Appendix A
Photographs A1 to A7

Western embankment-decant access intersection - looking north (17/2/2022)

Decant access roadway - looking east (17/2/2022)

Western embankment-decant access intersection - looking south (17/2/2022)

View along decant access roadway - looking east (17/2/2022)

Water level measuring staff (17/2/2022)

Floating water recovery pump and safety ring (17/2/2022)

Underdrainage water recovery sump and pump (17/2/2022)

Underdrainage water flowing into sump for return to the process plant (17/2/2022

View looking south along downstream toe drain (17/2/2022)

View looking north along downstream toe drain (17/2/2022)

Bedrock exposed at toe of east wall of TD1 (17/2/2022)

PZH002D and S suite of bores downstream of main embankment (17/2/2022)

Intermediate berm on east wall - looking south (17/2/2022)

Cut-off bund on intermediate berm on east wall - looking north (17/2/2022)

East wall of TD1 - looking north (17/2/2022)

East wall of TD1 - looking west (17/2/2022)

Rip-rap channel on east wall of TD1 - looking north (17/2/2022)

North wall with spillway – looking west (17/2/2022)

Spillway – looking west (17/2/2022)

Construction access ramp at north end of main east wall (17/2/2022)

Interception dam west of TD1 (17/2/2022)

Interception dam northwest of TD1 (17/2/2022)

Interception dam south of TD1 (17/2/2022)

Incipient slumping of the east wall intermediate berm crest (17/2/2022)

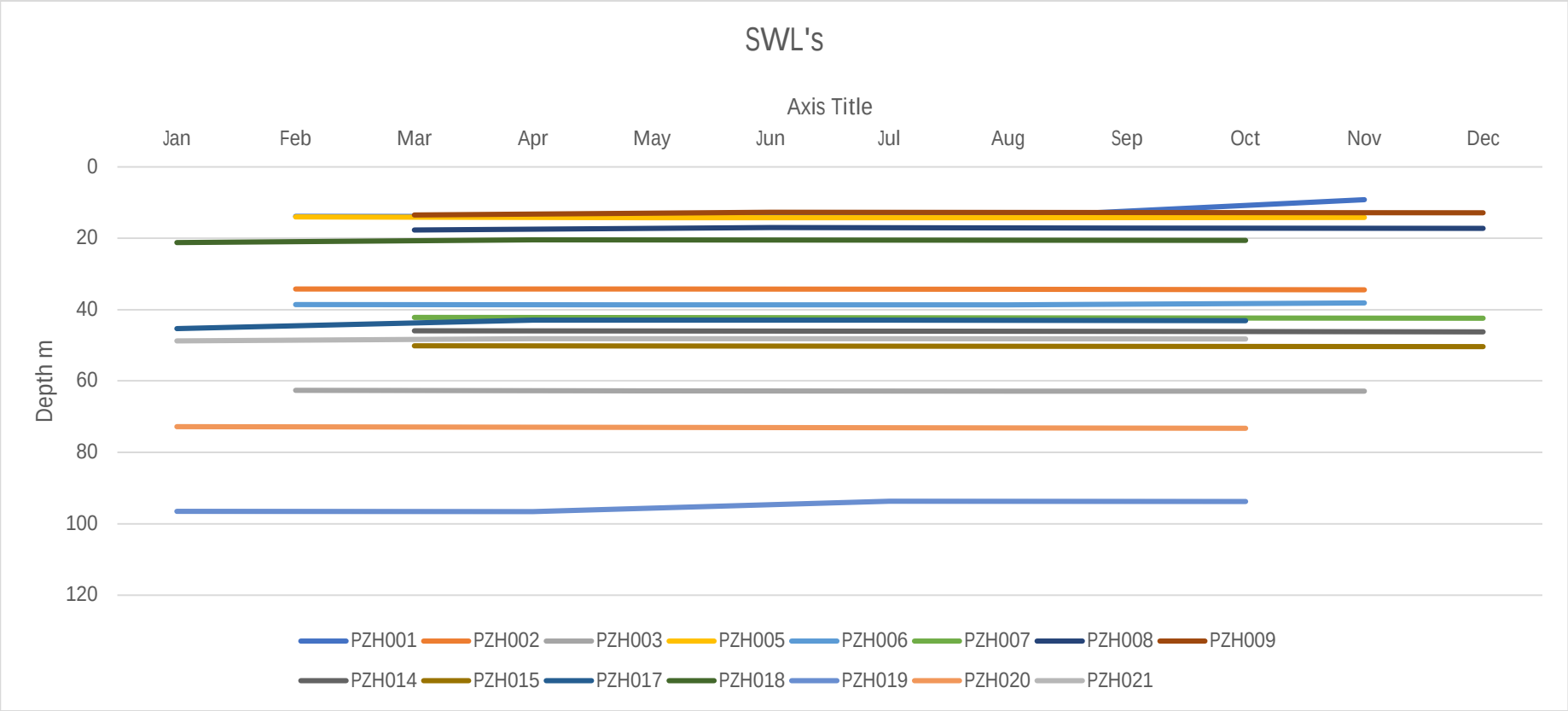
Scouring around an erosion control feature (17/2/2022)

Appendix B
Monitoring Information

2021data
14/03/2022

ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PZH001		13.88			13.94			13.98			9.18	
PZH002		34.19			34.26			34.33			34.42	
PZH003		62.62			62.71			62.79			62.86	
PZH005		14.04			14.21			14.27			14.13	
PZH006		38.58			38.66			38.69			38.15	
PZH007			42.18			42.25			42.29			42.39
PZH008			17.66			17.02			17.14			17.22
PZH009			13.47			12.69			12.75			12.83
PZH014			45.91			46.02			46.14			46.24
PZH015			50.14			50.22			50.31			50.39
PZH017	45.31			42.96			42.98			43.07		
PZH018	21.17			20.48			20.56			20.62		
PZH019	96.51			96.59			93.67			93.76		
PZH020	72.81			72.98			73.11			73.27		
PZH021	48.76			48.11			48.19			48.27		
PZH022	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
PZH023	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY

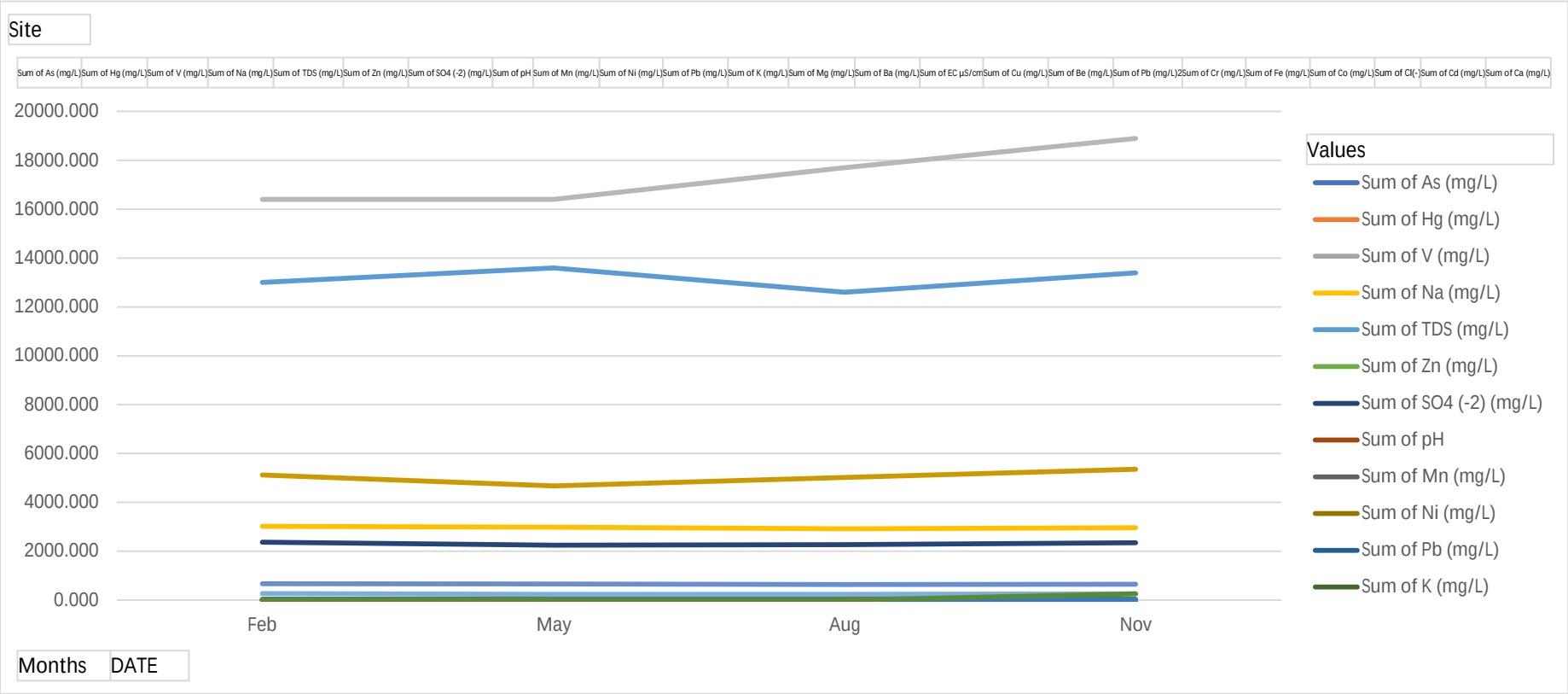
2021data
14/03/2022



2021data
14/03/2022

Site	DATE	As (mg/L)	Ba (mg/L)	Be (mg/L)	Ca (mg/L)	Cd (mg/L)	Cl(-)	Co (mg/L)	Cr (mg/L)	Cu (mg/L)	EC µS/cm	Fe (mg/L)	Hg (mg/L)	K (mg/L)	Mg (mg/L)	Mn (mg/L)	Na (mg/L)	Ni (mg/L)	Pb (mg/L)	pH	SO4 (-2) (mg/L)	TDS (mg/L)	V (mg/L)	Zn (mg/L)
PZH001	24/02/2021	0.001	0.01	0.001	148	0.0001	3870	0.001	0.001	0.011	13800	0.05	0.0001	8	518	0.001	2480	0.002	0.001	7.93	2300	9870	0.01	0.019
PZH001	14/05/2021	0.002	0.01	0.001	132	0.0001	3480	0.001	0.001	0.01	12400	0.05	0.0001	9	540	0.001	2570	0.002	0.001	7.73	2210	10200	0.01	0.029
PZH001	10/08/2021	0.001	0.01	0.001	147	0.0002	3650	0.001	0.001	0.012	14200	0.1	0.0001	8	512	0.002	2550	0.002	0.001	7.73	2190	9980	0.01	0.036
PZH001	24/11/2021	0.001	0.009	0.001	140	0.0001	3880	0.001	0.001	0.014	15600	0.05	0.0001	8	499	0.006	2430	0.003	0.001	7.77	2260	10700	0.01	0.024
PZH002	24/02/2021	0.001	0.014	168	0.0001	0.0001	3230	0.001	0.001	0.006	11700	0.22	0.0001	12	391	0.201	2240	0.001	0.001	7.84	1970	8730	0.01	0.014
PZH002	14/05/2021	0.001	0.016	153	0.0001	0.0001	2950	0.001	0.001	0.005	11200	0.82	0.0001	13	396	0.219	2290	0.001	0.001	7.61	1950	8730	0.01	0.014
PZH002	10/08/2021	0.001	0.015	166	0.0001	0.0001	3090	0.001	0.001	0.003	12400	0.23	0.0001	12	369	0.2	2220	0.002	0.001	7.61	1950	8520	0.01	0.011
PZH002	24/11/2021	0.001	0.014	160	160	0.0001	3290	0.001	0.001	0.002	13300	0.05	0.0001	11	371	0.195	2200	0.001	0.001	7.78	1920	9190	0.01	0.005
PZH003	24/02/2021	0.001	0.021	263	0.0002	0.0002	5120	0.001	0.001	0.009	16400	1.1	0.0001	30	675	0.226	3020	0.012	0.001	7.88	2370	13000	0.01	0.038
PZH003	14/05/2021	0.001	0.023	237	0.0001	0.0001	4670	0.002	0.001	0.002	16400	0.6	0.0001	32	665	0.245	2980	0.003	0.001	7.54	2250	13600	0.01	0.017
PZH003	10/08/2021	0.001	0.022	239	0.0001	0.0001	5020	0.002	0.001	0.001	17700	0.58	0.0001	28	634	0.28	2920	0.002	0.001	7.6	2270	12600	0.01	0.019
PZH003	24/11/2021	0.001	0.016	255	255	0.0001	5350	0.003	0.001	0.003	18900	0.84	0.0001	28	647	0.189	2960	0.002	0.001	7.75	2340	13400	0.01	0.043
PZH005	24/02/2021	0.003	0.014	162	0.0002	0.0002	4780	0.001	0.001	0.018	14300	0.05	0.0001	12	647	0.093	2500	0.043	0.001	7.83	1270	11100	0.01	0.037
PZH005	14/05/2021	0.003	0.013	147	0.0001	0.0001	4250	0.002	0.001	0.014	13100	0.07	0.0001	13	671	0.13	2530	0.037	0.001	7.44	1220	10600	0.01	0.031
PZH005	10/08/2021	0.002	0.012	134	0.0001	0.0001	4480	0.002	0.001	0.013	14800	0.07	0.0001	10	561	0.132	2190	0.034	0.001	7.51	1190	10200	0.01	0.023
PZH005	24/11/2021	0.001	0.011	151	151	0.0001	4700	0.003	0.002	0.02	16100	0.08	0.0001	11	606	0.158	2360	0.033	0.001	7.7	1160	11200	0.01	0.041
PZH006	24/02/2021	0.002	0.024	0.001	147	0.0002	2610	0.009	0.001	0.014	9860	0.34	0.0001	7	469	0.223	1650	0.006	0.001	7.71	2300	8060	0.01	0.03
PZH006	14/05/2021	0.002	0.023	0.001	136	0.0007	2430	0.018	0.001	0.036	9080	0.06	0.0001	7	499	0.036	1730	0.007	0.001	7.23	2130	7860	0.01	0.077
PZH006	10/08/2021	0.005	0.023	0.001	134	0.0001	2570	0.008	0.001	0.012	10300	0.09	0.0001	6	450	0.238	1620	0.006	0.002	7.17	2130	7650	0.01	0.032
PZH006	24/11/2021	0.001	0.021	0.001	140	0.0001	2680	0.007	0.001	0.008	11200	0.05	0.0001	6	454	0.207	1610	0.004	0.001	7.49	2150	8080	0.01	0.028
PZH007	24/03/2021	0.003	0.067	0.001	182	0.001	2990	0.014	0.004	0.095	12100	2.55	0.0001	22	325	0.364	2020	0.032	0.01	7.71	2010	8430	0.01	0.125
PZH007	24/06/2021	0.001	0.107	0.001	149	0.0002	2730	0.003	0.001	0.001	9880	0.71	0.0001	24	317	0.292	2010	0.012	0.001	7.85	1560	7310	0.01	0.033
PZH007	13/09/2021	0.016	0.028	0.001	163	0.0009	4190	0.005	0.001	0.04	16300	0.74	0.0001	12	518	0.126	2500	0.006	0.001	7.23	1960	11100	0.01	0.072
PZH007	16/12/2021	0.005	0.031	0.001	172	0.002	4650	0.016	0.004	0.198	15900	0.44	0.0001	18	560	0.21	2770	0.011	0.001	8.05	2250	12400	0.01	0.12
PZH008	24/03/2021	0.032	0.021	0.001	180	0.0001	3660	0.001	0.006	0.018	14000	1.42	0.0001	11	507	0.0065	2350	0.002	0.001	7.62	1820	9700	0.01	0.015
PZH008	17/06/2021	0.013	0.016	0.001	148	0.0001	3960	0.001	0.001	0.002	13100	0.54	0.0001	9	492	0.0047	2370	0.001	0.001	7.57	1720	9170	0.01	0.007
PZH008	13/09/2021	0.016	0.018	0.001	155	0.0001	3580	0.001	0.001	0.003	13400	0.66	0.0001	10	478	0.053	2220	0.001	0.001	7.25	1710	9580	0.01	0.014
PZH008	16/12/2021	0.02	0.019	0.001	142	0.0006	3970	0.01	0.001	0.044	13300	1.12	0.0001	9	473	0.108	2240	0.004	0.001	7.92	1810	10200	0.01	0.065
PZH009	24/03/2021	0.001	0.05	0.001	208	0.0008	4770	0.003	0.001	0.082	17900	0.21	0.0001	17	606	0.172	3220	0.02	0.001	8.22	2290	12700	0.01	0.108
PZH009	16/06/2021	0.001	0.042	0.001	172	0.0008	5120	0.001	0.001	0.082	17300	0.05	0.0001	16	585	0.095	3200	0.016	0.001	7.83	2160	12200	0.01	0.094
PZH009	13/09/2021	0.001	0.046	0.001	173	0.0006	4700	0.001	0.001	0.102	18300	0.07	0.0001	16	577	0.099	3020	0.016	0.001	7.6	2110	12400	0.01	0.106
PZH009	16/12/2021	0.001	0.045	0.001	161	0.0008	5380	0.002	0.001	0.098	17200	0.18	0.0001	16	564	0.072	3050	0.018	0.001	8	2280	13500	0.01	0.127
PZH014	24/03/2021	0.001	0.005	0.001	218	0.0002	4080	0.001	0.004	0.011	15300	0.37	0.0001	14	578	0.007	2550	0.003	0.001	8.12	1760	10600	0.01	0.02
PZH014	29/06/2021	0.002	0.004	0.001	178	0.0002	4380	0.001	0.003	0.013	14200	0.43	0.0001	12	562	0.008	2510	0.003	0.002	7.68	1750	10100	0.01	0.015
PZH014	14/09/2021	0.001	0.004	0.001	186	0.0001	4180	0.001	0.002	0.009	16000	0.24	0.0001	13	537	0.012	2370	0.002	0.001	7.37	1840	11000	0.01	0.015
PZH014	16/12/2021	0.001	0.004	0.001	174	0.0002	4480	0.001	0.001	0.005	14500	0.05	0.0001	12	532	0.019	2390	0.003	0.001	7.86	1870	11600	0.01	0.015
PZH015	24/03/2021	0.001	0.009	0.001	125	0.0001	3300	0.001	0.014	0.01	12400	0.2	0.0001	39	424	0.024	2160	0.003	0.001	8.19	2000	8640	0.01	0.02
PZH015	29/06/2021	0.001	0.006	0.001	190	0.0001	4830	0.001	0.009	0.005	16100	0.06	0.0001	24	602	0.024	3090	0.002	0.001	7.55	2510	12500	0.01	0.009
PZH015	14/09/2021	0.001	0.008	0.001	201	0.0001	4750	0.001	0.019	0.016	17900	0.11	0.0001	25	600	0.029	3010	0.003	0.001	7.49	2590	12700	0.01	0.024
PZH015	16/12/2021	0.001	0.007	0.001	186	0.0001	4950	0.001	0.012	0.016	16900	0.42	0.0001	24	592	0.012	3000	0.004	0.001	7.88	2830	13200	0.01	0.019
PZH017	25/01/2021	0.001	0.029	0.001	116	0.0001	3260	0.001	0.001	0.005	12100	2.01	0.0001	14	270	0.066	2040	0.001	0.001	7.9	799	7460	0.01	0.028
PZH017	27/04/2021	0.001	0.031	0.001	121	0.0001	3360	0.001	0.001	0.002	12100	1.78	0.0001	14	298	0.068	2210	0.001	0.001	7.93	907	7850	0.01	0.005
PZH017	26/07/2021	0.001	0.029	0.001	107	0.0001	3230	0.001	0.001	0.004	11500	0.51	0.0001	14	279	0.058	2080	0.001	0.001	8.04	856	7460	0.01	0.015
PZH017	28/10/2021	0.001	0.028	0.001	115	0.0002	3630	0.004	0.001	0.017	12000	0.29	0.0001	14	272	0.068	2060	0.002	0.001	8.18	971	7400	0.01	0.033
PZH018	25/01/2021	0.001	0.03	0.001	340	0.0001	7450	0.001	0.001	0.002	25800	0.38	0.0001	30	804	0.332	4240	0.002	0.001	7.76	2370	18700	0.01	0.006
PZH018	27/04/2021	0.001	0.032	0.001	342	0.0001	8040	0.002	0.001	0.006	25700	0.52	0.0001	32	882	0.442	4590	0.003	0.001	7.8	2580	19200	0.01	0.014
PZH018	14/07/2021	0.001	0.032	0.001	299	0.0001	7510	0.002	0.001	0.007	24300	0.52	0.0001	30	826	0.333	4400	0.003	0.001	7.81	2700	19100	0.01	0.015
PZH018	28/10/2021	0.001	0.031	0.001	341	0.0001	8240	0.003	0.001	0.011	24800	0.6	0.0001	29	796	0.36	4240	0.003	0.001	8.07	2460	18700	0.01	0.021
PZH019	25/01/2021	0.01	0.032	0.01	253	0.001	6070	0.01	0.01	0.013	21200	2.54	0.0001	26	713	0.092	3720	0.01	0.01	7.85	2010	15000	0.1	0.069
PZH019	27/04/2021	0.001	0.03	0.001	250	0.0001	5720	0.002	0.001	0.008	18900	0.63	0.0001	29	614	0.242	3500	0.002	0.001	7.8	1700	12900	0.01	0.015
PZH019	26/07/2021	0.003	0.023	0.001	81	0.0001	2970	0.001	0.001	0.006	10600	0.06	0.0001	10	276	0.006	1840	0.014	0.001	7.95	776	6730	0.01	0.048
PZH019	28/10/2021	0.001	0.059	0.001	248	0.0002	6140	0.003	0.001	0.052	21600	5.38	0.0001	18	622	1.08	2910	0.002	0.001	8.11	2360	16100	0.01	0.034
PZH020	25/01/2021	0.001	0.001	0.001	27	0.0001	694	0.001	0.001	0.002	2730	0.05	0.0001	6	67	0.002	418	0.001	0.001	7.56	232	1580	0.01	0.009
PZH020	27/04/2021	0.001	0.01	0.001	126	0.0001	3590	0.001	0.001	0.003	13000	0.07	0.0001	34	314	0.014	2340	0.001	0.001	7.67	1090	8320	0.01	0.013
PZH020	14/07/2021	0.001	0.008	0.001	128	0.0001	3760	0.001	0.001	0.006	13400	0.07	0.0001	31	357	0.02	2480	0.001	0.001	7.79	1380	8890	0.01	0.02
PZH020	27/10/2021	0.001	0.032	0.001	308	0.0006	7850	0.01	0.001	0.097	23800	0.64	0.0001	28	750	0.411	4050	0.006	0.001	8.07	2270	17600	0.01	0.098
PZH021	25/01/2021	0.001	0.062	0.001	256	0.0001	4480	0.001	0.001	0.003	16100	5.97	0.0001	16	533	1.18	2390	0.001	0.001	7.67	1600	10700	0.01	0.007
PZH021	27/04/2021	0.001	0.069	0.001	271	0.0001	4700	0.001	0.001	0.001	16000	6.69	0.0001	16	585	1.29	2590	0.001	0.001	7.74	1500	11400	0.01	0.005
PZH021	14/07/2021	0.001	0.06	0.001	215	0.0001	4400	0.001	0.001	0.004	15100	5.94	0.0001	15	508	1.02	2300	0.001	0.001	7.72	1680	10600	0.01	0.01
PZH021	28/10/2021	0.001	0.063	0.001	257	0.0001	4990	0.001	0.001	0.003	15800	6.28	0.0001	16	539	1.24	2440	0.001	0.001	8.01	1500	11700	0.01	0.007

