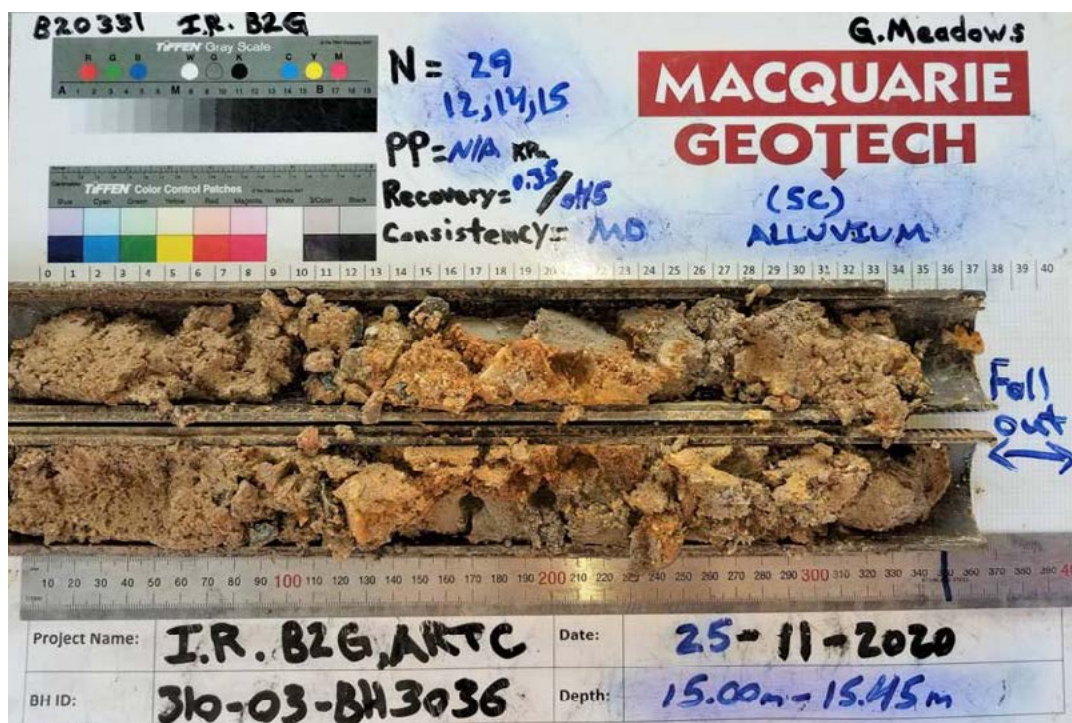
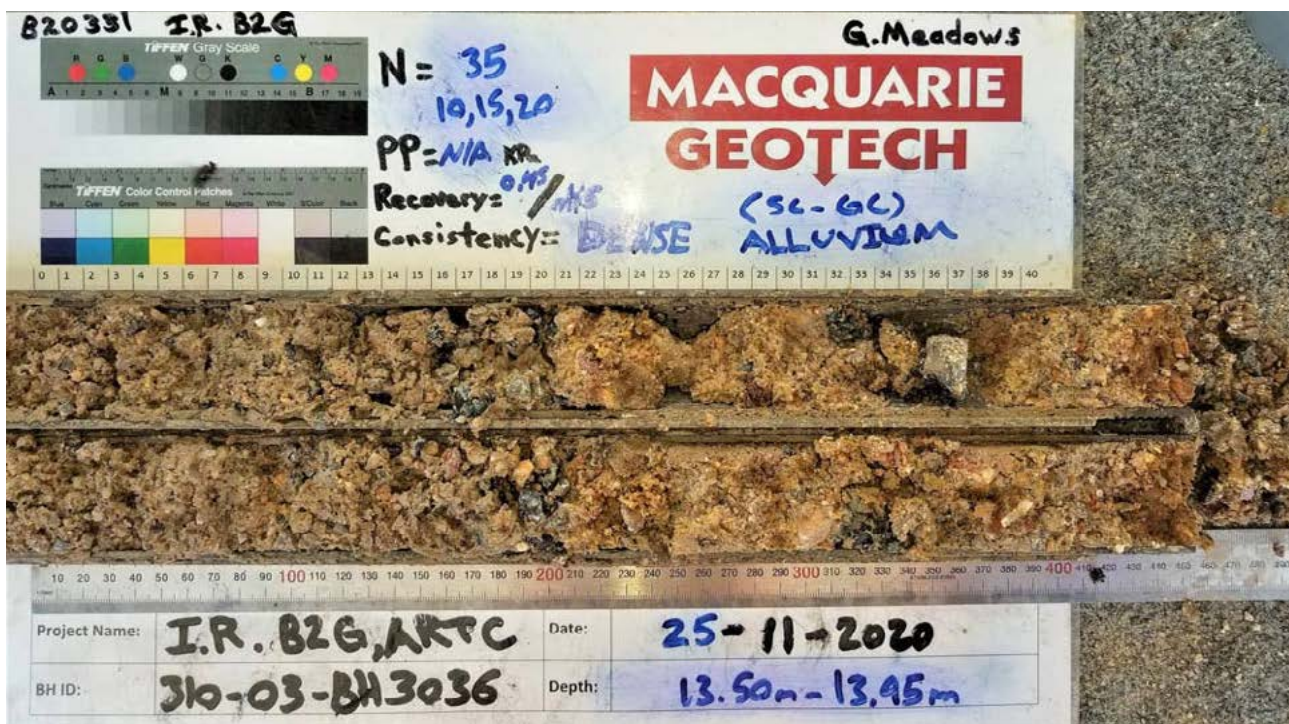
Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



Engineering Log - Borehole

Project No.: B20331

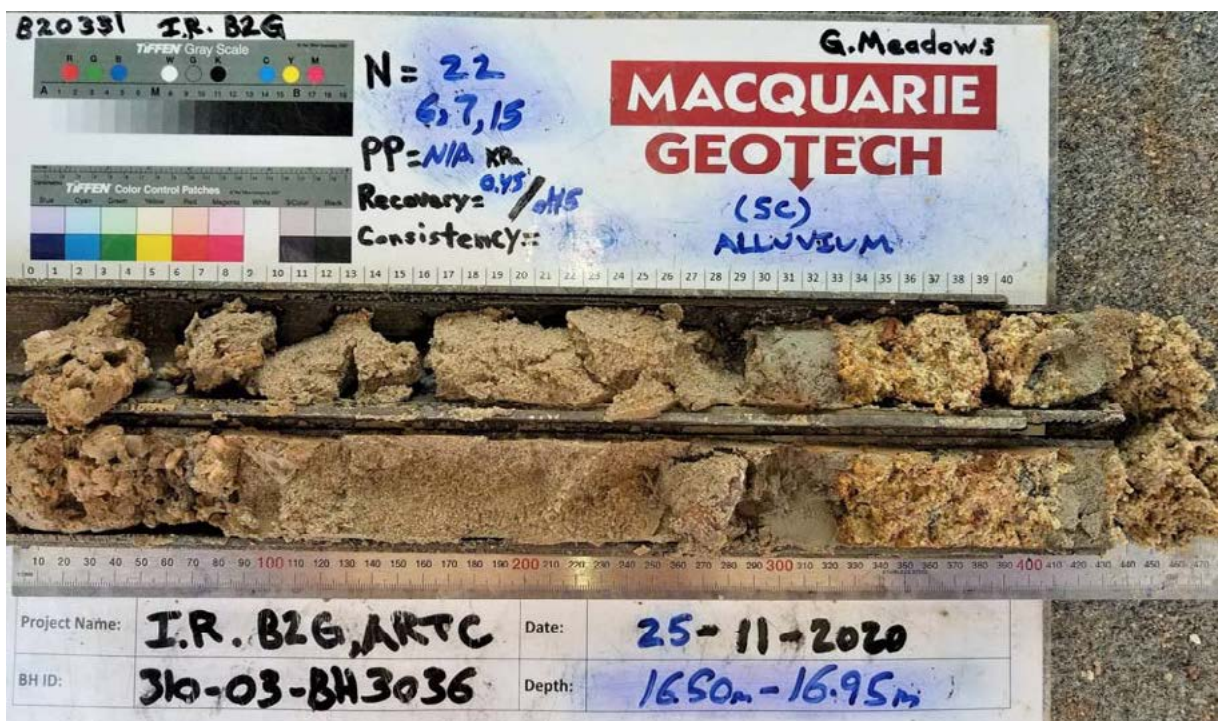
Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



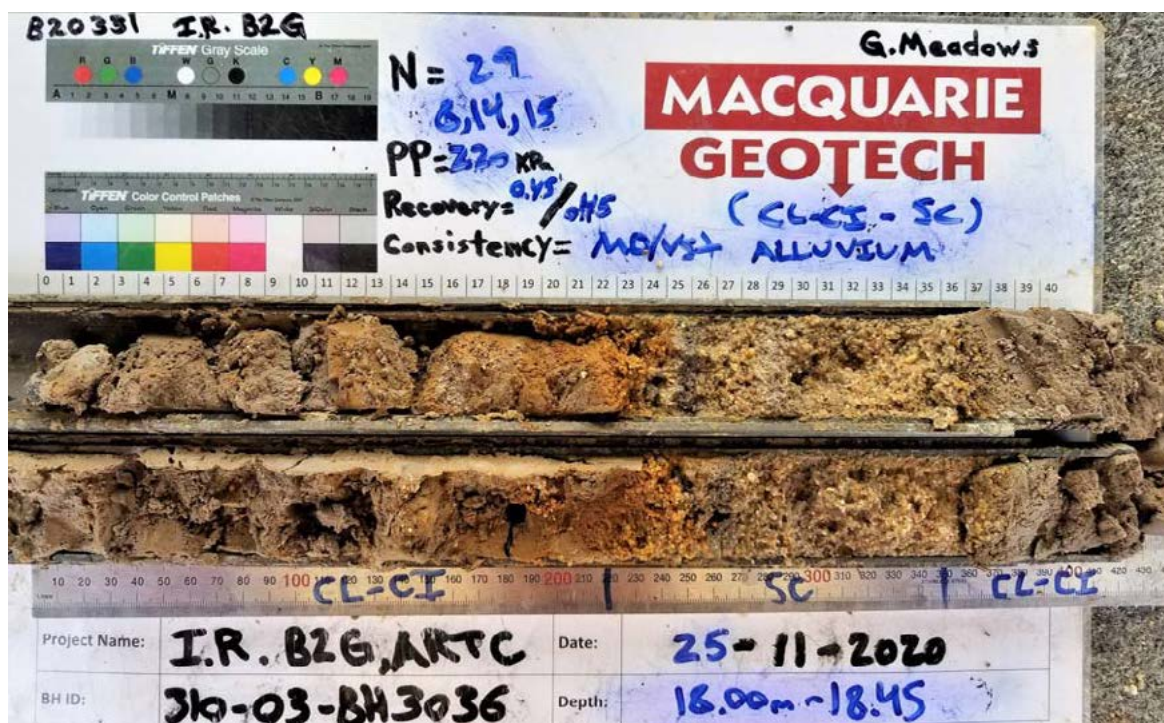
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3036 Depth Range: 16.50 - 16.95 m



310-03-BH3036 Depth Range: 18.00 - 18.45 m

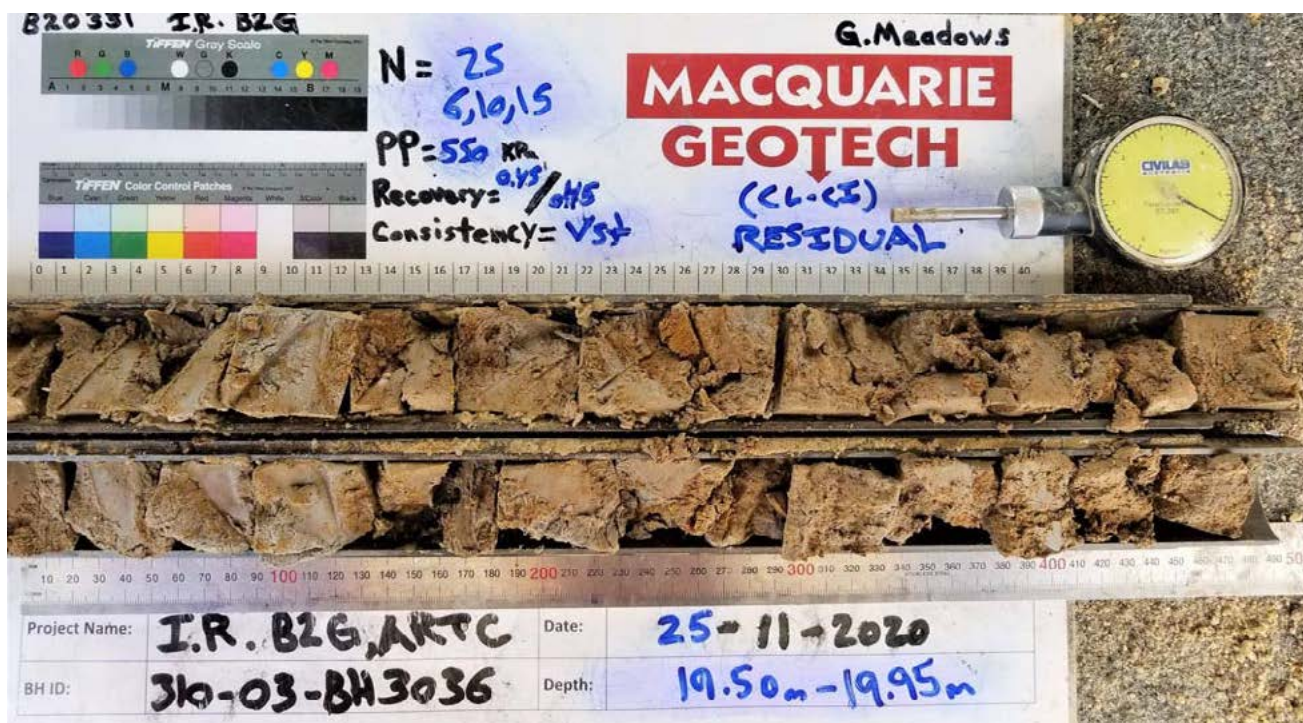
Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH141577 - Yandilla
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56

Commenced: 24/11/2020
Completed: 26/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 379.45 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: T.Lanaway



310-03-BH3036 Depth Range: 19.50 - 19.95 m



310-03-BH3036 Depth Range: 21.00 - 21.45 m

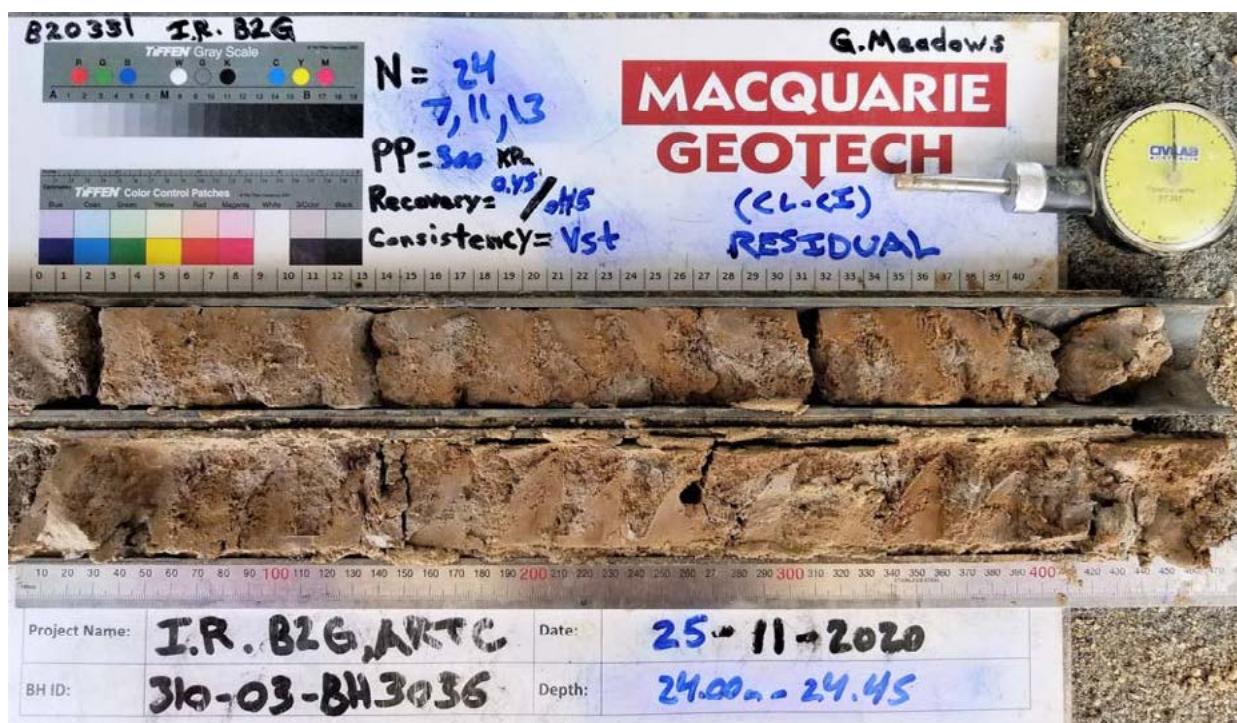
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3036 Depth Range: 22.50 - 22.95 m

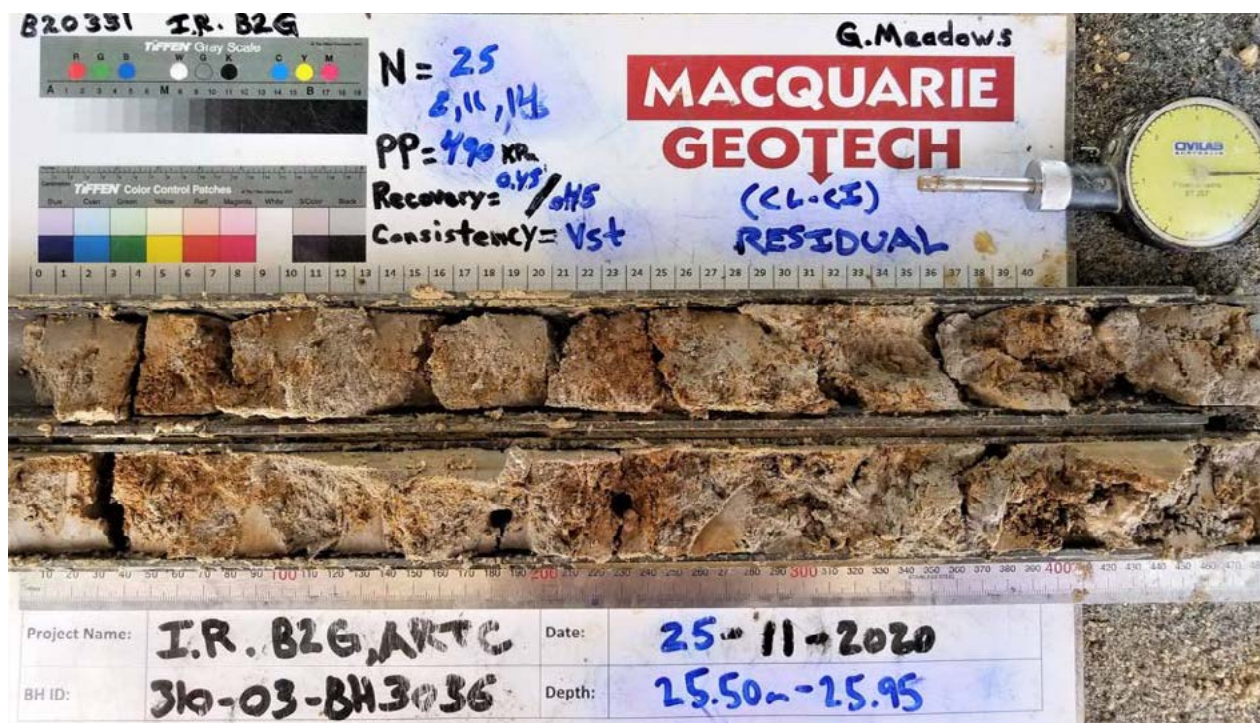


310-03-BH3036 Depth Range: 24.00 - 24.45 m

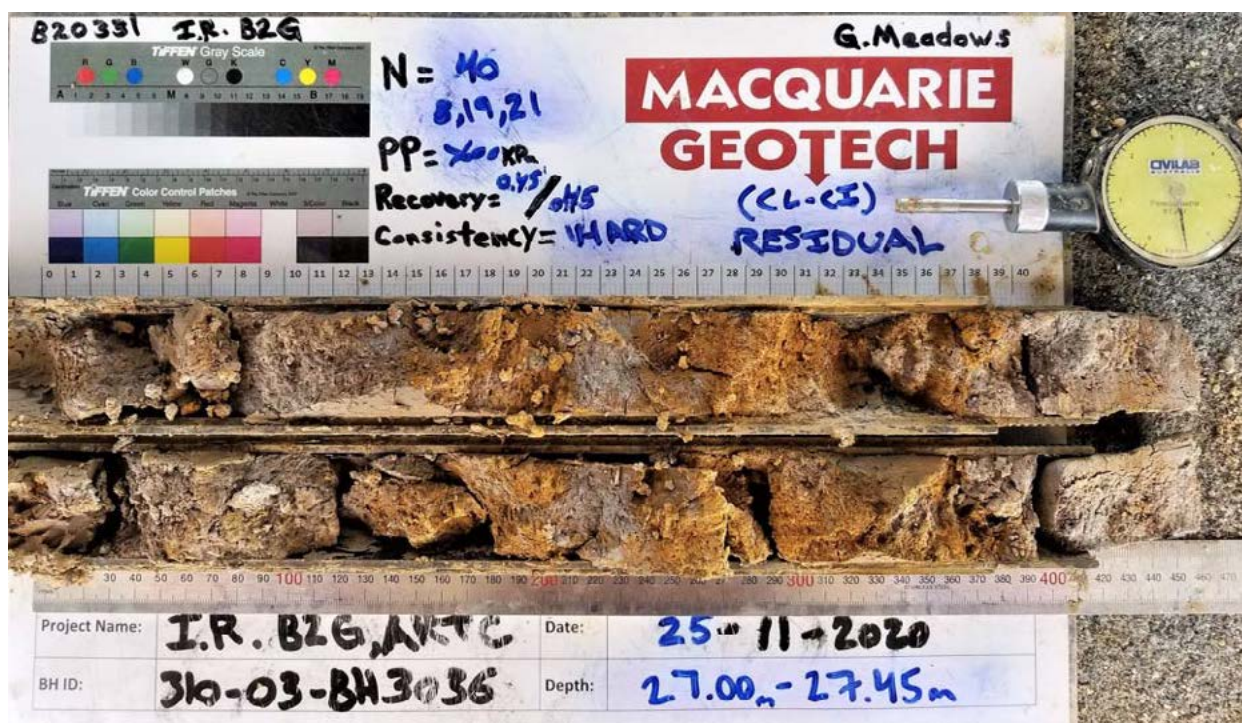
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3036 Depth Range: 25.50 - 25.95 m



310-03-BH3036 Depth Range: 27.00 - 27.45 m

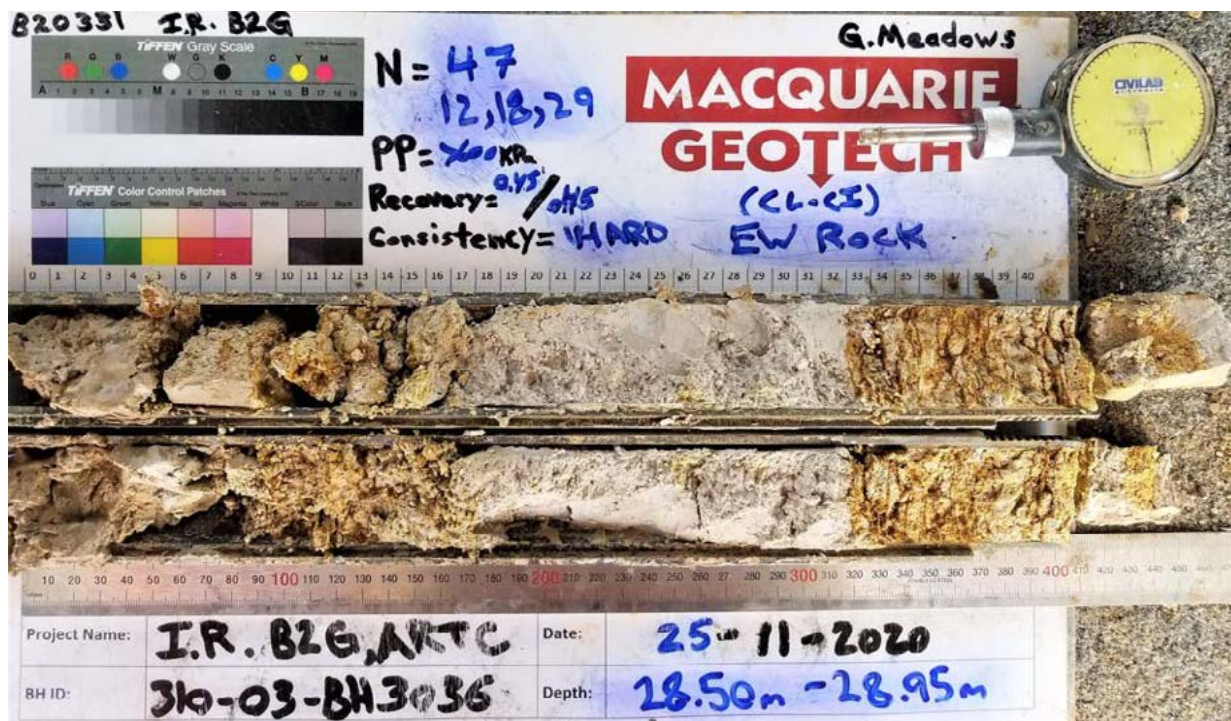
Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH141577 - Yandilla
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56

Commenced: 24/11/2020
Completed: 26/11/2020
Logged By: G.Meadows
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 379.45 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: T.Lanaway



310-03-BH3036 Depth Range: 28.50 - 28.95 m



310-03-BH3036 Depth Range: 30.00 - 30.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/11/2020	
Project Name: Inland Rail B2G		Completed: 26/11/2020	
Hole Location: Approx. CH141577 - Yandilla		Logged By: G.Meadows	
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Barrel Type and Length: HQ3 3 m		RL Surface: 379.45 m	
		Datum: AHD	
		Operator: T.Lanaway	

Drilling Information				Rock Substance				Rock Mass Defects					
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
										EL VL L M H VH EH	30 100 300 1000 3000	Particular	General
						354.5	25						
						353.5	26						
						352.5	27						
						351.5	28						
						350.5	29						
						349.5	30						
						348.5	31						
Continued from non-cored borehole sheet													
HQ3			100	0						XW			

Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel	Water Level (Date) Inflow Partial Loss Complete Loss	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil	Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High
Support T - Timbering				

Engineering Log - Cored Borehole

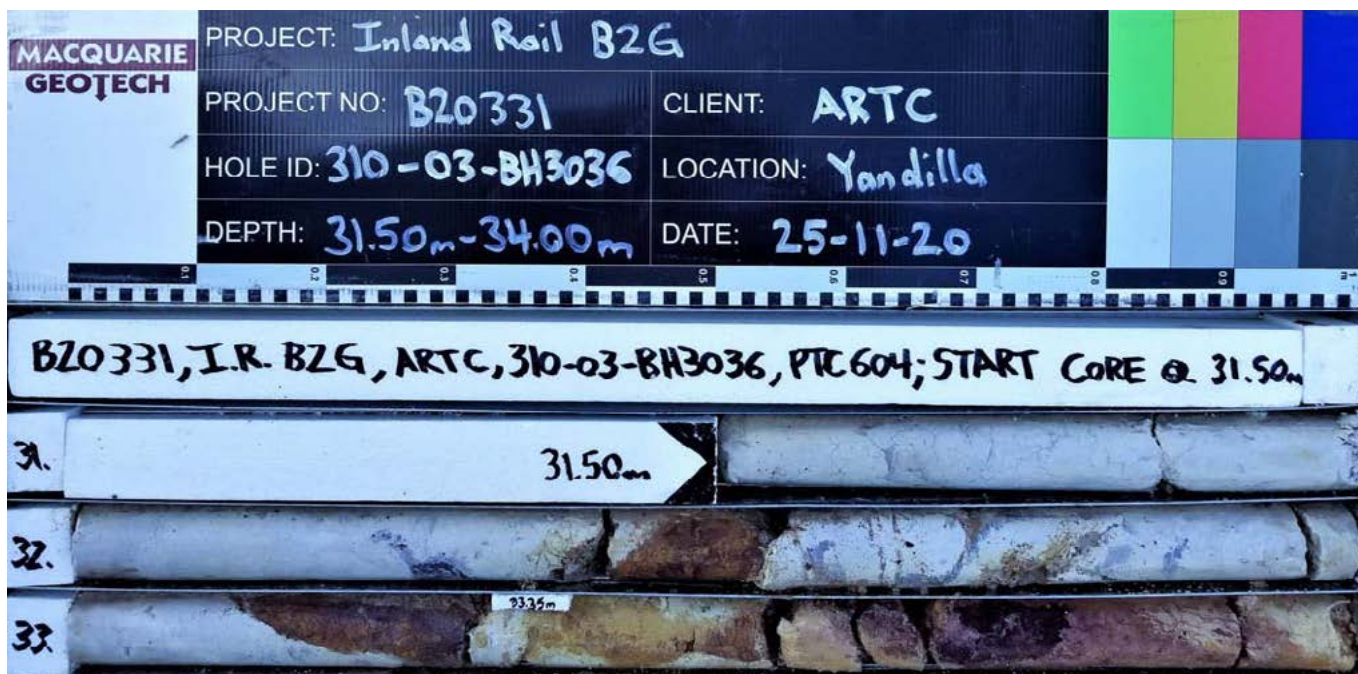
Project No.: B20331

Client: ARTC		Commenced: 24/11/2020												
Project Name: Inland Rail B2G		Completed: 26/11/2020												
Hole Location: Approx. CH141577 - Yandilla		Logged By: G.Meadows												
Hole Coordinates: 339974.3 m E 6920872.6 m N MGA94 Zone 56		Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.45 m											
Barrel Type and Length: HQ3 3 m		Bearing:	Datum: AHD Operator: T.Lanaway											
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
													Particular	General
	HQ3	80% Polymer RETURN Guagum used	100		0		33	346.5	SANDSTONE/SILTSTONE recovered as: (CL-CI) Silty CLAY with sand; low to medium plasticity, mottled red orange white, fine grained sand, indistictly laminated and inclined up to 15°, MC<PL, PP=>600KPa.(continued)	XW				
			100		0		34	345.5						
							35	344.5						
							36	343.5						
							37	342.5	Hole Terminated at 36.30 m Target depth. Hole grouted to surface. Hole grouted to surface.					
							38	341.5						
							39	340.5						
Method		Water		Graphic Log/Core Loss		Weathering		Strength						
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High						
Support		T - Timbering												

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/11/2020
Project Name:	Inland Rail B2G	Completed:	26/11/2020
Hole Location:	Approx. CH141577 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	339974.3 m E 6920872.6 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ3 3 m	RL Surface:	379.45 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