2021data
14/03/2022



Appendix Table 1 2021 Surface Water Quality Results (mg/L)

Date	Arsenic	Barium	Beryllium	Calcium	Cadmium	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercury	Potassium	Magnesium	Manganese	Sodium	Nickel	Lead	pH	Sulphate	Total Dissolved Solids	Vanadium	Zinc
Stock Watering Triggers *	**0.5**	**-**	**-**	**1000**	**0.01**	**-**	**1**	**1**	**1**	**6000**	**N/A**	**0.002**	**-**	**-**	**N/A**	**-**	**1**	**0.1**	**6 – 9**	**1000**	**4000**	**-**	**20**
Irrigation Triggers #	**2**	**-**	**0.5**	**-**	**0.05**	**350**	**0.1**	**1**	**5**	**6000**	**10**	**0.002**	**-**	**-**	**10**	**230**	**2**	**5**	**6 – 9**	**-**	**-**	**0.5**	**5**
TSW01																							
06/01/2021	0.002	0.049	<0.001	381	0.0216	446	0.298	0.006	10.3	3620	4.93	<0.0001	23	77	1.76	268	0.066	0.005	3.43	1380	3000	<0.01	5.24
10/02/2021	0.005	0.06	<0.001	491	0.0327	435	0.562	0.017	10.1	4230	13.3	<0.0001	27	109	2.89	264	0.092	0.028	3.07	1940	3500	<0.01	6.91
01/03/2021	0.005	0.059	<0.001	578	0.0183	935	0.362	0.01	2.93	5880	12.4	<0.0001	51	90	1.94	489	0.064	0.024	3.75	2300	5010	<0.01	4.16
12/04/2021	0.003	0.045	<0.001	359	0.013	502	0.26	0.006	3.74	3660	5.83	<0.0001	27	54	1.32	231	0.054	0.009	3.46	1280	2940	<0.01	3.24
12/05/2021	0.002	0.06	<0.001	697	0.0045	836	0.098	<0.001	2.17	5000	2.35	<0.0001	57	42	0.53	451	0.021	<0.001	4.56	1860	4350	<0.01	1.01
08/06/2021	0.002	0.042	<0.001	536	0.0097	723	0.164	0.002	3.54	4710	3.01	<0.0001	36	46	0.833	371	0.033	0.002	3.52	1440	3560	<0.01	2.15
05/07/2021	0.003	0.106	<0.001	243	0.0041	284	0.067	<0.001	1.53	2200	0.55	<0.0001	21	25	0.424	178	0.014	<0.001	6.6	650	1640	<0.01	0.899
23/08/2021	0.002	0.066	<0.001	464	0.0007	566	0.021	<0.001	0.026	3970	0.98	<0.0001	29	55	0.593	372	0.006	<0.001	3.92	1360	2990	<0.01	0.146
09/09/2021	0.004	0.057	<0.001	629	0.0043	828	0.078	0.001	1.37	5080	1.22	<0.0001	44	42	0.39	458	0.008	0.003	4.4	1670	4100	<0.01	0.605
06/10/2021	0.002	0.057	<0.001	424	0.0288	558	0.538	<0.001	9.07	4500	3.23	<0.0001	26	116	0.59	378	0.099	0.002	4	1500	3460	<0.01	6.94
03/11/2021	0.003	0.076	<0.001	569	0.0128	1070	0.214	<0.001	1.98	6410	1.42	<0.0001	42	110	1.17	717	0.058	0.003	4.54	2030	5060	<0.01	1.98
07/12/2021	0.003	0.045	0.001	315	0.0282	493	0.447	0.009	15.8	3820	8.73	0.0001	17	96	2.38	285	0.098	0.008	3.21	1320	2820	0.01	6.12
Average	**0.003**	**0.0602**	**0.001**	**473.833**	**0.014892**	**639.6667**	**0.2591**	**0.007286**	**5.213**	**4423.333**	**4.8292**	**0.0001**	**33.33333**	**71.83333**	**1.235**	**371.833**	**0.0511**	**0.00933**	**4.0383**	**1560.833**	**3535.833**	**0.01**	**3.28333**
TSW02																							
06/01/2021	0.002	0.006	0.003	421	0.0908	117	1.89	0.085	11.5	4220	24.6	<0.0001	3	343	7.74	70	0.243	0.016	3.28	2970	5210	<0.01	16
11/02/2021	0.004	0.004	0.004	452	0.104	172	2.12	0.104	13.6	4860	19.4	<0.0001	9	395	9.04	101	0.288	0.015	2.98	3410	5410	<0.01	16.8
01/03/2021	0.006	0.002	0.005	460	0.149	254	3.58	0.153	22	6430	17.1	<0.0001	11	542	12.9	148	0.448	0.01	2.83	4310	7020	<0.01	27.5
12/04/2021	0.004	0.005	0.002	433	0.057	214	1.47	0.077	9.05	4270	11	<0.0001	11	188	5.32	120	0.189	0.028	2.97	2450	3880	<0.01	11.6
12/05/2021	0.008	0.008	0.003	659	0.0696	374	2.15	0.154	10.2	5740	45.9	<0.0001	25	281	7.12	241	0.262	0.071	3.05	3340	5800	<0.01	15.4
08/06/2021	0.004	0.002	0.001	369	0.0231	178	0.748	0.051	3.98	3050	14.5	<0.0001	8	91	2.44	96	0.086	0.012	3.19	1390	2500	<0.01	5.33
05/07/2021	0.004	0.006	<0.001	492	0.0163	426	0.594	0.042	2.93	3690	10.8	<0.0001	22	77	1.95	250	0.071	0.015	3.29	1890	3460	<0.01	3.64
09/08/2021	0.011	0.012	<0.001	845	0.0027	927	0.086	0.013	0.013	5840	14.2	<0.0001	48	33	0.515	540	0.017	0.014	4.85	2060	4750	<0.01	0.398
09/09/2021	0.007	0.001	0.001	732	0.0276	700	0.751	0.149	5.86	6120	42.4	<0.0001	36	92	2.63	434	0.118	0.008	2.85	2390	4960	<0.01	5.57
06/10/2021	0.007	0.004	0.006	555	0.182	402	6.51	0.324	35.7	8910	156	<0.0001	12	927	18	245	0.762	0.028	2.97	6980	11000	<0.01	45.2
03/11/2021	0.02	0.002	0.01	616	0.266	1070	8.66	0.526	49.3	13700	129	<0.0001	20	1540	3.11	781	1.02	0.011	2.68	9720	16500	<0.01	62.5
07/12/2021	0.011	0.015	0.001	301	0.0236	169	0.661	0.022	3.42	2460	17.4	0.0001	7	95	3.04	91	0.088	0.022	3.64	1250	2210	0.01	4.6
Average	**0.0073**	**0.0056**	**0.0036**	**527.917**	**0.084308**	**416.917**	**2.435**	**0.141667**	**13.963**	**5774.17**	**41.86**	**0.0001**	**17.66667**	**383.6667**	**6.150417**	**259.75**	**0.2993**	**0.0208**	**3.215**	**3513.33**	**6058.333**	**0.01**	**17.878**
TSW03																							
11/02/2021	<0.001	0.104	<0.001	240	0.0008	412	0.052	<0.001	0.4	6140	187	<0.001	38	885	4.93	250	0.013	<0.001	4.22	4060	6990	<0.01	0.354
08/06/2021	0.001	0.123	<0.001	202	0.0006	369	0.053	0.001	0.078	5470	76.7	<0.001	33	584	4.09	170	0.011	<0.001	4.28	3300	5810	<0.01	0.153
05/07/2021	0.002	0.045	<0.001	404	0.0003	787	0.111	<0.001	0.037	12400	404	<0.001	63	1960	11.3	474	0.026	<0.001	4.26	9770	16600	<0.01	0.137
07/12/2021	0.001	0.097	0.001	42	0.0001	65	0.007	0.001	0.012	758	6.56	0.0001	11	44	0.58	34	0.002	0.001	6.26	308	505	0.01	0.012

Date	Arsenic	Barium	Beryllium	Calcium	Cadmium	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercury	Potassium	Magnesium	Manganese	Sodium	Nickel	Lead	pH	Sulphate	Total Dissolved Solids	Vanadium	Zinc
Stock Watering Triggers *	**0.5**	**-**	**-**	**1000**	**0.01**	**-**	**1**	**1**	**1**	**6000**	**N/A**	**0.002**	**-**	**-**	**N/A**	**-**	**1**	**0.1**	**6 – 9**	**1000**	**4000**	**-**	**20**
Irrigation Triggers #	**2**	**-**	**0.5**	**-**	**0.05**	**350**	**0.1**	**1**	**5**	**6000**	**10**	**0.002**	**-**	**-**	**10**	**230**	**2**	**5**	**6 – 9**	**-**	**-**	**0.5**	**5**
Average	**0.00133**	**0.0923**	**0.001**	**222**	**0.00045**	**408.25**	**0.0558**	**0.001**	**0.13175**	**6192**	**168.57**	**0.0001**	**36.25**	**868.25**	**5.225**	**232**	**0.013**	**0.001**	**4.755**	**4359.5**	**7476.25**	**0.01**	**0.164**
TSW04																							
06/01/2021	<0.001	0.074	<0.001	71	0.0078	324	0.061	<0.001	0.602	1950	<0.05	<0.0001	11	70	0.632	213	0.021	<0.001	6.63	424	1320	<0.01	0.615
10/02/2021	<0.001	0.059	<0.001	35	0.0002	61	0.001	<0.001	0.049	532	0.06	<0.0001	8	19	0.022	49	0.003	<0.001	7.55	48	356	<0.01	0.08
01/03/2021	0.002	0.063	<0.001	433	0.0129	510	0.251	0.002	1.82	3600	7.89	<0.0001	31	67	1.35	287	0.046	0.012	4	1430	2950	<0.01	2.84
12/04/2021	0.002	0.046	<0.001	92	0.0033	133	0.051	0.002	0.837	1130	1.6	<0.0001	15	24	0.381	83	0.016	0.002	5.64	354	867	<0.01	0.638
12/05/2021	<0.001	0.051	<0.001	391	0.0026	500	0.056	<0.001	1.2	3260	0.52	<0.0001	34	29	0.378	262	0.011	<0.001	5.18	1120	2550	<0.01	0.56
08/06/2021	0.001	0.045	<0.001	299	0.0055	438	0.092	<0.001	1.9	2780	0.16	<0.0001	24	30	0.451	215	0.019	<0.001	5.89	863	2050	<0.01	1.12
05/07/2021	<0.001	0.066	<0.001	44	0.0002	96	0.003	<0.001	0.008	682	0.63	<0.0001	10	20	0.056	60	0.002	<0.001	7.71	88	428	<0.01	0.04
23/08/2021	<0.001	0.059	<0.001	159	0.0003	219	0.008	<0.001	0.031	1560	1.42	<0.0001	15	23	0.244	145	0.005	0.001	6.17	480	1190	<0.01	0.062
09/09/2021	0.002	0.061	<0.001	44	<0.0001	67	0.005	0.001	0.13	549	2.38	<0.0001	9	9	0.101	46	0.004	0.003	6.07	114	738	0.01	0.061
06/10/2021	0.002	0.206	<0.001	24	0.0001	35	0.003	<0.001	0.048	411	0.26	<0.0001	11	11	0.02	43	0.004	<0.001	7.62	25	284	<0.01	0.025
03/11/2021	0.001	0.059	<0.001	38	0.0008	121	0.009	<0.001	0.317	836	0.71	<0.0001	9	27	0.101	85	0.008	<0.001	7.21	130	577	<0.01	0.093
07/12/2021	0.001	0.05	0.001	185	0.0177	371	0.248	0.002	8.05	2550	4.66	0.0001	13	72	1.5	226	0.057	0.003	4.44	849	1630	0.01	3.32
Average	**0.0016**	**0.0699**	**0.001**	**151.25**	**0.004673**	**239.583**	**0.066**	**0.00175**	**1.2493**	**1653.33**	**1.845**	**0.0001**	**15.83333**	**33.41667**	**0.436333**	**142.83**	**0.0163**	**0.0042**	**6.1758**	**493.75**	**1245**	**0.01**	**0.7878**
TSW08																							
06/01/2021	<0.001	0.018	<0.001	3	<0.0001	4	<0.001	0.001	0.006	66	0.62	<0.0001	4	3	0.015	6	<0.001	<0.001	6.63	1	66	<0.01	0.027
10/02/2021	0.001	0.027	<0.001	8	<0.0001	17	0.001	<0.001	0.03	206	0.19	<0.0001	6	7	0.011	19	0.001	<0.001	7.62	24	118	<0.01	0.033
01/03/2021	<0.001	0.063	<0.001	30	0.0003	70	0.001	<0.001	0.066	625	0.11	<0.0001	7	20	0.007	50	0.002	<0.001	7.16	84	418	<0.01	0.024
12/04/2021	0.002	0.039	<0.001	10	0.0026	25	0.044	0.002	0.53	268	1.02	<0.0001	12	9	0.236	24	0.011	<0.001	6.73	31	256	<0.01	0.514
12/05/2021	<0.001	0.05	<0.001	16	0.0005	42	0.005	<0.001	0.057	358	0.4	<0.0001	12	12	0.059	32	0.006	<0.001	6.53	27	284	<0.01	0.042
08/06/2021	<0.001	0.015	<0.001	1	0.0001	6	0.008	<0.001	0.037	95	0.19	<0.0001	7	3	0.018	16	0.002	<0.001	5.98	2	68	<0.01	0.037
05/07/2021	<0.001	0.032	<0.001	2	<0.0001	10	<0.001	<0.001	0.012	106	0.23	<0.0001	2	4	0.003	13	<0.001	<0.001	6.74	10	72	<0.01	<0.005
09/08/2021	0.001	0.055	<0.001	11	0.0007	28	0.004	<0.001	0.065	216	2.02	<0.0001	8	7	0.082	21	0.003	0.002	6.67	16	394	0.01	0.043
09/09/2021	0.001	0.068	<0.001	11	0.0002	28	0.003	0.001	0.046	212	2.36	<0.0001	8	6	0.076	21	0.004	0.003	5.95	10	472	0.01	0.026
06/10/2021	0.002	0.048	<0.001	3	<0.001	14	<0.001	<0.001	0.014	137	0.45	<0.0001	4	7	0.023	19	<0.001	<0.001	6.74	8	132	<0.01	0.026
03/11/2021	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
07/12/2021	0.002	0.024	0.001	2	0.0001	10	0.002	0.001	0.012	95	0.3	0.0001	3	3	0.03	14	0.001	0.001	6.6	8	116	0.01	0.014
Average	**0.0015**	**0.0399**	**0.001**	**8.81818**	**0.000643**	**23.0909**	**0.009**	**0.00125**	**0.0795**	**216.727**	**0.717**	**0.0001**	**6.636364**	**7.363636**	**0.050909**	**21.364**	**0.0038**	**0.002**	**6.6682**	**20.0909**	**217.8182**	**0.01**	**0.0786**

Date	Arsenic	Barium	Beryllium	Calcium	Cadmium	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercury	Potassium	Magnesium	Manganese	Sodium	Nickel	Lead	pH	Sulphate	Total Dissolved Solids	Vanadium	Zinc
Stock Watering Triggers *	**0.5**	**-**	**-**	**1000**	**0.01**	**-**	**1**	**1**	**1**	**6000**	**N/A**	**0.002**	**-**	**-**	**N/A**	**-**	**1**	**0.1**	**6 – 9**	**1000**	**4000**	**-**	**20**
Irrigation Triggers #	**2**	**-**	**0.5**	**-**	**0.05**	**350**	**0.1**	**1**	**5**	**6000**	**10**	**0.002**	**-**	**-**	**10**	**230**	**2**	**5**	**6 – 9**	**-**	**-**	**0.5**	**5**
TSW09																							
06/01/2021	0.001	0.077	<0.001	941	0.0037	1680	0.046	<0.001	1.37	7140	0.35	<0.0001	69	41	0.311	687	0.012	<0.001	6.01	2320	5720	<0.01	0.714
10/02/2021	0.001	0.066	<0.001	789	0.0056	1510	0.11	<0.001	0.382	5710	0.66	<0.0001	57	45	0.523	478	0.015	0.001	5.94	2080	4800	<0.01	1.25
01/03/2021	<0.001	0.07	<0.001	973	0.0018	1800	0.003	<0.001	0.049	7760	0.22	<0.0001	68	42	0.076	687	0.002	<0.001	5.94	2510	6370	<0.01	0.148
12/04/2021	0.002	0.066	<0.001	796	0.0001	1440	0.001	<0.001	0.002	5740	0.14	<0.0001	69	30	0.008	482	0.002	<0.001	8.89	1960	4650	<0.01	0.018
12/05/2021	0.004	0.058	<0.001	806	0.0002	1580	0.001	<0.001	0.002	6510	0.06	<0.0001	72	22	0.013	638	<0.001	<0.001	6.07	2010	5350	<0.01	0.006
08/06/2021	0.002	0.047	<0.001	812	0.0012	1310	0.03	<0.001	<0.001	5940	0.15	<0.0001	52	31	0.186	525	0.007	<0.001	5.99	1970	4790	<0.01	0.035
05/07/2021	0.004	0.045	<0.001	623	0.0016	1010	0.052	0.003	0.044	5080	0.86	<0.0001	44	24	0.251	447	0.007	0.002	8.02	1750	3800	<0.01	0.203
09/08/2021	0.001	0.039	<0.001	692	0.0003	1250	0.004	0.007	0.008	5200	0.75	<0.0001	38	22	0.044	512	0.003	0.002	9.64	1320	4110	<0.01	0.035
16/09/2021	0.005	0.061	<0.001	846	0.0003	1340	0.008	0.002	0.008	6150	0.78	<0.0001	63	24	0.073	576	0.002	0.005	6.93	1930	4850	<0.01	0.095
06/10/2021	0.003	0.08	<0.001	664	0.0004	897	0.014	0.002	0.01	5390	0.73	<0.0001	43	25	0.092	443	0.003	0.005	8.53	1750	4220	<0.01	0.035
03/11/2021	0.004	0.065	<0.001	740	0.0037	1630	0.063	0.002	0.139	6790	0.84	<0.0001	65	52	0.418	758	0.018	0.003	6.91	1980	5470	<0.01	0.578
07/12/2021	0.003	0.024	0.001	412	0.0168	381	0.389	0.009	1.56	3180	6.35	0.0001	17	67	1.98	201	0.052	0.01	5.13	1300	2630	0.01	2.75
Average	**0.0027**	**0.0582**	**0.001**	**757.833**	**0.002975**	**1319**	**0.060**	**0.004167**	**0.3249**	**5882.5**	**0.991**	**0.0001**	**54.75**	**35.41667**	**0.33125**	**536.17**	**0.0112**	**0.004**	**7**	**1906.67**	**4730**	**0.01**	**0.4889**
TSW10																							
07/01/2021	0.003	0.066	<0.001	358	0.0070	1690	0.039	<0.001	0.048	9000	0.08	<0.0001	44	281	1.07	1080	0.012	<0.001	7.35	2280	6540	<0.01	0.356
10/02/2021	0.002	0.055	<0.001	392	0.0041	2890	0.045	<0.001	0.047	11300	<0.05	<0.0001	42	379	0.951	1590	0.012	<0.001	7.58	2290	8130	<0.01	0.252
01/03/2021	0.002	0.061	<0.001	911	0.0012	1620	0.005	<0.001	0.035	7180	0.05	<0.0001	66	40	0.187	631	0.004	<0.001	6.56	2470	6140	<0.01	0.014
12/04/2021	0.014	0.074	<0.001	494	0.0014	1490	0.024	0.034	1.39	7990	13.2	<0.0001	53	210	0.507	883	0.018	0.078	7.88	2170	6300	0.02	0.332
27/05/2021	0.003	0.068	<0.001	348	0.0012	1100	0.021	<0.001	0.051	6690	0.19	<0.0001	71	225	0.568	772	0.013	<0.001	7.54	1870	5090	<0.01	0.077
08/06/2021	0.01	0.065	<0.001	433	0.0038	1900	0.057	0.019	0.528	8840	11.8	<0.0001	48	233	0.882	1110	0.024	0.056	6.42	1860	6490	0.01	0.535
06/07/2021	0.005	0.073	<0.001	439	0.0022	2930	0.03	0.003	0.141	12000	1.57	<0.0001	56	358	0.741	1730	0.01	0.008	8.01	2440	8560	<0.01	0.098
09/08/2021	0.001	0.035	<0.001	502	0.003	3460	0.039	<0.001	0.051	10400	0.07	<0.0001	48	286	0.954	1320	0.011	<0.001	7.7	2370	7790	<0.01	0.108
09/09/2021	0.002	0.067	<0.001	453	0.0021	1640	0.025	<0.001	0.028	8860	<0.05	<0.0001	55	254	0.558	1130	0.011	<0.001	6.2	2100	6660	<0.01	0.071
29/10/2021	0.003	0.073	<0.001	380	0.0038	2410	0.045	0.002	0.13	11000	1.58	<0.0001	51	356	0.981	1640	0.015	0.006	7.39	2120	7930	<0.01	0.098
03/11/2021	0.008	0.074	<0.001	366	0.0046	2420	0.055	0.013	0.801	10100	7.79	<0.0001	46	330	1.33	1410	0.018	0.025	7.51	2020	7770	<0.01	0.244
07/12/2021	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
Average	**0.0048**	**0.0646**	**<0.001**	**461.455**	**0.003127**	**2140.91**	**0.035**	**0.0142**	**0.2955**	**9396.36**	**4.037**	**<0.0001**	**52.72727**	**268.3636**	**0.793545**	**1208.7**	**0.0135**	**0.0346**	**7.2855**	**2180.91**	**7036.364**	**0.015**	**0.1986**
TSW11																							
08/06/2021	0.003	0.021	0.002	163	0.0053	56	0.373	0.005	4.48	1400	2.02	<0.0001	8	40	1.08	35	0.069	0.002	4.35	687	1180	<0.01	1.81
06/07/2021	0.002	0.017	0.002	323	0.0046	196	0.271	0.004	4.02	2460	2.05	<0.0001	13	42	1.01	119	0.047	0.004	3.58	1140	1990	<0.01	1.36
09/08/2021	0.002	0.027	0.001	389	0.0028	408	0.144	0.002	2.99	3180	0.92	<0.0001	23	33	0.578	267	0.032	0.004	4.08	1060	2480	<0.01	0.826
06/10/2021	0.005	0.029	0.003	423	0.0092	190	0.695	0.007	7.44	2970	0.89	<0.0001	18	104	2.05	111	0.134	0.006	4.28	1400	2680	<0.01	3.06
07/12/2021	0.001	0.056	0.001	183	0.001	74.000	0.003	0.001	0.033	1540.000	0.420	<0.0001	11.000	80.000	0.111	54	0.003	0.001	6.850	715.000	1300	0.010	0.028
Average	**0.0026**	**0.03**	**0.0018**	**296.2**	**0.00458**	**184.8**	**0.2972**	**0.0038**	**3.7926**	**2310**	**1.26**	**<0.0001**	**14.6**	**59.8**	**0.9658**	**117.2**	**0.057**	**0.0034**	**4.628**	**1000.4**	**1926**	**0.01**	**1.4168**

* ANSECC Stock water guidelines for cattle (Primary)
# ANZECC Irrigation and general use guidelines for wheat (Secondary)
N/A – Not sufficiently toxic to stock

Appendix Table 2 2021 Groundwater Quality Result (mg/L)

Date	Arsenic	Barium	Berylliu m	Calcium	Cadmiu m	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercur y	Potassium	Magnesium	Manganes e	Sodiu m	Nickel	Lead	Ph	Sulphate	Total Dissolve d Solids	Vanadiu m	Zinc
Stock Watering Triggers *	0.5	-	-	1000	0.01	-	1	1	1	6000	N/A	0.002	-	-	N/A	-	1	0.1	6 – 9	1000	4000	-	20
Irrigation Triggers #	2	-	0.5	-	0.05	350	0.1	1	5	6000	10	0.002	-	-	10	230	2	5	6 – 9	-	-	0.5	5
PZH001																							
24/02/2021	0.001	0.01	<0.001	148	0.0001	3870	<0.001	<0.001	0.011	13800	<0.05	<0.0001	8	518	<0.001	2480	0.002	<0.001	7.93	2300	9870	<0.01	0.019
14/05/2021	0.002	0.01	<0.001	132	0.0001	3480	<0.001	<0.001	0.01	12400	<0.05	<0.0001	9	540	<0.001	2570	0.002	<0.001	7.73	2210	10200	<0.01	0.029
10/08/2021	<0.001	0.01	<0.001	147	0.0002	3650	<0.001	<0.001	0.012	14200	0.1	<0.0001	8	512	0.002	2550	0.002	<0.001	7.73	2190	9980	<0.01	0.036
24/11/21	0.001	0.009	0.001	140	0.0001	3880	0.001	0.001	0.014	15600	0.05	0.0001	8	499	0.006	2430	0.003	0.001	7.77	2260	10700	0.01	0.024
Average	**0.001333**	**0.00975**	**0.001**	**141.75**	**0.000125**	**3720**	**0.001**	**0.001**	**0.01175**	**14000**	**0.075**	**0.0001**	**8.25**	**517.25**	**0.004**	**2507.5**	**0.00225**	**0.001**	**7.79**	**2240**	**10187.5**	**0.01**	**0.027**
PZH002																							
24/02/2021	<0.001	0.014	168	0.0001	<0.0001	3230	<0.001	<0.001	0.006	11700	0.22	<0.0001	12	391	0.201	2240	0.001	<0.001	7.84	1970	8730	<0.01	0.014
14/05/2021	0.001	0.016	153	0.0001	<0.0001	2950	<0.001	<0.001	0.005	11200	0.82	<0.0001	13	396	0.219	2290	<0.001	<0.001	7.61	1950	8730	<0.01	0.014
10/08/2021	<0.001	0.015	166	0.0001	<0.0001	3090	<0.001	<0.001	0.003	12400	0.23	<0.0001	12	369	0.2	2220	0.002	<0.001	7.61	1950	8520	<0.01	0.011
24/11/21	0.001	0.014	160	160	0.0001	3290	0.001	0.001	0.002	13300	0.05	0.0001	11	371	0.195	2200	0.001	0.001	7.78	1920	9190	0.01	0.005
Average	**0.001**	**0.01475**	**161.75**	**40.00008**	**0.0001**	**3140**	**0.001**	**0.001**	**0.004**	**12150**	**0.33**	**0.0001**	**12**	**381.75**	**0.20375**	**2237.5**	**0.00133**	**0.001**	**7.71**	**1947.5**	**8792.5**	**0.01**	**0.011**
PZH003																							
24/02/2021	<0.001	0.021	263	0.0002	0.0002	5120	0.001	<0.001	0.009	16400	1.1	<0.0001	30	675	0.226	3020	0.012	<0.001	7.88	2370	13000	<0.01	0.038
14/05/2021	<0.001	0.023	237	0.0001	<0.0001	4670	0.002	<0.001	0.002	16400	0.6	<0.0001	32	665	0.245	2980	0.003	<0.001	7.54	2250	13600	<0.01	0.017
10/08/2021	<0.001	0.022	239	0.0001	0.0001	5020	0.002	<0.001	<0.001	17700	0.58	<0.0001	28	634	0.28	2920	0.002	<0.001	7.6	2270	12600	<0.01	0.019
24/11/21	0.001	0.016	255	255	0.0001	5350	0.003	0.001	0.003	18900	0.84	0.0001	28	647	0.189	2960	0.002	0.001	7.75	2340	13400	0.01	0.043
Average	**0.001**	**0.0205**	**248.5**	**63.7501**	**0.000133**	**5040**	**0.002**	**0.001**	**0.00467**	**17350**	**0.78**	**0.0001**	**29.5**	**655.25**	**0.235**	**2970**	**0.00475**	**0.001**	**7.693**	**2307.5**	**13150**	**0.01**	**0.0293**
PZH005																							
24/02/2021	0.003	0.014	162	0.0002	0.0002	4780	0.001	<0.001	0.018	14300	<0.05	<0.0001	12	647	0.093	2500	0.043	0.001	7.83	1270	11100	<0.01	0.037
14/05/2021	0.003	0.013	147	0.0001	<0.0001	4250	0.002	<0.001	0.014	13100	0.07	<0.0001	13	671	0.13	2530	0.037	0.001	7.44	1220	10600	<0.01	0.031

Date	Arsenic	Barium	Beryllium	Calcium	Cadmium	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercury	Potassium	Magnesium	Manganese	Sodium	Nickel	Lead	Ph	Sulphate	Total Dissolved Solids	Vanadium	Zinc
Stock Watering Triggers *	0.5	-	-	1000	0.01	-	1	1	1	6000	N/A	0.002	-	-	N/A	-	1	0.1	6 – 9	1000	4000	-	20
Irrigation Triggers #	2	-	0.5	-	0.05	350	0.1	1	5	6000	10	0.002	-	-	10	230	2	5	6 – 9	-	-	0.5	5
10/08/2021	0.002	0.012	134	0.0001	0.0001	4480	0.002	<0.001	0.013	14800	0.07	<0.0001	10	561	0.132	2190	0.034	0.001	7.51	1190	10200	<0.01	0.023
24/11/21	0.001	0.011	151	151	0.0001	4700	0.003	0.002	0.02	16100	0.08	0.0001	11	606	0.158	2360	0.033	0.001	7.7	1160	11200	0.01	0.041
Average	**0.00225**	**0.0125**	**148.5**	**37.7501**	**0.000133**	**4552.5**	**0.002**	**0.002**	**0.01625**	**14575**	**0.073333**	**0.0001**	**11.5**	**621.25**	**0.12825**	**2395**	**0.03675**	**0.001**	**7.62**	**1210**	**10775**	**0.01**	**0.033**
PZH006																							
24/02/2021	0.002	0.024	<0.001	147	0.0002	2610	0.009	<0.001	0.014	9860	0.34	<0.0001	7	469	0.223	1650	0.006	0.001	7.71	2300	8060	<0.01	0.03
14/05/2021	0.002	0.023	<0.001	136	0.0007	2430	0.018	<0.001	0.036	9080	0.06	<0.0001	7	499	0.036	1730	0.007	0.001	7.23	2130	7860	<0.01	0.077
10/08/2021	0.005	0.023	<0.001	134	0.0001	2570	0.008	<0.001	0.012	10300	0.09	<0.0001	6	450	0.238	1620	0.006	0.002	7.17	2130	7650	<0.01	0.032
24/11/21	0.001	0.021	0.001	140	0.0001	2680	0.007	0.001	0.008	11200	0.05	0.0001	6	454	0.207	1610	0.004	0.001	7.49	2150	8080	0.01	0.028
Average	**0.0025**	**0.02275**	**0.001**	**139.25**	**0.000275**	**2572.5**	**0.0105**	**0.001**	**0.0175**	**10110**	**0.135**	**0.0001**	**6.5**	**468**	**0.176**	**1652.5**	**0.00575**	**0.00125**	**7.4**	**2177.5**	**7912.5**	**0.01**	**0.0418**
PZH007																							
24/03/2021	0.003	0.067	<0.001	182	0.001	2990	0.014	0.004	0.095	12100	2.55	<0.0001	22	325	0.364	2020	0.032	0.01	7.71	2010	8430	0.01	0.125
24/06/2021	<0.001	0.107	<0.001	149	0.0002	2730	0.003	<0.001	<0.001	9880	0.71	<0.0001	24	317	0.292	2010	0.012	0.001	7.85	1560	7310	<0.01	0.033
13/09/2021	0.016	0.028	<0.001	163	0.0009	4190	0.005	<0.001	0.04	16300	0.74	<0.0001	12	518	0.126	2500	0.006	<0.001	7.23	1960	11100	<0.01	0.072
16/12/2021	0.005	0.031	<0.001	172	0.0020	4650	0.016	0.004	0.198	15900	0.44	<0.0001	18	560	0.210	2770	0.011	<0.001	8.05	2250	12400	<0.01	0.120
Average	**0.00625**	**0.05825**	**<0.001**	**166.5**	**0.001025**	**3640**	**0.01625**	**0.0025**	**0.0835**	**13545**	**1.11**	**<0.0001**	**19**	**430**	**0.248**	**2325**	**0.01525**	**0.00325**	**7.71**	**1945**	**9810**	<0.01	**0.0875**
PZH008																							
24/03/2021	0.032	0.021	<0.001	180	<0.0001	3660	<0.001	0.006	0.018	14000	1.42	<0.0001	11	507	0.0065	2350	0.002	0.001	7.62	1820	9700	<0.01	0.015
17/06/2021	0.013	0.016	<0.001	148	<0.0001	3960	<0.001	<0.001	0.002	13100	0.54	<0.0001	9	492	0.0047	2370	<0.001	<0.001	7.57	1720	9170	<0.01	0.007
13/09/2021	0.016	0.018	<0.001	155	<0.0001	3580	<0.001	<0.001	0.003	13400	0.66	<0.0001	10	478	0.053	2220	<0.001	<0.001	7.25	1710	9580	<0.01	0.014
16/12/2021	0.020	0.019	<0.001	142	0.0006	3970	0.010	<0.001	0.044	13300	1.12	<0.0001	9	473	0.108	2240	0.004	<0.001	7.92	1810	10200	<0.01	0.065
Average	**0.02025**	**0.0185**	**<0.001**	**156.25**	**0.0006**	**3792.5**	**0.0085**	**<0.00225**	**0.01675**	**13450**	**0.935**	**<0.0001**	**9.75**	**487.5**	**0.04305**	**2295**	**0.003**	**0.001**	**7.59**	**1765**	**9662.5**	**<0.01**	**0.0253**
PZH009																							
24/03/2021	<0.001	0.05	<0.001	208	0.0008	4770	0.003	0.001	0.082	17900	0.21	<0.0001	17	606	0.172	3220	0.02	<0.001	8.22	2290	12700	<0.01	0.108
16/06/2021	<0.001	0.042	<0.001	172	0.0008	5120	<0.001	<0.001	0.082	17300	<0.05	<0.0001	16	585	0.095	3200	0.016	<0.001	7.83	2160	12200	<0.01	0.094