PointID : 310-03-BH3036 Depth Range: 31.50 - 34.00 m



PointID : 310-03-BH3036 Depth Range: 34.00 - 36.30 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC				Commenced: 25/11/2020												
Project Name: Inland Rail B2G				Completed: 28/11/2020												
Hole Location: Approx. CH141785 - Yandilla				Logged By: H.Tran												
Hole Coordinates: 340064.3 m E 6921058.2 m N MGA94 Zone 56				Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°		RL Surface: 379.79 m		Operator: J. Komung										
Hole Diameter: 115 mm		Bearing:		Datum: AHD												
Drilling Information				Soil Description				Observations								
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/				J00010 0.10-0.20 m PID 0.10 m 0.3 ppm D00035 0.35-0.50 m J00040 0.40-0.50 m S00050 SPT 0.50-0.95 m 2.2,4 N=6 PID 0.50 m 1.3 ppm PP 0.75 m =160 kPa J00095 0.95-1.00 m PP 0.95 m =92 kPa PID 0.95 m 0.3 ppm D00100 1.00-1.50 m U00150 1.50-1.95 m S00200 SPT 2.00-2.45 m 3.5,7 N=12 PP 2.40 m =320 kPa D00300 3.00-3.50 m S00350 SPT 3.50-3.95 m 3.5,8 N=13 PP 3.85 m =310 kPa D00450 4.50-5.00 m S00500 SPT 5.00-5.45 m 4,6,9 N=15 PP 5.30 m =520 kPa D00600 6.00-6.50 m S00650 SPT 6.50-6.95 m 3,6,9 N=15 PP 6.85 m =520 kPa D00750		378.8	1		CH	FILL Silty CLAY trace sand and gravel: high plasticity, black, fine grained sand, fine to medium sub-rounded gravel. Silty CLAY trace gravel: high plasticity, black, fine sub-rounded gravel.	F					REWORKED TOPSOIL
						377.8	2		CI-CH	Silty CLAY: medium to high plasticity, dark brown.					ALLUVIAL SOIL	
						376.8	3									
						375.8	4									
						374.8	5									
						373.8	6									
						372.8	7									
Method AS - Auger Screwing RR - Rock Roller WB - Washbore				Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense				
Support C - Casing				Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss				Classification Symbols and Soil Descriptions Based on Unified Soil Classification System		Plastic Limit < PL = PL < PL						

Client: ARTC		Commenced: 25/11/2020	
Project Name: Inland Rail B2G		Completed: 28/11/2020	
Hole Location: Approx. CH141785 - Yandilla		Logged By: H.Tran	
Hole Coordinates: 340064.3 m E 6921058.2 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.79 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: J. Komung
Drilling Information			
Soil Description			
Observations			
Method	Penetration	Support	Water
Samples Tests Remarks	Recovery	RL (m)	Depth (m)
Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition Consistency Relative Density
Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
100			
200			
300			
400			
500			
AD/V			
WB			
7.50-8.00 m S00800 SPT 8.00-8.45 m 6,13,13 N=26			
370.8			
9			
SC			
Clayey SAND trace gravel: fine to coarse grained, dark yellow brown and grey, medium plasticity clay, fine to medium sub-rounded gravel.			
Below 8.50m: clay decreasing with depth.			
D00900 9.00-9.50 m			
369.8			
10			
SP			
Clayey SAND trace gravel: fine to coarse grained, yellow brown, low to medium plasticity clay, fine to medium sub-rounded gravel.			
Below 9.50m: trace low plasticity clay.			
S00950 SPT 9.50-9.95 m 6,11,10 N=21			
368.8			
11			
SP			
Gravelly SAND trace clay: fine to coarse grained, yellow brown, fine to coarse sub-rounded gravel, low plasticity clay.			
Below 10.30m: with fine to coarse sub-rounded gravel.			
D10500 10.50-11.00 m			
367.8			
12			
CI-CH			
Gravelly Sandy CLAY: medium to high plasticity, dark grey and pale yellow brown, fine to coarse grained sand, fine to coarse sub-rounded gravel.			
From 12.50 to 12.95m: Silty CLAY interbedded with Gravelly SAND.			
S01100 SPT 11.00-11.35 m 23,42,22/50mm HB N=64/200mm			
366.8			
13			
M			
(<PL)			
VSt			
D01200 12.00-12.50 m			
365.8			
14			
MH			
Clayey SILT trace sand: pale brown, high plasticity clay, trace fine grained sand.			
S01250 SPT 12.50-12.95 m 8,11,11 N=22			
364.8			
15			
M			
(>PL)			
St			
S01400 SPT 14.00-14.45 m 3,5,7 N=12			
364.8			
16			
CL-CI			
Silty CLAY with sand: low to medium plasticity, pale grey and brown, fine to coarse grained sand.			
S01550 SPT 15.50-15.95 m 2,5,6			
363.8			
17			
CL-CI			
Silty CLAY with sand: low to medium plasticity, pale grey and brown, fine to coarse grained sand.			
Method			
Penetration			
Water			
Samples and Tests			
Moisture Condition			
Consistency/Relative Density			
Support			
Graphic Log/Core Loss			
Classification Symbols and Soil Descriptions			
Plastic Limit			
Structure and Additional Observations			
ALLUVIAL SOIL			
Standing Water Level - 27/11/2020			
Standing Water Level - 28/11/2020			
AS - Auger Screwing			
RR - Rock Roller			
WB - Washbore			
No resistance ranging to refusal			
Level (Date)			
Inflow			
Partial Loss			
Complete Loss			
U - Undisturbed Sample			
D - Disturbed Sample			
SPT - Standard Penetration Test			
D - Dry			
M - Moist			
W - Wet			
VS - Very Soft			
S - Soft			
F - Firm			
VSt - Very Stiff			
H - Hard			
VL - Very Loose			
L - Loose			
MD - Medium Dense			
D - Dense			
VD - Very Dense			
< PL			
= PL			
> PL			

Engineering Log - Borehole

Project No.: B20331

Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH141785 - Yandilla Hole Coordinates: 340064.3 m E 6921058.2 m N MGA94 Zone 56										Commenced: 25/11/2020 Completed: 28/11/2020 Logged By: H.Tran Checked By: J.Boyle										
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.79 m										
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: J. Komung										
Drilling Information							Soil Description							Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations					
WB				N=11 PP 15.75 m =180 kPa					CL-CI	Silty CLAY with sand: low to medium plasticity, pale grey and brown, fine to coarse grained sand. (continued)	M (>PL)	St			ALLUVIAL SOIL					
				S01700 SPT 17.00-17.45 m 9,13,12 N=25		362.8	17		SP	Gravelly SAND with clay: fine to coarse grained, pale yellow brown and off-white mottled dark red, fine to medium sub-rounded gravel, low plasticity clay.	W	MD								
				S01850 SPT 18.50-18.95 m 8,14,15 N=29		361.8	18													
				S02000 SPT 20.00-20.45 m 7,6,10 N=16 PP 20.30 m >600 kPa		360.8	19		CI	Silty CLAY: medium plasticity, grey and yellow brown.										
				S02150 SPT 21.50-21.95 m 14,17,24 N=41 PP 21.85 m =460 kPa		359.8	20					VSt								
				S02300 SPT 23.00-23.35 m 20,29,21/50mm HB N=50/200mm PP 23.30 m		358.8	21					M (>PL)								
						357.8	22			From 21.50 to 21.95m: with calcerous material.										
						356.8	23		CL	Extremely weathered SILTSTONE: Recovered as Silty CLAY: low plasticity, off-white.		H			EXTREMELY WEATHERED MATERIAL					
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																				

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 25/11/2020																													
Project Name: Inland Rail B2G										Completed: 28/11/2020																													
Hole Location: Approx. CH141785 - Yandilla										Logged By: H.Tran																													
Hole Coordinates: 340064.3 m E 6921058.2 m N MGA94 Zone 56										Checked By: J.Boyle																													
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																													
Hole Diameter: 115 mm										RL Surface: 379.79 m																													
										Bearing: Datum: AHD Operator: J. Komung																													
Drilling Information										Soil Description										Observations																			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																								
WB				>600 kPa					CL	Extremely weathered SILTSTONE: Recovered as Silty CLAY: low plasticity, off-white. (continued)					EXTREMELY WEATHERED MATERIAL																								
				S02450 SPT 24.50-24.70 m 30,20/50mm HB N=20/50mm PP 24.65 m >600 kPa		354.8	25																																
				S02600 SPT 26.00-26.35 m 22,43,25/50mm HB N=68/200mm PP 26.30 m >600 kPa		353.8	26			From 26.15 to 26.25: thinly bedded with highly to extremely weathered SILTSTONE: Recovered as Clayey GRAVEL with sand: fine to coarse sub-angular to angular, dark red, low plasticity clay, fine to coarse grained sand.																													
				S02750 SPT 27.50-27.95 m 16,23,33 N=56 PP 27.90 m >600 kPa		351.8	28		CL-CI	Extremely weathered SILTSTONE: Recovered as Silty CLAY with gravel: low to medium plasticity, dark red, fine to medium sub-angular gravel.	M (>PL)																												
				S02900 SPT 29.00-29.45 m 18,21,28 N=49 PP 29.30 m >600 kPa		350.8	29																																
				S03050 SPT 30.50-30.95 m 6,12,16 N=28		348.8	31		CI-CH	Extremely weathered SILTSTONE: Sandy Silty CLAY: medium to high plasticity, yellow brown and pale brown, fine grained sand.																													
Method AS - Auger Screwing RR - Rock Roller WB- Washbore										Penetration No resistance ranging to refusal										Water Level (Date) Inflow Partial Loss Complete Loss										Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test									
Support C - Casing										Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss										Moisture Condition D - Dry M - Moist W - Wet Plastic Limit < PL = PL < PL										Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
										Classification Symbols and Soil Descriptions Based on Unified Soil Classification System																													

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.79 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 0.50 - 0.95 m

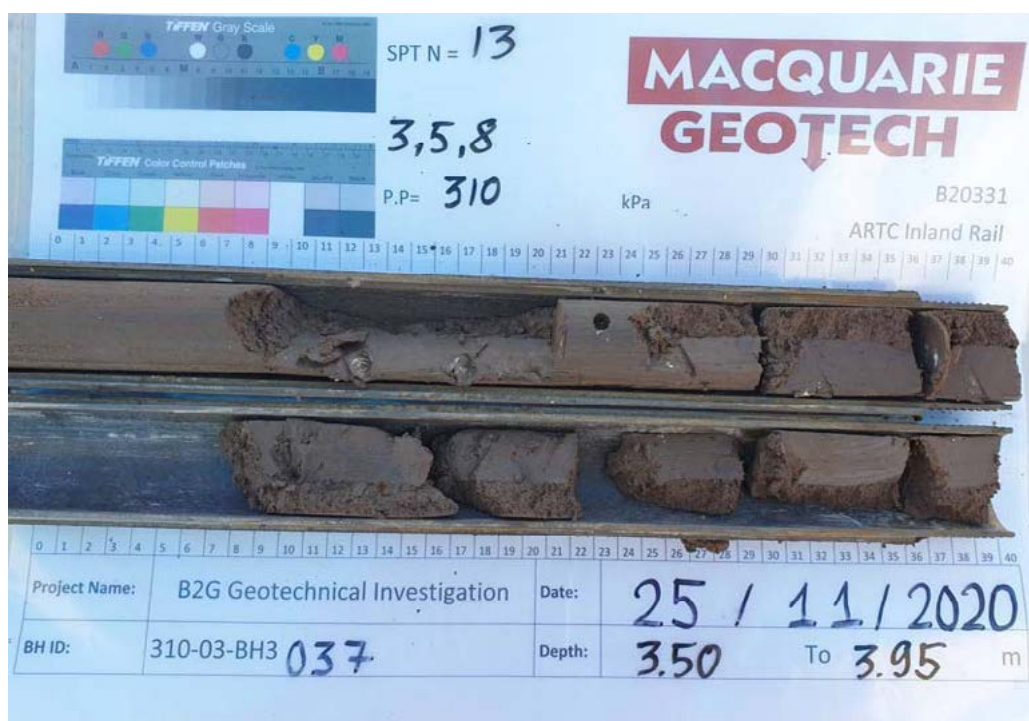


310-03-BH3037 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.79 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 3.50 - 3.95 m



310-03-BH3037 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.79 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 6.50 - 6.95 m



310-03-BH3037 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.79 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3037 Depth Range: 9.50 - 9.95 m



310-03-BH3037 Depth Range: 11.00 - 11.35 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.79 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 12.50 - 12.95 m



310-03-BH3037 Depth Range: 14.00 - 14.35 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.79 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3037 Depth Range: 15.50 - 15.95 m



310-03-BH3037 Depth Range: 17.00 - 17.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.79 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 18.50 - 18.95 m



310-03-BH3037 Depth Range: 20.00 - 20.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.79 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3037 Depth Range: 21.50 - 21.95 m



310-03-BH3037 Depth Range: 23.00 - 23.40 m

Engineering Log - Borehole

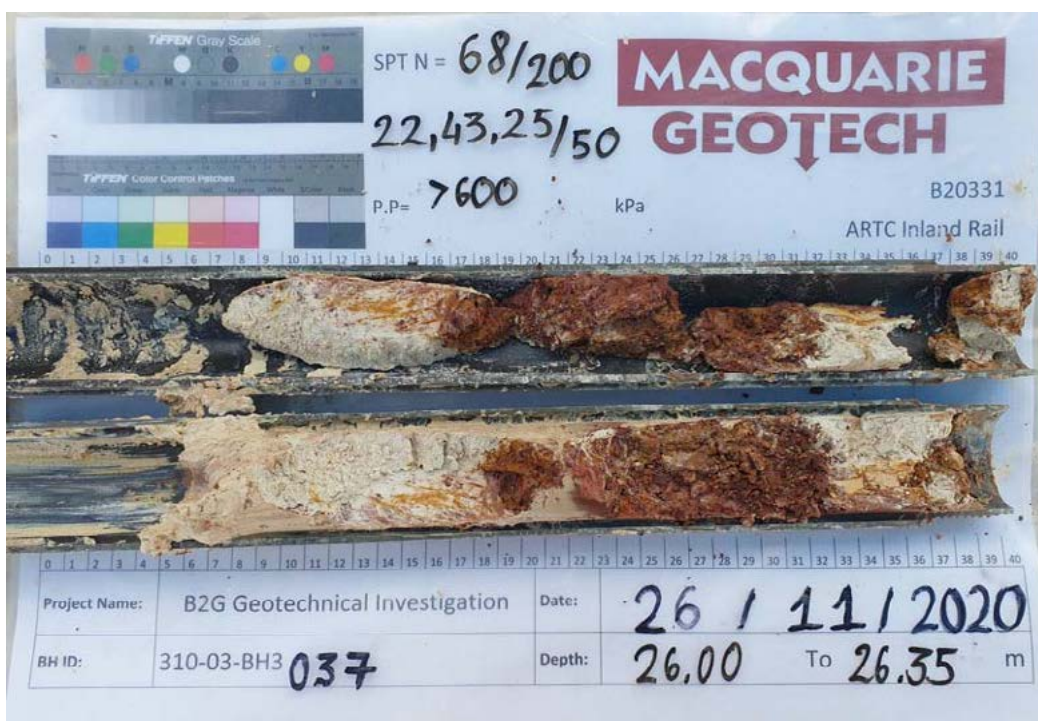
Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.79 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3037 Depth Range: 24.50 - 24.70 m



310-03-BH3037 Depth Range: 26.00 - 26.35 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.79 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3037 Depth Range: 27.50 - 27.95 m



310-03-BH3037 Depth Range: 29.00 - 29.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.79 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 30.50 - 30.95 m



310-03-BH3037 Depth Range: 32.00 - 32.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	25/11/2020
Project Name:	Inland Rail B2G	Completed:	28/11/2020
Hole Location:	Approx. CH141785 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340064.3 m E 6921058.2 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.79 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3037 Depth Range: 33.50 - 33.95 m



310-03-BH3037 Depth Range: 35.00 - 35.31 m

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3038

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH142007 Lot.2RP37103 YandillaFILE / JOB NO : B20331
SHEET : 1 OF 4

POSITION : E: 340162.9, N: 6921257.3 (MGA94 Zone 56)

SURFACE ELEVATION : 379.75 (AHD)

EQUIPMENT TYPE : Excavator 14T

METHOD : 900mm bucket

DATE EXCAVATED : 03/03/2021

LOGGED BY : H.Tran

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE

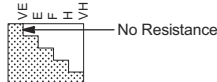
EXCAVATION INFORMATION					MATERIAL						
VE	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm	POCKET PENETROMETER kPa	STRUCTURE & Other Observations
			0.0			FILL Silty CLAY with sand trace gravel: high plasticity, black, fine to coarse grained sand, fine to medium sub-rounded gravel, trace rootlets (<2mm)		F			REWORKED TOPSOIL
			0.30m			Silty CLAY: high plasticity, black.					ALLUVIAL SOIL
			0.5								0.40: PLT: Max Settlement: 6.55mm Maximum Applied Pressure: 140KPa 0.56: Field water content: 56.99% Temperature: 25.5 C
			0.60m								
			0.80060 x8								
			1.00m								
			1.0								
			1.5								
			1.50m			Hole Terminated at 1.50 m Target depth					
			2.0								
			2.5								
			3.0								
			3.5								
			4.0								

PHOTOGRAPHS
NOTES

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

PENETRATION



WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
PP - Pocket Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)CLASSIFICATION SYMBOLS &
SOIL DESCRIPTION
Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet
M > PL- Moisture Content > Plastic Limit
M ~ PL- Moisture Content = Plastic Limit
M < PL- Moisture Content < Plastic LimitCONSISTENCY/
RELATIVE DENSITYVS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very DenseSee Explanatory Notes for
details of abbreviations
& basis of descriptions.

POSITION : E: 340162.9, N: 6921257.3 (MGA94 Zone 56)	SURFACE ELEVATION : 379.75 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE		



310-03-BH3038-FFJV - 1 Depth Range: 0.00 m



310-03-BH3038-FFJV - 2 Depth Range: 0.00 m

See Explanatory Notes for details of abbreviations & basis of descriptions.

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH142007 Lot.2RP37103 Yandilla

FILE / JOB NO : B20331
SHEET : 3 OF 4

POSITION : E: 340162.9, N: 6921257.3 (MGA94 Zone 56)	SURFACE ELEVATION : 379.75 (AHD)	
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket	
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran	CHECKED BY : J.Boyle
EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE		



310-03-BH3038-FFJV - 3 Depth Range: 0.00 m



310-03-BH3038-FFJV - 4 Depth Range: 0.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3038

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : CH142007 Lot.2RP37103 Yandilla

FILE / JOB NO : B20331
SHEET : 4 OF 4

POSITION : E: 340162.9, N: 6921257.3 (MGA94 Zone 56)	SURFACE ELEVATION : 379.75 (AHD)
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket
DATE EXCAVATED : 03/03/2021	LOGGED BY : H.Tran
EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE	CHECKED BY : J.Boyle



310-03-BH3038-FFJV - 5 Depth Range: 0.00 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 18/11/2020																																																							
Project Name: Inland Rail B2G										Completed: 24/11/2020																																																							
Hole Location: Approx. CH142007 - Yandilla										Logged By: H.Tran																																																							
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56										Checked By: J.Boyle																																																							
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.71 m																																																							
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: J. Komung																																																							
Drilling Information							Soil Description							Observations																																																			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																																		
AD/N				J00010 0.10-0.20 m PID 0.10 m 0.5 ppm D00030 0.30-0.50 m J00040 0.40-0.50 m PID 0.40 m 0.3 ppm S00050 SPT 0.50-0.95 m 2,3,3 N=6 PP 0.75 m =190 kPa J00095 0.95-1.00 m PID 0.95 m 0.1 ppm D00100 1.00-1.50 m U00150 1.50-1.95 m PP 1.95 m =140 kPa S00200 SPT 2.00-2.45 m 2,6,8 N=14 PP 2.40 m =350 kPa D00300 3.00-3.50 m S00350 SPT 3.50-3.95 m 4,8,9 N=17 PP 3.70 m =580 kPa D00450 4.50-5.00 m S00500 SPT 5.00-5.45 m 3,6,10 N=16 PP 5.30 m >600 kPa D00600 6.00-6.50 m S00650 SPT 6.50-6.95 m 5,11,11 N=22 PP 6.70 m =590 kPa D00750		378.7	1		CH	FIL:L Silty CLAY trace gravel: high plasticity, black, trace fine to medium sub-angular gravel. Silty CLAY trace gravel: high plasticity, black, trace fine to medium sub-rounded to sub-angular gravel.		F				REWORKED TOPSOIL																																																	
						377.7	2								ALLUVIAL SOIL																																																		
						376.7	3					St																																																					
						375.7	4				M (~PL)																																																						
						374.7	5																																																										
						373.7	6				Sandy CLAY trace gravel: high plasticity, black, fine to medium grained sand, fine to medium sub-rounded to sub-angular calcareous gravel.		VSt																																																				
						372.7	7																																																										
									CI-CH		Sandy CLAY trace gravel: medium to high plasticity, pale grey and yellow brown, fine to coarse grained sand, trace fine to medium sub-angular gravel. becoming high plasticity clay.																																																						
	<table><tr><td colspan="2">Method</td><td colspan="2">Penetration</td><td colspan="2">Water</td><td colspan="2">Samples and Tests</td><td colspan="2">Moisture Condition</td><td colspan="2">Consistency/Relative Density</td></tr><tr><td colspan="2">AS - Auger Screwing RR - Rock Roller WB - Washbore</td><td colspan="2"> No resistance ranging to refusal</td><td colspan="2"> Level (Date) Inflow Partial Loss Complete Loss</td><td colspan="2">U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test</td><td colspan="2">D - Dry M - Moist W - Wet</td><td colspan="2">VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</td></tr><tr><td colspan="2">Support</td><td colspan="2">Graphic Log/Core Loss</td><td colspan="2">Classification Symbols and Soil Descriptions</td><td colspan="2">Plastic Limit</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">C - Casing</td><td colspan="2"> Core recovered (hatching indicates material) Core loss</td><td colspan="2">Based on Unified Soil Classification System</td><td colspan="2">< PL = PL < PL</td><td colspan="2"></td><td colspan="2"></td></tr></table>																		Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density		AS - Auger Screwing RR - Rock Roller WB - Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense		Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit						C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL				
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density																																																							
AS - Auger Screwing RR - Rock Roller WB - Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense																																																							
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit																																																											
C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL																																																											

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 18/11/2020							
Project Name: Inland Rail B2G										Completed: 24/11/2020							
Hole Location: Approx. CH142007 - Yandilla										Logged By: H.Tran							
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56										Checked By: J.Boyle							
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.71 m							
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: J. Komung							
Drilling Information							Soil Description							Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
AD/V				7.50-8.00 m S00800 SPT 8.00-8.45 m 9,12,18 N=30					SP-SC	Clayey Gravelly SAND: fine to coarse grained, yellow brown mottled off-white and pale grey, medium plasticity clay, fine to medium sub-rounded to sub-angular gravel.					ALLUVIAL SOIL		
				D00900 9.00-9.50 m		370.7	9		SP	Clayey SAND with gravel: fine to coarse grained, yellow brown and off-white, low to medium plasticity clay, fine to medium sub-rounded to sub-angular gravel.	MD / D						
				S00950 SPT 9.50-9.95 m 7,16,15 N=31		369.7	10				D						
				D10500 10.50-11.00 m		368.7	11										
				S01100 SPT 11.00-11.45 m 12,20,19 N=39		367.7	12										
				S01250 SPT 12.50-12.95 m 12,20,17 N=37		366.7	13			Below 12.50m: trace low plasticity clay. From 12.90 to 12.95m: with low to medium plasticity clay.	D						
				S01400 SPT 14.00-14.45 m 13,25,24 N=49		365.7	14		SM	Silty SAND trace gravel: fine to coarse grained, off-white and dark yellow brown, trace fine to medium sub-rounded gravel.	W						
				S01550 SPT 15.50-15.95 m 4,9,14		364.7	15		SP	Gravelly SAND with clay: fine to coarse grained, yellow brown mottled pale grey and brown, fine to medium sub-rounded gravel, low to medium plasticity clay.	MD						
	Standing Water Level - 24/11/2020																

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 18/11/2020													
Project Name: Inland Rail B2G		Completed: 24/11/2020													
Hole Location: Approx. CH142007 - Yandilla		Logged By: H.Tran													
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56		Checked By: J.Boyle													
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.71 m												
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: J. Komung												
Drilling Information						Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=23					SP	Gravelly SAND with clay: fine to coarse grained, yellow brown mottled pale grey and brown, fine to medium sub-rounded gravel, low to medium plasticity clay. (continued)				100	ALLUVIAL SOIL
				S01700 SPT 17.00-17.45 m 8,13,8 N=21		362.7	17		SC	Clayey SAND trace gravel: fine to medium grained, dark brown, low plasticity clay, trace fine to medium sub-rounded gravel.				200	
						361.7	18				W	MD		300	
				S01850 SPT 18.50-18.95 m 7,20,20 N=40		360.7	19							400	
						359.7	20							500	
				S02000 SPT 20.00-20.45 m 7,10,13 N=23 PP 20.30 m =540 kPa		358.7	21		CI-CH	Silty CLAY trace sand: medium to high plasticity, dark brown and yellow brown, fine grained sand.					RESIDUAL SOIL
				S02150 SPT 21.50-21.95 m 9,16,30 N=46 PP 21.75 m >600 kPa		357.7	22				M (<PL)	VSt			
						356.7	23			Continued on cored borehole sheet		H			

Method
AS - Auger Screwing
RR - Rock Roller
WB- Washbore

Penetration
 No resistance ranging to refusal

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
 Core recovered (hatching indicates material)
 Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

MG 4.02 LUB.GLB Log MG BOREHOLE EXCL DCP MG 4.02 G.P. <<DrawingFile>> 28/04/2021 16:32 10.0000 Dugail Lab and In Situ Tool - DGD | UIC DGDTP 4.01.2.dpt 3.04 2019-07-02 Ppt DGDTP 4.00.6 2017-11-25

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3038 Depth Range: 0.50 - 0.95 m



310-03-BH3038 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.71 m
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3038 Depth Range: 3.50 - 3.95 m



310-03-BH3038 Depth Range: 5.00 - 5.45 m

Engineering Log - Borehole

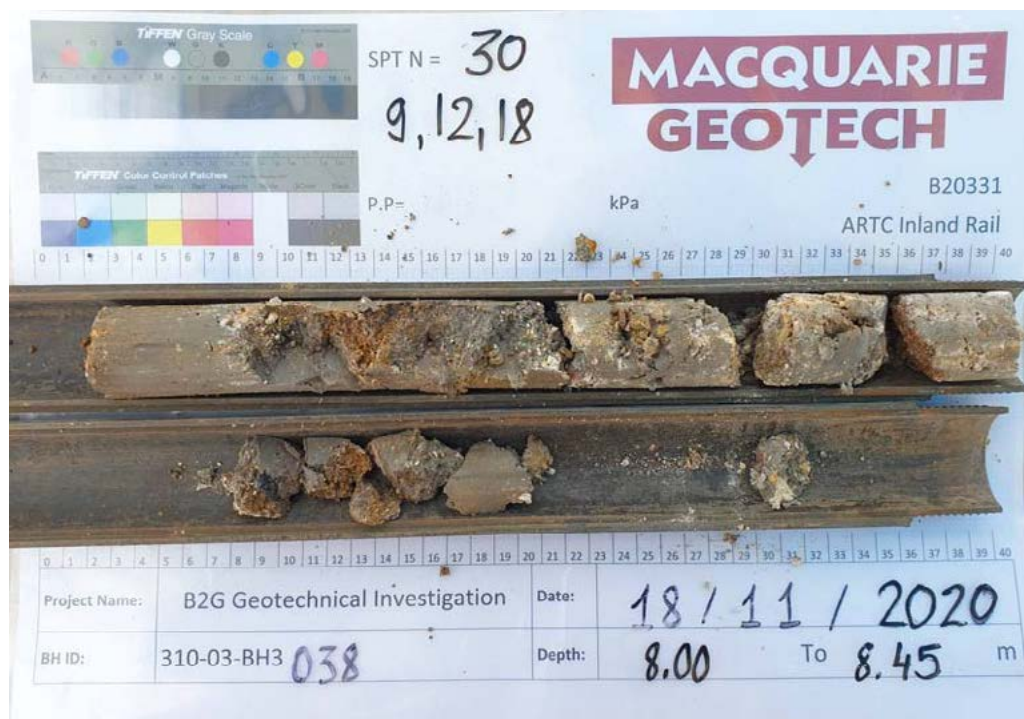
Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3038 Depth Range: 6.50 - 6.95 m



310-03-BH3038 Depth Range: 8.00 - 8.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3038 Depth Range: 9.50 - 9.95 m



310-03-BH3038 Depth Range: 11.00 - 11.45 m

Engineering Log - Borehole

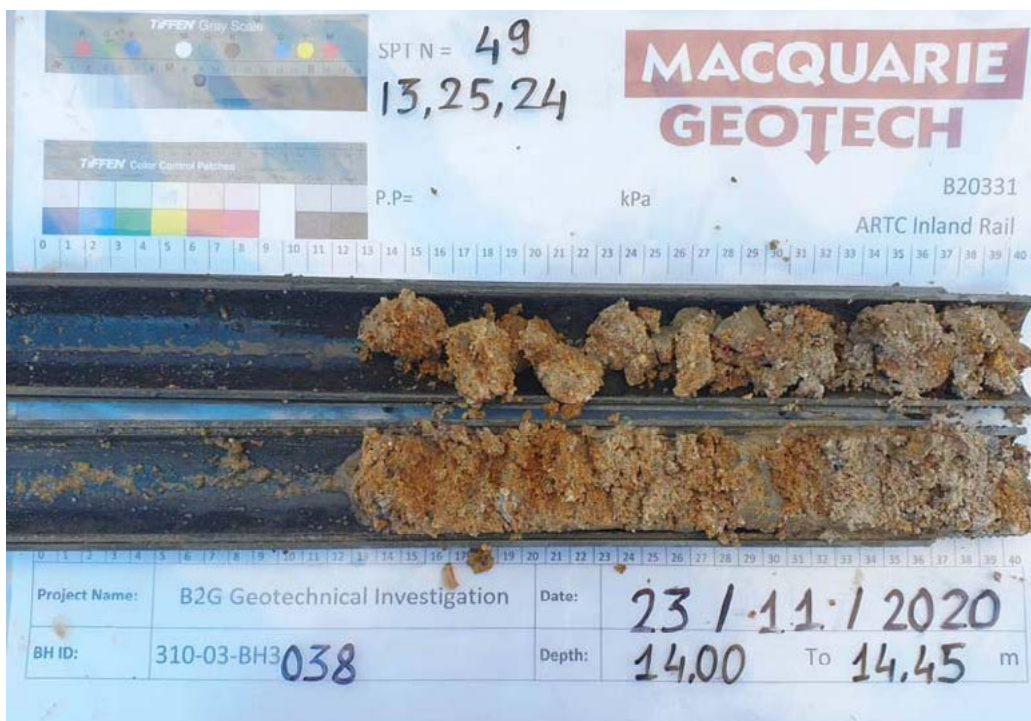
Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3038 Depth Range: 12.50 - 12.95 m



310-03-BH3038 Depth Range: 14.00 - 14.45 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH142007 - Yandilla
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56

Commenced: 18/11/2020
Completed: 24/11/2020
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.71 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: J. Komung



310-03-BH3038 Depth Range: 15.50 - 15.95 m



310-03-BH3038 Depth Range: 17.00 - 17.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.71 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3038 Depth Range: 18.50 - 18.95 m



310-03-BH3038 Depth Range: 20.00 - 20.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.71 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3038 Depth Range: 21.50 - 21.95 m



310-03-BH3038 Depth Range: 23.00 - 23.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: J. Komung



310-03-BH3038 Depth Range: 24.50 - 24.95 m



310-03-BH3038 Depth Range: 26.00 - 26.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.71 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3038 Depth Range: 33.50 - 33.95 m



310-03-BH3038 Depth Range: 35.00 - 35.45 m

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH142007 - Yandilla
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56

Commenced: 18/11/2020
Completed: 24/11/2020
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 379.71 m
Barrel Type and Length: HQ 4.15 m Bearing: Datum: AHD Operator: J. Komung

Drilling Information							Rock Substance					Rock Mass Defects															
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral		Defect Spacing (mm)		Defect Description thickness, type, inclination, planarity, roughness, coating/infilling												
											EL	VL	L	M	H	VH	EH	30	100	300	1000	3000	Particular	General			
HQ3		85% RETURN	100		0	354.7	25	XXXXXX	SILTSTONE: Recovered as Silty CLAY: low to medium plasticity, off-white and pale brown.(continued)	XW													- 24.50: S02450 SPT 13/25/35 N=60				
			100		0	353.7	26	XXXXXX	From 25.55 to 26.00m: with fine grained sand.														- 25.50: PP In-situ >600 kPa				
						352.7	27	XXXXXX	From 26.70 to 26.80m: with fine grained sand. From 27.10 to 27.13m: with fine grained sand. From 27.17 to 27.37m: with fine grained sand.														- 26.00: S02600 SPT 17/23/34 N=57				
						351.7	28	XXXXXX	From 27.68 to 27.93m: thinly bedded with SANDSTONE: fine grained, dark red. From 28.00 to 28.90m: thickly bedded with SANDSTONE: fine grained, pale grey.		HW to XW												- 26.65: PP In-situ >600 kPa				
			85	12		350.7	29	XXXXXX	From 28.90 to 29.20m: weathered zone.	XW															- 27.65: PP In-situ >600 kPa		
						349.7	30	XXXXXX	NO CORE 0.35m																	- 28.50: PP In-situ >600 kPa	
			100		0			XXXXXX	SILTSTONE: Recovered as Silty CLAY: low to medium plasticity, off-white and pale brown.	XW																- 29.70: PP In-situ >600 kPa	
						348.7	31	XXXXXX	NO CORE 0.90m																		
			70		0			XXXXXX	(GC) Clayey GRAVEL: medium to coarse sub-rounded, dark grey and pale yellow brown, low to medium plasticity clay.	RS																	
			Method AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel Water Level (Date) Inflow Partial Loss Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Weathering FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil Strength (indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High Support T - Timbering																								

Engineering Log - Cored Borehole

Project No.: B20331

Client: ARTC		Commenced: 18/11/2020												
Project Name: Inland Rail B2G		Completed: 24/11/2020												
Hole Location: Approx. CH142007 - Yandilla		Logged By: H.Tran												
Hole Coordinates: 340162.9 m E 6921257.3 m N MGA94 Zone 56		Checked By: J.Boyle												
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.71 m											
Barrel Type and Length: HQ 4.15 m		Bearing:	Datum: AHD Operator: J. Komung											
Drilling Information		Rock Substance		Rock Mass Defects										
Method	Support	Water	TCR (%)	SCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength Is(50) ● - Axial ○ - Diametral	Defect Spacing (mm)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling	
HQ3	85% RETURN	70	0	346.7	33	34	35		(CI) Silty CLAY: medium plasticity, pale yellow brown and off-white.(continued)	RS			Particular General	
									SILTSTONE: Recovered as Silty CLAY: low to medium plasticity, off-white and pale brown.	XW			- 32.10: PP In-situ =60 kPa - 32.90: PP In-situ >600 kPa	
									(CI) Silty CLAY: medium plasticity, pale yellow brown and off-white.	RS			- 33.50: S03350 SPT 9/14/17 N=31 - 33.70: PP In-situ =450 kPa - 34.15: PP In-situ =550 kPa	
									- 35.40: PP In-situ =570 kPa					
				343.7	36				Hole Terminated at 35.45 m Target depth. Hole grouted to surface. Hole grouted to surface.					
				342.7	37									
				341.7	38									
				340.7	39									
Method		Water		Graphic Log/Core Loss		Weathering		Strength						
AS - Auger Screwing WB- Washbore HQ3 HQ3 Core Barrel NQ3 NQ3 Core Barrel		Level (Date) Inflow Partial Loss Complete Loss		 Core recovered (hatching indicates material) Core loss		FR - Fresh SW - Slightly Weathered DW - Distinctly Weathered XW - Extremely Weathered RS - Residual Soil		(indirect tensile strength) EL - Extremely Low VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High						
Support		T - Timbering												

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Barrel Type and Length:	HQ 4.15 m	RL Surface:	379.71 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



PointID : 310-03-BH3038 Depth Range: 22.00 - 25.00 m



PointID : 310-03-BH3038 Depth Range: 25.00 - 29.00 m

Engineering Log - Cored Borehole

Project No.: B20331

Client:	ARTC	Commenced:	18/11/2020
Project Name:	Inland Rail B2G	Completed:	24/11/2020
Hole Location:	Approx. CH142007 - Yandilla	Logged By:	H.Tran
Hole Coordinates:	340162.9 m E 6921257.3 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.71 m
Barrel Type and Length:	HQ 4.15 m	Bearing:		Datum:	AHD Operator: J. Komung



PointID : 310-03-BH3038 Depth Range: 29.00 - 33.00 m



PointID : 310-03-BH3038 Depth Range: 33.00 - 35.45 m

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3039

CLIENT : ARTC Inland Rail
PROJECT : B2G Inland Rail
LOCATION : Approx. CH138000 Lot.2RP16058 YandillaFILE / JOB NO : B20331
SHEET : 1 OF 3

POSITION : E: 340419.3, N: 6921780.9 (MGA94 Zone 56)

SURFACE ELEVATION : 378.93 (AHD)

EQUIPMENT TYPE : Excavator 14T

METHOD : 900mm bucket

DATE EXCAVATED : 19/02/2021

LOGGED BY : J.Cooper

CHECKED BY : J.Boyle

EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE

EXCAVATION INFORMATION				MATERIAL							
VE PENETRATION F H	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	ELEVATION (RL) DEPTH (M)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION CONSISTENCY RELATIVE DENSITY	DCP Blows/100mm 5 10 15 20	POCKET PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
			0.0			FILL Silty CLAY with sand trace gravel: high plasticity, black, fine to coarse grained sand, fine to medium sub-rounded gravel, trace rootlets (<2mm)	M (<PL)	F			REWORKED TOPSOIL
		0.30m B00030 x5	378.4			Silty CLAY: high plasticity, black.					ALLUVIAL SOIL
	Not Encountered		0.5								0.30: Field Moisture content not available 0.40: PLT: Max Settlement: 9.17mm Maximum Applied Pressure: 140KPa
		1.00m	377.9		CH		M (~PL)	St			
			1.0								
			377.4								
			1.5			Hole Terminated at 1.50 m Target depth					
			2.0								
			2.5								
			3.0								
			3.5								
			4.0								

PHOTOGRAPHS
NOTES

☐

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper	WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content PP - Pocket Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa)	MOISTURE D - Dry M - Moist W - Wet M > PL- Moisture Content > Plastic Limit M ~ PL- Moisture Content = Plastic Limit M < PL- Moisture Content < Plastic Limit	VS - Very Soft S - Soft F - Firm St - Stiff VSst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3039

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : Approx. CH138000 Lot.2RP16058 Yandilla

FILE / JOB NO : B20331
SHEET : 2 OF 3

POSITION : E: 340419.3, N: 6921780.9 (MGA94 Zone 56)	SURFACE ELEVATION : 378.93 (AHD)
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket
DATE EXCAVATED : 19/02/2021	LOGGED BY : J.Cooper
EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE	CHECKED BY : J.Boyle



310-03-BH3039-FFJV - 1 Depth Range: 0.00 m



310-03-BH3039-FFJV - 2 Depth Range: 0.00 m

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

EXCAVATION - GEOLOGICAL LOG

PIT NO : 310-03-BH3039

CLIENT : ARTC Inland Rail PROJECT : B2G Inland Rail
LOCATION : Approx. CH138000 Lot.2RP16058 Yandilla

FILE / JOB NO : B20331
SHEET : 3 OF 3

POSITION : E: 340419.3, N: 6921780.9 (MGA94 Zone 56)	SURFACE ELEVATION : 378.93 (AHD)
EQUIPMENT TYPE : Excavator 14T	METHOD : 900mm bucket
DATE EXCAVATED : 19/02/2021	LOGGED BY : J.Cooper
EXCAVATION DIMENSIONS : 2.10 m LONG 1.20 m WIDE	CHECKED BY : J.Boyle



310-03-BH3039-FFJV - 3 Depth Range: 0.00 m

Client: ARTC										Commenced: 17/11/2020														
Project Name: Inland Rail B2G										Completed: 23/11/2020														
Hole Location: Approx. CH142590 - Yandilla										Logged By: G.Meadows														
Hole Coordinates: 340419.3 m E 6921780.9 m N MGA94 Zone 56										Checked By: J.Boyle														
Drill Model and Mounting: Comacchio 305/Track					Inclination: -90°					RL Surface: 379.75 m														
Hole Diameter: 115 mm					Bearing:					Datum: AHD Operator: T.Lanaway														
Drilling Information										Soil Description										Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations									
				D00000 0.00-0.50 m						FILL: Silty CLAY with gravel trace sand; high plasticity, black grey, fine to coarse sub-angular to angular gravel and ballast, fine to medium grained sand, with roots and plants detritus up to 15mm.														
				J00020 0.20-0.30 m																				
				PID 0.20 m																				
				0.6 ppm																				
				J00050 0.50-0.60 m		378.8	1		CH	Silty CLAY trace sand and gravel; high plasticity, black grey, fine grained sand, fine sub-rounded to rounded gravel, with carbonate nodules up to 5mm, trace roots.				x										
				S00050 SPT																				
				0.50-0.95 m								F												
				1,2,4																				
				N=6																				
				PID 0.50 m																				
				1.4 ppm																				
				PP 0.89 m		377.8	2			becoming brown grey.														
				=120 kPa																				
				D00100 1.00-1.50 m										x										
				J00100 1.00-1.10 m							M (>PL)													
				PID 1.00 m																				
				1.3 ppm																				
				U00150 1.50-1.85 m		376.8	3																	
				S00200 SPT								St												
				2.00-2.45 m																				
				3,4,6																				
				N=10																				
				PP 2.35 m		375.8	4																	
				=180 kPa																				
				D00250 2.50-3.00 m																				
				S00300 U00400																				
				4.00-4.50 m					CI-CH	Silty sandy CLAY with gravel; medium to high plasticity, mottled orange brown grey, fine to coarse grained sand, fine rounded to sub-angular gravel, with carbonate nodules up to 15mm.				x										
				S00450 SPT						From 5.00m: lessening sand coarse fraction to with.														
				4.50-4.95 m		374.8	5				M (-PL) / M (>PL)	VSt												
				5,6,11																				
				N=17																				
				PP 4.81 m																				
				=420 kPa																				
				D00500 5.00-5.50 m					CI	Silty sandy CLAY with gravel; medium to high plasticity, orange grey brown, fine to medium grained sand, fine rounded to sub-rounded gravel.														
				S00600 SPT																				
				6.00-6.45 m		373.8	6							x										
				4,6,7																				
				N=13																				
				PP 6.33 m																				
				=420 kPa																				
				S00750 SPT																				
				7.50-7.95 m		372.8	7				M (<PL)													
				5,7,14								VSt		x										
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Plastic Limit < PL = PL > PL Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Support C - Casing Classification Symbols and Soil Descriptions Based on Unified Soil Classification System																								

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 17/11/2020																																																	
Project Name: Inland Rail B2G										Completed: 23/11/2020																																																	
Hole Location: Approx. CH142590 - Yandilla										Logged By: G.Meadows																																																	
Hole Coordinates: 340419.3 m E 6921780.9 m N MGA94 Zone 56										Checked By: J.Boyle																																																	
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																																																	
Hole Diameter: 115 mm										RL Surface: 379.75 m																																																	
										Bearing: Datum: AHD Operator: T.Lanaway																																																	
Drilling Information										Soil Description										Observations																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																												
AD/T				N=21 PP 7.77 m =360 kPa					CI	Silty sandy CLAY with gravel; medium to high plasticity, orange grey brown, fine to medium grained sand, fine rounded to sub-rounded gravel. (continued)	M (<PL)	VSt			ALLUVIAL SOIL																																												
				S00900 SPT 9.00-9.45 m 6,6,12 N=18		370.8	9		SC	Silty clayey SAND; fine grained, grey orange brown, low to medium plasticity clay.	M	MD																																															
						369.8	10																																																				
				S01050 SPT 10.50-10.95 m 8,4,4 N=8 PP 10.80 m =240 kPa		368.8	11		SP CL-CI SP-SC	SAND with gravel trace clay; fine to coarse grained, yellow brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay. Silty CLAY with sand; low to medium plasticity, grey brown, fine to medium grained sand. Gravelly SAND with silt and clay; fine to coarse grained, yellow grey brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with brown grey, silty clay bands up to 150mm.	M (<PL)	F	x																																														
						367.8	12																																																				
WB				S01200 SPT 12.00-12.45 m 16,26,30 N=56		366.8	13				M	D / VD			Standing Water Level - 23/11/2020																																												
				S01350 SPT 13.50-13.95 m 7,16,23 N=39		365.8	14																																																				
				S01500 SPT 15.00-15.45 m 11,12,15 N=27		364.8	15				W	MD																																															
Method										Penetration										Water										Samples and Tests										Moisture Condition										Consistency/Relative Density									
AS - Auger Screwing RR - Rock Roller WB - Washbore																				 Level (Date)  Inflow  Partial Loss  Complete Loss										U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test										D - Dry M - Moist W - Wet										VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
Support										Graphic Log/Core Loss										Classification Symbols and Soil Descriptions										Plastic Limit																													
C - Casing										 Core recovered (hatching indicates material)  Core loss										Based on Unified Soil Classification System										< PL = PL < PL																													

Engineering Log - Borehole

Project No.: B20331

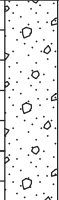
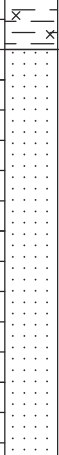
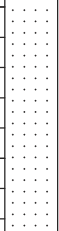
Client: ARTC										Commenced: 17/11/2020																																																	
Project Name: Inland Rail B2G										Completed: 23/11/2020																																																	
Hole Location: Approx. CH142590 - Yandilla										Logged By: G.Meadows																																																	
Hole Coordinates: 340419.3 m E 6921780.9 m N MGA94 Zone 56										Checked By: J.Boyle																																																	
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																																																	
Hole Diameter: 115 mm										RL Surface: 379.75 m																																																	
										Bearing: Datum: AHD Operator: T.Lanaway																																																	
Drilling Information										Soil Description										Observations																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																												
WB				S01650 SPT 16.50-16.95 m 5,9,14 N=23		362.8	17		SP-SC	Gravelly SAND with silt and clay; fine to coarse grained, yellow grey brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with brown grey, silty clay bands up to 150mm. (continued)					ALLUVIAL SOIL																																												
				S01800 SPT 18.00-18.45 m 6,11,15 N=26		361.8	18				MD																																																
				S01950 SPT 19.50-19.95 m 5,19,30 N=49		359.8	20				W	D																																															
				S02100 SPT 21.00-21.45 m 4,12,17 N=29		358.8	21																																																				
				S02250 SPT 22.50-22.95 m 8,11,25 N=36		356.8	23					MD / D																																															
Method AS - Auger Screwing RR - Rock Roller WB- Washbore										Penetration  No resistance ranging to refusal										Water  Level (Date)  Inflow  Partial Loss  Complete Loss										Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test										Moisture Condition D - Dry M - Moist W - Wet										Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
Support C - Casing										Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss										Classification Symbols and Soil Descriptions Based on Unified Soil Classification System										Plastic Limit < PL = PL < PL																													

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 17/11/2020
Project Name: Inland Rail B2G	Completed: 23/11/2020
Hole Location: Approx. CH142590 - Yandilla	Logged By: G.Meadows
Hole Coordinates: 340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 379.75 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: T.Lanaway

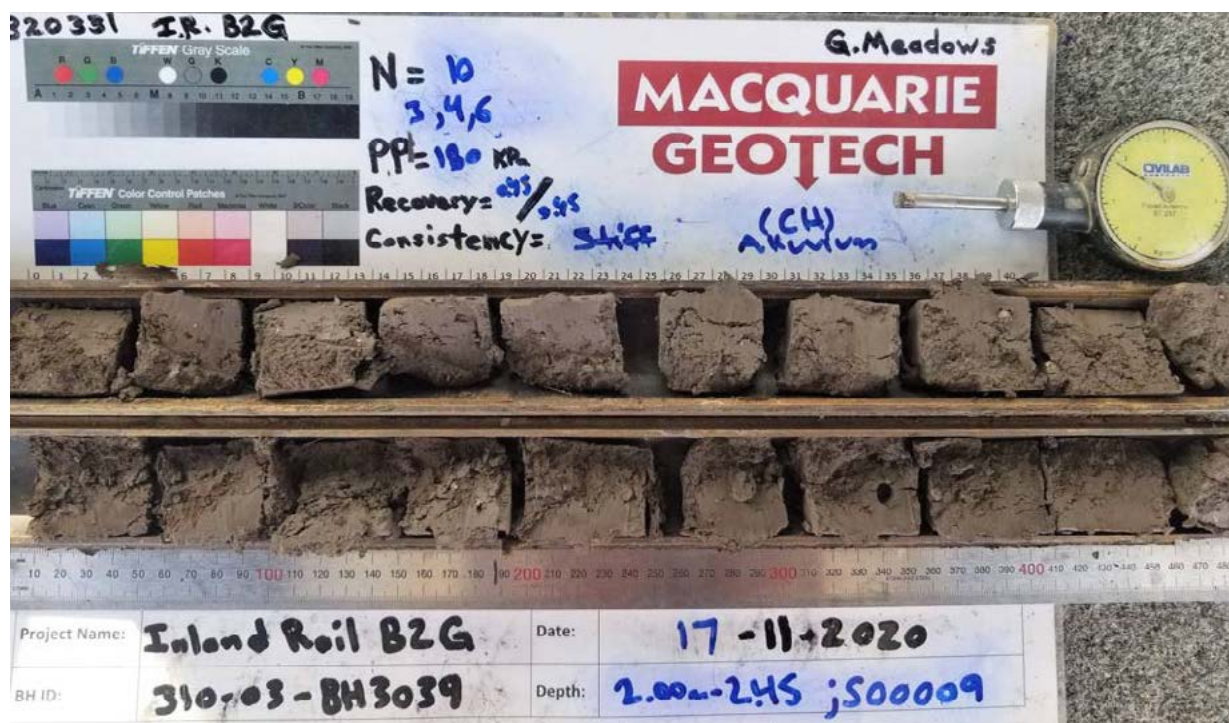
Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				S02400 SPT 24.00-24.45 m 7,10,18 N=28		354.8	25		SP-SC	Gravelly SAND with silt and clay; fine to coarse grained, yellow grey brown, fine to coarse rounded to sub-angular gravel, low to medium plasticity clay, with brown grey, silty clay bands up to 150mm. (continued)	W				ALLUVIAL SOIL	
				S02550 SPT 25.50-25.95 m 6,10,16 N=26 PP 25.68 m =560 kPa		353.8	26		CL-CI	Silty CLAY with sand; low to medium plasticity, mottled orange grey brown, fine grained sand, with fine to medium grained.					RESIDUAL SOIL	
				S02700 SPT 27.00-27.45 m 5,11,12 N=23 PP 27.45 m =560 kPa		352.8	27									
				S02850 SPT 28.50-28.95 m 8,10,12 N=22 PP 28.66 m =550 kPa PP 28.87 m =150 kPa		350.8	29			SANDSTONE recovered as: Silty sandy CLAY; low plasticity, mottled orange red and white, fine grained sand.	M (-PL) / M (>PL)				EXTREMELY WEATHERED MATERIAL	
				S03000 SPT 30.00-30.45 m 7,17,26 N=43 PP 30.05 m =180 kPa PP 30.11 m =130 kPa PP 30.15 m =120 kPa PP 30.26 m >600 kPa S03150 SPT		349.8	30									
						348.8	31			SILTSTONE recovered as: Silty CLAY; low plasticity, mottled orange red and white, distinctly thinly cross-laminated and inclined up to 20°.		H				

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal 	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Engineering Log - Borehole

Project No.: B20331

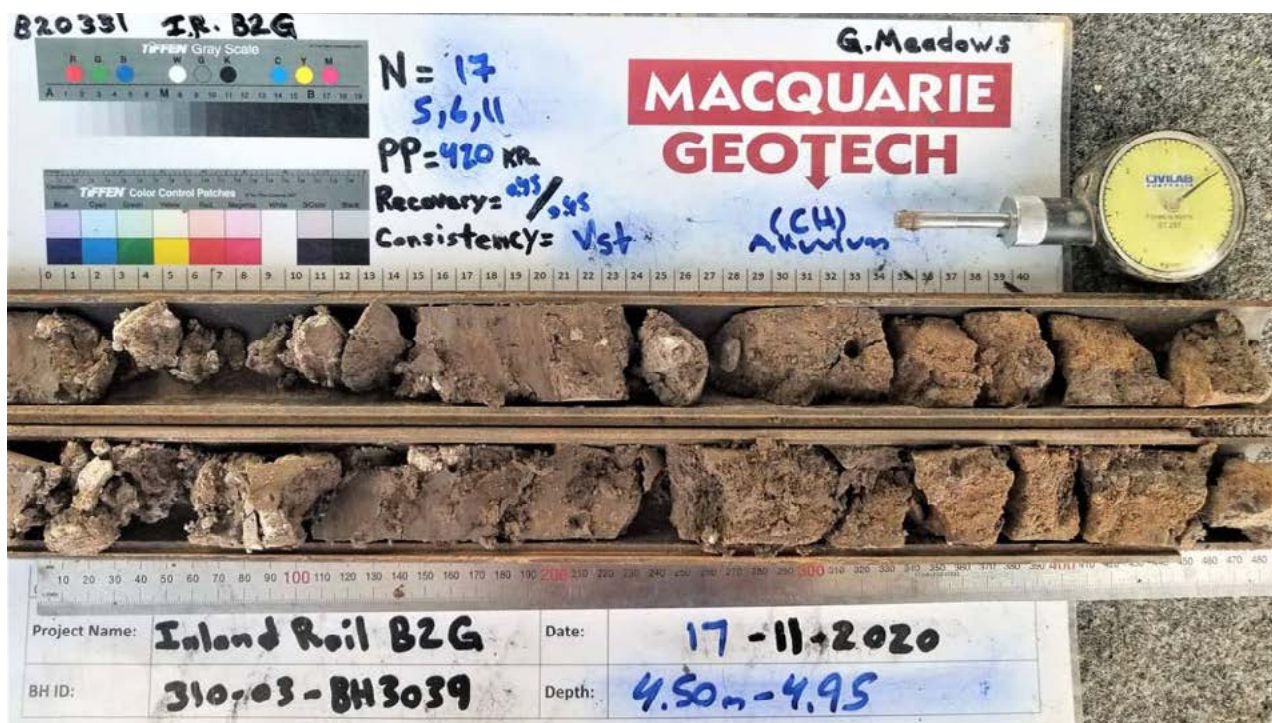
Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020				
Project Name:	Inland Rail B2G	Completed:	23/11/2020				
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows				
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.75 m		
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway



310-03-BH3039 Depth Range: 4.50 - 4.95 m

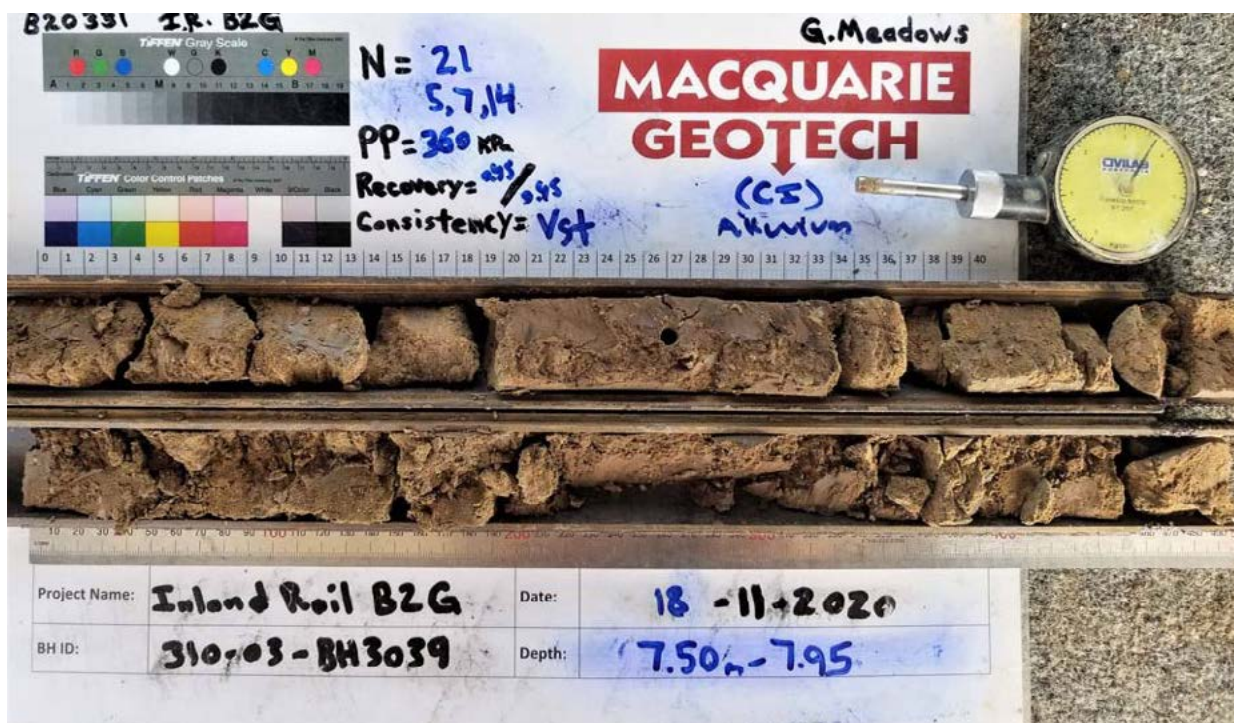


310-03-BH3039 Depth Range: 6.00 - 6.45 m

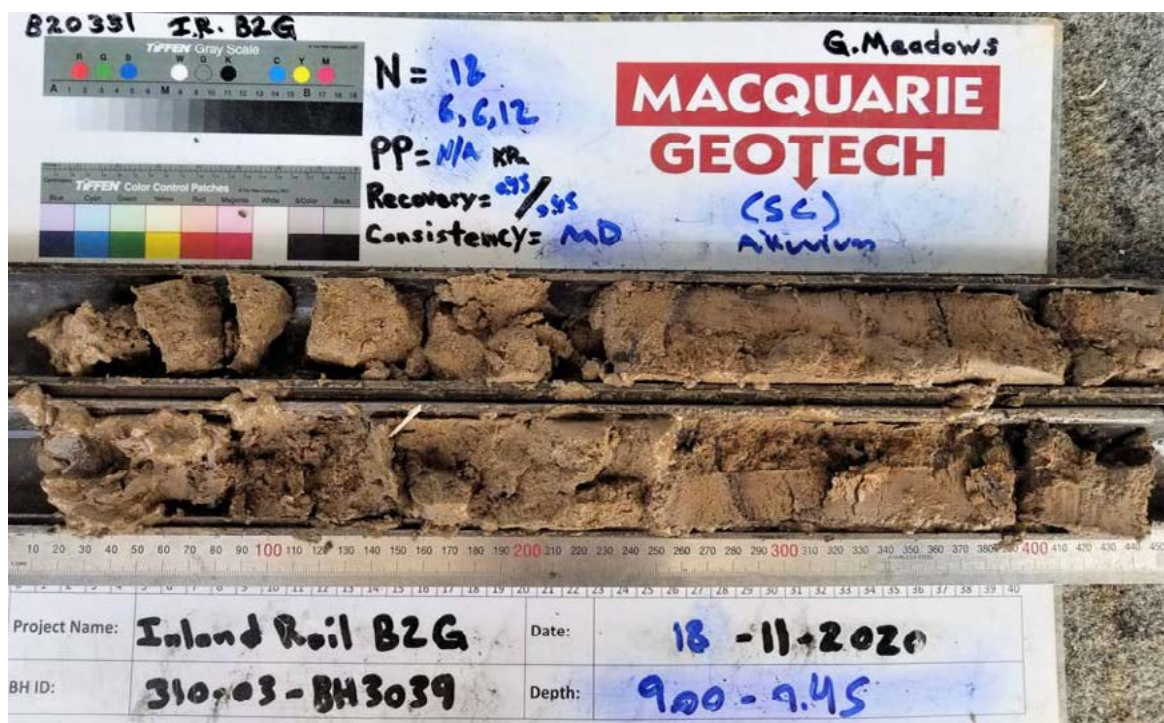
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020				
Project Name:	Inland Rail B2G	Completed:	23/11/2020				
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows				
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle				
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.75 m		
Hole Diameter:	115 mm	Bearing:		Datum:	AHD	Operator:	T.Lanaway



310-03-BH3039 Depth Range: 7.50 - 7.95 m



310-03-BH3039 Depth Range: 9.00 - 9.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 10.50 - 10.95 m



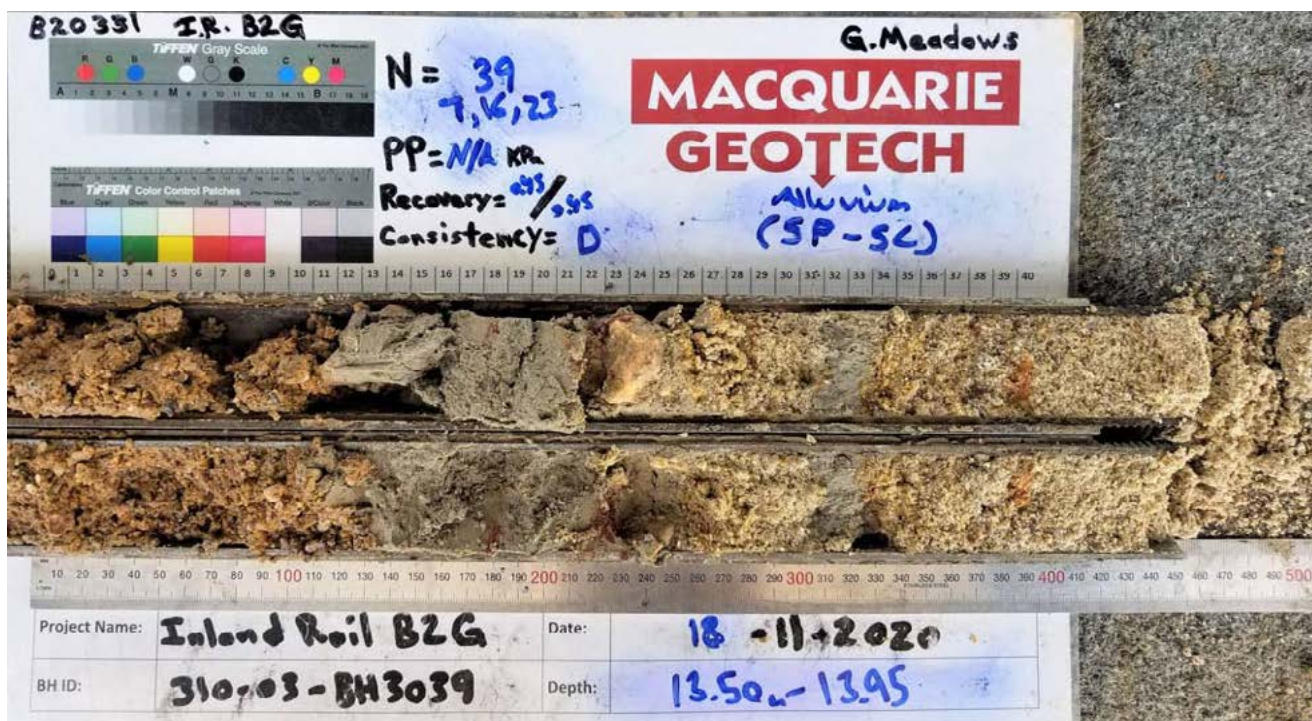
310-03-BH3039 Depth Range: 12.00 - 12.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.75 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	T.Lanaway