Date	Arsenic	Barium	Berylliu m	Calcium	Cadmiu m	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercur y	Potassium	Magnesium	Manganes e	Sodiu m	Nickel	Lead	Ph	Sulphate	Total Dissolve d Solids	Vanadiu m	Zinc
Stock Watering Triggers *	0.5	-	-	1000	0.01	-	1	1	1	6000	N/A	0.002	-	-	N/A	-	1	0.1	6 – 9	1000	4000	-	20
Irrigation Triggers #	2	-	0.5	-	0.05	350	0.1	1	5	6000	10	0.002	-	-	10	230	2	5	6 – 9	-	-	0.5	5
13/09/2021	<0.001	0.046	<0.001	173	0.0006	4700	<0.001	0.001	0.102	18300	0.07	<0.0001	16	577	0.099	3020	0.016	<0.001	7.6	2110	12400	<0.01	0.106
16/12/2021	0.001	0.045	<0.001	161	0.0008	5380	0.002	0.001	0.098	17200	0.18	<0.0001	16	564	0.072	3050	0.018	<0.001	8.0	2280	13500	<0.01	0.127
Average	**0.001**	**0.04575**	**<0.001**	**178.5**	**0.00075**	**4992.5**	**0.0025**	0.001	**0.091**	**17675**	**0.153333**	**<0.0001**	**16.25**	**583**	**0.1095**	**3122.5**	**0.0175**	**<0.001**	**7.913**	**2210**	**12700**	**<0.01**	**0.1088**
PZH014																							
24/03/2021	0.001	0.005	<0.001	218	0.0002	4080	<0.001	0.004	0.011	15300	0.37	<0.0001	14	578	0.007	2550	0.003	<0.001	8.12	1760	10600	<0.01	0.02
29/06/2021	0.002	0.004	<0.001	178	0.0002	4380	<0.001	0.003	0.013	14200	0.43	<0.0001	12	562	0.008	2510	0.003	0.002	7.68	1750	10100	<0.01	0.015
14/09/2021	0.001	0.004	<0.001	186	<0.0001	4180	<0.001	0.002	0.009	16000	0.24	<0.0001	13	537	0.012	2370	0.002	<0.001	7.37	1840	11000	<0.01	0.015
16/12/2021	0.001	0.004	<0.001	174	0.0002	4480	<0.001	<0.001	0.005	14500	<0.05	<0.0001	12	532	0.019	2390	0.003	<0.001	7.86	1870	11600	<0.01	0.015
Average	**0.00125**	**0.00425**	**<0.001**	**189**	**0.0002**	**4280**	**<0.001**	**0.003**	**0.0095**	**15000**	**0.346667**	**<0.0001**	**12.75**	**552.25**	**0.0115**	**2552.5**	**0.00275**	**0.001**	**7.758**	**1805**	**10825**	**<0.01**	**0.0163**
PZH015																							
24/03/2021	<0.001	0.009	<0.001	125	0.0001	3300	<0.001	0.014	0.01	12400	0.2	0.0001	39	424	0.024	2160	0.003	<0.001	8.19	2000	8640	<0.01	0.02
29/06/2021	<0.001	0.006	<0.001	190	<0.0001	4830	<0.001	0.009	0.005	16100	0.06	<0.0001	24	602	0.024	3090	0.002	<0.001	7.55	2510	12500	<0.01	0.009
14/09/2021	<0.001	0.008	<0.001	201	<0.0001	4750	0.001	0.019	0.016	17900	0.11	<0.0001	25	600	0.029	3010	0.003	<0.001	7.49	2590	12700	<0.01	0.024
16/12/2021	<0.001	0.007	<0.001	186	0.0001	4950	<0.001	0.012	0.016	16900	0.42	<0.0001	24	592	0.012	3000	0.004	<0.001	7.88	2830	13200	<0.01	0.019
Average	**<0.001**	**0.0075**	**<0.001**	**175.5**	**0.0001**	**4457.5**	**0.0025**	**0.0135**	**0.01175**	**15825**	**0.1975**	**0.0001**	**28**	**554.5**	**0.02225**	**2815**	**0.003**	**<0.001**	**7.778**	**2482.5**	**11760**	**<0.01**	**0.018**
PZH017																							
25/01/2021	<0.001	0.029	<0.001	116	<0.0001	3260	<0.001	<0.001	0.005	12100	2.01	<0.0001	14	270	0.066	2040	<0.001	<0.001	7.9	799	7460	<0.01	0.028
27/04/2021	<0.001	0.031	<0.001	121	<0.0001	3360	<0.001	<0.001	0.002	12100	1.78	<0.0001	14	298	0.068	2210	<0.001	<0.001	7.93	907	7850	<0.01	<0.005
26/07/2021	<0.001	0.029	<0.001	107	<0.0001	3230	<0.001	<0.001	0.004	11500	0.51	<0.0001	14	279	0.058	2080	<0.001	<0.001	8.04	856	7460	<0.01	0.015
28/10/2021	<0.001	0.028	<0.001	115	0.0002	3630	0.004	<0.001	0.017	12000	0.29	<0.0001	14	272	0.068	2060	0.002	<0.001	8.18	971	7400	<0.01	0.033
Average	**<0.001**	**0.029**	**<0.001**	**114.75**	**0.0001**	**3370**	**0.0017**	**<0.001**	**0.00525**	**11925**	**1.1475**	**<0.0001**	**14**	**279.75**	**0.065**	**2097.5**	0.002	**<0.001**	**8.01**	**883.25**	**7542.5**	**<0.01**	**0.0203**
PZH018																							
25/01/2021	<0.001	0.03	<0.001	340	<0.0001	7450	<0.001	<0.001	0.002	25800	0.38	<0.0001	30	804	0.332	4240	0.002	<0.001	7.76	2370	18700	<0.01	0.006
27/04/2021	<0.001	0.032	<0.001	342	0.0001	8040	0.002	0.001	0.006	25700	0.52	<0.0001	32	882	0.442	4590	0.003	<0.001	7.8	2580	19200	<0.01	0.014

Date	Arsenic	Barium	Beryllium	Calcium	Cadmium	Chloride	Cobalt	Chromium	Copper	EC µS/cm	Iron	Mercury	Potassium	Magnesium	Manganese	Sodium	Nickel	Lead	Ph	Sulphate	Total Dissolved Solids	Vanadium	Zinc
Stock Watering Triggers *	0.5	-	-	1000	0.01	-	1	1	1	6000	N/A	0.002	-	-	N/A	-	1	0.1	6 – 9	1000	4000	-	20
Irrigation Triggers #	2	-	0.5	-	0.05	350	0.1	1	5	6000	10	0.002	-	-	10	230	2	5	6 – 9	-	-	0.5	5
14/07/2021	<0.001	0.032	<0.001	299	<0.0001	7510	0.002	0.001	0.007	24300	0.52	<0.0001	30	826	0.333	4400	0.003	<0.001	7.81	2700	19100	<0.01	0.015
28/10/2021	<0.001	0.031	<0.001	341	<0.0001	8240	0.003	0.001	0.011	24800	0.6	<0.0001	29	796	0.36	4240	0.003	<0.001	8.07	2460	18700	<0.01	0.021
Average	**<0.001**	**0.031**	**<0.001**	**330.5**	**<0.0001**	**7810**	**0.002**	**0.001**	**0.0065**	**25150**	**0.505**	**<0.0001**	**30.25**	**827**	**0.36675**	**4367.5**	**0.00275**	**<0.001**	**7.86**	**2527.5**	**18925**	**<0.01**	**0.014**
PZH019																							
25/01/2021	0.01	0.032	<0.010	253	<0.0010	6070	<0.010	<0.010	0.013	21200	2.54	<0.0001	26	713	0.092	3720	<0.010	<0.010	7.85	2010	15000	<0.10	0.069
27/04/2021	<0.001	0.03	<0.001	250	<0.0001	5720	0.002	<0.001	0.008	18900	0.63	<0.0001	29	614	0.242	3500	0.002	<0.001	7.8	1700	12900	<0.01	0.015
26/07/2021	0.003	0.023	<0.001	81	<0.0001	2970	<0.001	<0.001	0.006	10600	0.06	<0.0001	10	276	0.006	1840	0.014	<0.001	7.95	776	6730	<0.01	0.048
28/10/2021	<0.001	0.059	<0.001	248	0.0002	6140	0.003	<0.001	0.052	21600	5.38	<0.0001	18	622	1.08	2910	0.002	<0.001	8.11	2360	16100	<0.01	0.034
Average	**0.0065**	**0.036**	**<0.001**	**208**	**0.0002**	**5225**	**0.0025**	**<0.001**	**0.01975**	**18075**	**2.1525**	**<0.0001**	**20.75**	**556.25**	**0.0355**	**2992.5**	**0.006**	**<0.001**	**7.928**	**1711.5**	**12682.5**	**<0.01**	**0.0415**
PZH020																							
25/01/2021	<0.001	<0.001	<0.001	27	<0.0001	694	<0.001	<0.001	0.002	2730	<0.05	<0.0001	6	67	0.002	418	<0.001	<0.001	7.56	232	1580	<0.01	0.009
27/04/2021	<0.001	0.01	<0.001	126	<0.0001	3590	<0.001	<0.001	0.003	13000	0.07	<0.0001	34	314	0.014	2340	<0.001	<0.001	7.67	1090	8320	<0.01	0.013
14/07/2021	<0.001	0.008	<0.001	128	<0.0001	3760	0.001	<0.001	0.006	13400	0.07	<0.0001	31	357	0.02	2480	0.001	<0.001	7.79	1380	8890	<0.01	0.02
27/10/2021	<0.001	0.032	<0.001	308	0.0006	7850	0.01	<0.001	0.097	23800	0.64	<0.0001	28	750	0.411	4050	0.006	<0.001	8.07	2270	17600	<0.01	0.098
Average	**<0.001**	**0.01667**	**<0.001**	**147.25**	**0.00026**	**3973.5**	**0.0055**	**<0.001**	**0.027**	**13232.5**	**0.26**	**<0.0001**	**24.75**	**372**	**0.11175**	**2322**	**0.00235**	**<0.001**	**7.773**	**1243**	**9097.5**	**<0.01**	**0.035**
PZH021																							
25/01/2021	<0.001	0.062	<0.001	256	<0.0001	4480	<0.001	<0.001	0.003	16100	5.97	<0.0001	16	533	1.18	2390	<0.001	<0.001	7.67	1600	10700	<0.01	0.007
27/04/2021	<0.001	0.069	<0.001	271	<0.0001	4700	<0.001	<0.001	0.001	16000	6.69	<0.0001	16	585	1.29	2590	<0.001	<0.001	7.74	1500	11400	<0.01	0.005
14/07/2021	<0.001	0.06	<0.001	215	<0.0001	4400	<0.001	<0.001	0.004	15100	5.94	<0.0001	15	508	1.02	2300	<0.001	<0.001	7.72	1680	10600	<0.01	0.01
28/10/2021	<0.001	0.063	<0.001	257	<0.0001	4990	<0.001	<0.001	0.003	15800	6.28	<0.0001	16	539	1.24	2440	<0.001	<0.001	8.01	1500	11700	<0.01	0.007
Average	**<0.001**	**0.0635**	**<0.001**	**249.75**	**<0.0001**	**4642.5**	**<0.001**	**<0.001**	**0.00275**	**15750**	**6.22**	**<0.0001**	**15.75**	**541.25**	**1.1825**	**2430**	**<0.001**	**<0.001**	**7.785**	**1570**	**11100**	**<0.01**	**0.0073**

* ANSECC Stock water guidelines for cattle (Primary)

\# ANZECC Irrigation and general use guidelines for wheat (Secondary)

N/A – Not sufficiently toxic to stock

Appendix C
Stability Analyses

GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

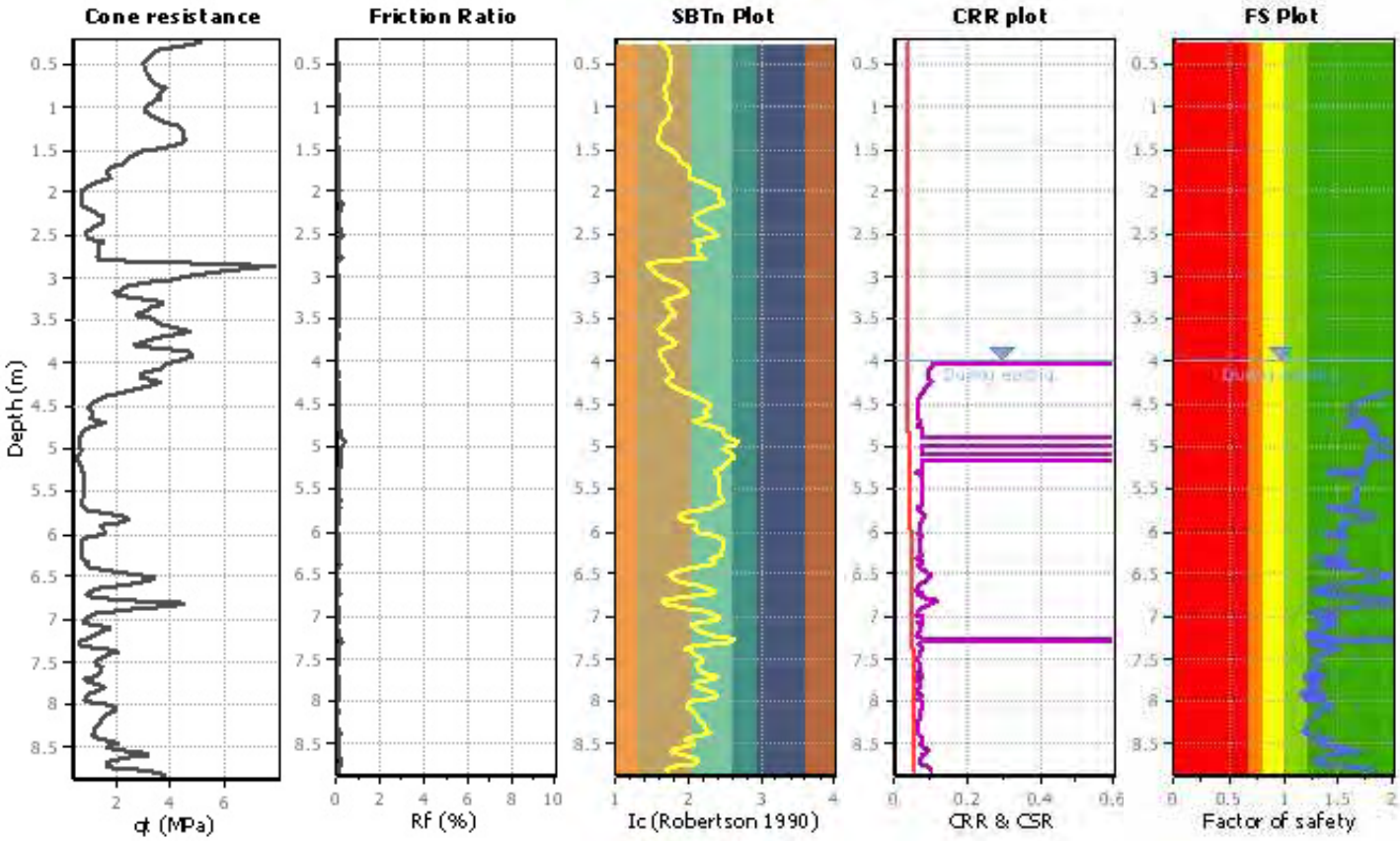
LIQUEFACTION ANALYSIS REPORT

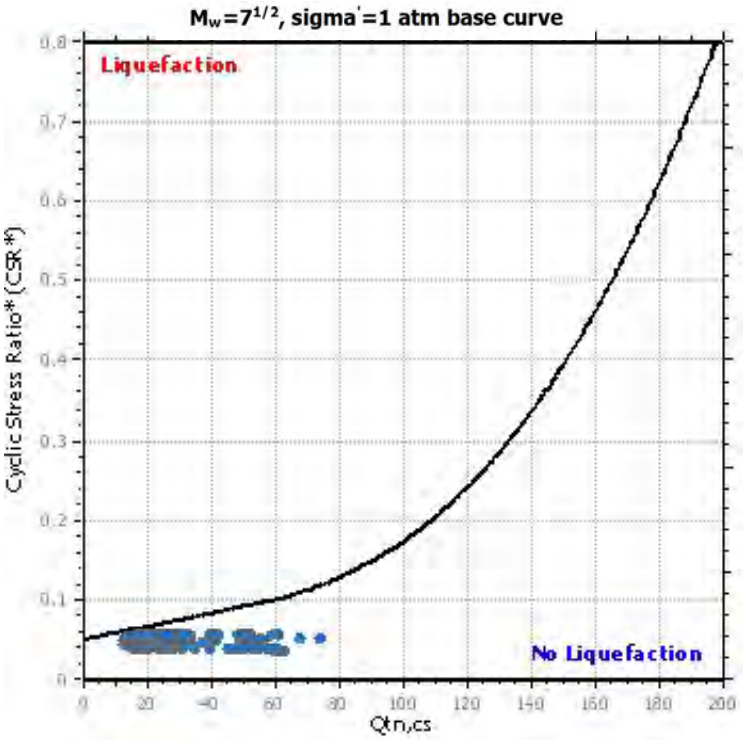
Project title : **Location :**

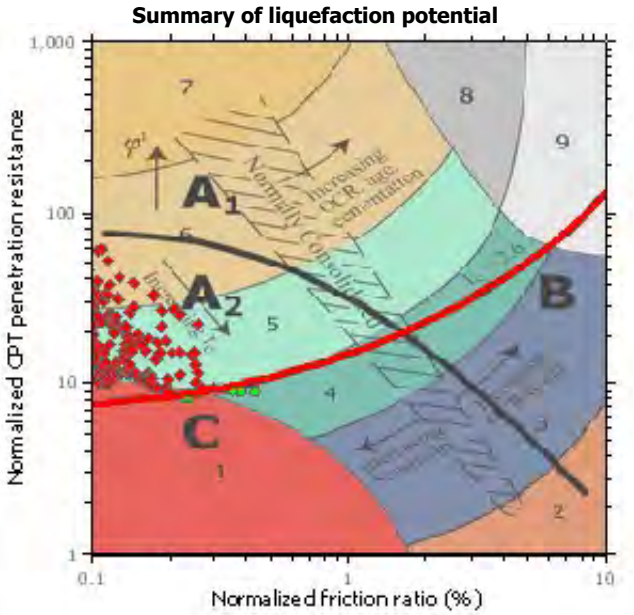
CPT file : AR0002M3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	0.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	4.00 m	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.10	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		







Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

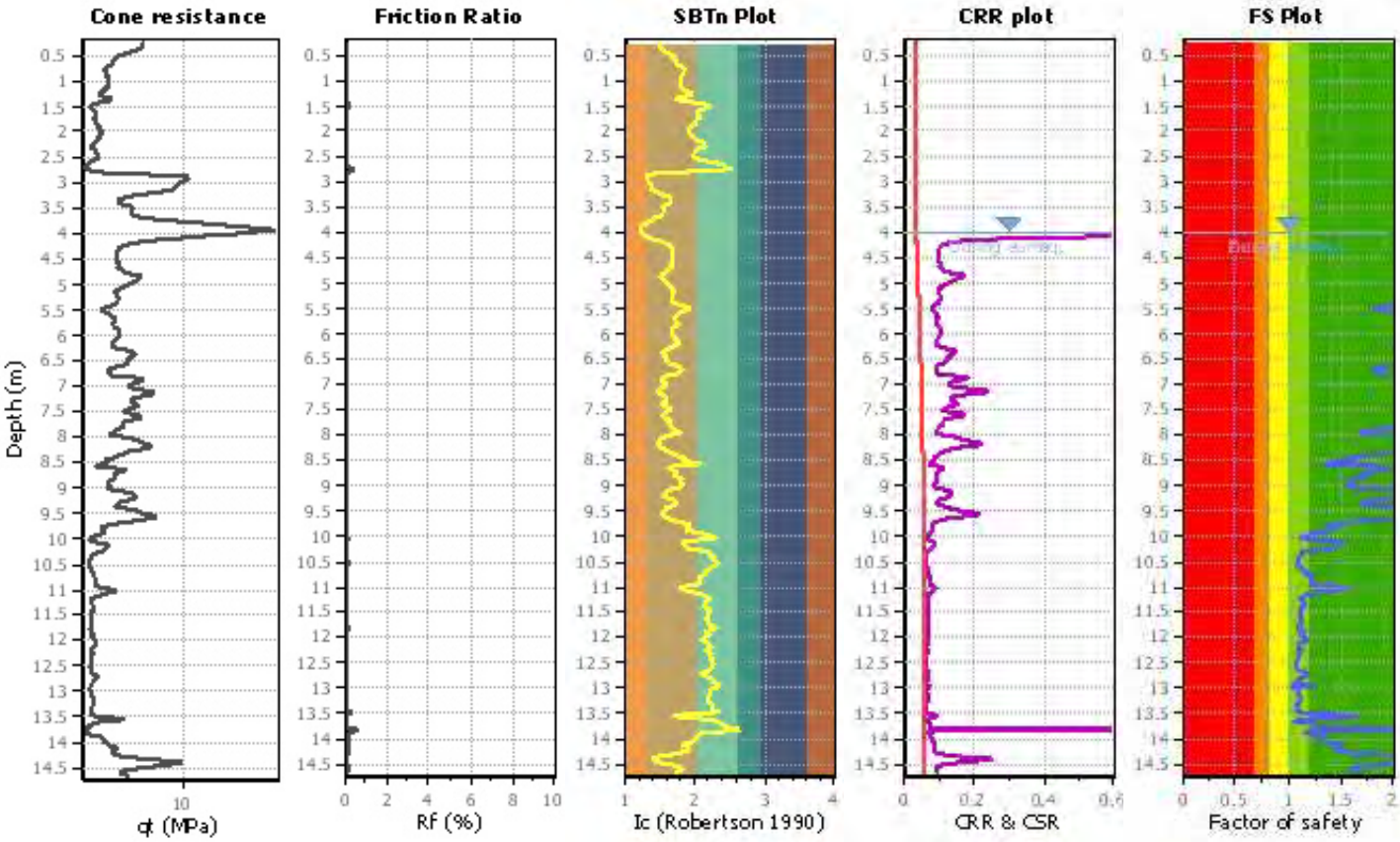
LIQUEFACTION ANALYSIS REPORT

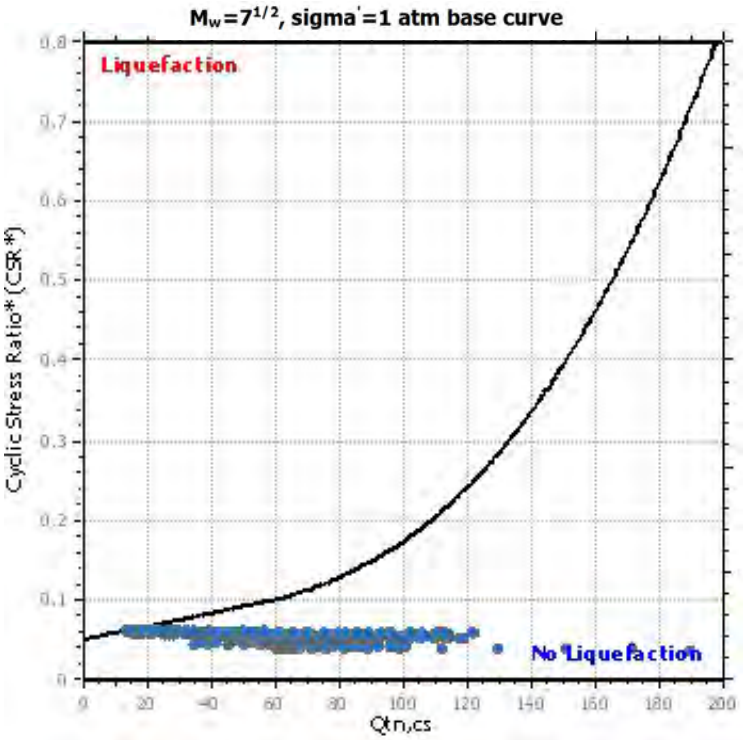
Project title : **Location :**

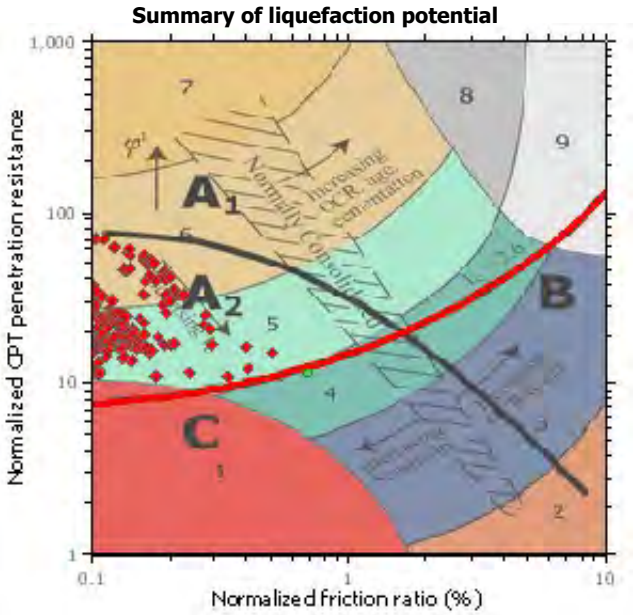
CPT file : AR0003M3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	0.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	4.00 m	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.10	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		







Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

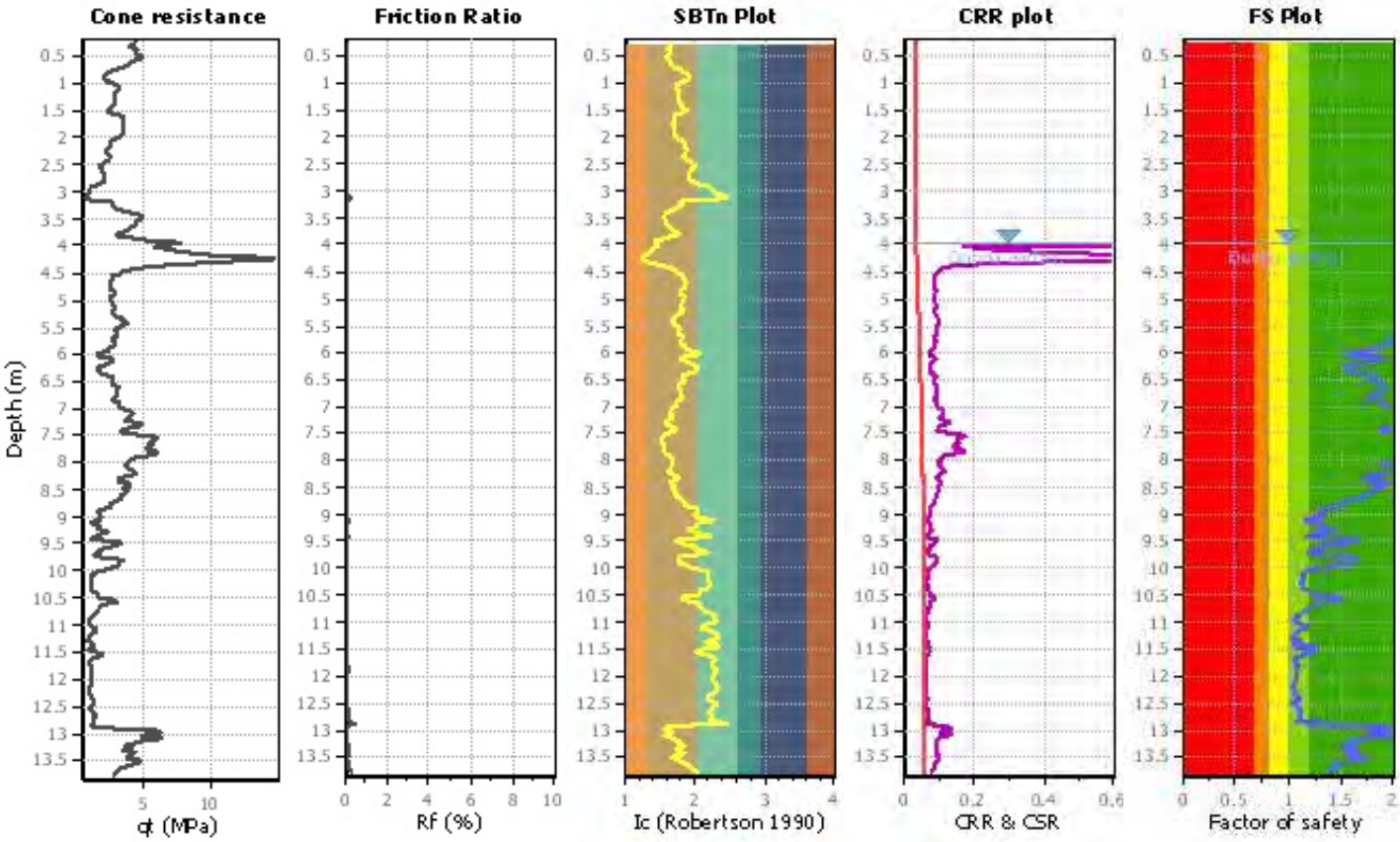
LIQUEFACTION ANALYSIS REPORT

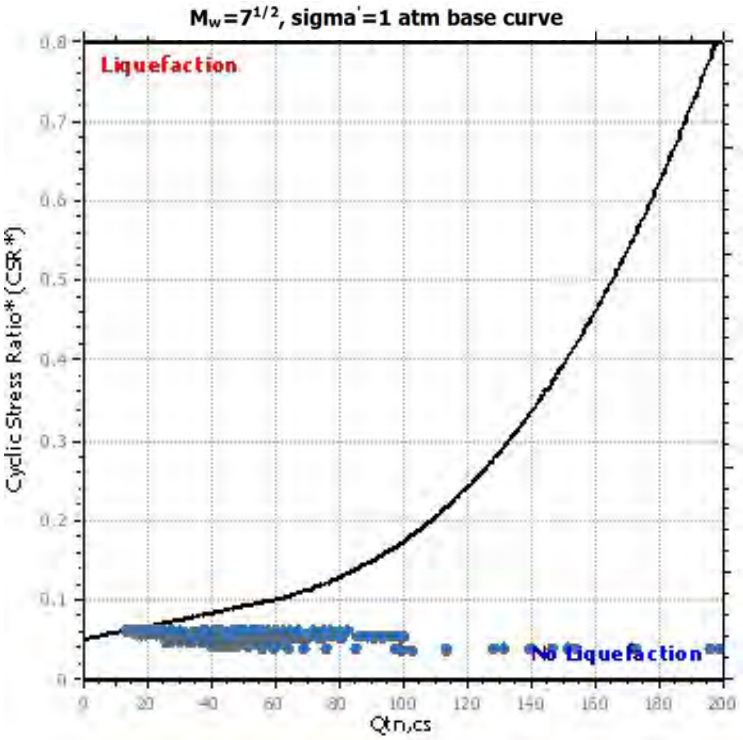
Project title : **Location :**

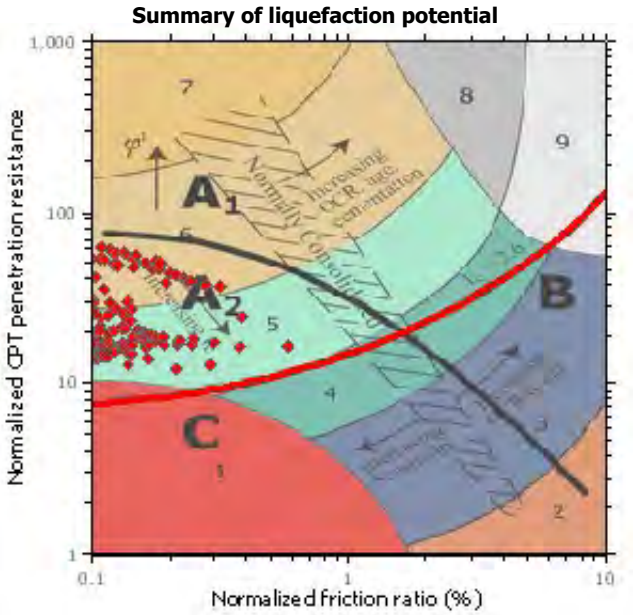
CPT file : AR0004M3

Input parameters and analysis data

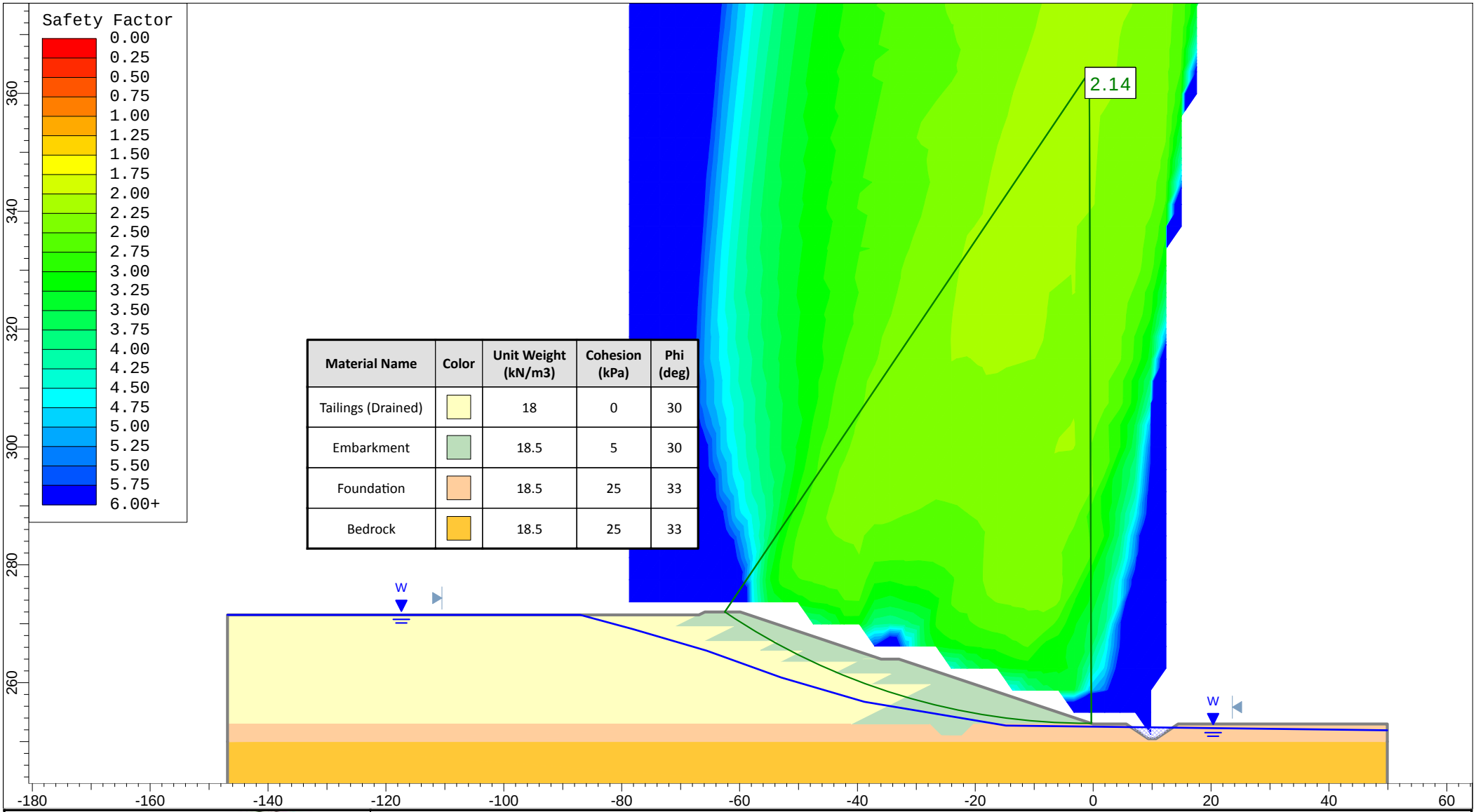
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	0.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	4.00 m	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.00	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.10	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		







Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

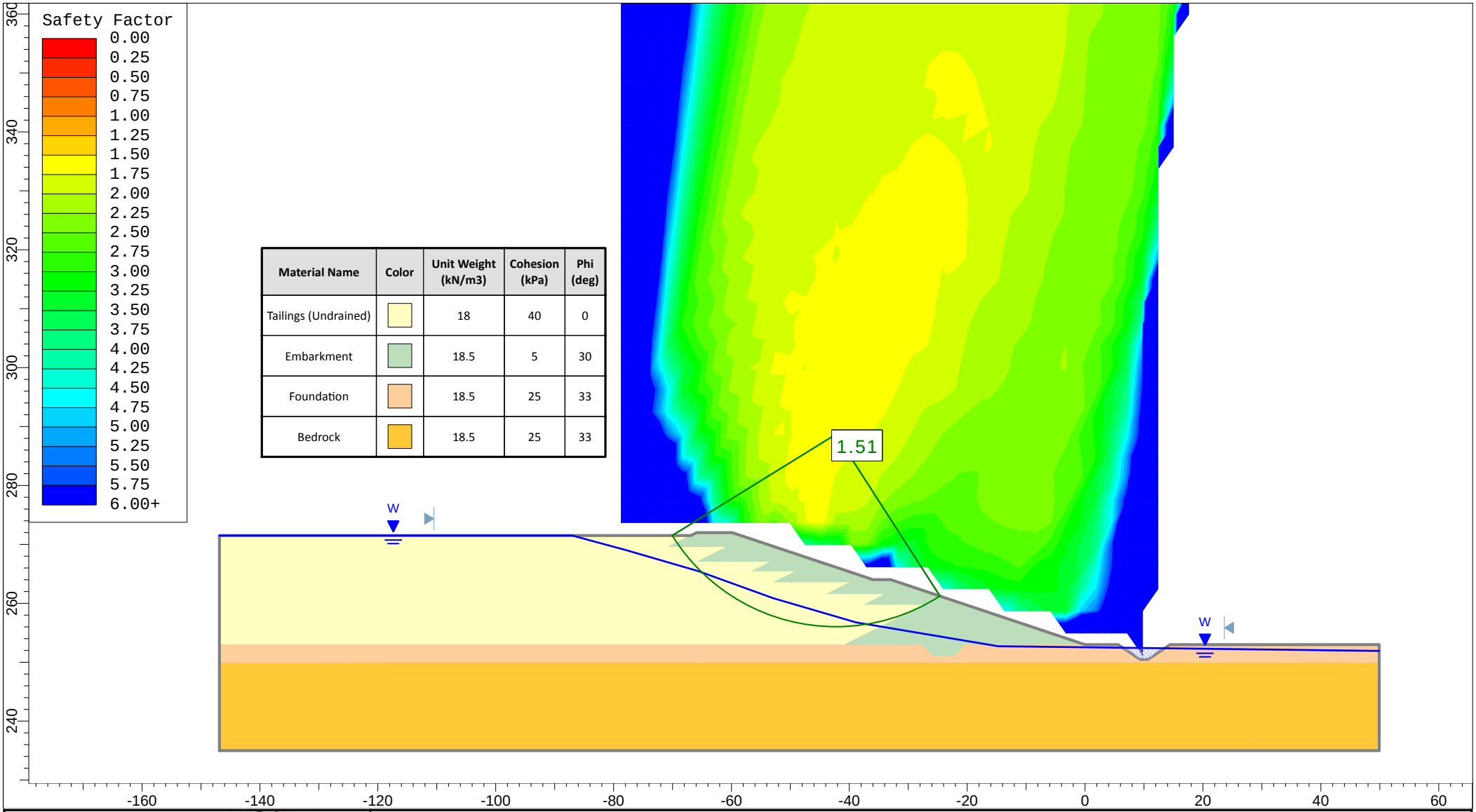


Material Name	Color	Unit Weight (kN/m3)	Cohesion (kPa)	Phi (deg)
Tailings (Drained)		18	0	30
Embarkment		18.5	5	30
Foundation		18.5	25	33
Bedrock		18.5	25	33