310-03-BH3039 Depth Range: 13.50 - 13.95 m

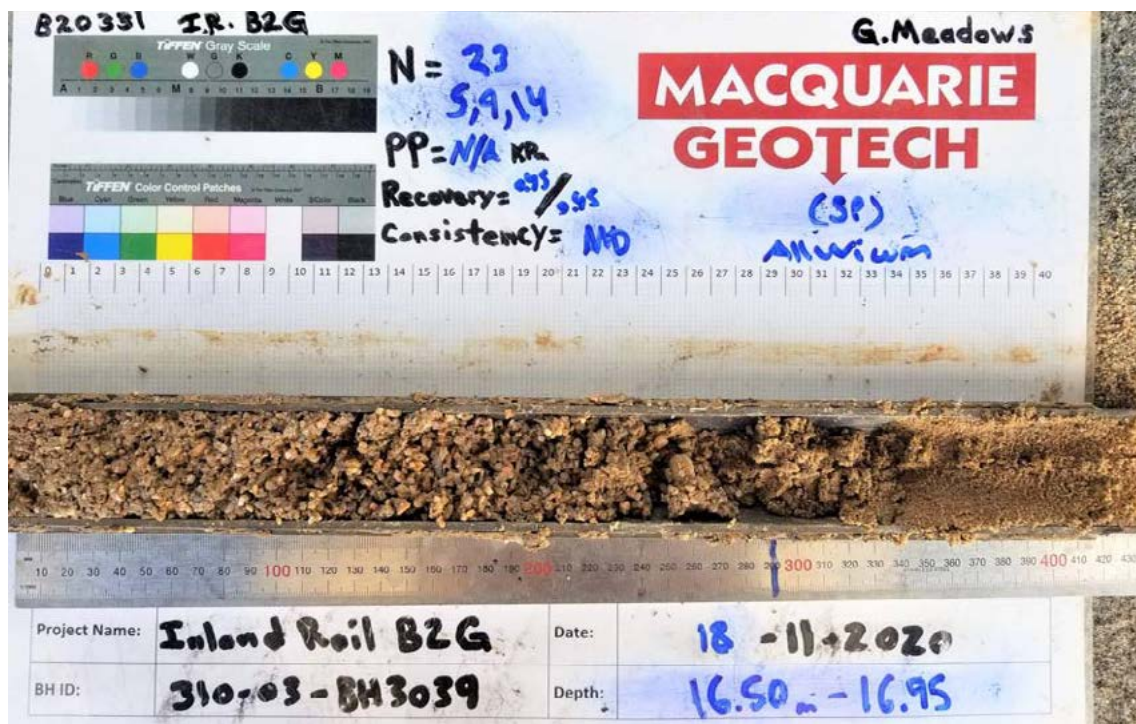


310-03-BH3039 Depth Range: 15.00 - 15.45 m

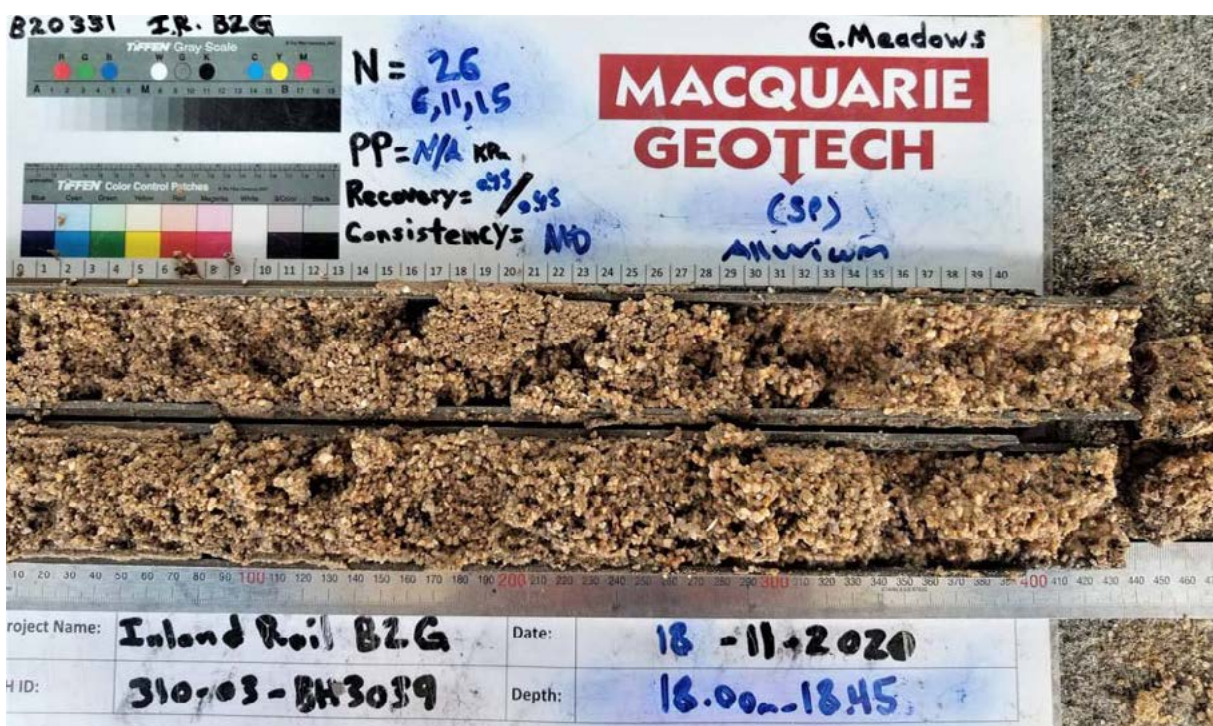
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 16.50 - 16.95 m

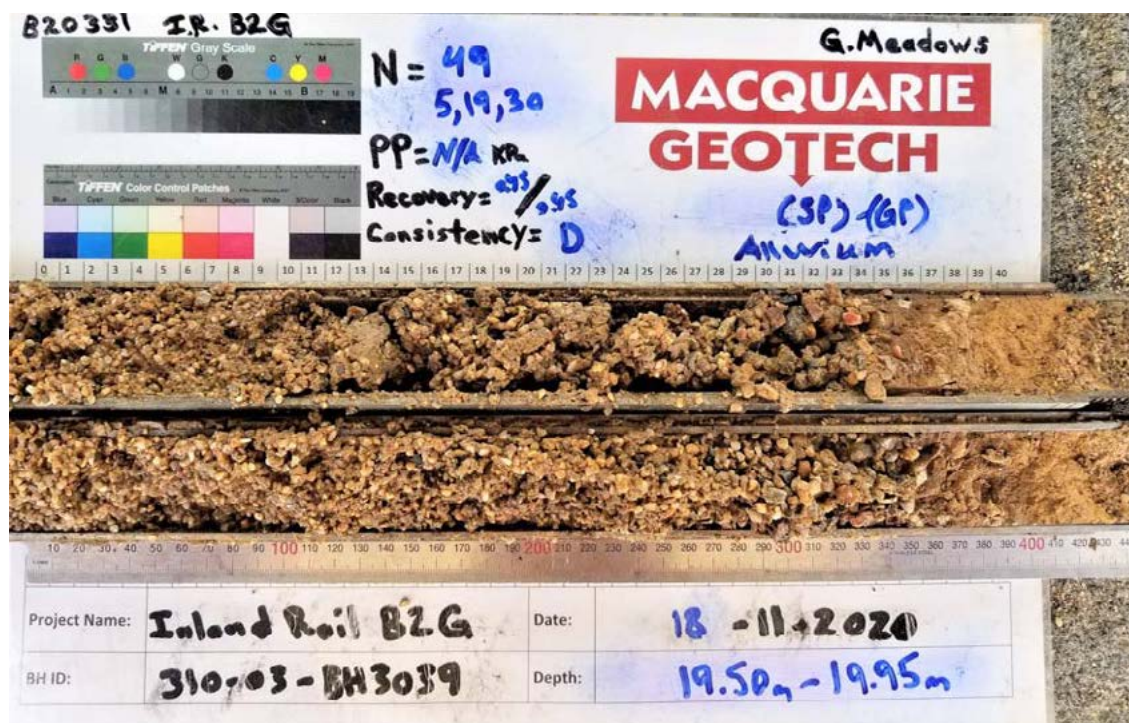


310-03-BH3039 Depth Range: 18.00 - 18.45 m

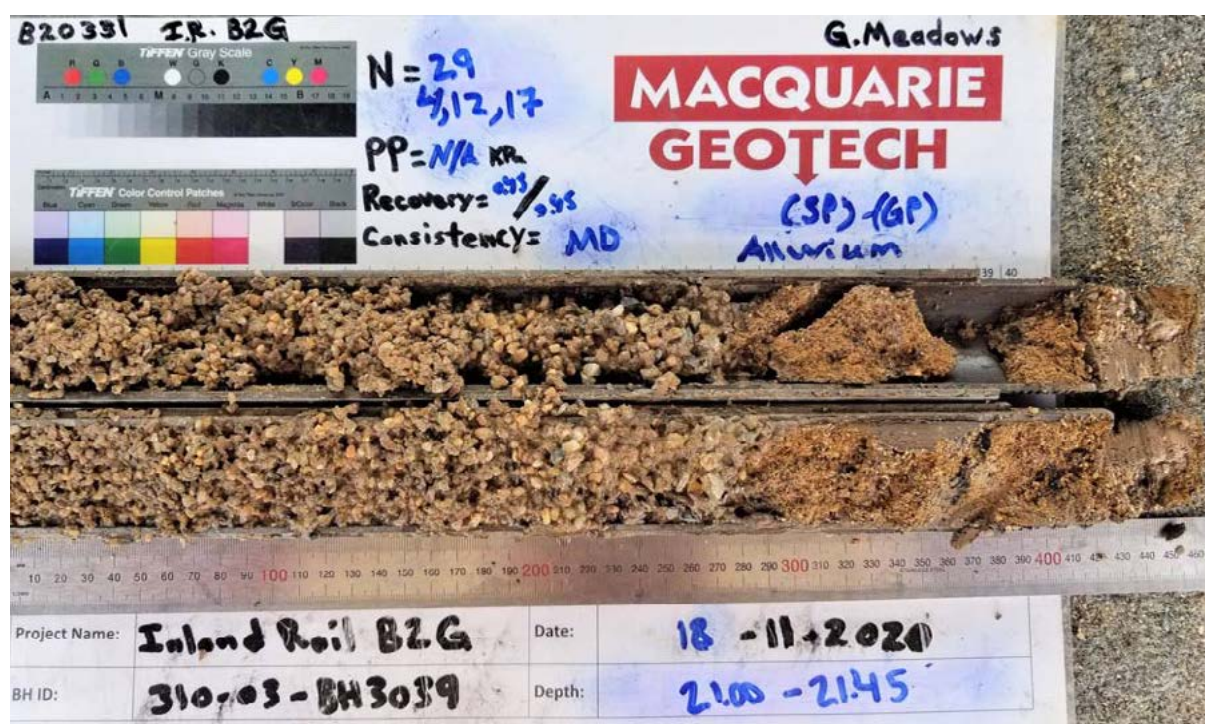
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 19.50 - 19.95 m

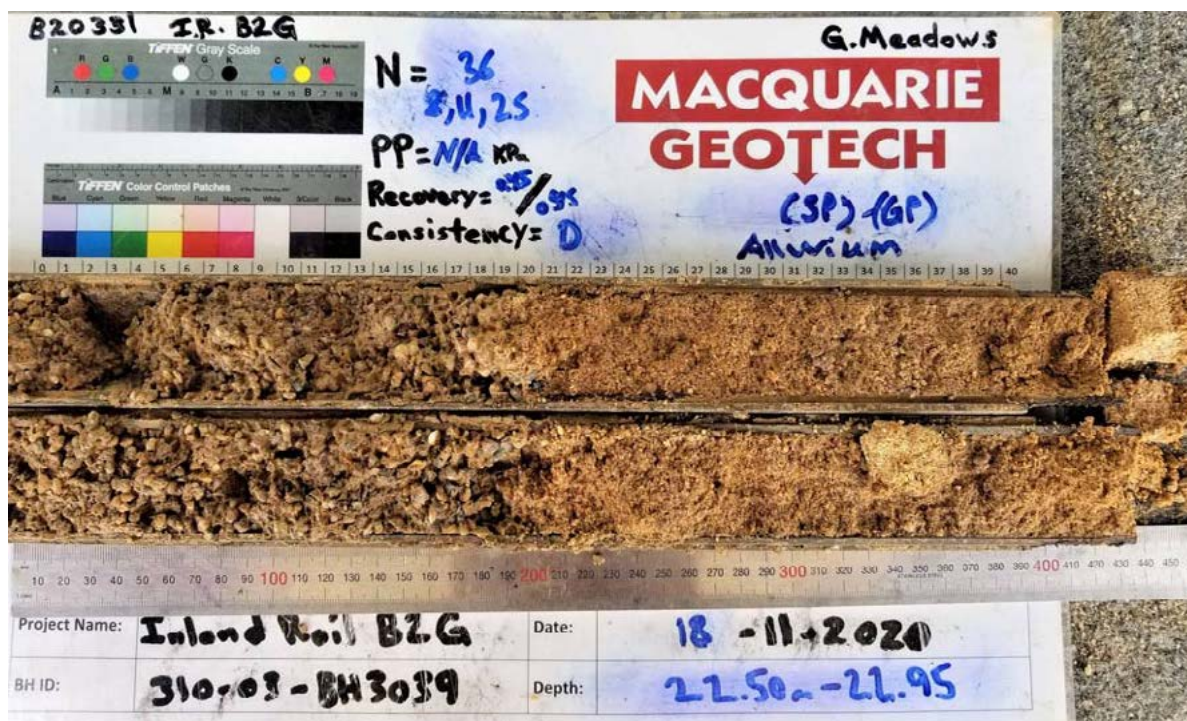


310-03-BH3039 Depth Range: 21.00 - 21.45 m

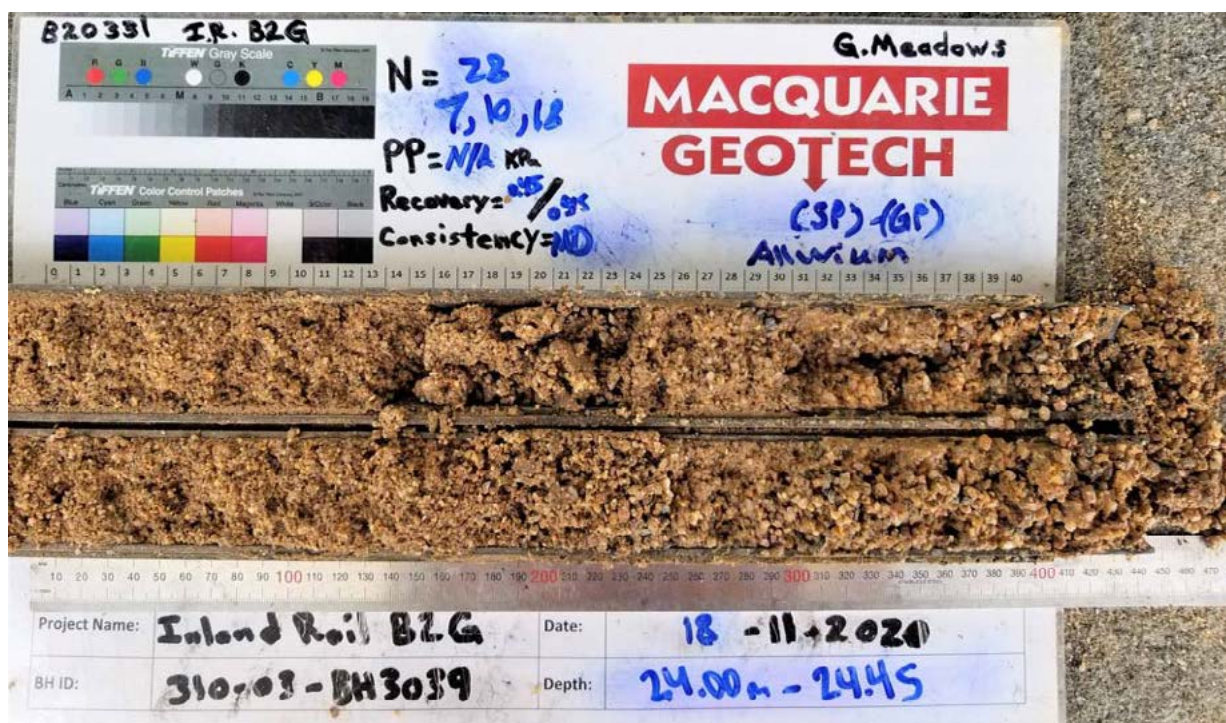
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 22.50 - 22.95 m

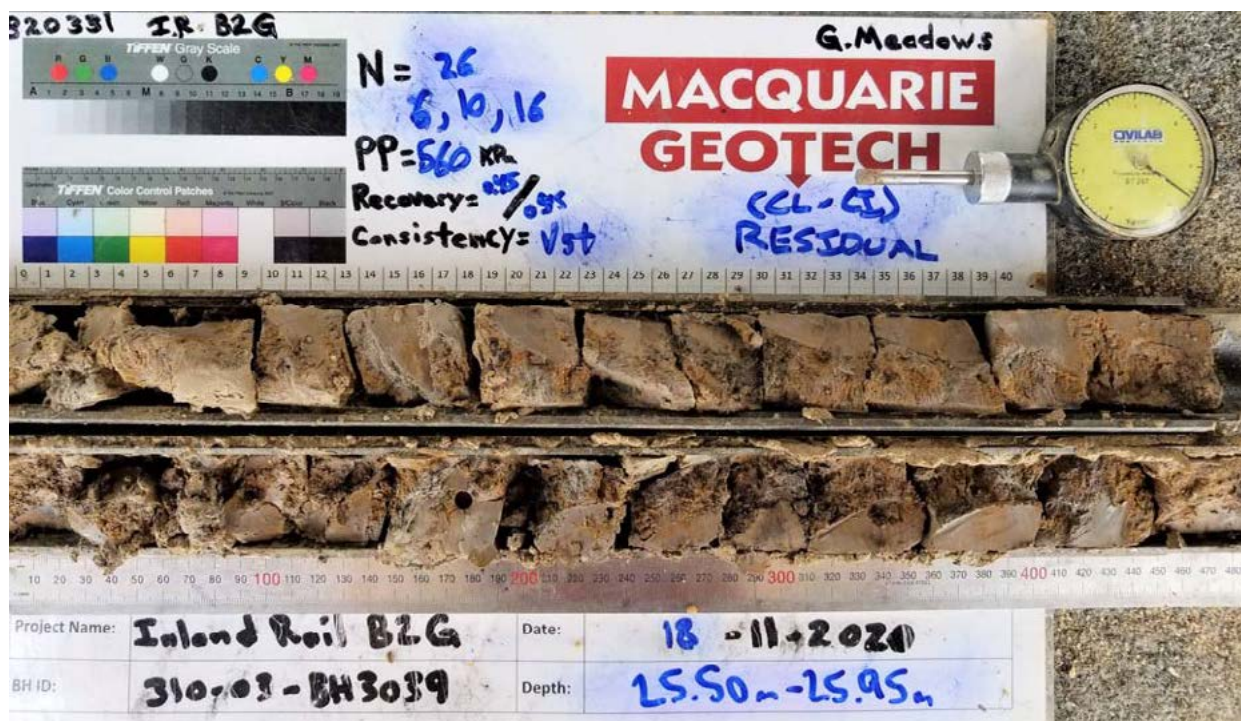


310-03-BH3039 Depth Range: 24.00 - 24.45 m

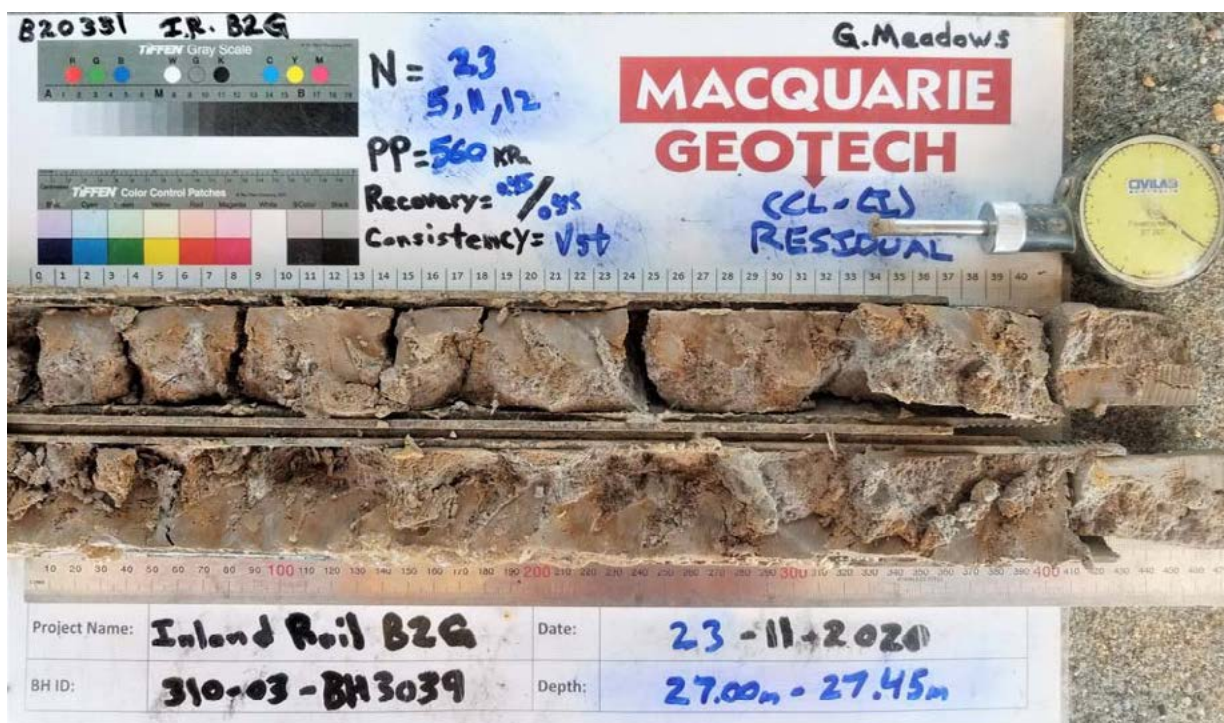
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 25.50 - 25.95 m

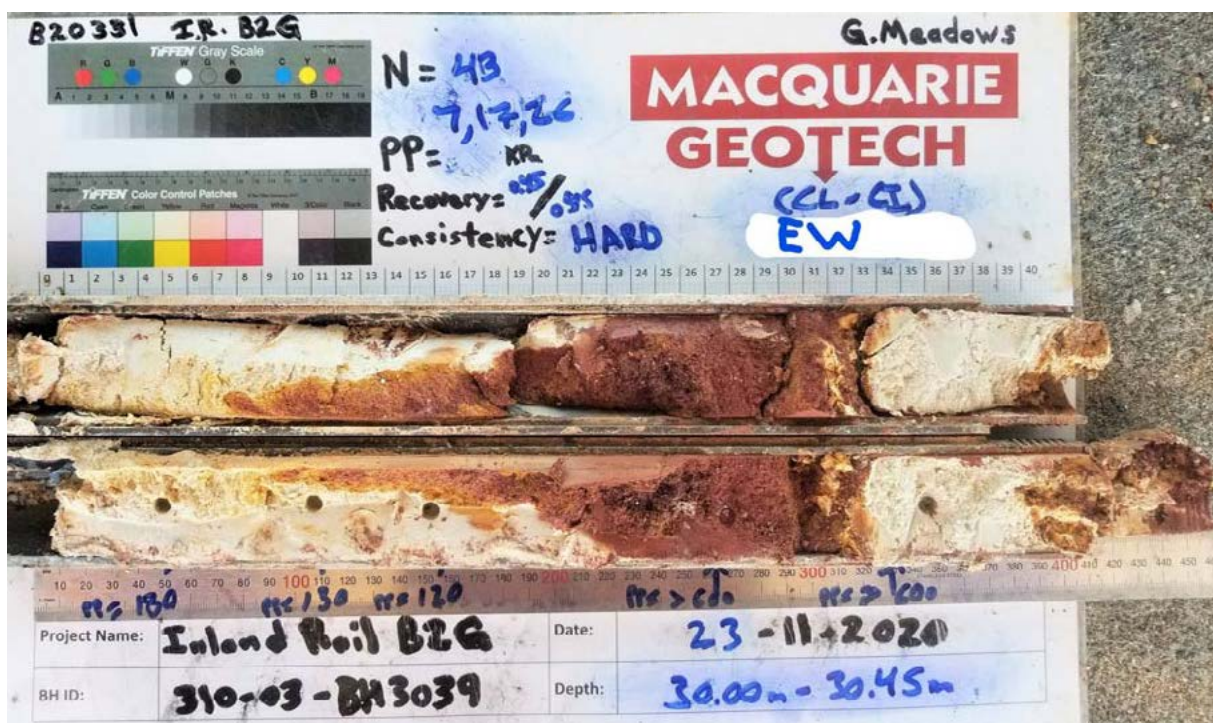
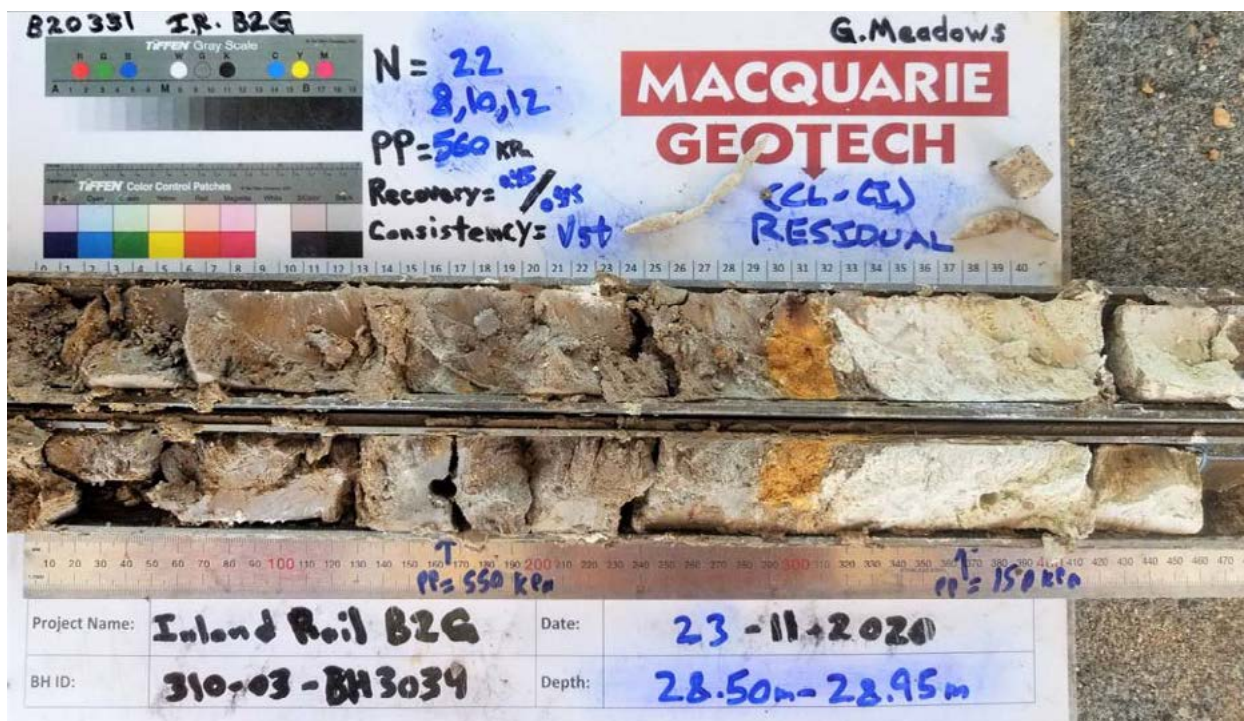


310-03-BH3039 Depth Range: 27.00 - 27.45 m

Engineering Log - Borehole

Project No.: B20331

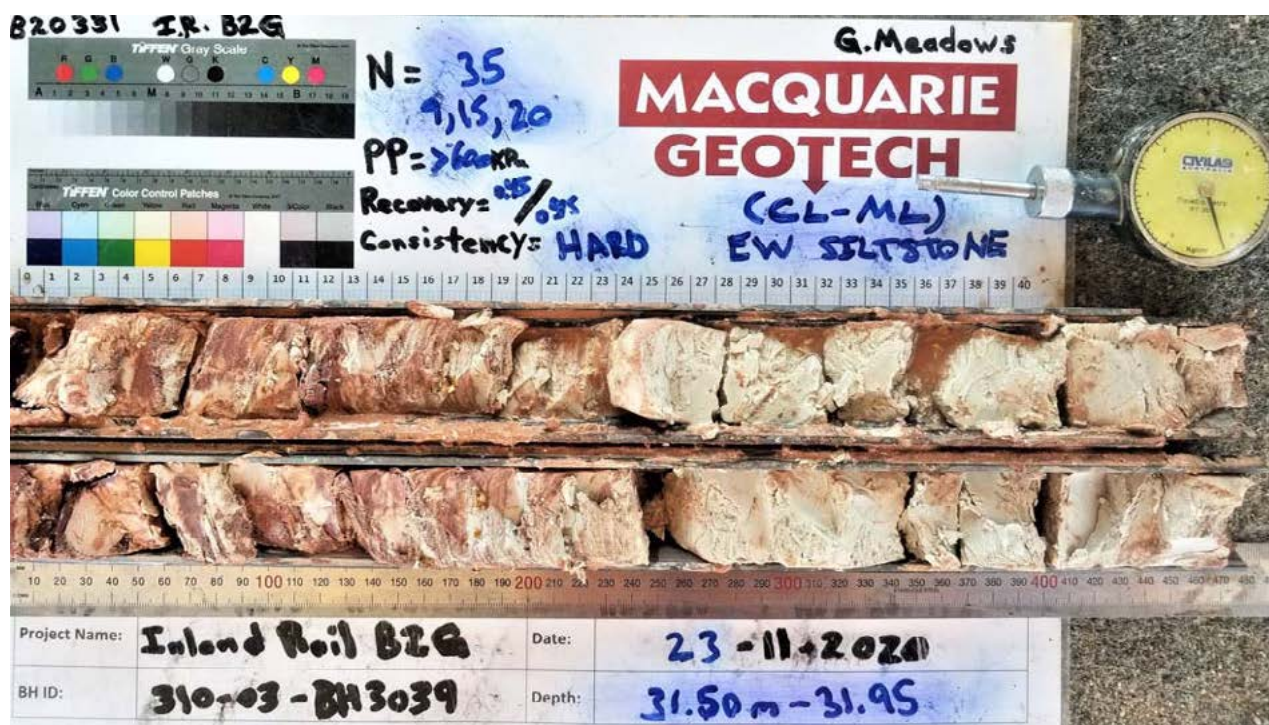
Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



Engineering Log - Borehole

Project No.: B20331

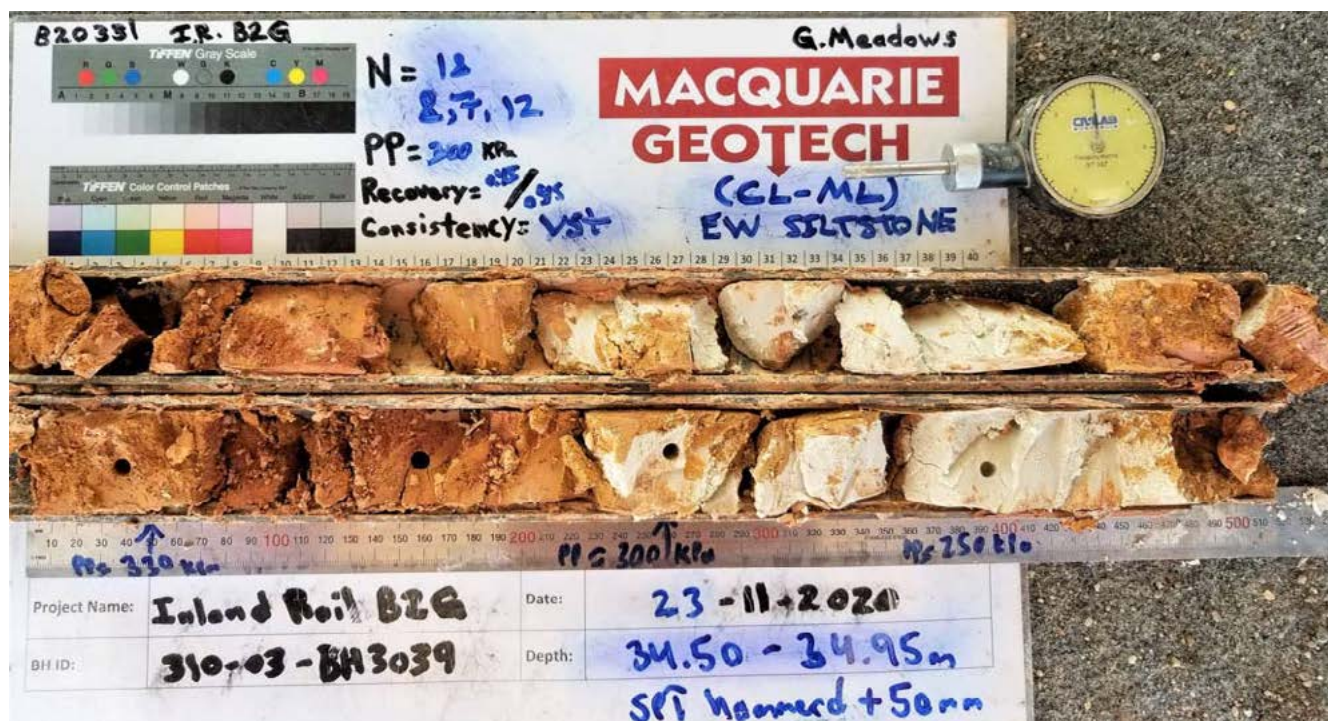
Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	17/11/2020
Project Name:	Inland Rail B2G	Completed:	23/11/2020
Hole Location:	Approx. CH142590 - Yandilla	Logged By:	G.Meadows
Hole Coordinates:	340419.3 m E 6921780.9 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.75 m
		Bearing:	
		Datum:	AHD
		Operator:	T.Lanaway