Project	Tritton Copper Tailings Dam		
Analysis Description	Main Embarkment Crest RL272 Drained Stability Analysis		
Drawn By MS	*Scale* 1:900	*Company*	Aeris Tritton Operations
Date 21/11/2017, 12:26:24 PM		*File Name*	Tritton Copper Tailings (Drained).slim

CMW Geosciences

SLIDEINTERP 7.026



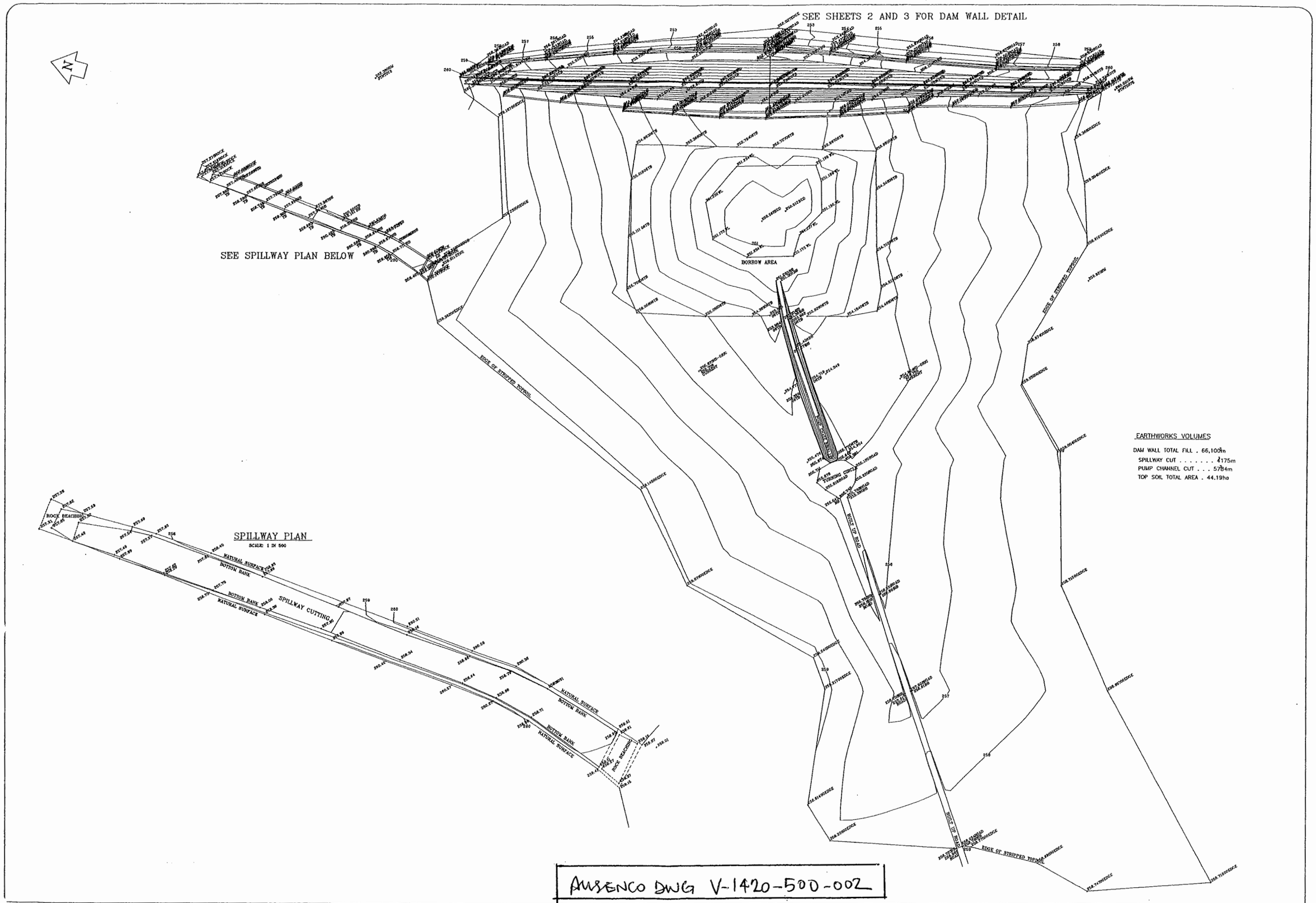
Material Name	Color	Unit Weight (kN/m3)	Cohesion (kPa)	Phi (deg)
Tailings (Undrained)		18	40	0
Embarkment		18.5	5	30
Foundation		18.5	25	33
Bedrock		18.5	25	33

Project	Tritton Copper Tailings Dam		
Analysis Description	Main Embarkment Crest RL272 Undrained Stability Analysis		
Drawn By	MS	*Scale* 1:900	*Company* Aeris Tritton Operations
Date	21/11/2017, 12:26:24 PM		*File Name* Tritton Copper Tailings (Undrained2).slim

CMW Geosciences

SLIDEINTERP 7.026

Appendix D
Design Information



AUSENCO DWG V-1420-500-002

SCALES : HORIZ 1 IN 1250 (A0) VERT ____ (0 20 40 60 80 100m)	AMENDMENTS	BY	DATE
DATUM : LOCAL. CONTOUR INTERVAL. : MAJOR 5m MINOR 1m	SURVEYED S. JACKSON DESIGNED ____ CHECKED P. COVELL		

M. F-G. SHAW & ASSOCIATE PTY.LTD.
CONSULTING SURVEYORS
PO BOX 774 MOREE 2400
PHONE (02) 67 521021, FAX (02) 67 525070

PROJECT: TRITON COPPER PROJECT, NYNGAN
PLAN : TAILINGS STORAGE FACILITY AS CONSTRUCTED SURVEY

FILE No. 04/122	No. OF SHEETS	SHEET No.
PLAN No. 04/122-1	3	1
DATE 20 SEP 2004		

DRAWING FILE : WILDTDAM.VCD

FIGURE 20

(Supplied by others)

REF:
DWG: F:\MINE\MH00001 to MH00173\MWP00100AG Triton 2007 Surveillance\DWG\Working\MWP00100AG-FIG21.dwg

drawn	PP	coffey mining SPECIALISTS FROM BOARDROOM TO MINE FACE	client:	STRAITS TRITTON PTY LTD		
approved	IG		project:	SURVEILLANCE REVIEW		
date	10/04/08		title:	STAGE 2 AS CONSTRUCTED DETAILS		
scale	1:3000		project no:	MWP00000AA	fig no: 21	rev:
original size	A4					

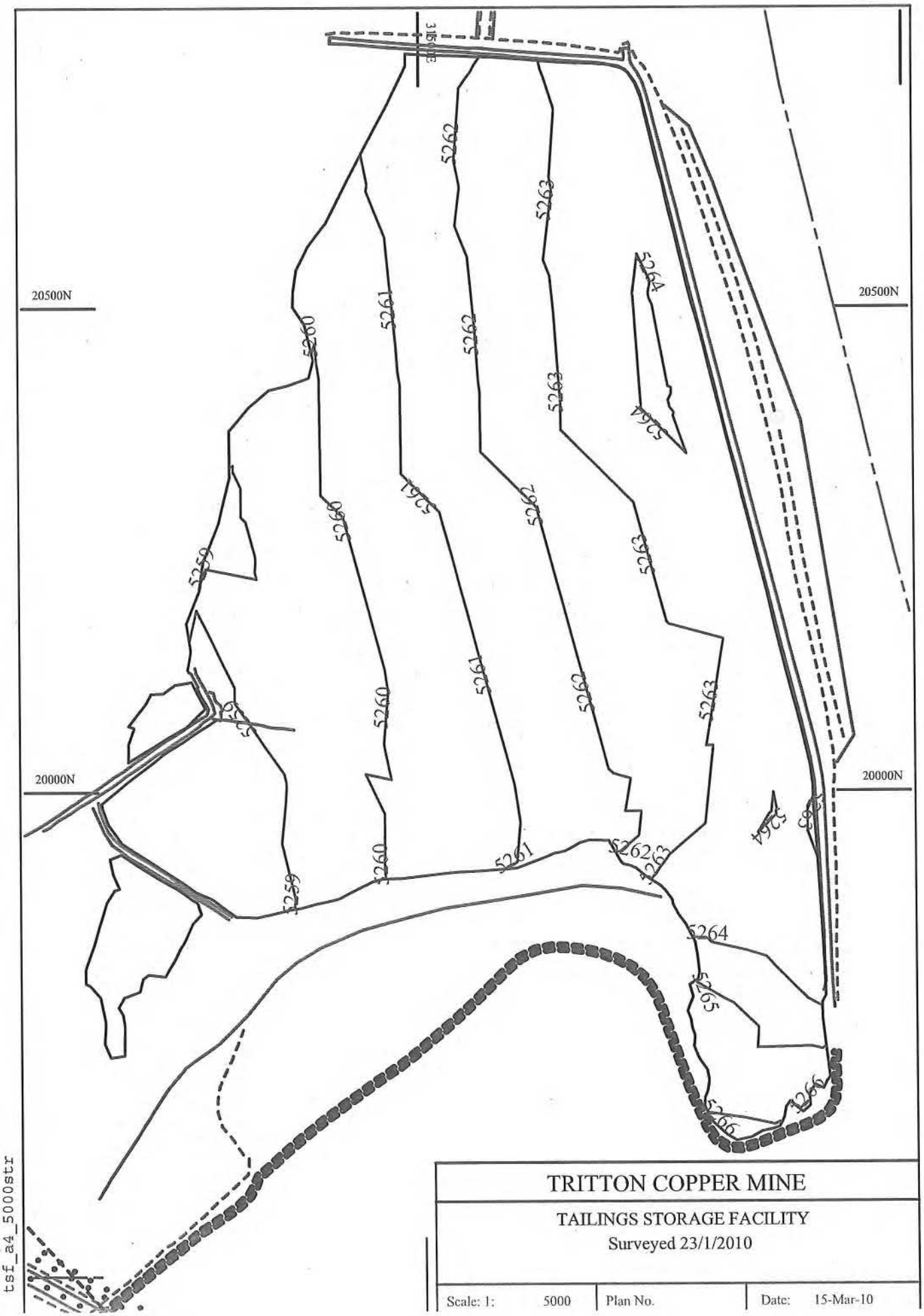

20500N
20500N
20000N
20000N
5259
5260
5261
5262
5263
5264
5265
5266
TRITTON COPPER MINE
TAILINGS STORAGE FACILITY
Surveyed 23/1/2010
Scale: 1: 5000
Plan No.
Date: 15-Mar-10
tsf_a4_5000str

Figure 22

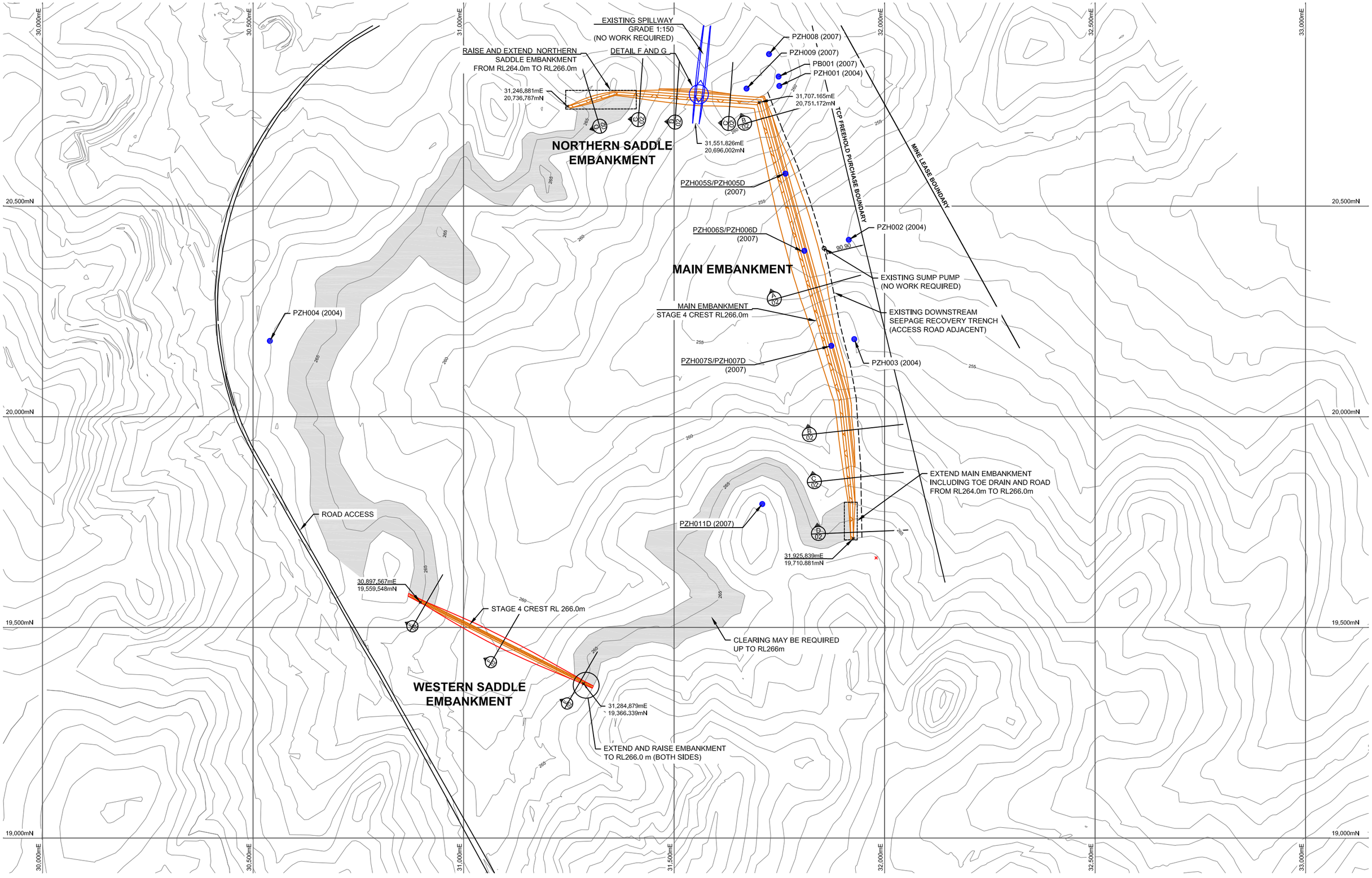


Figure 23

rev no	revision note	date	approved
1	ISSUED FOR TENDERING	17/09/12	IG

Drawn:	CLG
Approved:	IG
Date:	17/09/12
Scale:	NTS
Original size:	A1

coffey mining
SPECIALISTS FROM BOARDROOM TO MINE FACE

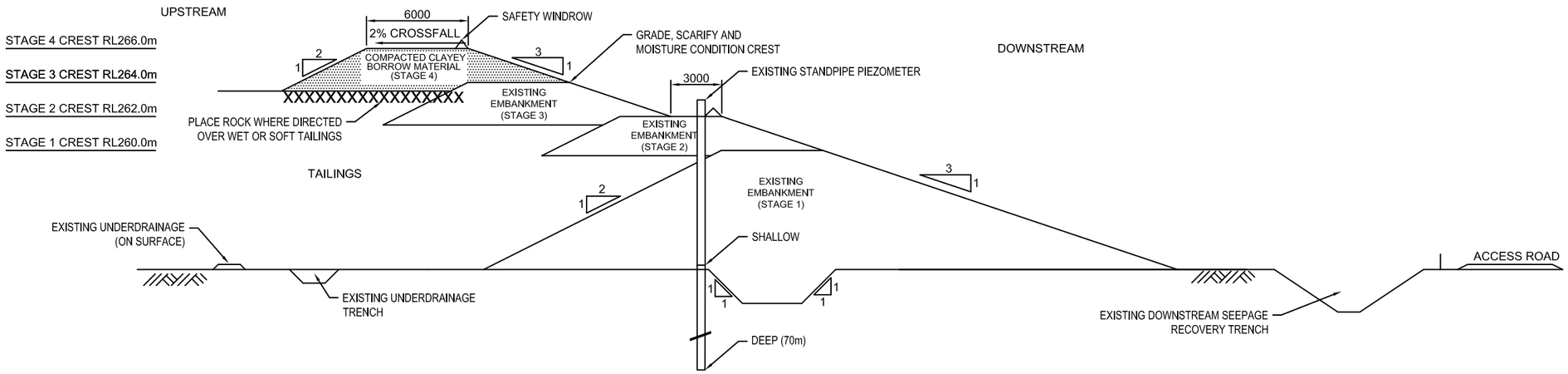
Client: STRAITS TRITTON RESOURCES LIMITED

Project: TRITTON COPPER PROJECT
TAILINGS DAM 1

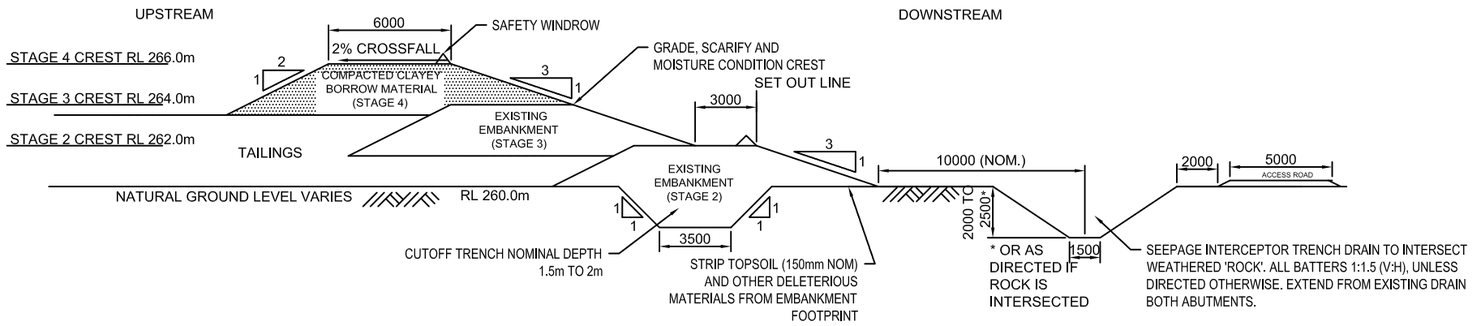
Title: PLAN EMBANKMENT RAISING - STAGE 4 (RL264.0m TO RL266.0m)

Project no: MWP00100AQ | Dwg no: MWP00100AQ-01 | Rev: 1

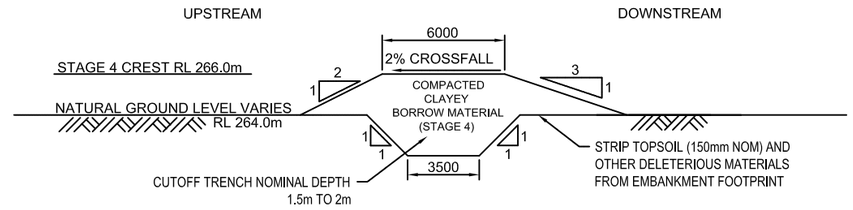
REF:
DWG: F:\MINE\Projects\Straits Tritton Copper\MINE\WPER00100AQ_Stage 4 Lift TSF1\Figures\MWP00100AQ_01 Rev1.dxf



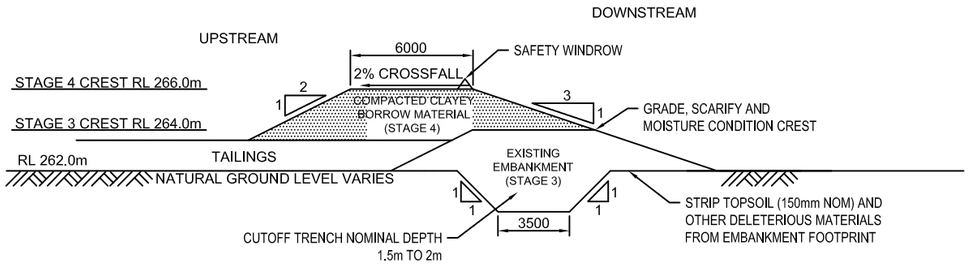
A 01 MAIN EMBANKMENT RAISE - STAGE 4
TYPICAL SECTION OVER TAILINGS
SCALE 1:150



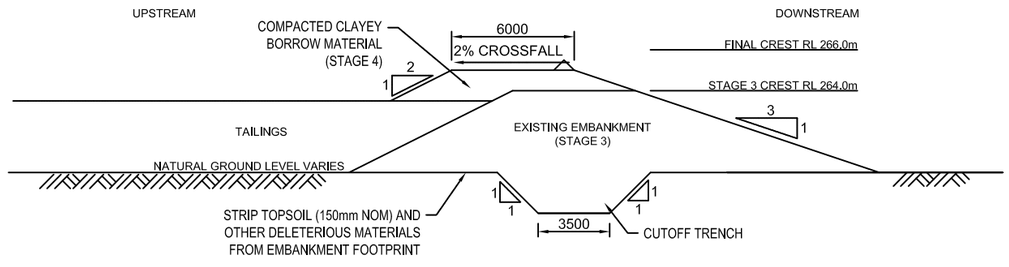
B 01 MAIN EMBANKMENT EXT. RAISE - STAGE 4
SECTION OVER NATURAL GROUND RL 260.0m TO RL 262.0m
SCALE 1:150



D 01 MAIN EMBANKMENT EXT. RAISE - STAGE 4
SECTION OVER NATURAL GROUND RL 264.0m TO RL 266.0m
SCALE 1:150



C 01 MAIN EMBANKMENT EXT. RAISE - STAGE 4
SECTION OVER NATURAL GROUND RL 262.0m TO RL 264.0m
SCALE 1:150



E 01 NORTH AND SOUTH SADDLE EMBANKMENT RAISE - STAGE 4
TYPICAL SECTION
SCALE 1:150

Figure 24

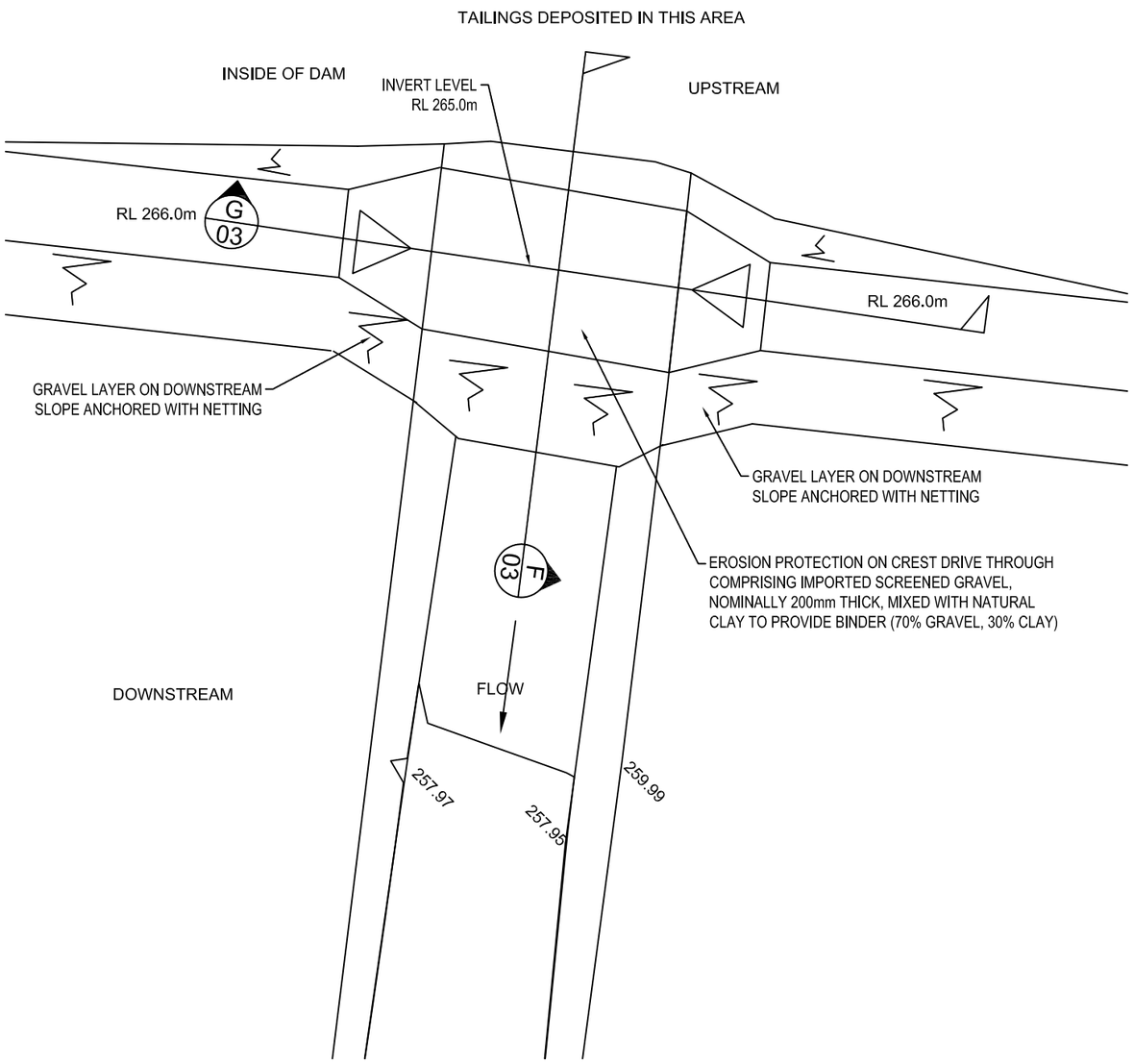
rev no	revision note	date	approved
1	ISSUED FOR TENDERING	17/09/12	IG

Drawn:	CLG
Approved:	IG
Date:	17/09/12
Scale:	AS SHOWN
Original size:	A1

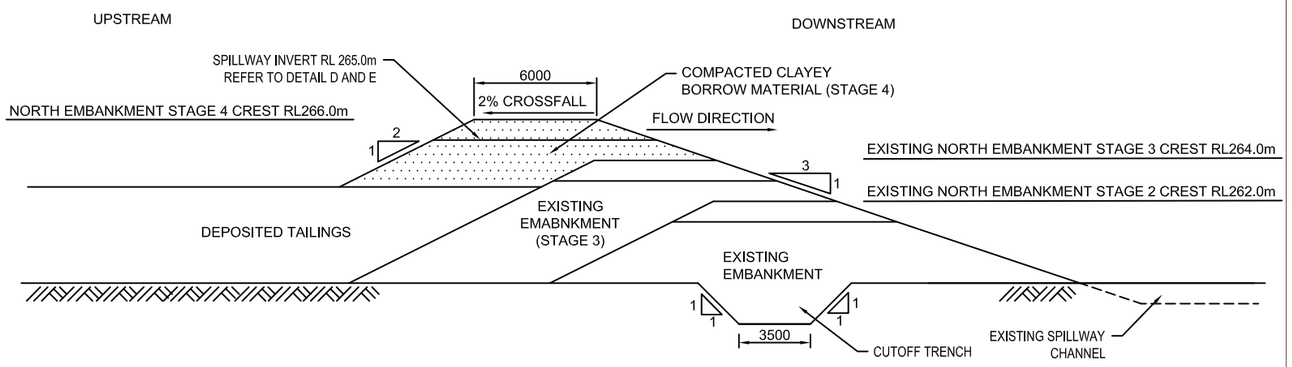
coffey mining — SPECIALISTS FROM BOARDROOM TO MINE FACE

Client:	STRAITS TRITTON RESOURCES LIMITED
Project:	TRITTON COPPER PROJECT TAILINGS DAM 1
Title:	SECTIONS AND DETAILS - STAGE 4
Project no:	MWP00100AQ
Dwg no:	MWP00100AQ-02
Rev:	1

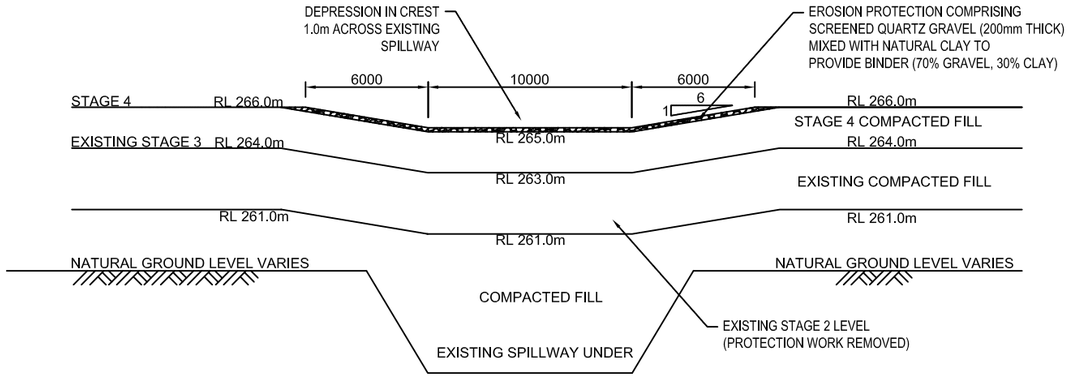
REF:
DWG: F:\MINE\Projects\Straits Tritton Copper\MINE\WPER00100AQ_Stage 4 Lift TSF1\Figures\MWP00100AQ_02 Rev1.dwf



NORTH SADDLE EMBANKMENT - STAGE 4
PLAN VIEW ACROSS EXISTING SPILLWAY
SCALE 1:200



F
03
NORTH SADDLE EMBANKMENT - STAGE 4
SPILLWAY AREA CROSS-SECTION
SCALE 1:150



G
03
NORTH SADDLE EMBANKMENT - STAGE 4
SPILLWAY DETAIL SECTION
SCALE 1:150

Figure 25

rev no	revision note	date	approved
1	ISSUED FOR TENDERING	17/09/12	IG

Drawn:	CLG
Approved:	IG
Date:	17/09/12
Scale:	AS SHOWN
Original size:	A1

coffey mining
SPECIALISTS FROM BOARDROOM TO MINE FACE

Client:	STRAITS TRITTON RESOURCES LIMITED
Project:	TRITTON COPPER PROJECT TAILINGS DAM 1
Title:	SPILLWAY SECTIONS AND DETAILS - STAGE 4
Project no:	MWP00100AQ
Dwg no:	MWP00100AQ-03
Rev:	1

REF:
DWG: F:\MINE\Projects\Straits Tritton Copper\MINE\WPER00100AQ_Stage 4 Lift TSF1\Figures\MWP00100AQ_03 Rev1.dxf

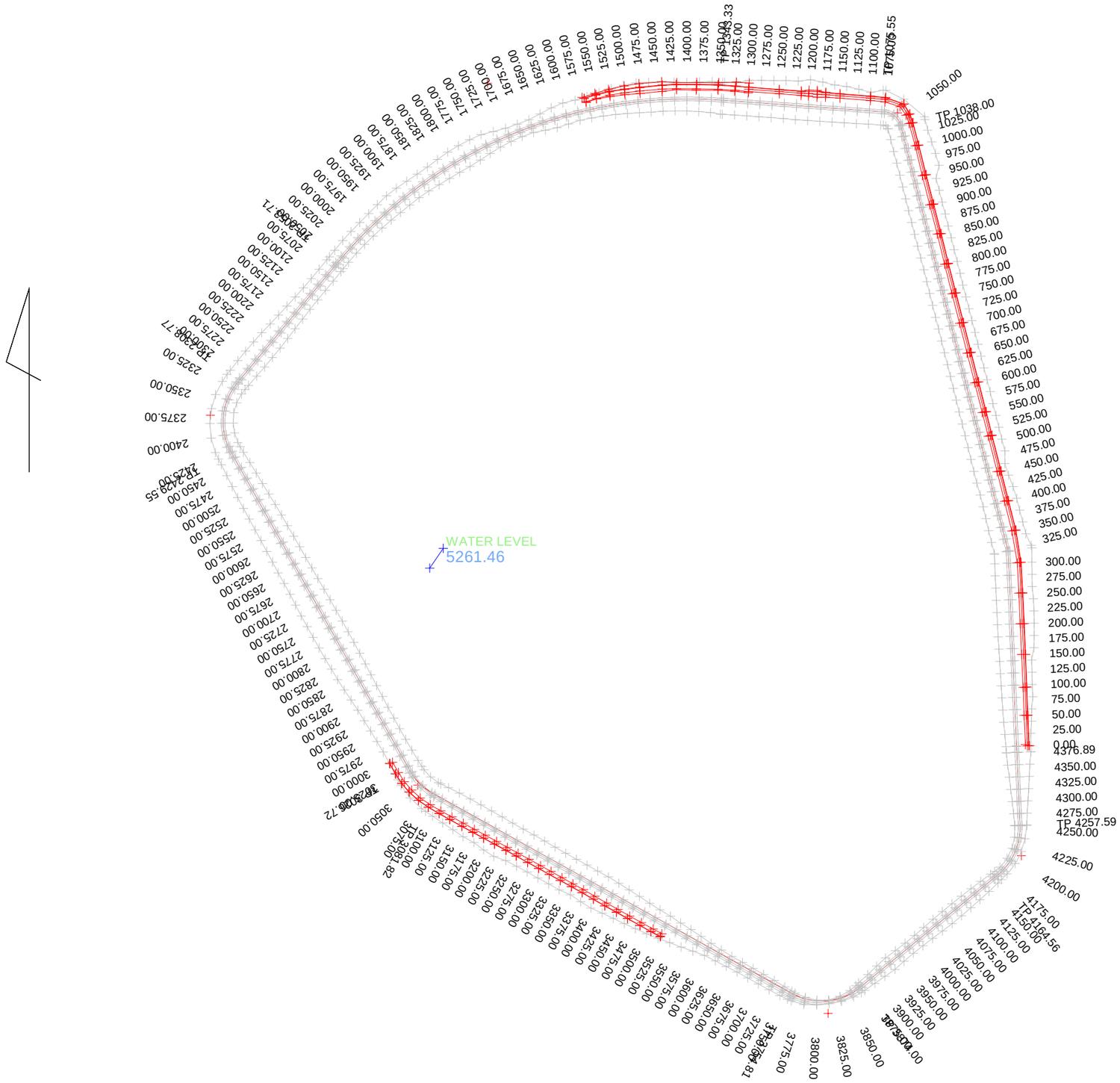
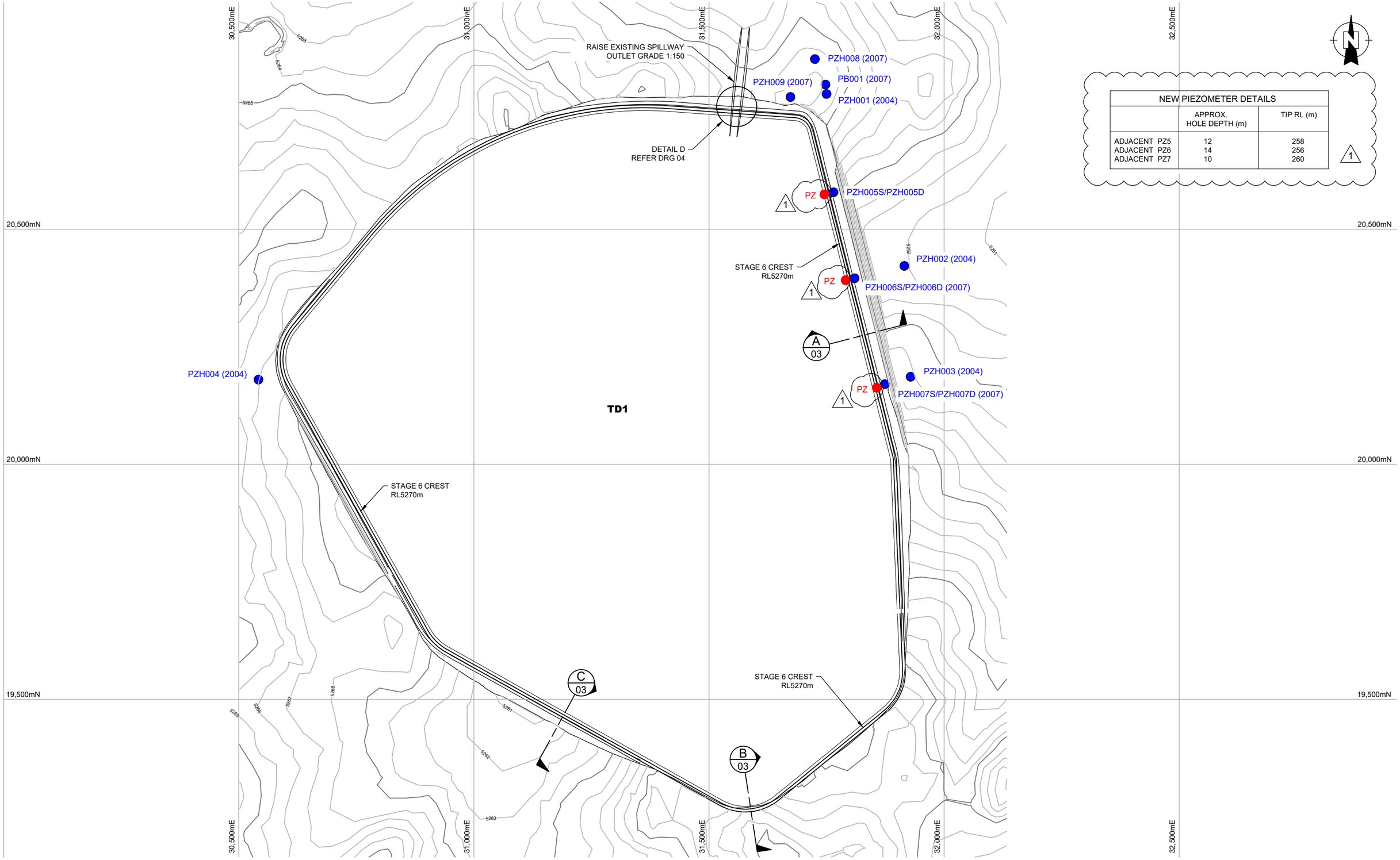