310-03-BH3039 Depth Range: 34.50 - 34.95 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH143042 - Pampas
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56

Commenced: 06/02/2021
Completed: 08/02/2021
Logged By: A. Sharma
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 378.93 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: M.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				J00020 0.20-0.30 m PID 0.20 m 0 ppm J00050 0.50-0.60 m S00050 SPT 0.50-0.95 m 7,14,18 N=32 PP 0.50 m >600 kPa PID 0.50 m 0.6 ppm J00100 Ps 1.00-1.10 m U00100 U 1.00-1.45 m PID 1.00 m 0.4 ppm S00150 SPT 1.50-1.95 m 8,12,17 N=29 PP 1.50 m >600 kPa D00250 D 2.50-3.00 m S00300 SPT 3.00-3.45 m 8,9,10 N=19 PP 3.00 m >600 kPa D00400 D 4.00-4.50 m S00450 SPT 4.50-4.95 m 12,15,19 N=34 PP 4.50 m >600 kPa D00550 D 5.50-6.00 m S00600 SPT 6.00-6.45 m 11,15,21 N=36 PP 6.00 m >600 kPa		377.9	1	CH	FILL: CLAY trace gravel: medium plasticity, dark-brown, fine rounded gravel CLAY trace gravel: medium plasticity, dark-brown, fine rounded gravel	H						REWORKED TOPSOIL ALLUVIAL SOIL
						376.9	2			Below 1.50m: no gravel						
						375.9	3		CI	Sandy CLAY trace silt: medium plasticity, dark-brown to black, fine grained sand	VSt					
						374.9	4		CI	CLAY with sand trace silt: medium plasticity, dark-brown to black, fine grained sand.	M (>PL)					
						373.9	5			becoming medium to high plsticity clay.						
						372.9	6					H				
						371.9	7									
					S00750 SPT 7.50-7.95 m 11.14.22				CI	Gravelly CLAY with sand: medium plasticity, grey-orange, coarse to medium sub-rounded gravel, fine to mdium grained sand	M (<PL)					
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration  Water  Level (Date)  Inflow  Partial Loss  Complete Loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH143042 - Pampas
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56

Commenced: 06/02/2021
Completed: 08/02/2021
Logged By: A. Sharma
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclin: -90° RL Surface: 378.93 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: M.Boga

Drilling Information							Soil Description							Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
AD/T				N=36 PP 7.50 m <400 kPa					CI	Gravelly CLAY with sand: medium plasticity, grey-orange, coarse to medium sub-rounded gravel, fine to mdium grained sand (continued)	M (<PL)				ALLUVIAL SOIL	
				S00900 SPT 9.00-9.45 m 9,10,11 N=21 PP 9.00 m <350 kPa		369.9	9					H		x		
						368.9	10				M					
				S01050 SPT 10.50-10.95 m 22,17,22 N=39 PP 10.50 m <450 kPa		367.9	11		GP CI	GRAVEL trace sand and clay: medium to coarse sub-rounded to sub-angular, grey-brown, fine grained sand, high plasticity Sandy CLAY: medium plasticity, brown mottled grey, fine grained sand	M D			x		
						366.9	12		SP	SAND with gravel trace clay: coarse grained sand, pale-yellow to brown, medium to coarse sub-rounded to sub-angular gravel, medium plasticity From 12.25m to 12.31m silty clay trace gravel, medium plasticity brown, fine sub-rounded gravel			MD			
				S01200 SPT 12.00-12.45 m 15,13,10 N=23		365.9	13		GP	GRAVEL with sand: medium to coarse sub-rounded to sub-angular, pink to white, black, fine grained sand						
				S01350 SPT 13.50-13.95 m 13,18,17 N=35		364.9	14		SC	Clayey SAND with gravel: fine to coarse, orange bown and brown, low to medium plasticity clay, fine to medium sub-rounded to sub-angular gravel	M to W					
									GP	GRAVEL with sand: medium to coarse sub-rounded to sub-angular, pink to white, black, fine grained sand			D			
				S01500 SPT 15.00-15.45 m 11,17,25 N=42		363.9	15		SC	From 15.00m to 15.10m clayey sand with gravel Clayey SAND with gravel: fine to coarse, orange bown and brown, low to medium plasticity clay, fine to medium sub-rounded to sub-angular gravel						
									GP							
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration  Water     Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Support C - Casing Graphic Log/Core Loss   Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Plastic Limit < PL = PL < PL																

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 06/02/2021																			
Project Name: Inland Rail B2G										Completed: 08/02/2021																			
Hole Location: Approx. CH143042 - Pampas										Logged By: A. Sharma																			
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																			
Hole Diameter: 115 mm										RL Surface: 378.93 m																			
										Bearing: Datum: AHD Operator: M.Boga																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
AD/T 																													

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 06/02/2021																			
Project Name: Inland Rail B2G										Completed: 08/02/2021																			
Hole Location: Approx. CH143042 - Pampas										Logged By: A. Sharma																			
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																			
Hole Diameter: 115 mm										RL Surface: 378.93 m																			
										Bearing: Datum: AHD Operator: M.Boga																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
WB				S02400 SPT 24.00-24.45 m 10,13,16 N=29		353.9	25		GP	GRAVEL with sand: fine to medium sub-rounded to sub-angular, pink to white, black, fine grained sand (continued)	W	MD			ALLUVIAL SOIL														
				S02550 SPT 25.50-25.95 m 14,21,20 N=41 PP 25.50 m <600 kPa		352.9	26		CI	Sandy CLAY: medium plasticity, brown , fine to medium grained sand	M (~PL)	H																	
				S02700 SPT 27.00-27.30 m 16,30 HB N=30/150mm		351.9	27		GP	GRAVEL with sand: fine to medium sub-rounded to sub-angular, pink to white, black, fine grained sand	W	D to VD																	
				S02850 SPT 28.50-28.95 m 17,27,32 N=59 PP 28.50 m <600 kPa		349.9	28		SC	Clayey SAND with gravel: fine to coarse, orange bown and brown, low plasticity clay, fine to medium sub-rounded to sub-angular gravel					RESIDUAL SOIL														
				S03000 SPT 30.00-30.30 m 19,32 HB N=32/150mm PP 30.00 m <550 kPa		348.9	29		CI	CLAY: medium plasticity, white	M (~PL)	H																	
				S03150 SPT 31.50-31.95 m 22,30,30		347.9	30		CL-CI	CLAY trace gravel: low to medium plasticity, red-white, mottled orange, medium to coarse weathered angular gravel	M (<PL)																		
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density																			
AS - Auger Screwing RR - Rock Roller WB- Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense																			
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit																							
C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL																							

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 06/02/2021	
Project Name: Inland Rail B2G		Completed: 08/02/2021	
Hole Location: Approx. CH143042 - Pampas		Logged By: A. Sharma	
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 378.93 m	
		Bearing: Datum: AHD Operator: M.Boga	

Drilling Information				Soil Description				Observations							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=60 PP 31.50 m <600 kPa					CL-CI	CLAY trace gravel: low to medium plasticity, red-white, mottled orange, medium to coarse weathered angular gravel (<i>continued</i>)					RESIDUAL SOIL
				S03300 SPT 33.00-33.45 m 14,19,25 N=44 PP 33.00 m <550 kPa		345.9	33		CL	Silty CLAY: low plasticity, white and maroon	M (<PL)	H			x
						344.9	34								
				S03500 SPT 35.00-35.30 m 29,30 HB N=30/150mm PP 35.00 m >600 kPa		343.9	35			Hole Terminated at 35.30 m Target depth Hole grouted to surface.					
						342.9	36								
						341.9	37								
						340.9	38								
						339.9	39								

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

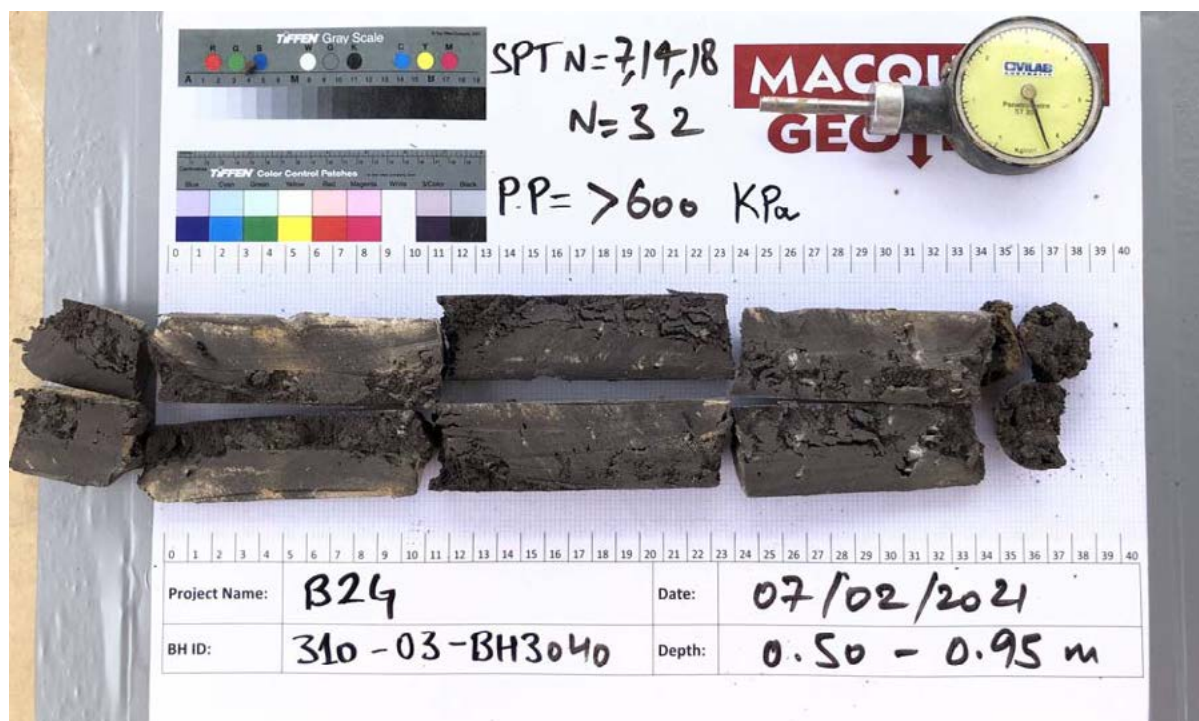
Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 0.50 - 0.95 m



310-03-BH3040 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH143042 - Pampas
Hole Coordinates: 340598.7 m E 6922195.4 m N MGA94 Zone 56

Commenced: 06/02/2021
Completed: 08/02/2021
Logged By: A. Sharma
Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track Inclusion: -90° RL Surface: 378.93 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: M.Boga



310-03-BH3040 Depth Range: 3.00 - 3.45 m



310-03-BH3040 Depth Range: 4.50 - 4.95 m

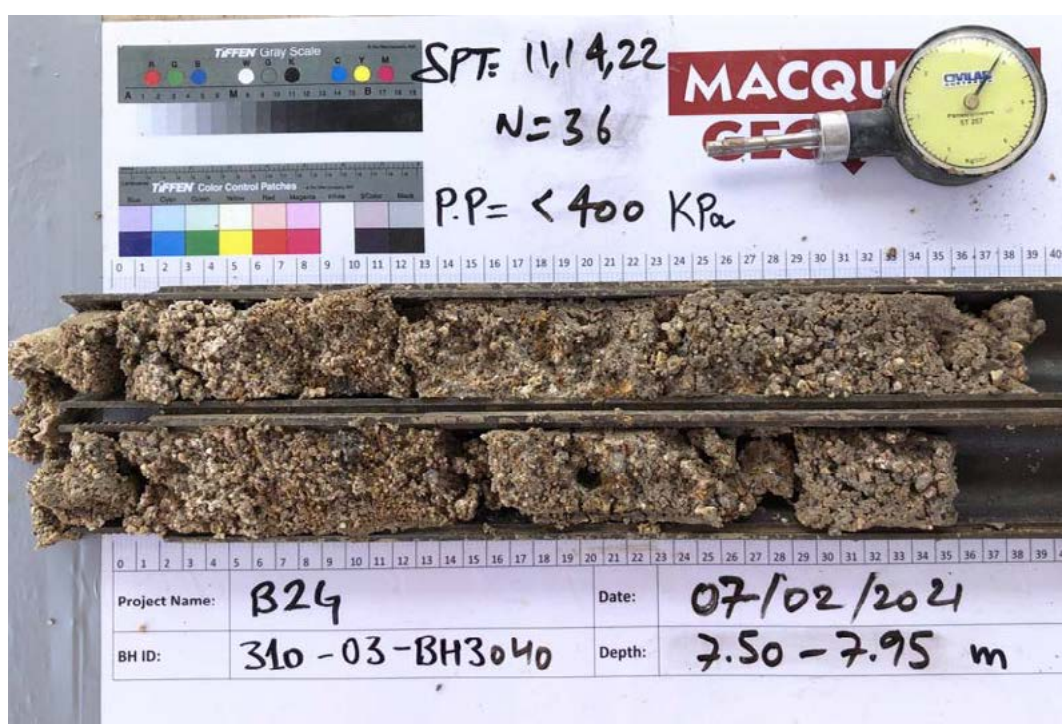
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 6.00 - 6.45 m



310-03-BH3040 Depth Range: 7.50 - 7.95 m

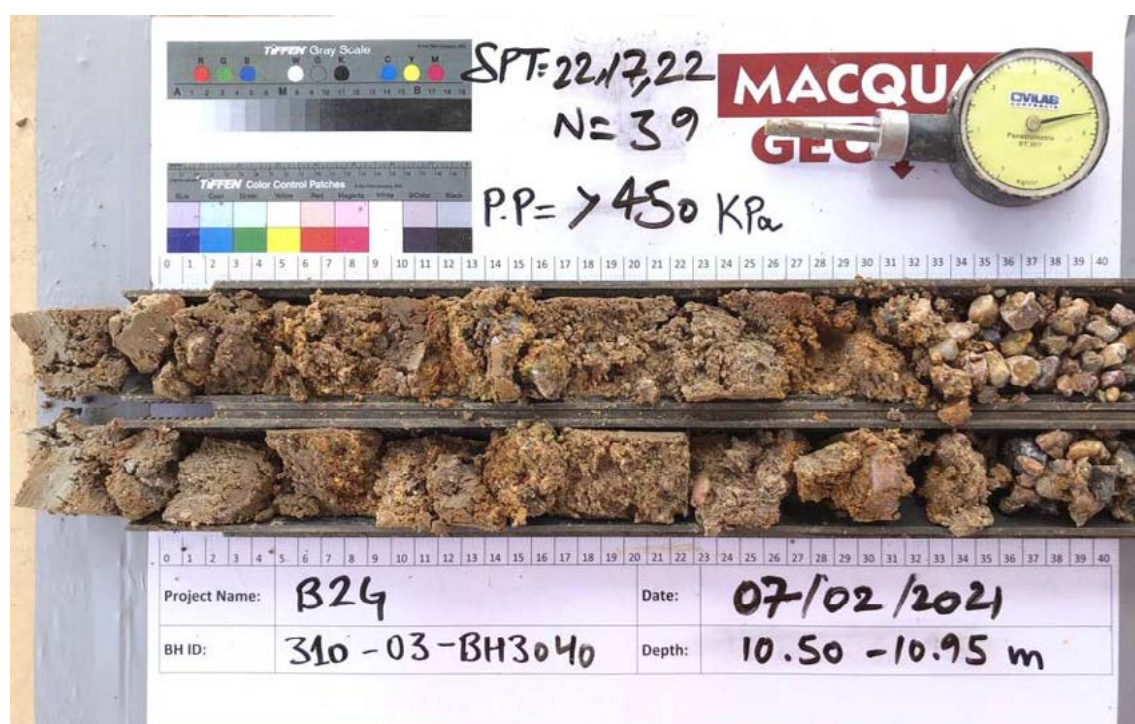
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 9.00 - 9.45 m



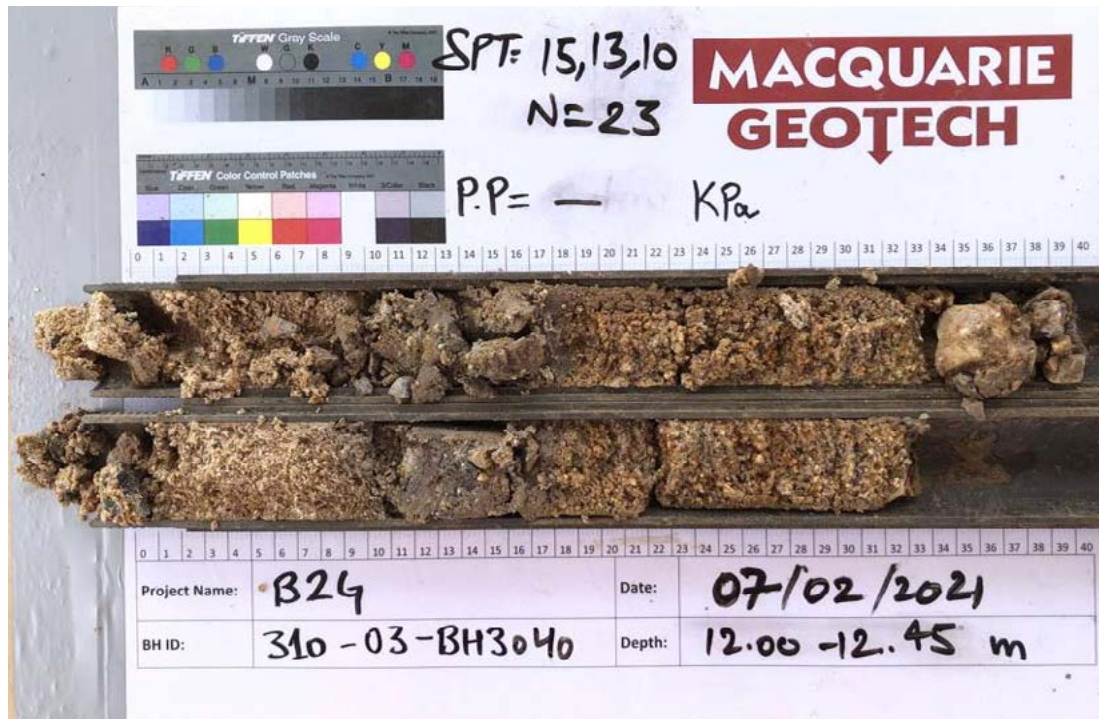
310-03-BH3040 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

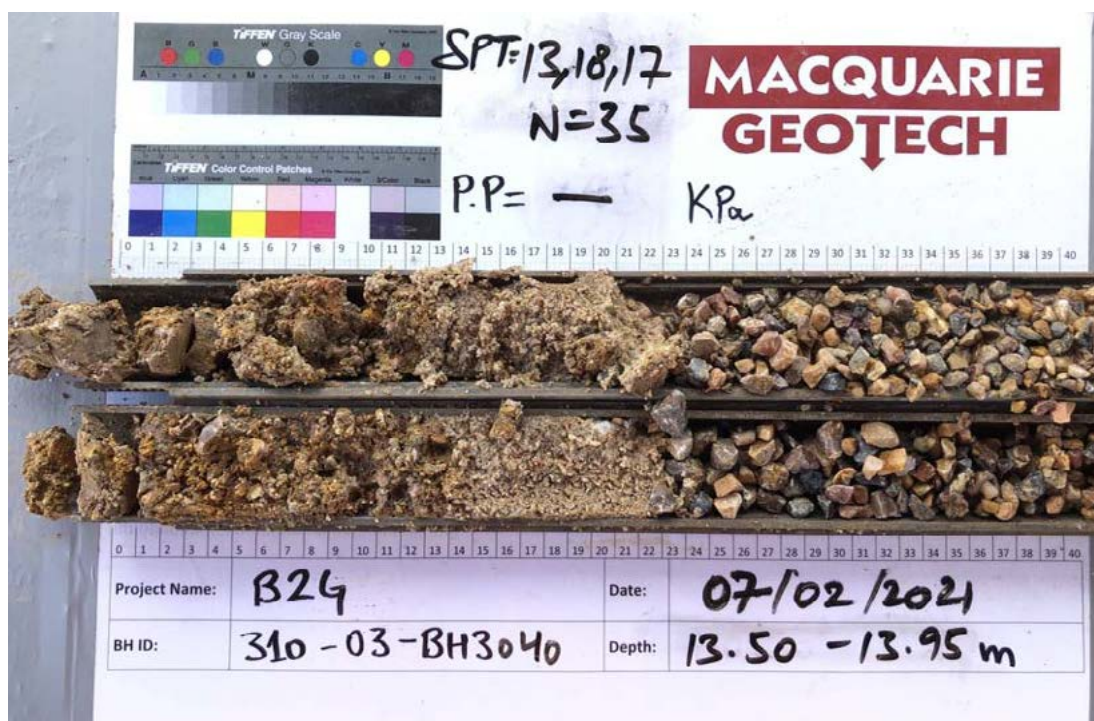
Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.93 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3040 Depth Range: 12.00 - 12.45 m



310-03-BH3040 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

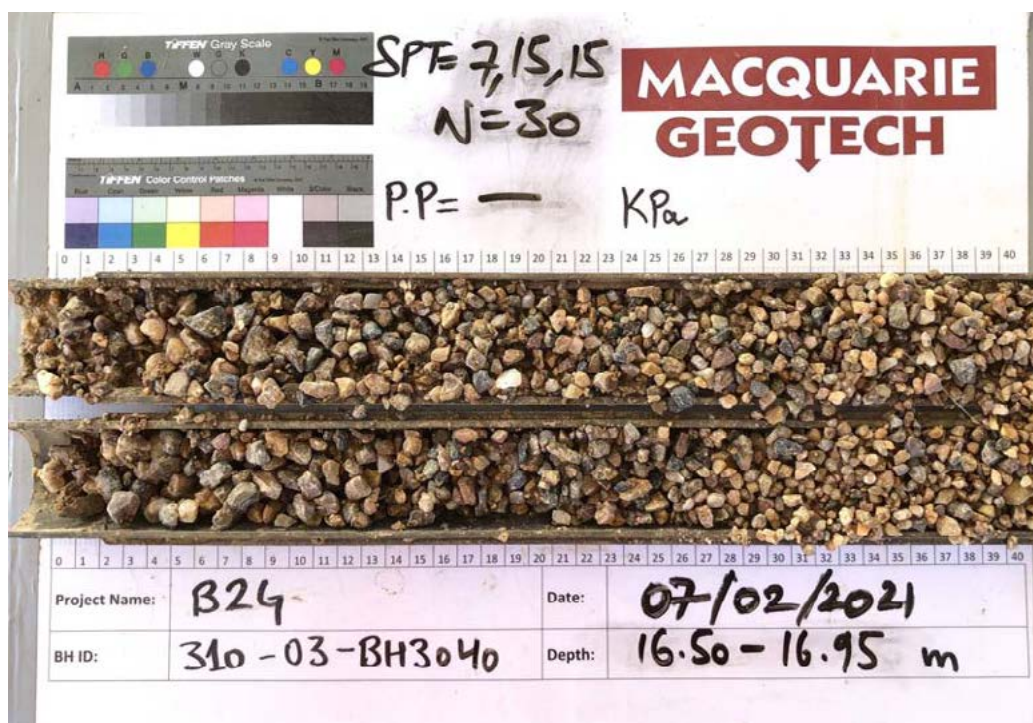
Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.93 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3040 Depth Range: 15.00 - 15.45 m



310-03-BH3040 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 18.00 - 18.45 m



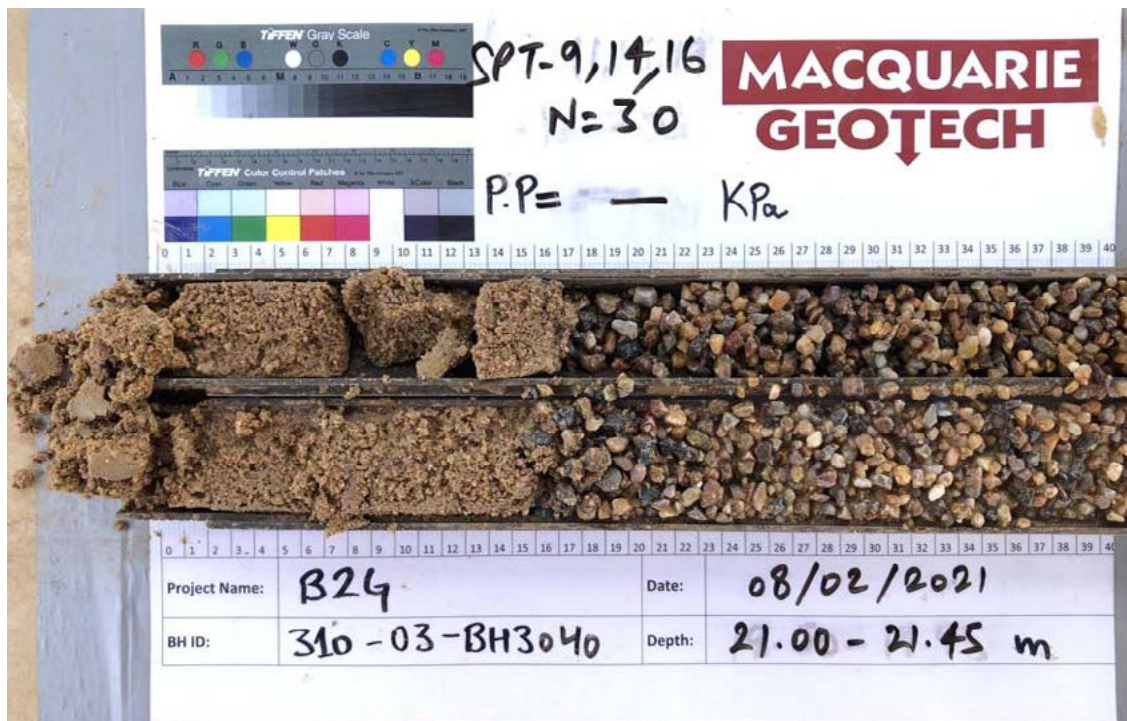
310-03-BH3040 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.93 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3040 Depth Range: 21.00 - 21.45 m

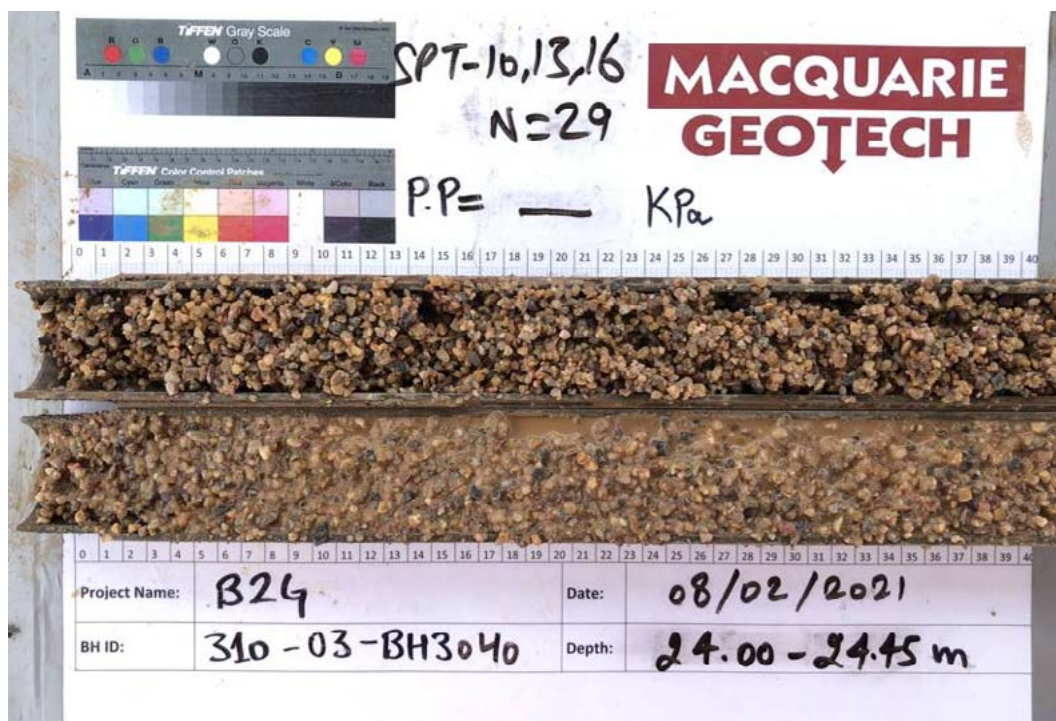


310-03-BH3040 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 24.00 - 24.45 m



310-03-BH3040 Depth Range: 25.50 - 25.95 m

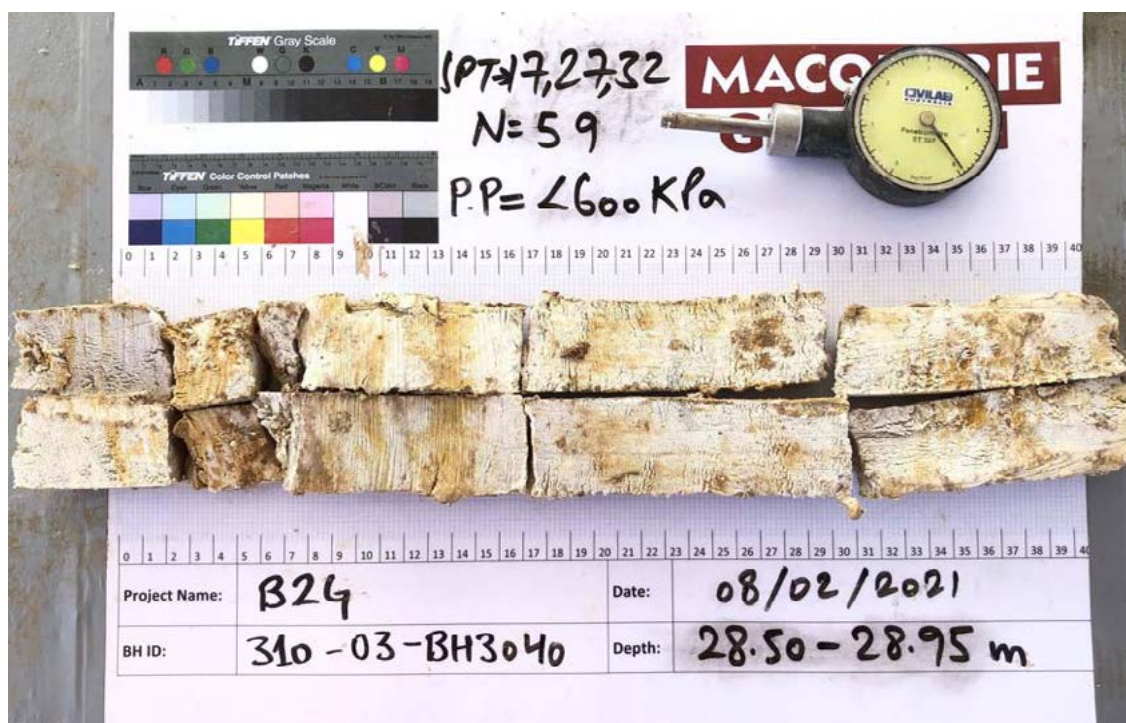
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	378.93 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3040 Depth Range: 27.00 - 27.45 m



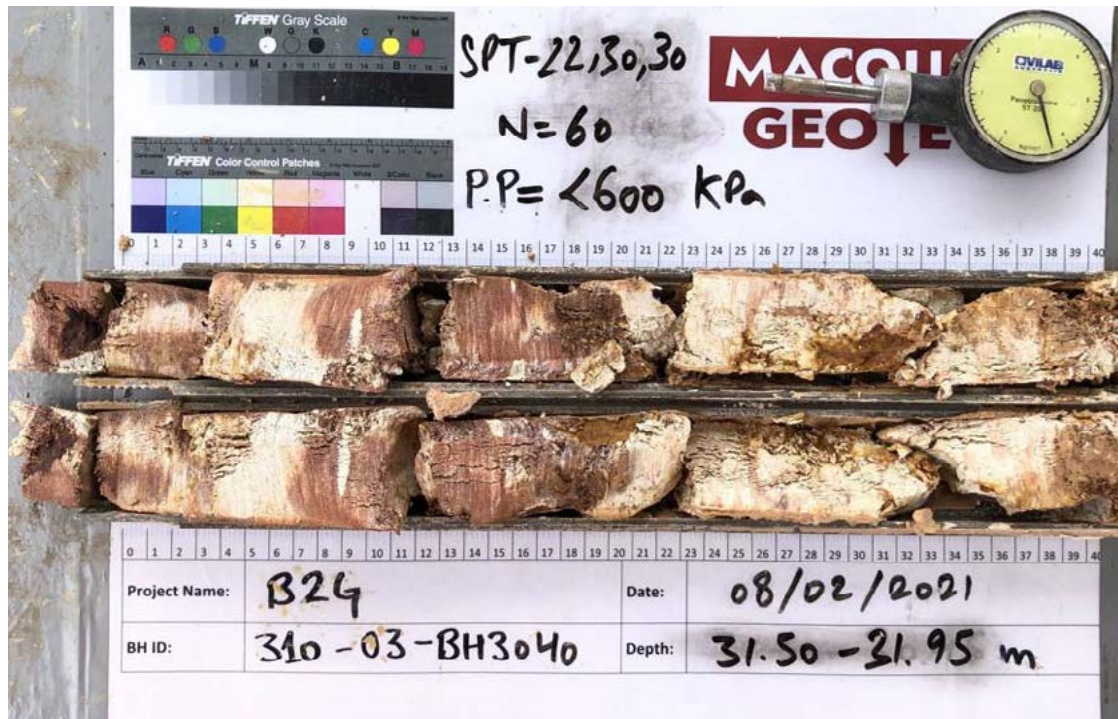
310-03-BH3040 Depth Range: 28.50 - 28.95 m

Engineering Log - Borehole

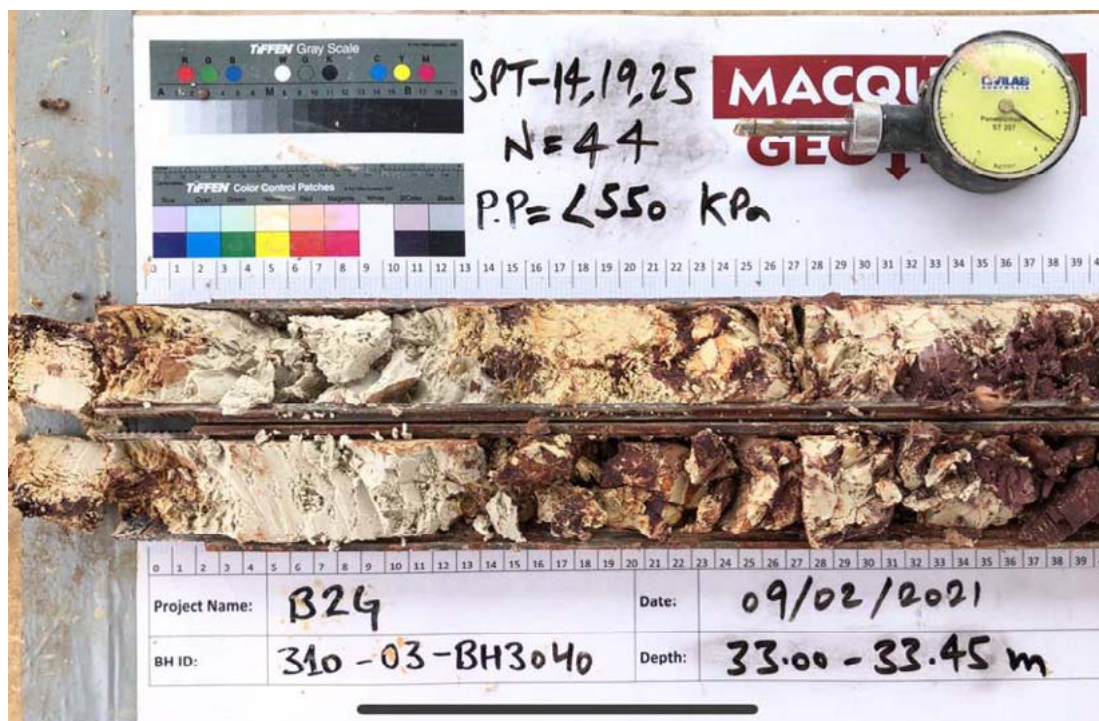
Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.93 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3040 Depth Range: 31.50 - 31.95 m



310-03-BH3040 Depth Range: 33.00 - 33.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143042 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	340598.7 m E 6922195.4 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	378.93 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3040 Depth Range: 35.00 - 35.45 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 06/02/2021
Project Name: Inland Rail B2G	Completed: 08/02/2021
Hole Location: Approx. CH143422 - Pampas	Logged By: H.Tran
Hole Coordinates: 340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: D4TAPG Truck mounted rig	Inclination: -90°	RL Surface: 379.24 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: B.Boga

Drilling Information							Soil Description					Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
AD/T				J00015 0.15-0.20 m PID 0.20 m 0.1 ppm D00030 0.30-0.50 m J00045 0.45-0.50 m S00050 SPT 0.50-0.95 m 2,3,4 N=7 PID 0.50 m 0.1 ppm PP 0.75 m =150 kPa J00095 0.95-1.00 m D00100 1.00-1.50 m U00100 1.00-1.45 m PID 1.00 m 0.2 ppm S00150 SPT 1.50-1.95 m 2,3,4 N=7 PP 1.80 m =240 kPa D00250 2.50-3.00 m S00300 SPT 3.00-3.45 m 4,7,9 N=16 PP 3.30 m >600 kPa D00400 4.00-4.50 m S00450 SPT 4.50-4.95 m 9,11,15 N=26 PP 4.70 m >600 kPa D00550 5.50-6.00 m S00600 SPT 6.00-6.45 m 9,14,20 N=34 PP 6.40 m >600 kPa S00750 SPT		378.2	1		FILL Silty CLAY trace gravel: high plasticity, black, fine to medium, sub-rounded to sub-angular gravel.						FILL		
							CH	Silty CLAY: high plasticity, black.				ALLUVIAL SOIL					
						377.2	2		At 1.85m: with calcerous material.	St							
								CI-CH	Silty CLAY trace sand: medium to high plasticity, yellow brown and pale grey, fine grained sand.								
						376.2	3		Below 3.00m: with fine grained sand and high plasticity clay. At 3.35m: trace medium sub-rounded gravel.	M (<PL)							
						375.2	4		CH	Silty CLAY with sand trace gravel: high plasticity, yellow brown and pale grey, fine grained sand, fine to medium sub-rounded gravel.							
										From 4.50 to 4.80m: with fine to medium sub-rounded gravel.	VSt						
WB		100% Water RETURN				374.2	5										
						373.2	6										
						372.2	7										
									CH	Sandy CLAY: high plasticity, dark grey and yellow brown, fine grained sand.	W	VSt					

Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density	
AS - Auger Screwing			No resistance ranging to refusal		Level (Date)	U - Undisturbed Sample		D - Dry		VS - Very Soft	
RR - Rock Roller			Inflow		Disturbed Sample	D - Disturbed Sample		M - Moist		S - Soft	
WB- Washbore			Partial Loss		SPT - Standard Penetration Test	SPT - Standard Penetration Test		W - Wet		F - Firm	
			Complete Loss							VSt - Very Stiff	
										H - Hard	
										VL - Very Loose	
										L - Loose	
										MD - Medium Dense	
										D - Dense	
										VD - Very Dense	

Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit	
C - Casing			Core recovered (hatching indicates material)	Based on Unified Soil Classification System		< PL	
			Core loss			= PL	
						< PL	

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB - Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions	Plastic Limit		
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System	< PL = PL < PL		

Client: ARTC Project Name: Inland Rail B2G Hole Location: Approx. CH143422 - Pampas Hole Coordinates: 340814.4 m E 6922509.5 m N MGA94 Zone 56										Commenced: 06/02/2021 Completed: 08/02/2021 Logged By: H.Tran Checked By: J.Boyle																	
Drill Model and Mounting: D4TAPG Truck mounted rig Hole Diameter: 115 mm					Inclination: -90° Bearing:		RL Surface: 379.24 m Datum: AHD		Operator: B.Boga																		
Drilling Information					Soil Description							Observations															
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations												
WB				7.50-7.95 m 11,11,14 N=25 PP 7.70 m >600 kPa					CH	Sandy CLAY: high plasticity, dark grey and yellow brown, fine grained sand. (continued)		VSt			ALLUVIAL SOIL Standing Water Level - 08/02/2021												
				S00900 SPT 9.00-9.45 m 9,12,20 N=32		370.2	9	SM	Silty SAND: fine to medium grained, pale yellow brown.		D																
				S01050 SPT 10.50-10.95 m 6,9,9 N=18		369.2	10	SP-SC	SAND with clay: fine to medium grained, pale grey, low plasticity clay.		MD																
				S01200 SPT 12.00-12.45 m 5,7,16 N=23		368.2	11	SP	SAND: fine to medium grained, pale grey. At 12.45m: trace medium sub-rounded gravel.		D																
				S01350 SPT 13.50-13.95 m 7,13,23 N=36		367.2	12	CL-CI	Gravelly SAND: fine to coarse grained, yellow brown, fine to medium sub-rounded gravel. From 15.05 to 15.15m: thinly bedded with Silty CLAY: high plasticity, dark grey. Silty CLAY: low to medium plasticity, pale brown.	M (>PL) VSt	x																
<table><tr><td>Method AS - Auger Screwing RR - Rock Roller WB - Washbore</td><td>Penetration No resistance ranging to refusal</td><td>Water Level (Date) Inflow Partial Loss Complete Loss</td><td>Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test</td><td>Moisture Condition D - Dry M - Moist W - Wet Plastic Limit < PL = PL > PL</td><td>Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard L - Loose MD - Medium Dense D - Dense VD - Very Dense</td></tr><tr><td>Support C - Casing</td><td>Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss</td><td colspan="2">Classification Symbols and Soil Descriptions Based on Unified Soil Classification System</td><td colspan="2"></td></tr></table>																Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet Plastic Limit < PL = PL > PL	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard L - Loose MD - Medium Dense D - Dense VD - Very Dense	Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System			
Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet Plastic Limit < PL = PL > PL	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard L - Loose MD - Medium Dense D - Dense VD - Very Dense																						
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System																									

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH143422 - Pampas
Hole Coordinates: 340814.4 m E 6922509.5 m N MGA94 Zone 56

Commenced: 06/02/2021
Completed: 08/02/2021
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG Truck mounted rig Inclusion: -90° RL Surface: 379.24 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description						Observations		
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB									CL-CI	Silty CLAY: low to medium plasticity, pale brown. (continued)					ALLUVIAL SOIL
				S01650 SPT 16.50-16.95 m 4,7,12 N=19 PP 16.70 m =320 kPa		362.2	17		ML-MH	Clayey SILT: pale brown, medium plasticity clay.	M (>PL)	VSt			
				S01800 SPT 18.00-18.45 m 5,6,11 N=17 PP 18.20 m =210 kPa		361.2	18								
						360.2	19		SP	SAND trace clay: fine to coarse grained, black, low plasticity clay.	W	MD			
				S01950 SPT 19.50-19.95 m 3,4,7 N=11		359.2	20		CL	Silty CLAY: low plasticity, pale brown. From 19.80 to 19.90m: thinly bedded with Clayey SAND: fine to coarse grained, dark brown, low plasticity clay.	M (>PL)	St			
				S02100 SPT 21.00-21.45 m 6,12,21 N=33		358.2	21		SC	Clayey SAND: fine to coarse grained, dark brown, low plasticity clay.					
						357.2	22								
				S02250 SPT 22.50-22.95 m 15,16,17 N=33		356.2	23		SP	SAND trace gravel: fine to coarse grained, pale brown, fine to medium sub-rounded gravel.	W	D			

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration

No resistance ranging to refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching indicates material)
Core loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Classification Symbols and Soil Descriptions

Based on Unified Soil Classification System

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit

< PL
= PL
> PL

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 06/02/2021																																																	
Project Name: Inland Rail B2G										Completed: 08/02/2021																																																	
Hole Location: Approx. CH143422 - Pampas										Logged By: H.Tran																																																	
Hole Coordinates: 340814.4 m E 6922509.5 m N MGA94 Zone 56										Checked By: J.Boyle																																																	
Drill Model and Mounting: D4TAPG Truck mounted rig										Inclination: -90°																																																	
Hole Diameter: 115 mm										RL Surface: 379.24 m																																																	
										Bearing: Datum: AHD Operator: B.Boga																																																	
Drilling Information										Soil Description										Observations																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																												
WB				S02400 SPT 24.00-24.45 m 9,14,15 N=29		354.2	25		SP	SAND trace gravel: fine to coarse grained, pale brown, fine to medium sub-rounded gravel. (continued) Below 24.00m: with fine to medium sub-rounded gravel.					ALLUVIAL SOIL																																												
				S02550 SPT 25.50-25.95 m 11,13,15 N=28		353.2	26			Below 25.50m: trace low plasticity clay.	MD																																																
				S02700 SPT 27.00-27.45 m 14,23,24 N=47		352.2	27		SP	Gravelly SAND: fine to coarse grained, pale brown, fine to medium sub-rounded gravel.				RESIDUAL SOIL																																													
				S02850 SPT 28.50-28.95 m 7,11,14 N=25 PP 28.70 m =340 kPa		350.2	29		CI-CH	Silty CLAY: medium to high plasticity, pale grey and brown.	M (>PL)	VSt	x																																														
				S03000 SPT 30.00-30.45 m 7,12,15 N=27		349.2	30		SC	Clayey SAND: fine to medium grained, pale grey and brown, low to medium plasticity clay.																																																	
				S03150 SPT 31.50-31.95 m 13,19,21		348.2	31		SP	SAND with gravel: fine to coarse grained, pale brown and black, fine to medium sub-rounded gravel.		D																																															
Method										Penetration										Water										Samples and Tests										Moisture Condition										Consistency/Relative Density									
AS - Auger Screwing RR - Rock Roller WB- Washbore										 No resistance ranging to refusal										 Level (Date)  Inflow  Partial Loss  Complete Loss										U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test										D - Dry M - Moist W - Wet										VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
Support										Graphic Log/Core Loss										Classification Symbols and Soil Descriptions										Plastic Limit																													
C - Casing										 Core recovered (hatching indicates material)  Core loss										Based on Unified Soil Classification System										< PL = PL < PL																													

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 06/02/2021	
Project Name: Inland Rail B2G		Completed: 08/02/2021	
Hole Location: Approx. CH143422 - Pampas		Logged By: H.Tran	
Hole Coordinates: 340814.4 m E 6922509.5 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: D4TAPG Truck mounted rig		Inclination: -90°	RL Surface: 379.24 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: B.Boga

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=40					SP	SAND with gravel: fine to coarse grained, pale brown and black, fine to medium sub-rounded gravel. (continued)	W	D		RESIDUAL SOIL
				S03300 SPT 33.00-33.25 m 33,50/100mm HB N=50/100mm PP 33.20 m >600 kPa		346.2	33		CI	Extremely weathered SILTSTONE: recovered as Silty CLAY: medium plasticity, pale grey and orange brown.				EXTREMELY WEATHERED MATERIAL
				S03450 SPT 34.50-34.85 m 25,35,30/50mm HB N=65/200mm PP 34.85 m >600 kPa		345.2	34		CL	Extremely weathered SANDSTONE: recovered as Sandy CLAY: low plasticity, off-white, fine to coarse grained sand.	M (<PL)	H		
						344.2	35			Hole Terminated at 34.85 m Target depth Hole grouted to surface.				
						343.2	36							
						342.2	37							
						341.2	38							
						340.2	39							

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration No resistance ranging to refusal	Water Level (Date) Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.24 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga



310-03-BH3041 Depth Range: 0.50 - 0.95 m



310-03-BH3041 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.24 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: B.Boga



310-03-BH3041 Depth Range: 3.00 - 3.45 m

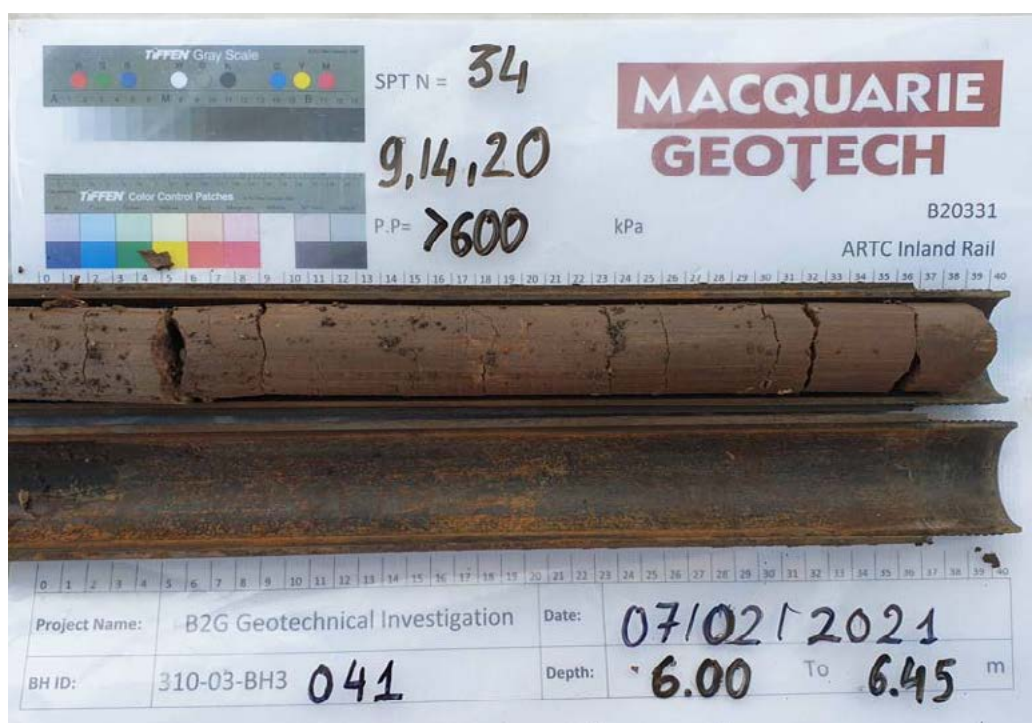


310-03-BH3041 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 6.00 - 6.45 m



310-03-BH3041 Depth Range: 7.50 - 7.95 m

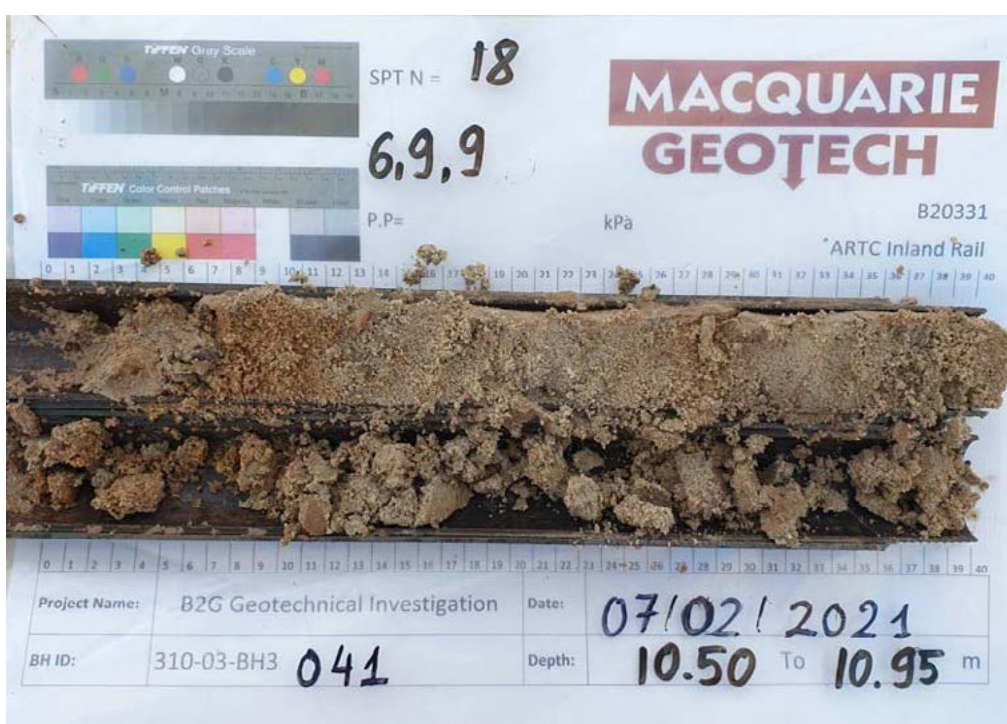
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 9.00 - 9.45 m



310-03-BH3041 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 12.00 - 12.45 m

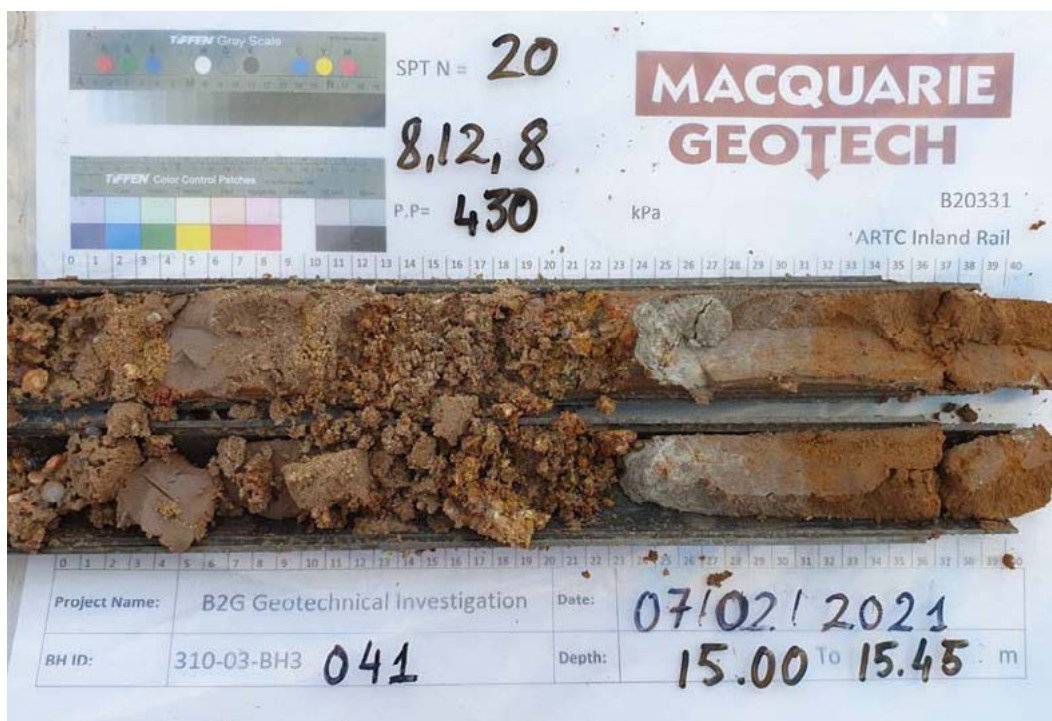


310-03-BH3041 Depth Range: 13.50 - 13.95 m

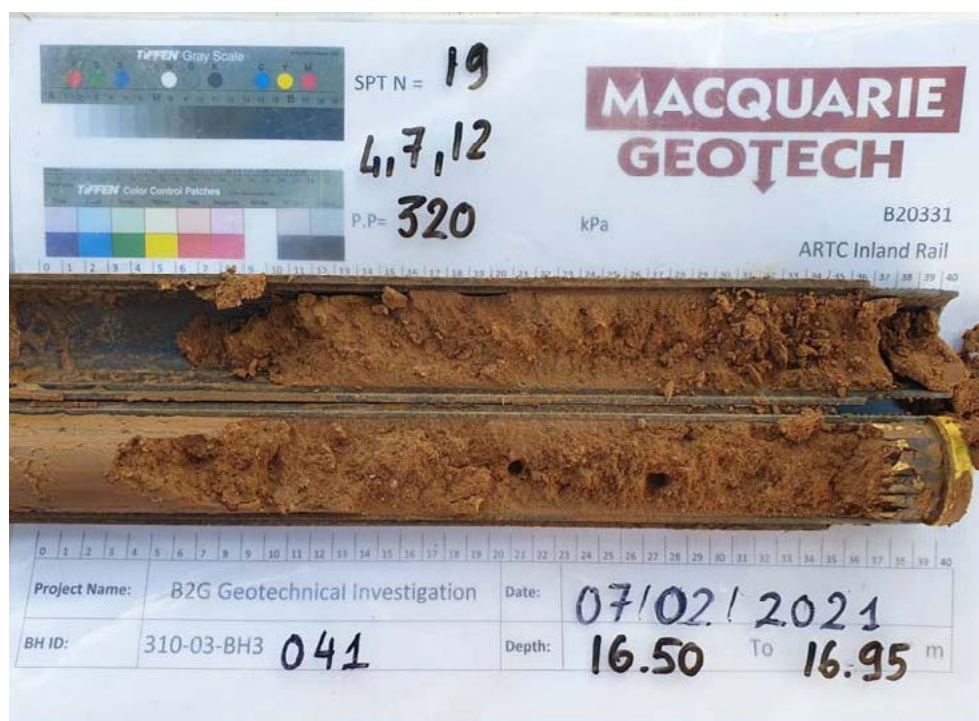
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 15.00 - 15.45 m



310-03-BH3041 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 18.00 - 18.45 m



310-03-BH3041 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.24 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: B.Boga



310-03-BH3041 Depth Range: 21.00 - 21.45 m



310-03-BH3041 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.24 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: B.Boga



310-03-BH3041 Depth Range: 24.00 - 24.45 m



310-03-BH3041 Depth Range: 25.50 - 25.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 27.00 - 27.45 m



310-03-BH3041 Depth Range: 28.50 - 28.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.24 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 30.00 - 30.45 m



310-03-BH3041 Depth Range: 31.50 - 31.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	06/02/2021
Project Name:	Inland Rail B2G	Completed:	08/02/2021
Hole Location:	Approx. CH143422 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340814.4 m E 6922509.5 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.24 m
		Bearing:	
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3041 Depth Range: 33.00 - 33.25 m



310-03-BH3041 Depth Range: 34.50 - 34.85 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 04/02/2021																																																	
Project Name: Inland Rail B2G										Completed: 06/02/2021																																																	
Hole Location: Approx. CH143636 - Pampas										Logged By: H.Tran																																																	
Hole Coordinates: 340955.8 m E 6922670.0 m N MGA94 Zone 56										Checked By: J.Boyle																																																	
Drill Model and Mounting: D4TAPG Truck mounted rig										Inclination: -90°																																																	
Hole Diameter: 115 mm										RL Surface: 379.80 m																																																	
										Bearing: Datum: AHD Operator: B.Boga																																																	
Drilling Information										Soil Description										Observations																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																												
AD/T				J00015 0.15-0.20 m PID 0.20 m 0.3 ppm D00030 0.30-0.50 m J00045 0.45-0.50 m S00050 SPT 0.50-0.95 m 2.4.4 N=8 PID 0.50 m 0.6 ppm PP 0.75 m =180 kPa J00095 0.95-1.00 m D00100 1.00-1.50 m U00100 1.00-1.45 m PID 1.00 m 0.2 ppm PP 1.45 m =210 kPa S00150 SPT 1.50-1.95 m 3.5.6 N=11 PP 1.75 m =340 kPa D00250 2.50-3.00 m S00300 SPT 3.00-3.45 m 5.7.8 N=15 PP 3.30 m =540 kPa D00400 4.00-4.50 m S00450 SPT 4.50-4.95 m 6.6.11 N=17 PP 4.75 m =540 kPa D00550 5.50-6.00 m S00600 SPT 6.00-6.45 m 8.16.16 N=32 PP 6.30 m >600 kPa		378.8	1		CH	FILL Silty CLAY trace gravel: high plasticity, black, fine to medium sub-angular gravel.	M (<PL)	St	100 200 300 400 500	x	FILL																																												
				Silty CLAY: high plasticity, black.						ALLUVIAL SOIL																																																	
				Below 1.50m: trace fine to medium sub-rounded gravel.																																																							
				CH												Silty CLAY trace sand and gravel: high plasticity, black, fine to medium grained sand, fine to medium sub-rounded gravel.	St	x	ALLUVIAL SOIL																																								
																Below 3.00m: gravel increasing with depth.																																											
																CI-CH				Silty CLAY trace sand: medium to high plasticity, dark grey and orange brown, fine grained sand.	VSt	x	ALLUVIAL SOIL																																				
				Below 5.00m: trace fine sub-rounded gravel.																																																							
				At 5.50m: becoming with sand.																																																							
				CI-CH												Sandy CLAY: medium to high plasticity, dark grey and dark orange brown, fine grained sand.	H	x	ALLUVIAL SOIL																																								
																From 7.50m: medium plasticity clay.																																											
WB					372.8	7					VSt	x	Standing Water Level -05/02/2021																																														
Method AS - Auger Screwing RR - Rock Roller WB- Washbore										Penetration No resistance ranging to refusal										Water Level (Date) Inflow Partial Loss Complete Loss										Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test										Moisture Condition D - Dry M - Moist W - Wet										Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
Support C - Casing										Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss										Classification Symbols and Soil Descriptions Based on Unified Soil Classification System										Plastic Limit < PL = PL < PL																													

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.80 m
		Bearing:	
		Datum:	AHD
		Operator:	B.Boga

Drilling Information							Soil Description						Observations																				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																		
WB				S00750 SPT 7.50-7.95 m 6,8,8 N=16 PP 7.75 m =280 kPa		370.8	9		CI-CH	Sandy CLAY: medium to high plasticity, dark grey and dark orange brown, fine grained sand. (continued) From 8.00 to 8.80m: with fine to medium sub-rounded gravel.	M (>PL)	VSt			ALLUVIAL SOIL Standing Water Level - 07/02/2021 ALLUVIAL SOIL																		
				S00900 SPT 9.00-9.45 m 9,16,20 N=36		SC	Clayey SAND: fine grained, grey and dark orange brown, medium plasticity clay.																										
				S01050 SPT 10.50-10.95 m 12,25,12 N=37			From 10.50 to 10.85m: tending to Sandy GRAVEL trace clay: fine to coarse sub-rounded, dark grey, fine to coarse grained sand, low plasticity clay.			D																							
				S01200 SPT 12.00-12.45 m 8,8,12 N=20		SP	Gravelly SAND trace silt: fine to coarse, yellow brown, fine to medium sub-rounded gravel.		W		MD																						
				S01350 SPT 13.50-13.95 m 5,9,10 N=19 PP 13.75 m =280 kPa		CI-CH	Sandy CLAY with gravel: medium to high plasticity, pale grey and orange brown, fine to coarse grained sand, fine to medium sub-rounded gravel.		M (>PL)	VSt	*																						
				S01500 SPT 15.00-15.35 m 17,35,15/50mm HB N=50/200mm		GP	Sandy GRAVEL: fine to coarse sub-rounded to sub-angular, pale yellow brown, fine to coarse grained sand. At 15.35m: SPT refusal possibly on coarse gravel.		W	VD																							
						364.8	15																										
<table><tr><th>Method</th><th>Penetration</th><th>Water</th><th>Samples and Tests</th><th>Moisture Condition</th><th>Consistency/Relative Density</th></tr><tr><td>AS - Auger Screwing RR - Rock Roller WB- Washbore</td><td> No resistance ranging to refusal</td><td> Level (Date) Inflow Partial Loss Complete Loss</td><td>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test</td><td>D - Dry M - Moist W - Wet</td><td>VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</td></tr><tr><td>Support C - Casing</td><td> Core recovered (hatching indicates material) Core loss</td><td>Graphic Log/Core Loss</td><td>Classification Symbols and Soil Descriptions Based on Unified Soil Classification System</td><td>Plastic Limit < PL = PL < PL</td><td></td></tr></table>																Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density	AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Support C - Casing	Core recovered (hatching indicates material) Core loss	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL	
Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density																												
AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense																												
Support C - Casing	Core recovered (hatching indicates material) Core loss	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL																													

MG 4.02 LUB.GLB Log MG BOREHOLE EXCL DCP MG 4.02 G.P.J. <<DrawingFile>> 28/04/2021 17:41 10.0.0000 Dugail Lab and In Situ Tool - DGD | Ute DGDTP 4.01.2.dpt 3.04 2019-07-02 Ppt DGDTP 4.00.6 2017-11-25

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

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

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 04/02/2021																			
Project Name: Inland Rail B2G										Completed: 06/02/2021																			
Hole Location: Approx. CH143636 - Pampas										Logged By: H.Tran																			
Hole Coordinates: 340955.8 m E 6922670.0 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: D4TAPG Truck mounted rig										Inclination: -90°																			
Hole Diameter: 115 mm										RL Surface: 379.80 m																			
										Datum: AHD																			
										Operator: B.Boga																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
WB									GP	Sandy GRAVEL: fine to coarse sub-rounded to sub-angular, pale yellow brown, fine to coarse grained sand. (continued)	W	VD			ALLUVIAL SOIL														
				S01650 SPT 16.50-16.95 m 4,5,6 N=11 PP 16.80 m =250 kPa		362.8	17		CL-CI	Silty CLAY: low to medium plasticity, pale brown.		St																	
				S01800 SPT 18.00-18.45 m 6,7,16 N=23 PP 18.30 m =180 kPa		361.8	18		ML-MH	Clayey SILT: pale brown, medium plasticity clay.																			
				S01950 SPT 19.50-19.95 m 7,9,12 N=21 PP 19.75 m =530 kPa		360.8	19		CI	Silty CLAY with sand trace gravel: medium plasticity, dark brown, fine to coarse grained sand, fine to medium sub-rounded gravel.	M (>PL)																		
				S02100 SPT 21.00-21.45 m 6,6,11 N=17 PP 21.30 m =200 kPa		359.8	20			Below 21.00m: no sand.		VSt																	
				S02250 SPT 22.50-22.95 m 6,7,10 N=17 PP 22.75 m =250 kPa		358.8	21		CL-CI	Sandy CLAY: low to medium plasticity, brown and pale grey, fine grained sand. At 22.95m: with coarse sub-rounded gravel.																			
						357.8	22																						
						356.8	23																						
Method AS - Auger Screwing RR - Rock Roller WB- Washbore Penetration No resistance ranging to refusal Water Level (Date) Inflow Partial Loss Complete Loss Support C - Casing Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test Classification Symbols and Soil Descriptions Based on Unified Soil Classification System Moisture Condition D - Dry M - Moist W - Wet Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense Plastic Limit < PL = PL > PL																													

Method

AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration

No resistance
ranging to
refusal

Water

Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests

U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test

Moisture Condition

D - Dry
M - Moist
W - Wet

Consistency/Relative Density

VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support

C - Casing

Graphic Log/Core Loss

Core recovered (hatching
indicates material)
Core loss

**Classification Symbols
and Soil Descriptions**

Based on Unified Soil
Classification System

Plastic Limit

< PL
= PL
< PL

Engineering Log - Borehole

Project No.: B20331

Client: ARTC
Project Name: Inland Rail B2G
Hole Location: Approx. CH143636 - Pampas
Hole Coordinates: 340955.8 m E 6922670.0 m N MGA94 Zone 56

Commenced: 04/02/2021
Completed: 06/02/2021
Logged By: H.Tran
Checked By: J.Boyle

Drill Model and Mounting: D4TAPG Truck mounted rig Inclin: -90° RL Surface: 379.80 m
Hole Diameter: 115 mm Bearing: Datum: AHD Operator: B.Boga

Drilling Information							Soil Description							Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)				Structure and Additional Observations
WB				S02400 SPT 24.00-24.45 m 10,17,16 N=33		354.8	25		SP	SAND: fine to coarse grained, yellow brown.		D					ALLUVIAL SOIL
				S02550 SPT 25.50-25.90 m 25,29,21/100mm N=50/250mm		353.8	26										
				S02700 SPT 27.00-27.45 m 22,26,30 N=56		352.8	27		SP	Gravelly SAND trace clay: fine to coarse grained, yellow brown, fine to medium sub-rounded gravel, low plasticity clay.	W	VD					
				S02850 SPT 28.50-28.95 m 15,15,17 N=32		350.8	29		SP	SAND: fine to medium grained, dark brown.		D					
				S03000 SPT 30.00-30.45 m 5,8,13 N=21 PP 30.30 m =320 kPa		349.8	30		CI-CH	Silty CLAY: medium to high plasticity, grey and dark orange brown.					x		
				S03150 SPT 31.50-31.95 m 7,9,11		348.8	31					M (>PL)	VSt			x	
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density							
AS - Auger Screwing RR - Rock Roller WB- Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT- Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense							
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit											
C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL											

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 04/02/2021	
Project Name: Inland Rail B2G		Completed: 06/02/2021	
Hole Location: Approx. CH143636 - Pampas		Logged By: H.Tran	
Hole Coordinates: 340955.8 m E 6922670.0 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: D4TAPG Truck mounted rig		Inclination: -90°	RL Surface: 379.80 m
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: B.Boga

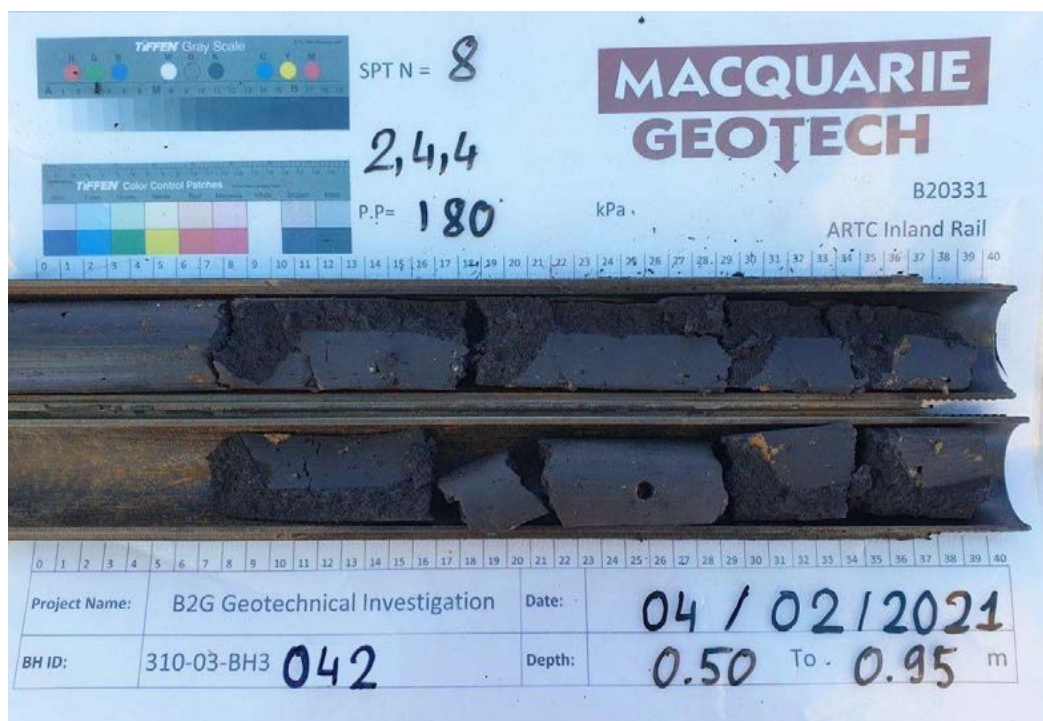
Drilling Information				Soil Description						Observations					
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=20 PP 31.70 m =420 kPa					CI-CH	Silty CLAY: medium to high plasticity, grey and dark orange brown. (continued)	M (>PL)	VSt		100 200 300 400 500	ALLUVIAL SOIL
				S03300 SPT 33.00-33.45 m 10,13,15 N=28		346.8	33		SC	Clayey SAND: fine grained, grey, low to medium plasticity clay.	W	MD			RESIDUAL SOIL
				S03450 SPT 34.50-34.95 m 23,29,29 N=58 PP 34.75 m =490 kPa		345.8	34			Extremely weathered SILTSTONE: recovered as Silty CLAY: low to medium plasticity, off-white and orange brown.	M (>PL)	H			EXTREMELY WEATHERED MATERIAL
						344.8	35			Hole Terminated at 34.95 m Target depth Hole grouted to surface.					
						343.8	36								
						342.8	37								
						341.8	38								
						340.8	39								

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration 	Water 	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss 	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL < PL		

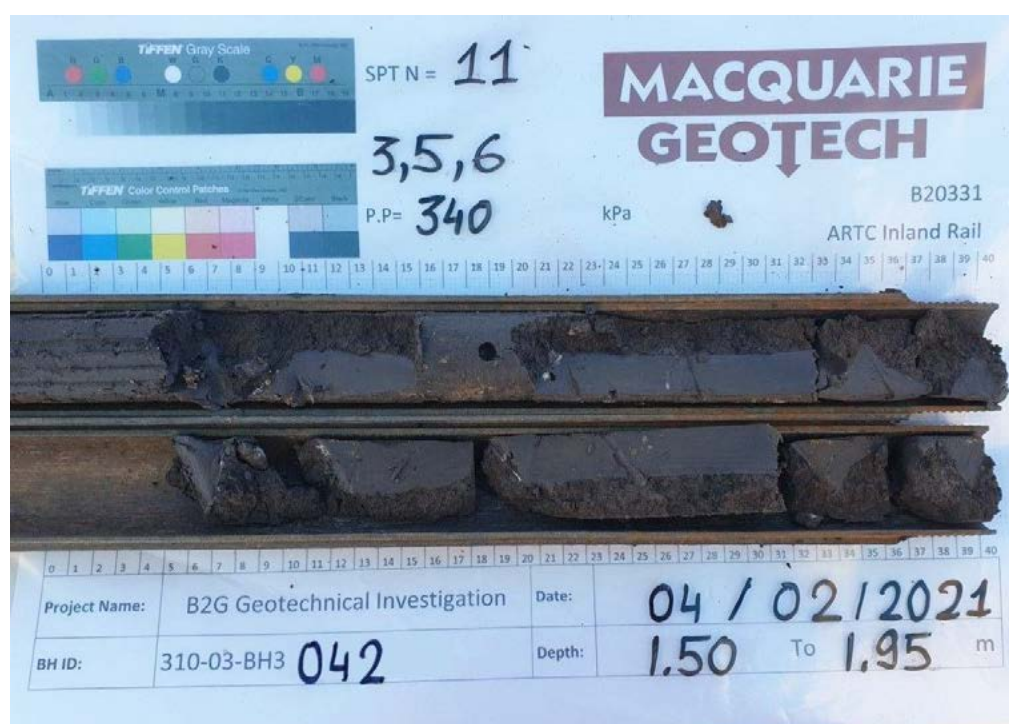
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 0.50 - 0.95 m



310-03-BH3042 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 3.00 - 3.45 m



310-03-BH3042 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

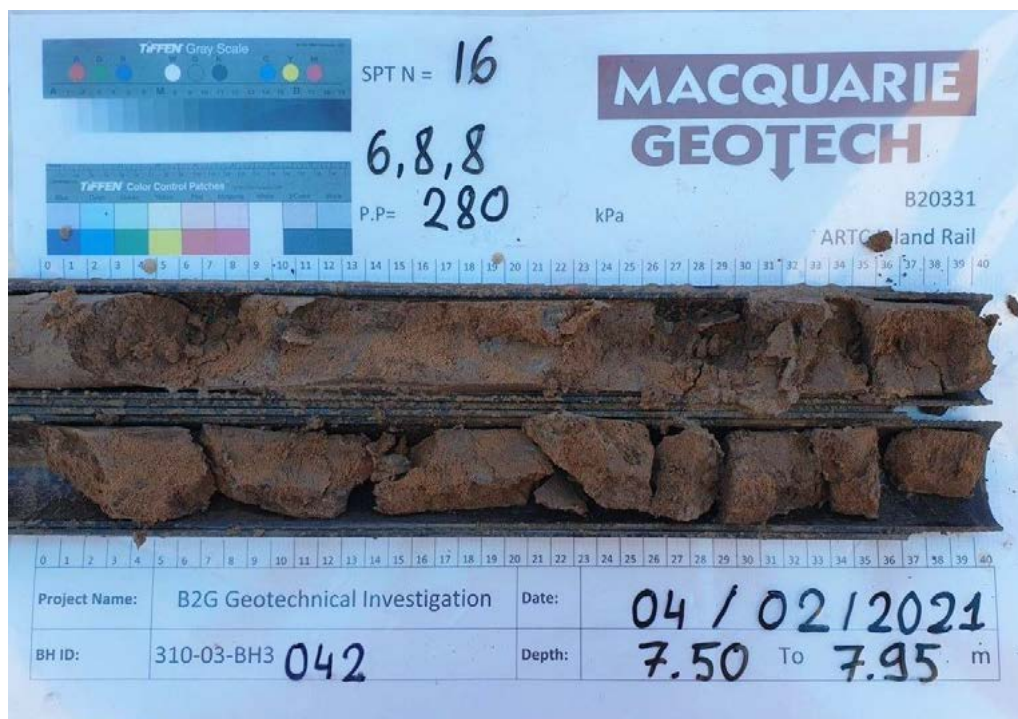
Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.80 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: B.Boga



310-03-BH3042 Depth Range: 6.00 - 6.45 m



310-03-BH3042 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 9.00 - 9.45 m



310-03-BH3042 Depth Range: 10.50 - 10.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 12.00 - 12.45 m



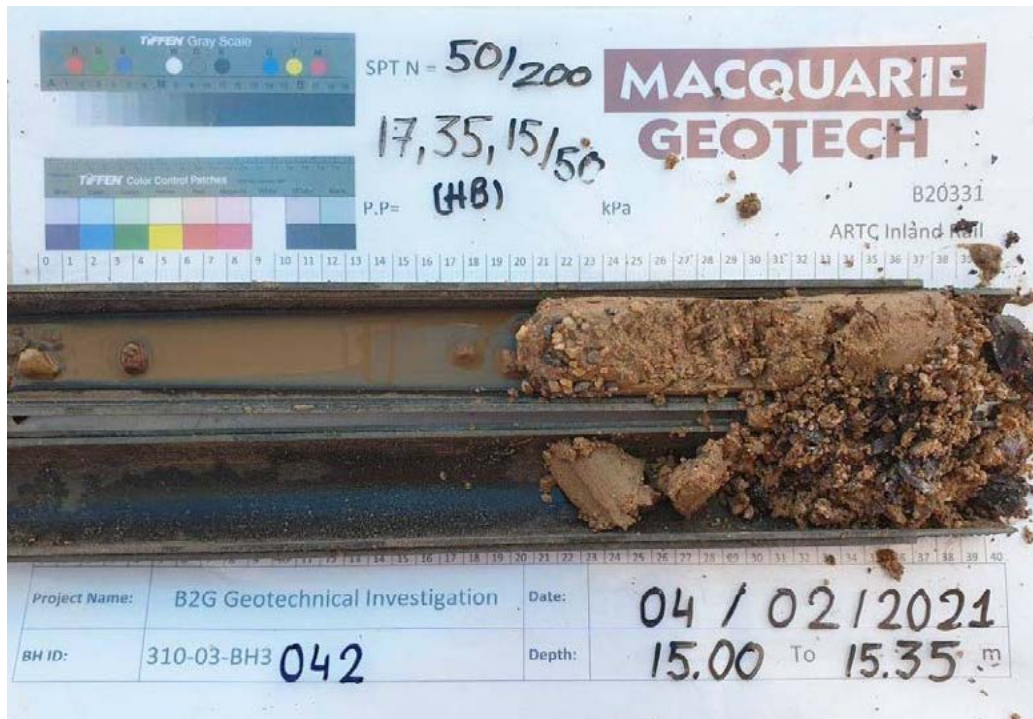
310-03-BH3042 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°	RL Surface:	379.80 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	B.Boga



310-03-BH3042 Depth Range: 15.00 - 15.35 m



310-03-BH3042 Depth Range: 16.50 - 16.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 18.00 - 18.45 m

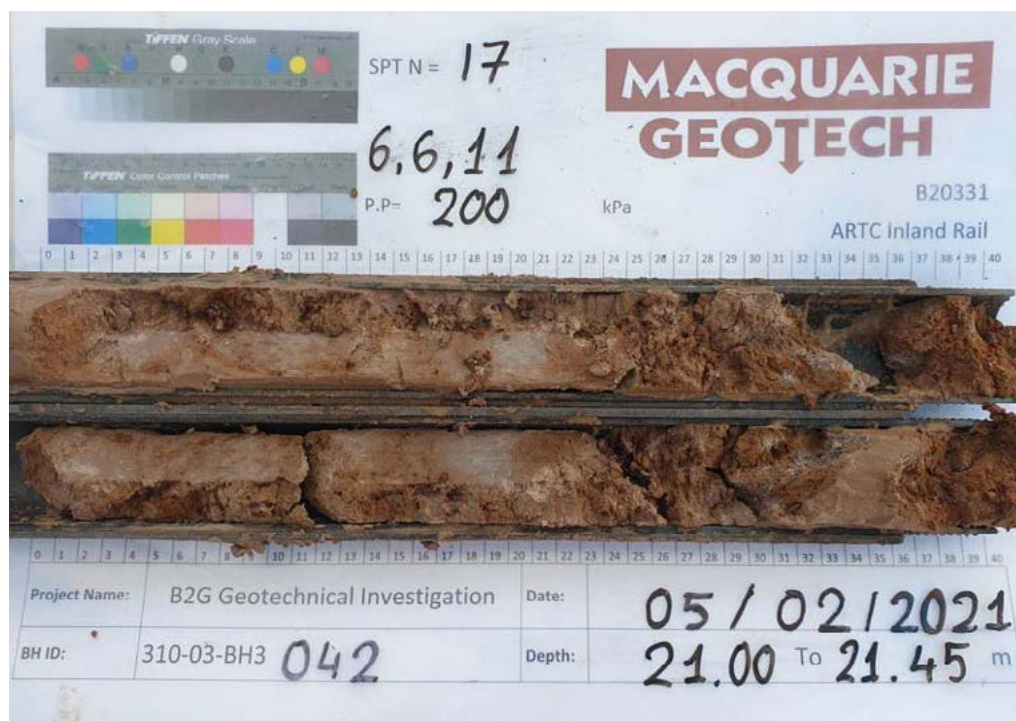


310-03-BH3042 Depth Range: 19.50 - 19.95 m

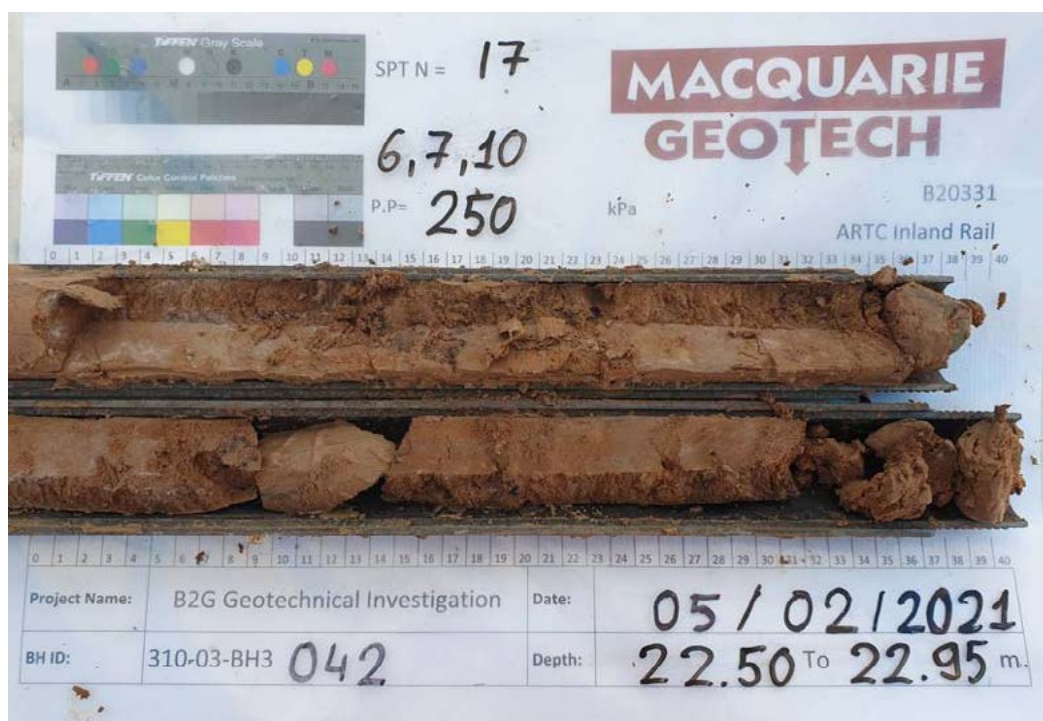
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 21.00 - 21.45 m



310-03-BH3042 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 24.00 - 24.45 m



310-03-BH3042 Depth Range: 25.50 - 25.90 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 27.00 - 27.45 m



310-03-BH3042 Depth Range: 28.50 - 28.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 30.00 - 30.45 m



310-03-BH3042 Depth Range: 31.50 - 31.95 m

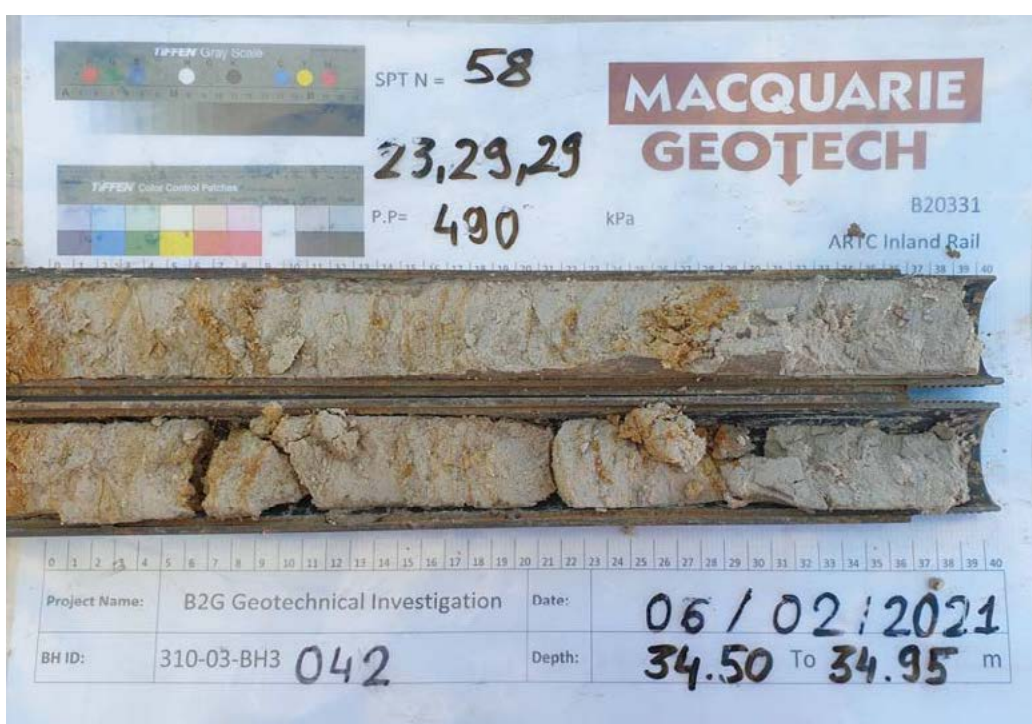
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143636 - Pampas	Logged By:	H.Tran
Hole Coordinates:	340955.8 m E 6922670.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	D4TAPG Truck mounted rig	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.80 m
		Datum:	AHD
		Operator:	B.Boga



310-03-BH3042 Depth Range: 33.00 - 33.45 m



310-03-BH3042 Depth Range: 34.50 - 34.95 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 04/02/2021															
Project Name: Inland Rail B2G		Completed: 06/02/2021															
Hole Location: Approx. CH143827 - Pampas		Logged By: A. Sharma															
Hole Coordinates: 341095.4 m E 6922791.8 m N MGA94 Zone 56		Checked By: J.Boyle															
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	RL Surface: 379.98 m														
Hole Diameter: 115 mm		Bearing:	Datum: AHD Operator: M.Boga														
Drilling Information				Soil Description				Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations		
AD/T				J00020 0.20-0.30 m PID 0.20 m 0 ppm J00050 0.50-0.60 m S00050 SPT 0.50-0.95 m 3,4,5 N=9 PP 0.50 m <300 kPa PID 0.50 m 0.1 ppm J00100 1.00-1.10 m U00100 U 1.00-1.45 m PID 1.00 m 0.1 ppm S00150 SPT 1.50-1.95 m 4,6,8 N=14 D00250 D 2.50-3.00 m S00300 SPT 3.00-3.45 m 7,10,12 N=22 D00400 D 4.00-4.50 m S00450 SPT 4.50-4.95 m 8,10,13 N=23 PP 4.50 m <500 kPa D00550 D 5.50-6.00 m S00600 SPT 6.00-6.45 m 17,30,0 N=30 PP 6.00 m <500 kPa D00700 D 7.00-7.50 m S00750 SPT 7.50-7.95 m 13,21,30		379.0	1		CH	FILL: CLAY trace gravel: medium plasticity, black, fine sub-rounded gravel, trace rootlets CLAY trace gravel: high plasticity, black, fine sub-rounded gravel	F to St						REWORKED TOPSOIL ALLUVIAL SOIL
						378.0	2			From 2.50m: with fine to coarse sand.							
						377.0	3		CH	CLAY with gravel: high plasticity, black, off-white to white, medium to coarse sub-rounded gravel						ALLUVIAL SOIL	
						376.0	4					M (<PL) VSt					
						375.0	5		CL-CI	Sandy CLAY with gravel: low to medium plasticity, pale-yellow to black, brown, fine grained sand, fine sub-rounded gravel							
						374.0	6										
						373.0	7				H						
Method AS - Auger Screwing RR - Rock Roller WB- Washbore		Penetration No resistance ranging to refusal		Water Level (Date) Inflow Partial Loss Complete Loss		Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		Moisture Condition D - Dry M - Moist W - Wet		Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense							
Support C - Casing		Graphic Log/Core Loss Core recovered (hatching indicates material) Core loss		Classification Symbols and Soil Descriptions Based on Unified Soil Classification System		Plastic Limit < PL = PL < PL											

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 04/02/2021																																																	
Project Name: Inland Rail B2G										Completed: 06/02/2021																																																	
Hole Location: Approx. CH143827 - Pampas										Logged By: A. Sharma																																																	
Hole Coordinates: 341095.4 m E 6922791.8 m N MGA94 Zone 56										Checked By: J.Boyle																																																	
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																																																	
Hole Diameter: 115 mm										RL Surface: 379.98 m																																																	
										Bearing: Datum: AHD Operator: M.Boga																																																	
Drilling Information										Soil Description										Observations																																							
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations																																												
AD/T				N=51 PP 7.50 m >600 kPa					CL-CI	Sandy CLAY with gravel: low to medium plasticity, pale-yellow to black, brown, fine grained sand, fine sub-rounded gravel (continued) From 7.00m: becoming high plasticity clay. From 7.00m: becoming high plasticity clay. (continued)	M (<PL)																																																
				D00850 D 8.50-9.00 m		371.0	9					H																																															
				S00900 SPT 9.00-9.45 m 14,16,24 N=40		370.0	10				M (>PL)																																																
				D01000 D 10.00-10.50 m																																																							
				S01050 SPT 10.50-10.95 m 6,11,12 N=23		369.0	11		SP	SAND trace clay: fine to medium grained sand, pale-brown to dark-brown, low plasticity		MD			ALLUVIAL SOIL																																												
				D01150 D 11.50-12.00 m		368.0	12					M																																															
				S01200 SPT 12.00-12.45 m 29,28,18 N=46		367.0	13		GP	Sandy GRAVEL trace clay: medium to coarse sub-rounded to sub-angular, grey-brown and orange-brown, fine grained sand, low to medium plasticity		D																																															
				S01300 D 13.00-13.50 m		366.0	14					M (<PL)	H																																														
				S01350 SPT 13.50-13.95 m 12,25,31 N=56 PP 13.50 m <450 kPa		365.0	15		CI	Sandy CLAY trace gravel: medium plasticity, brown and dark grey, fine to coarse grained sand, fine sub-rounded gravel,																																																	
				D01450 D 14.50-15.00 m					SC	Clayey SAND trace gravel: fine to coarse grained, orange brown and grey, medium plasticity, fine to medium sub-angular to sub-rounded gravel																																																	
				S01500 SPT 15.00-15.45 m 14,16,21 N=37							M	D																																															
									GP	GRAVEL trace sand and clay: medium to coarse sub-rounded to sub-angular, grey-brown, fine grained sand, high plasticity																																																	
Method										Penetration										Water										Samples and Tests										Moisture Condition										Consistency/Relative Density									
AS - Auger Screwing RR - Rock Roller WB - Washbore																				 Level (Date)  Inflow  Partial Loss  Complete Loss										U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test										D - Dry M - Moist W - Wet										VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense									
Support										Graphic Log/Core Loss										Classification Symbols and Soil Descriptions										Plastic Limit																													
C - Casing										 Core recovered (hatching indicates material)  Core loss										Based on Unified Soil Classification System										< PL = PL < PL																													

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Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.98 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 0.50 - 0.95 m



310-03-BH3043 Depth Range: 1.50 - 1.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.98 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3043 Depth Range: 3.00 - 3.45 m



310-03-BH3043 Depth Range: 4.50 - 4.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.98 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3043 Depth Range: 6.00 - 6.45 m



310-03-BH3043 Depth Range: 7.50 - 7.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.98 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 9.00 - 9.45 m



310-03-BH3043 Depth Range: 10.50 - 10.95 m

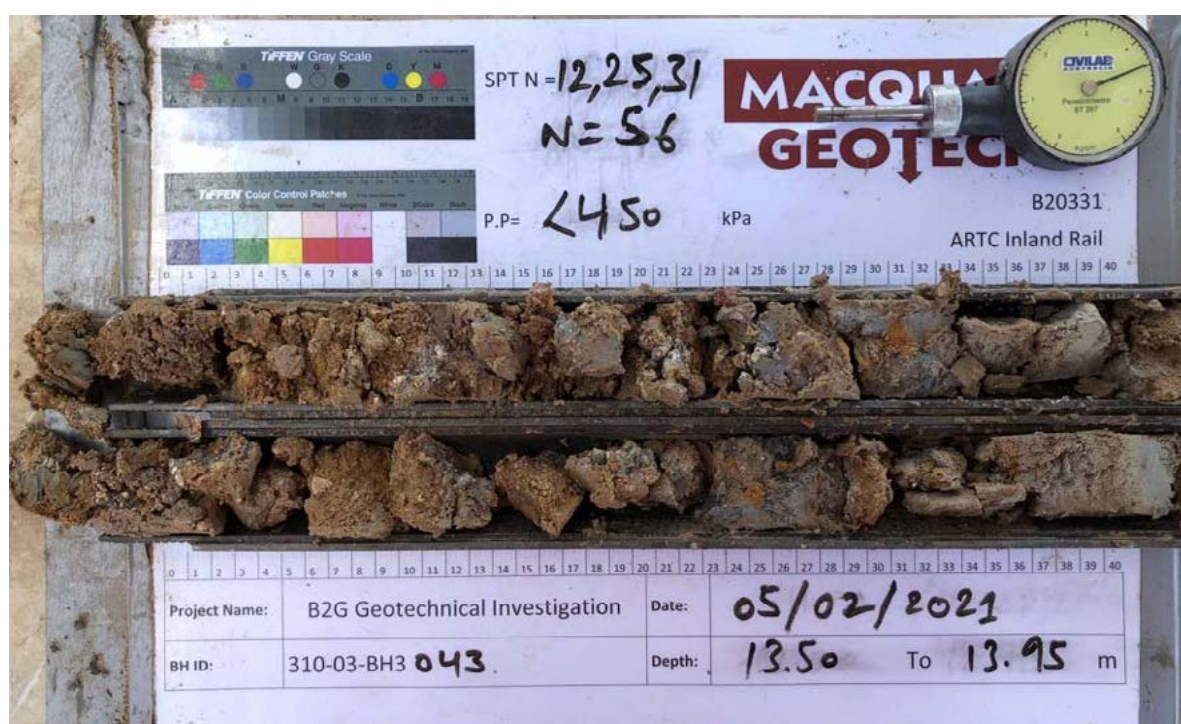
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.98 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 12.00 - 12.45 m



310-03-BH3043 Depth Range: 13.50 - 13.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.98 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 15.00 - 15.45 m

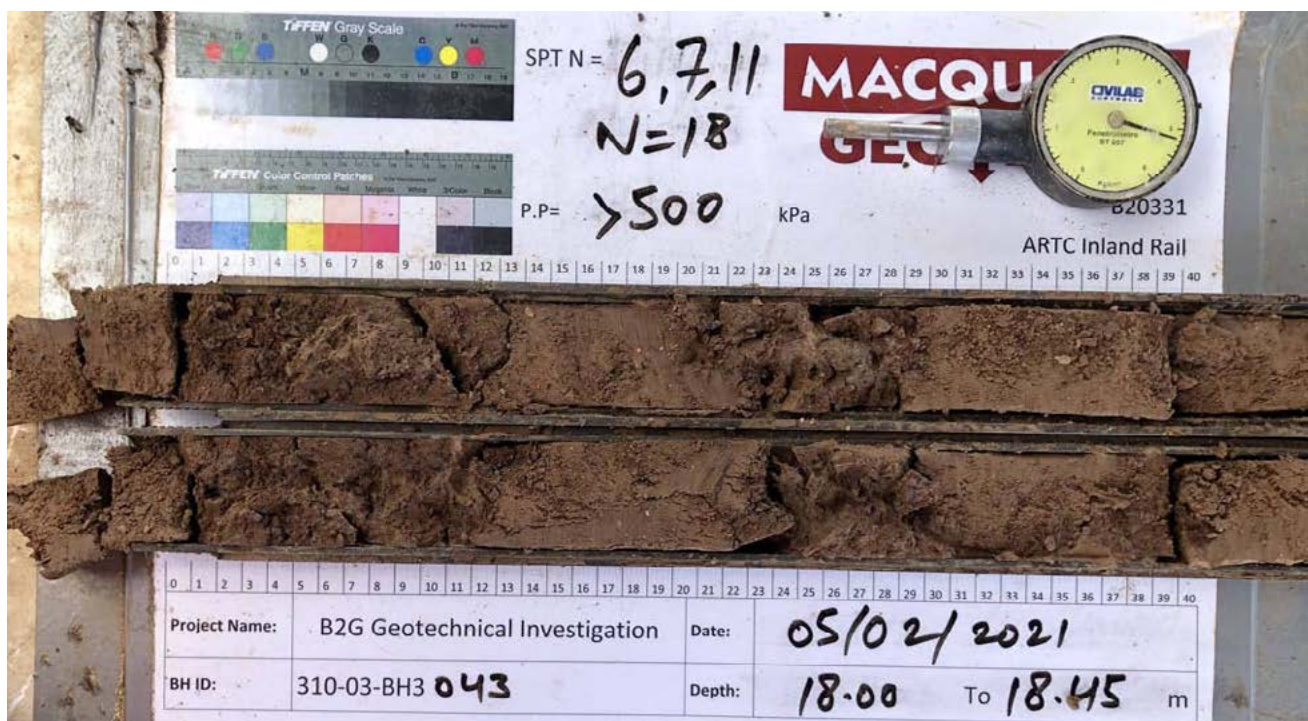


310-03-BH3043 Depth Range: 16.50 - 16.95 m

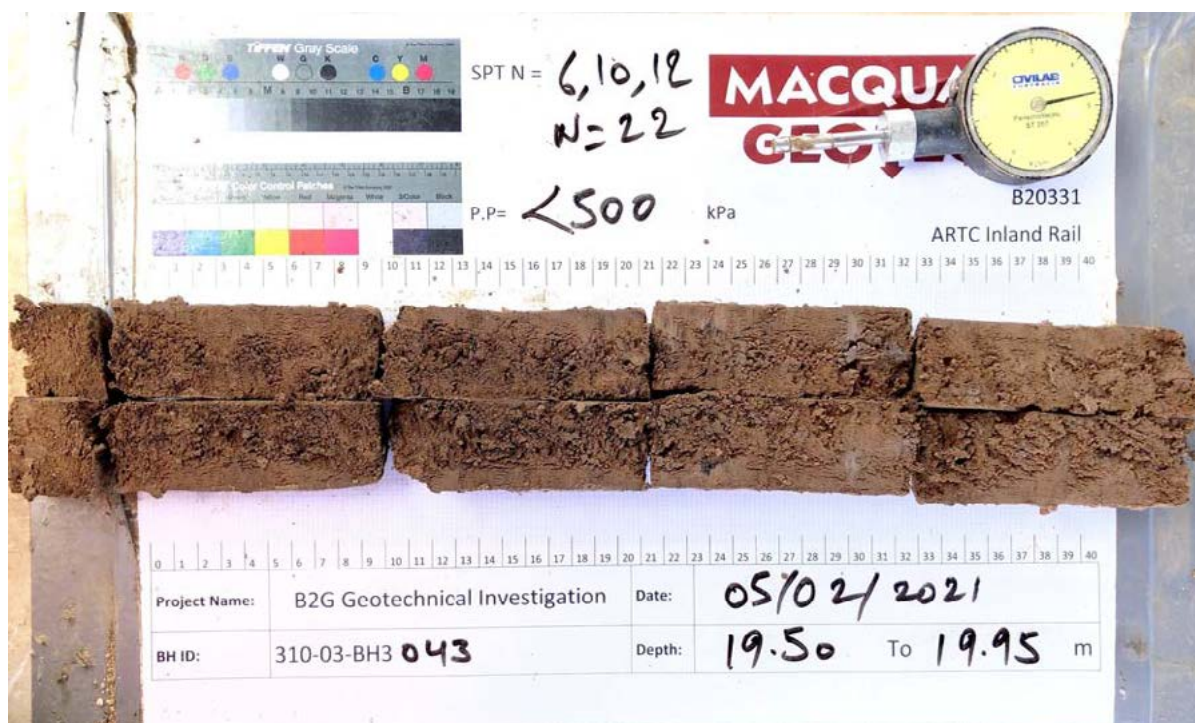
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.98 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 18.00 - 18.45 m



310-03-BH3043 Depth Range: 19.50 - 19.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	Bearing:	
		RL Surface:	379.98 m
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 21.00 - 21.45 m



310-03-BH3043 Depth Range: 22.50 - 22.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.98 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3043 Depth Range: 24.00 - 24.45 m



310-03-BH3043 Depth Range: 25.50 - 25.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.98 m
		Bearing:	
		Datum:	AHD
		Operator:	M.Boga



310-03-BH3043 Depth Range: 27.00 - 27.45 m



310-03-BH3043 Depth Range: 28.50 - 28.95 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.98 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD
				Operator:	M.Boga



310-03-BH3043 Depth Range: 30.00 - 30.45 m



310-03-BH3043 Depth Range: 31.50 - 31.95 m

Engineering Log - Borehole

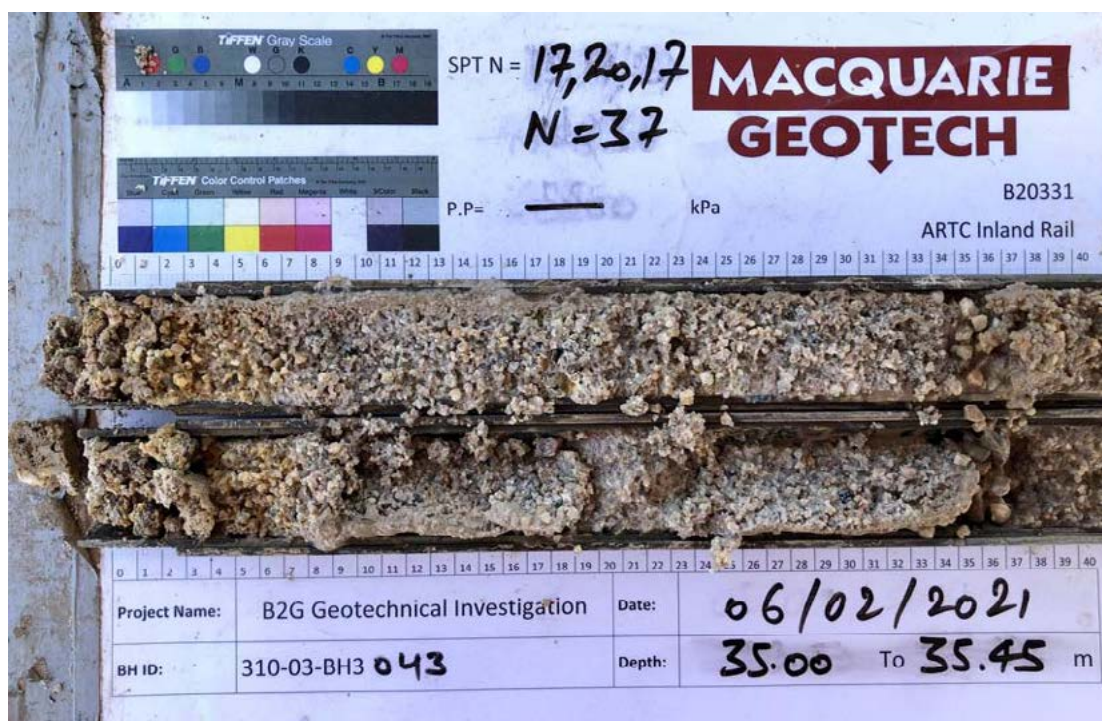
Project No.: B20331

Client:	ARTC	Commenced:	04/02/2021
Project Name:	Inland Rail B2G	Completed:	06/02/2021
Hole Location:	Approx. CH143827 - Pampas	Logged By:	A. Sharma
Hole Coordinates:	341095.4 m E 6922791.8 m N MGA94 Zone 56	Checked By:	J.Boyle

Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°	RL Surface:	379.98 m
Hole Diameter:	115 mm	Bearing:		Datum:	AHD Operator: M.Boga



310-03-BH3043 Depth Range: 33.00 - 33.45 m



310-03-BH3043 Depth Range: 35.00 - 35.45 m

Engineering Log - Borehole

Project No.: B20331

Client: ARTC										Commenced: 24/01/2021																			
Project Name: Inland Rail B2G										Completed: 26/01/2021																			
Hole Location: Approx. CH144029 - Pampas										Logged By: V. Chandrasena																			
Hole Coordinates: 341251.0 m E 6922928.0 m N MGA94 Zone 56										Checked By: J.Boyle																			
Drill Model and Mounting: Comacchio 305/Track										Inclination: -90°																			
Hole Diameter: 115 mm										RL Surface: 379.50 m																			
										Bearing: Datum: AHD Operator: J. Komung																			
Drilling Information										Soil Description										Observations									
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations														
AD/T				J00020 0.20-0.30 m PID 0.20 m 0.1 ppm J00050 0.50-0.60 m S00050 SPT 0.50-0.95 m 2,2,4 N=6 PID 0.50 m 0.1 ppm PP 0.80 m =160 kPa J00100 1.00-1.10 m U00100 1.00-1.45 m PID 1.00 m 0.2 ppm D00150 1.50-2.00 m S00200 SPT 2.00-2.45 m 3,4,6 N=10 PP 2.40 m =310 kPa D00300 3.00-3.50 m S00350 SPT 3.50-3.95 m 3,5,7 N=12 PP 3.70 m =320 kPa D00450 4.50-5.00 m S00500 SPT 5.00-5.45 m 7,13,16 N=29 PP 5.35 m =350 kPa D00600 6.00-6.50 m S00650 SPT 6.50-6.95 m 6,10,13 N=23 PP 6.80 m =430 kPa D00750 7.50-8.00 m		378.5	1		CH	FILL: silty CLAY trace sand and gravel, high plasticity, black, fine to coarse grained sand, fine sub-angular gravel. Silty CLAY trace sand: high plasticity, black, fine to coarse grained sand.						REWORKED TOPSOIL													
																	ALLUVIAL SOIL												

[illegible]

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/01/2021	
Project Name: Inland Rail B2G		Completed: 26/01/2021	
Hole Location: Approx. CH144029 - Pampas		Logged By: V. Chandrasena	
Hole Coordinates: 341251.0 m E 6922928.0 m N MGA94 Zone 56		Checked By: J.Boyle	
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°	
Hole Diameter: 115 mm		RL Surface: 379.50 m	
		Bearing: Datum: AHD Operator: J. Komung	

Drilling Information				Soil Description				Observations						
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				N=28 PP 15.70 m =210 kPa					CI	Silty CLAY with sand trace gravel : medium plasticity, brown, fine to coarse grained sand, fine sub-rounded gravel. (continued)				ALLUVIAL SOIL
				S01700 SPT 17.00-17.45 m 6,8,10 N=18 PP 17.40 m =180 kPa		362.5	17			Below 17.00m : fine to medium grained sand, no trace gravel.	M (~PL) to M (>PL)	VSt		
				S01850 SPT 18.50-18.95 m 7,7,9 N=16 PP 18.80 m =170 kPa		361.5	18							
				S02000 SPT 20.00-20.45 m 8,12,20 N=32		360.5	19							
				S02150 SPT 21.50-21.95 m 8,9,9 N=18 PP 21.80 m =170 kPa		359.5	20							
				S02300 SPT 23.00-23.45 m 10,13,15 N=28		358.5	21							
						357.5	22			Below 21.50m : sandy, fine grained.	M (>PL)	VSt		
						356.5	23		SM	Silty SAND trace clay : fine grained, yellow brown, low to medium plasticity clay.	W	MD		

Method
AS - Auger Screwing
RR - Rock Roller
WB - Washbore

Penetration
No resistance ranging to refusal

Support
C - Casing

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

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

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Plastic Limit
< PL
= PL
> PL

Engineering Log - Borehole

Project No.: B20331

Client: ARTC		Commenced: 24/01/2021													
Project Name: Inland Rail B2G		Completed: 26/01/2021													
Hole Location: Approx. CH144029 - Pampas		Logged By: V. Chandrasena													
Hole Coordinates: 341251.0 m E 6922928.0 m N MGA94 Zone 56		Checked By: J.Boyle													
Drill Model and Mounting: Comacchio 305/Track		Inclination: -90°													
Hole Diameter: 115 mm		RL Surface: 379.50 m													
		Bearing: Datum: AHD Operator: J. Komung													
Drilling Information						Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
WB				S02450 SPT 24.50-24.95 m 6,12,14 N=26		354.5	25		SM	Silty SAND trace clay : fine grained, yellow brown, low to medium plasticity clay. (continued)		MD			ALLUVIAL SOIL
				S02600 SPT 26.00-26.45 m 16,20,20 N=40		353.5	26		SP	SAND with gravel: fine to coarse grained, yellow brown, fine to medium sub-rounded gravel.	W				
				S02750 SPT 27.50-27.95 m 7,9,11 N=20 PP 27.80 m =420 kPa		351.5	28		CH	Silty CLAY with sand: high plasticity, green grey mottled brown, fine to coarse grained sand.		D			
				S02900 SPT 29.00-29.45 m 9,11,16 N=27 PP 29.30 m =380 kPa		350.5	29			Below 29.00m : brown mottled grey.					
				S03050 SPT 30.50-30.95 m 11,13,16 N=29 PP 30.80 m =320 kPa		348.5	31				M (<PL)	VSt			
Method		Penetration		Water		Samples and Tests		Moisture Condition		Consistency/Relative Density					
AS - Auger Screwing RR - Rock Roller WB- Washbore		No resistance ranging to refusal		Level (Date) Inflow Partial Loss Complete Loss		U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test		D - Dry M - Moist W - Wet		VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense					
Support		Graphic Log/Core Loss		Classification Symbols and Soil Descriptions		Plastic Limit									
C - Casing		Core recovered (hatching indicates material) Core loss		Based on Unified Soil Classification System		< PL = PL < PL									

Engineering Log - Borehole

Project No.: B20331

Client: ARTC	Commenced: 24/01/2021
Project Name: Inland Rail B2G	Completed: 26/01/2021
Hole Location: Approx. CH144029 - Pampas	Logged By: V. Chandrasena
Hole Coordinates: 341251.0 m E 6922928.0 m N MGA94 Zone 56	Checked By: J.Boyle

Drill Model and Mounting: Comacchio 305/Track	Inclination: -90°	RL Surface: 379.50 m
Hole Diameter: 115 mm	Bearing:	Datum: AHD Operator: J. Komung

Drilling Information							Soil Description						Observations			
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency	Relative Density	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations	
WB				S03200 SPT 32.00-32.45 10,17,15 N=32		346.5	33		SM	Silty SAND : fine grained, pale brown.	W	D			ALLUVIAL SOIL	
				SP					SAND: fine to coarse grained, yellow brown.							
				S03350 SPT 33.50-33.95 8,11,10 N=21 PP 33.80 m =260 kPa		345.5	34		SM	Silty SAND trace clay : fine to medium grained, green grey, low to medium plasticity clay.	M to W	MD		x		
				CH					Silty CLAY : high plasticity, green grey.							
				S03500 SPT 35.00-35.45 13,22,30 N=52 PP 35.35 m >600 kPa		344.5	35			Below 35.00m : sandy, fine to coarse grained.	M (-PL) to M (>PL)	VSt				
									Extremely weathered lateritic siltstone recovered as ; silty CLAY with sand : low to medium plasticity, white grey mottled orange, fine coarse grained sand.							
						343.5	36			Hole Terminated at 35.45 m Target depth Hole grouted to surface.	H			RESIDUAL SOIL		
						342.5	37									
						341.5	38									
						340.5	39									

Method	Penetration	Water	Samples and Tests	Moisture Condition	Consistency/Relative Density
AS - Auger Screwing RR - Rock Roller WB- Washbore	No resistance ranging to refusal	Level (Date) Inflow Partial Loss Complete Loss	U - Undisturbed Sample D - Disturbed Sample SPT- Standard Penetration Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support	Graphic Log/Core Loss	Classification Symbols and Soil Descriptions			Plastic Limit
C - Casing	Core recovered (hatching indicates material) Core loss	Based on Unified Soil Classification System			< PL = PL < PL

Method AS - Auger Screwing RR - Rock Roller WB - Washbore	Penetration  No resistance ranging to refusal	Water  Level (Date)  Inflow  Partial Loss  Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very Soft S - Soft F - Firm VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
Support C - Casing	Graphic Log/Core Loss  Core recovered (hatching indicates material)  Core loss	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit < PL = PL > PL		

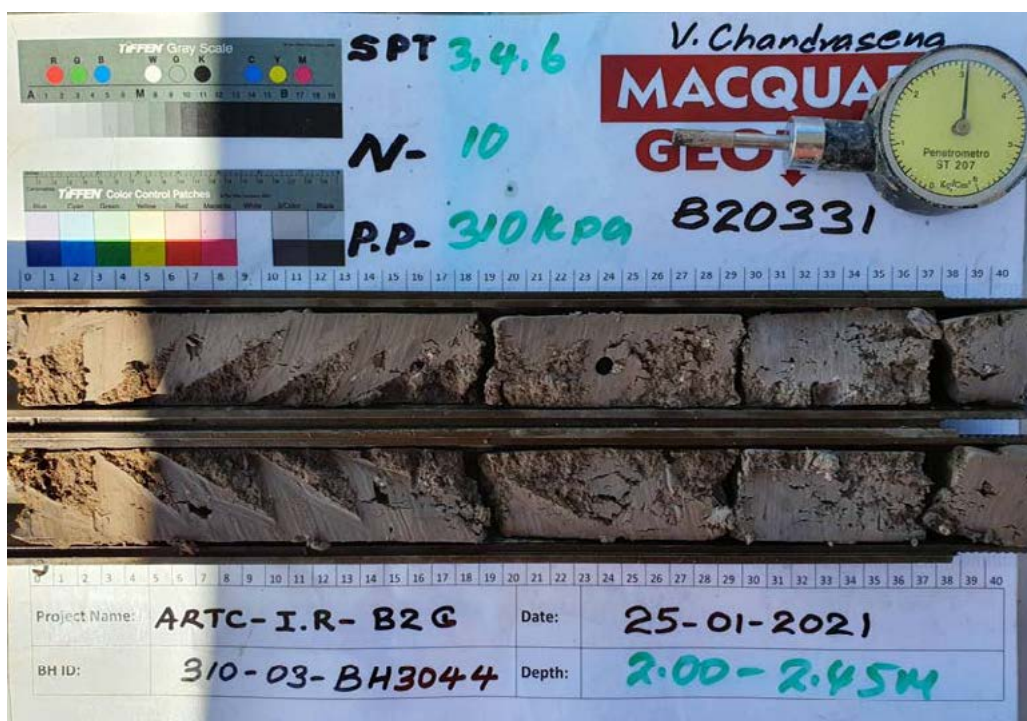
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/01/2021
Project Name:	Inland Rail B2G	Completed:	26/01/2021
Hole Location:	Approx. CH144029 - Pampas	Logged By:	V. Chandrasena
Hole Coordinates:	341251.0 m E 6922928.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3044 Depth Range: 0.50 - 0.95 m



310-03-BH3044 Depth Range: 2.00 - 2.45 m

Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/01/2021
Project Name:	Inland Rail B2G	Completed:	26/01/2021
Hole Location:	Approx. CH144029 - Pampas	Logged By:	V. Chandrasena
Hole Coordinates:	341251.0 m E 6922928.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3044 Depth Range: 3.50 - 3.45 m

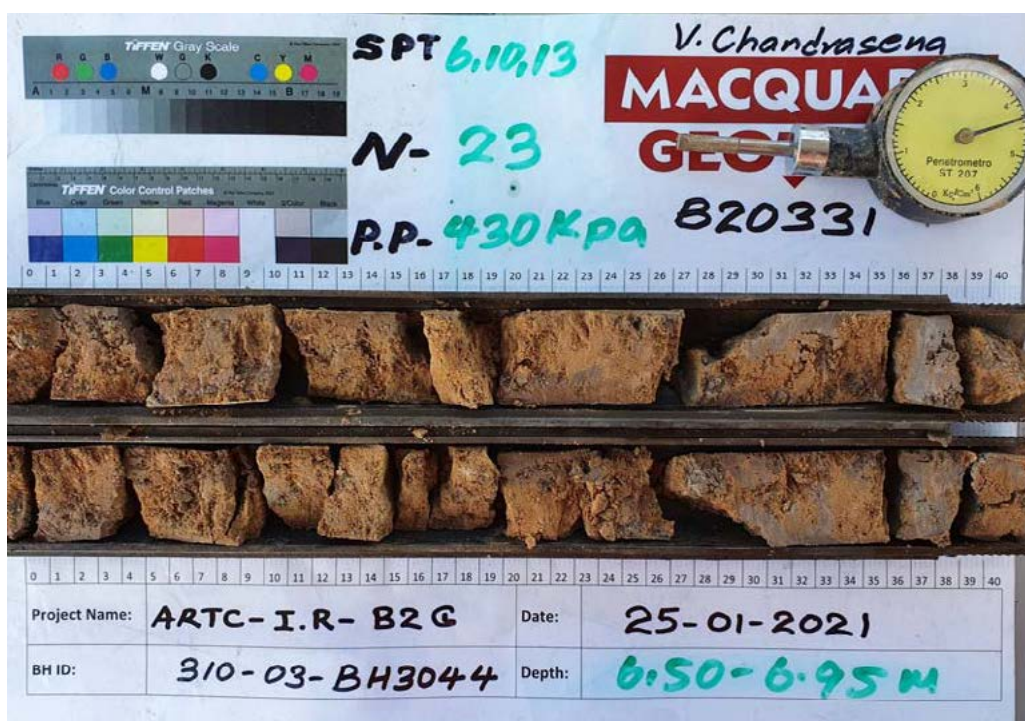


310-03-BH3044 Depth Range: 5.00 - 5.45 m

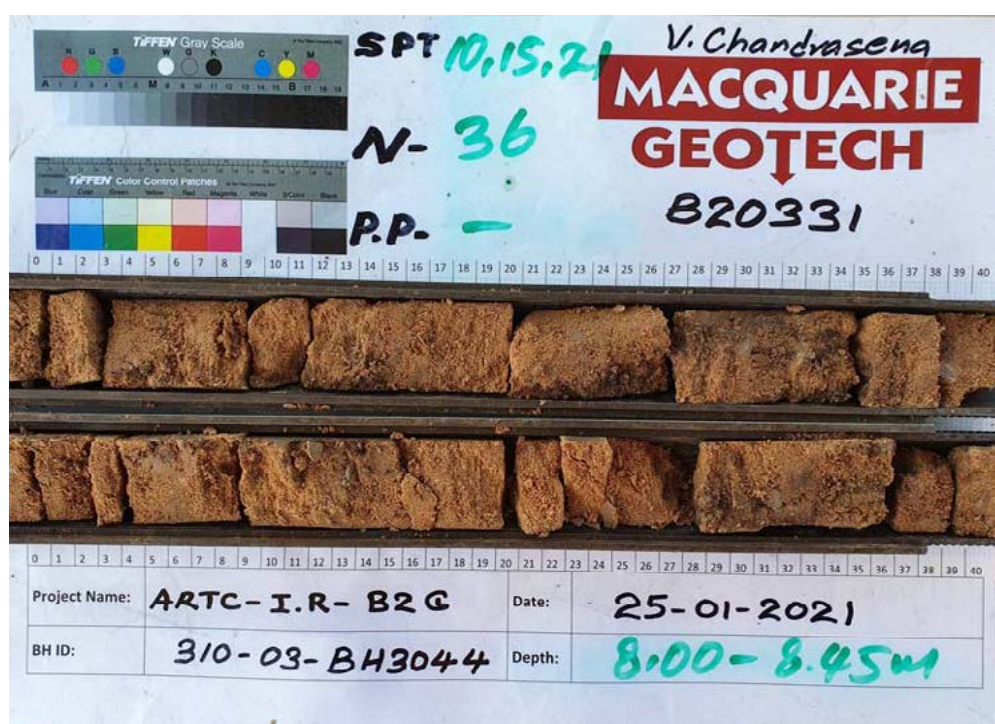
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/01/2021
Project Name:	Inland Rail B2G	Completed:	26/01/2021
Hole Location:	Approx. CH144029 - Pampas	Logged By:	V. Chandrasena
Hole Coordinates:	341251.0 m E 6922928.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3044 Depth Range: 6.50 - 6.95 m

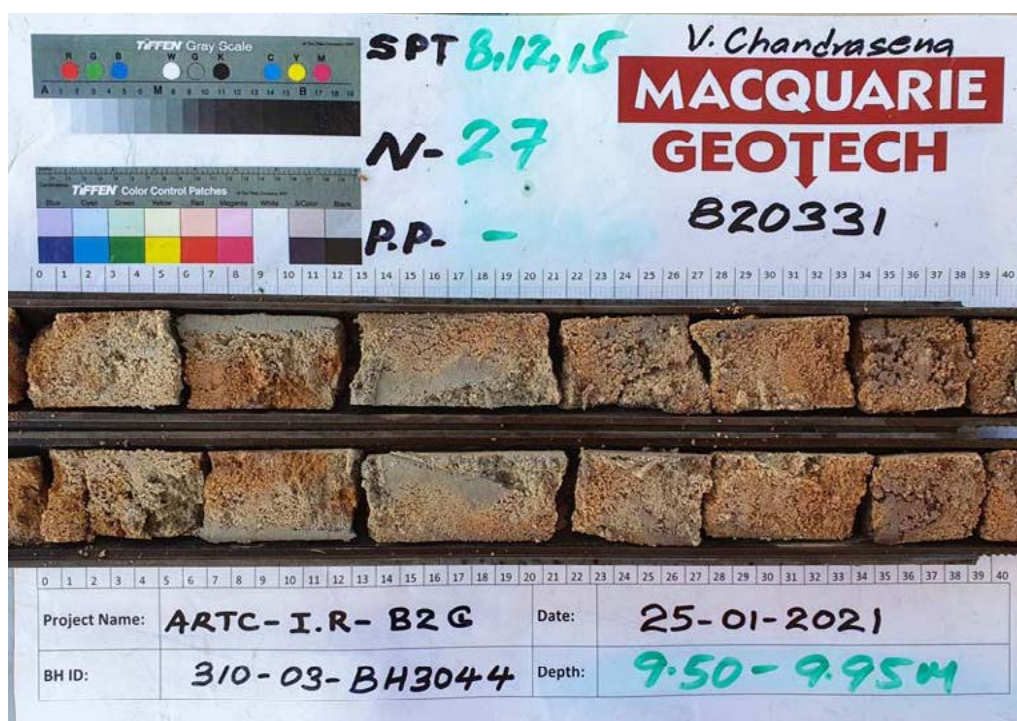


310-03-BH3044 Depth Range: 8.00 - 8.45 m

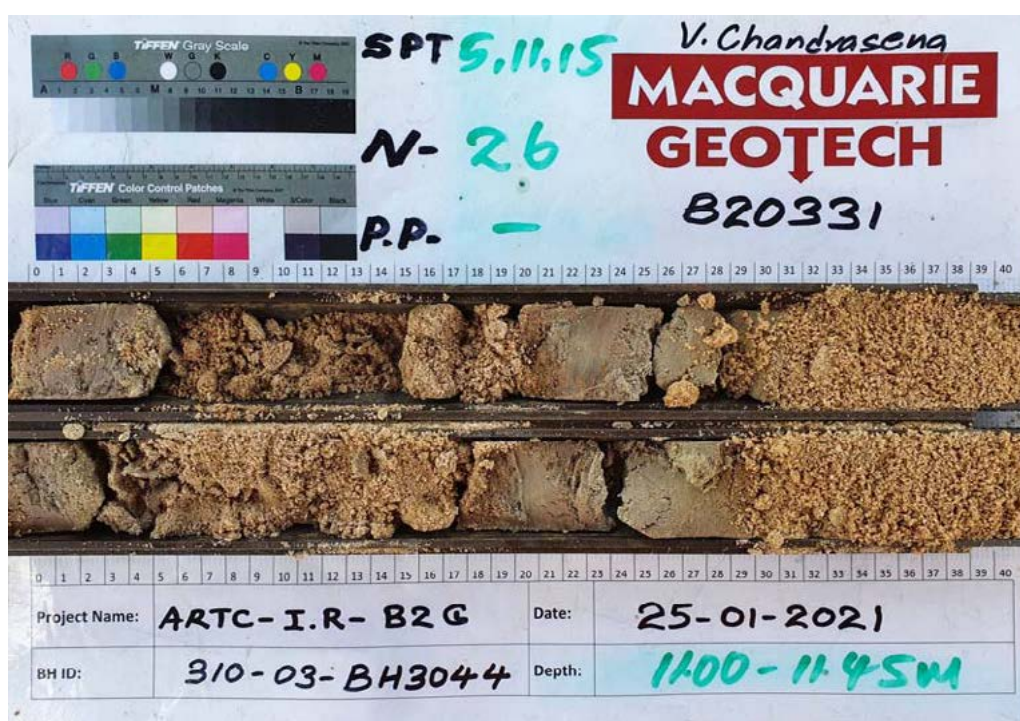
Engineering Log - Borehole

Project No.: B20331

Client:	ARTC	Commenced:	24/01/2021
Project Name:	Inland Rail B2G	Completed:	26/01/2021
Hole Location:	Approx. CH144029 - Pampas	Logged By:	V. Chandrasena
Hole Coordinates:	341251.0 m E 6922928.0 m N MGA94 Zone 56	Checked By:	J.Boyle
Drill Model and Mounting:	Comacchio 305/Track	Inclination:	-90°
Hole Diameter:	115 mm	RL Surface:	379.50 m
		Bearing:	
		Datum:	AHD
		Operator:	J. Komung



310-03-BH3044 Depth Range: 9.50 - 9.95 m



310-03-BH3044 Depth Range: 11.00 - 11.45 m