FIGURE 26

ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 23
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	CIVIL ENGINEERING	TRITTON TAILINGS DAM	TRITDAM S4 ASBUILT - MP ASB266	
11/03/2015	HEIGHT DATUM			STAGE 4 ALIGNMENT RL5273	PLAN NUMBER	**Sheet Number: 2**
	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	ASBUILT RL 266		

A3



NEW PIEZOMETER DETAILS		
	APPROX. HOLE DEPTH (m)	TIP RL (m)
ADJACENT PZ5	12	258
ADJACENT PZ6	14	256
ADJACENT PZ7	10	260

1

LEGEND:

- PZH004 EXISTING PIEZOMETER
- PZ PROPOSED PIEZOMETER
- 1 REV. 1

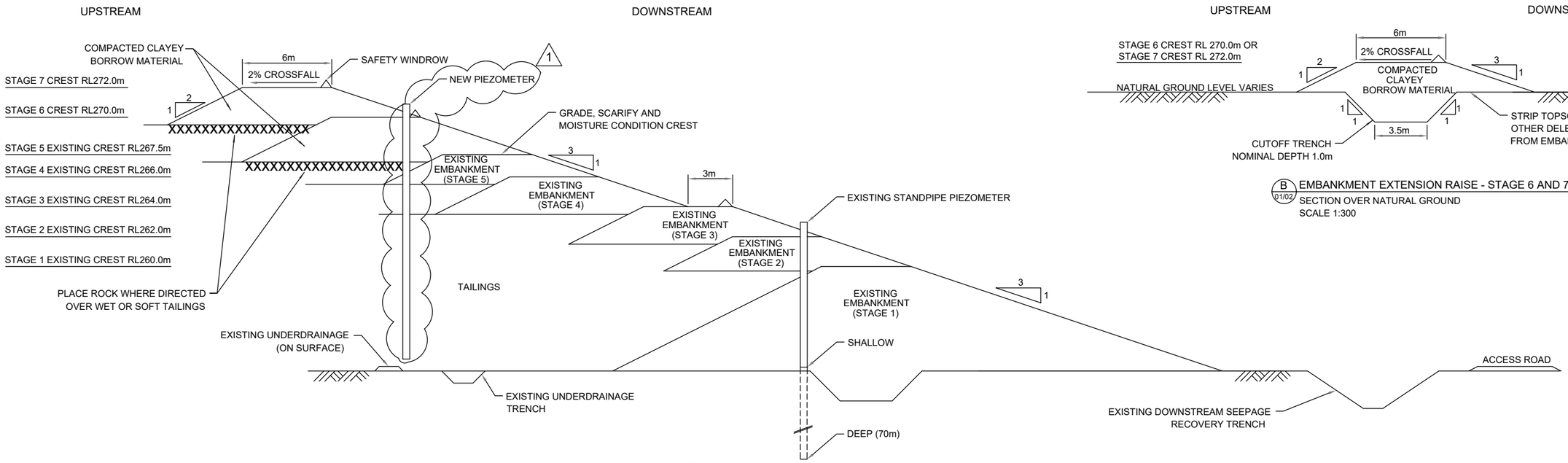
NOTES:

1. EXISTING DECANT ACCESSWAY TO BE RAISED AS REQUIRED BY SITE DICTATED CONDITIONS

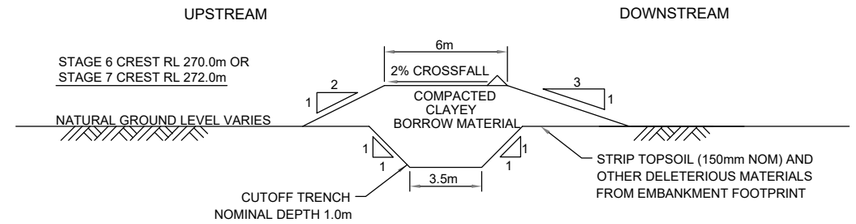
1:7500 0 75 150 225 300 375 m

CMW Geosciences

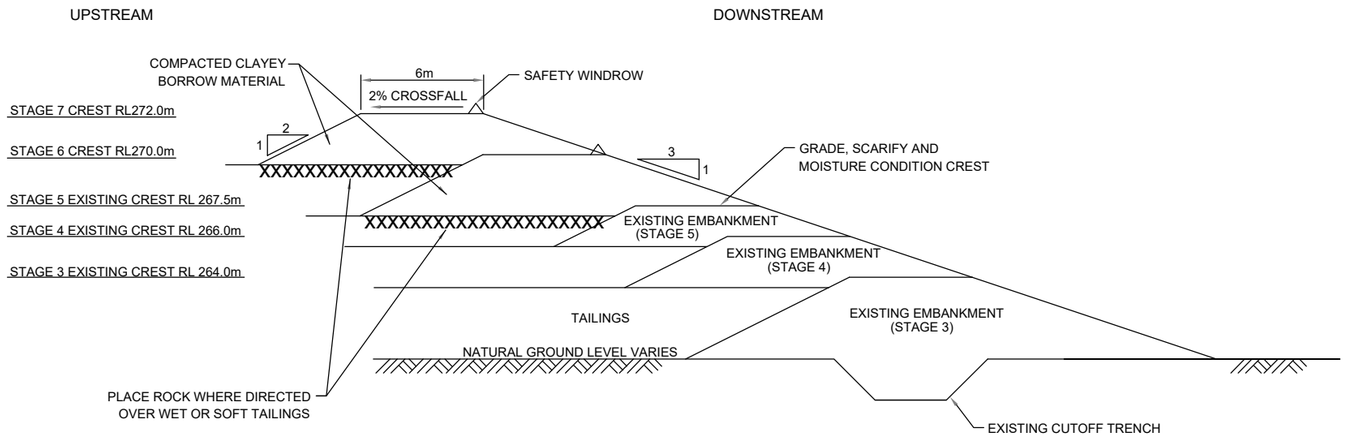
CLIENT: TRITTON RESOURCES PTY LTD	DRAWN: DE	PROJECT: PER2017-0066
PROJECT: RAISING OF TD1, STAGES 6 AND 7 TRITTON COPPER MINE	CHECKED: CH	DRAWING: 01
	REVISION: 1	SCALE: 1:7500
TITLE: GENERAL ARRANGEMENT - STAGE 6	DATE: 09.11.17	SHEET: A3 L



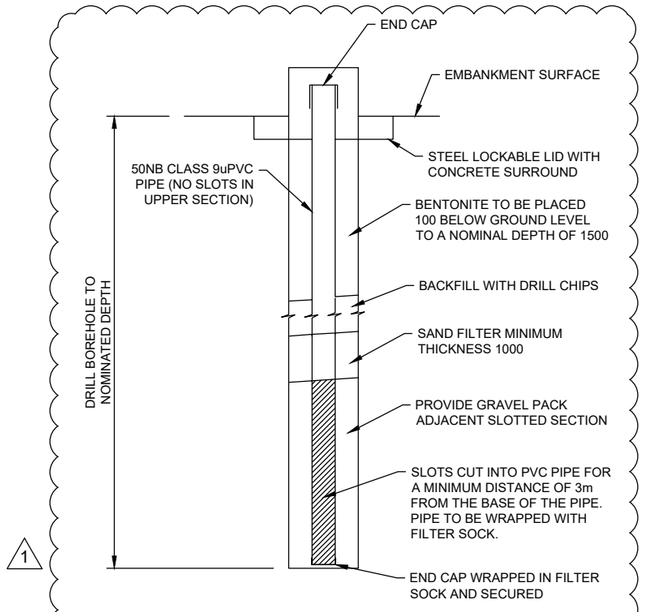
A 01/02 MAIN EMBANKMENT RAISE - STAGE 6 AND 7
TYPICAL SECTION OVER TAILINGS
SCALE 1:300



B 01/02 EMBANKMENT EXTENSION RAISE - STAGE 6 AND 7
SECTION OVER NATURAL GROUND
SCALE 1:300



C 01/02 NORTH AND WEST SADDLE EMBANKMENT RAISE - STAGE 6 AND 7
TYPICAL SECTION
SCALE 1:300



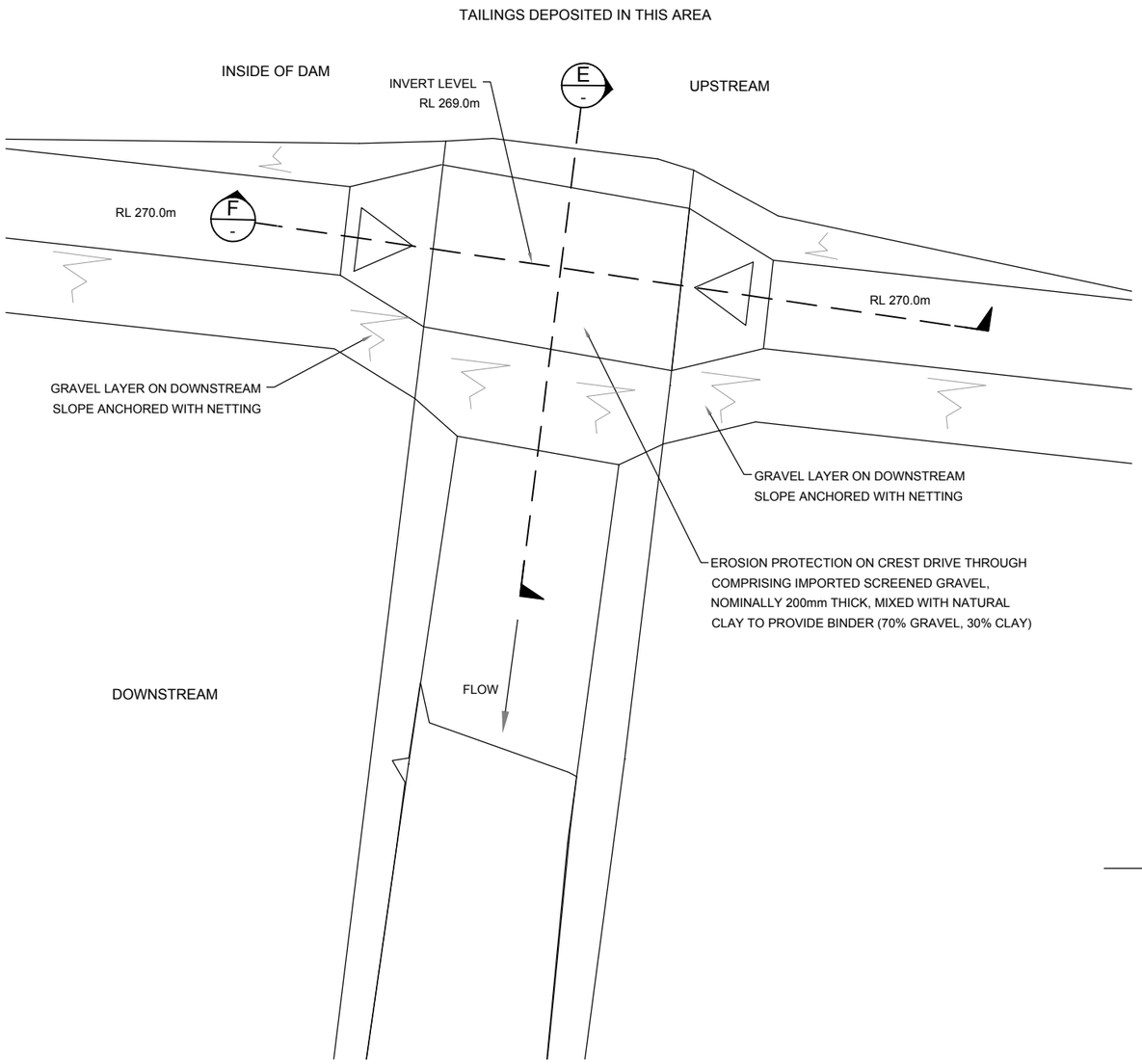
STANDPIPE PIEZOMETER - TYPICAL DETAIL
NTS

LEGEND:

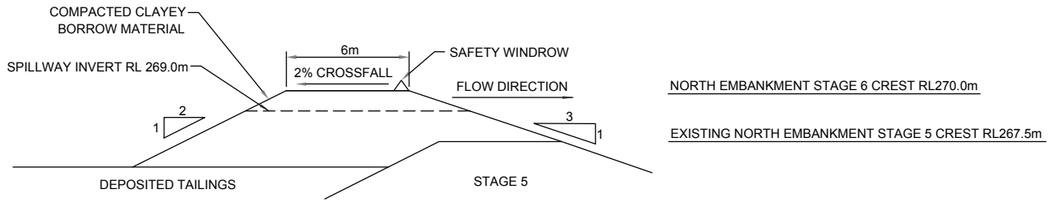
1 REV. 1

1:300 0 3 6 9 12 15 m

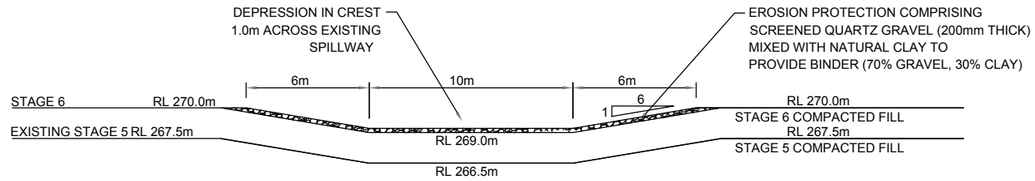
CMW Geosciences	CLIENT: TRITTON RESOURCES PTY LTD	DRAWN: DE	PROJECT: PER2017-0066
	PROJECT: RAISING OF TD1, STAGES 6 AND 7 TRITTON COPPER MINE	CHECKED: CH	DRAWING: 03
		REVISION: 1	SCALE: AS SHOWN
	TITLE: SECTIONS SHEET 1	DATE: 09.11.17	SHEET: A3 L



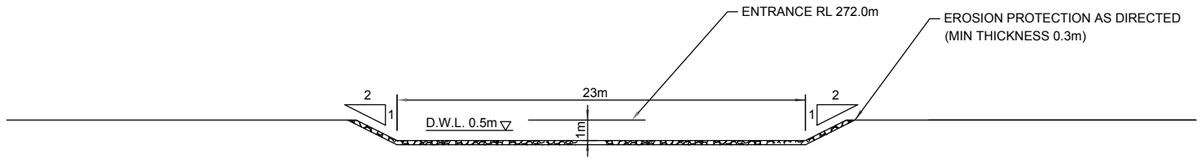
D 01 NORTH SADDLE EMBANKMENT - STAGE 6
PLAN VIEW ACROSS EXISTING SPILLWAY
SCALE 1:300



E - NORTH SADDLE EMBANKMENT - STAGE 6
SPILLWAY AREA CROSS-SECTION
SCALE 1:300



F - NORTH SADDLE EMBANKMENT - STAGE 6
SPILLWAY DETAIL SECTION
SCALE 1:300



G 02 CLOSURE SPILLWAY - STAGE 7
SPILLWAY DETAIL SECTION
SCALE 1:300

1:300 0 3 6 9 12 15 m

CMW Geosciences	CLIENT: TRITTON RESOURCES PTY LTD	DRAWN: DE	PROJECT: PER2017-0066
	PROJECT: RAISING OF TD1, STAGES 6 AND 7 TRITTON COPPER MINE	CHECKED: CH	DRAWING: 04
		REVISION: 0	SCALE: AS SHOWN
	TITLE: SECTIONS S EET	DATE: 09.11.17	SHEET: A3 L

Appendix E
Annual Dams Safety Standards Report

Annual Dams Safety Standards Report 2021

This report demonstrates the declared dam owner's compliance with the dam safety standards set out in the Dams Safety Regulation 2019 (the Regulation). It covers the named declared dam for the calendar year ending 31 December 2021.

The dam owner (the office holder at the end of this report) attests to the accuracy of the report.

A separate report for each declared dam must be lodged with Dams Safety NSW by 31 March 2022.

Section 1 – Declared dam identification details

Dam name	Tailings Dam 1
Dam owner	Aeris Tritton Mine

Section 2 – Dams safety standards

Consequence category of dam – Regulation, Part 3

The dam consequence category is a rating of the impact that could potentially be caused if the dam failed. It must be assessed:

- within 6 months of the dam being declared
- at least once every 15 years
- after any significant change in the number of people likely to be affected by a dam failure
- or if required by Dams Safety NSW.

Regulation, subclause 7(2)

Dam consequence category	Significant
Date of the last consequence category assessment by a competent person	Last reviewed March 2021 Refer design report 2018
Has the number of people likely to be affected by a dam failure changed since the last consequence category review?	No
How was this checked?	Discussions between designer and Aeris

For extreme and high consequence dams only

If the consequence category is Extreme, High A, High B, or High C, the consequence category assessment must be reviewed by an independent competent person - Regulation, subclause 7(4)

Date of last independent review of the consequence category assessment	
Name of independent reviewer (must be a competent person)	

Dams safety standard – Dam safety management system - Part 5

The dam safety management system provides a comprehensive and integrated system to manage all aspects of foreseeable risks relating to dam failure. It is designed to be used by the dam owner to ensure, as far as reasonably practicable, the safety of people and property is not put at risk from the dam.
- Regulation Part 5

Documenting the dam safety management system

Is the dam safety management system fully documented?	☐ Yes ☒ No
If not, what percentage of the dam safety management system documentation is complete?	TDI has a operations manual which includes an emergency plan. These were last reviewed in 2021. Development of management plan, 80% complete.
How did you confirm this percentage? (eg draft review, version approved)	Site has an existing safety management system. Operations manual needs to be integrated with site safety management system.
Does the dam safety management system apply to more than one dam?	☐ Yes ☒ No

Documenting the dam safety management system

Is the dam safety management system fully implemented for this dam?	☐ Yes ☒ No
If not, what percentage of the dam safety management system is implemented?	90%
How did you confirm this percentage? (eg internal audit, key staff statements)	Assessment based on discussions between designer and Aeris. Aeris are not proposing to make significant changes to what they are doing, just make sure that what is being done is documented.

Dam safety management system review

The declared dam owner must ensure the dam safety management system is reviewed each year to ensure it remains effective. Regulation, clause 17

Date of last safety management system review	Full safety review yet to be completed. However, safety has been reviewed as part of annual surveillance reviews.

Assessment of societal and individual risk rating

The owner of a declared dam (other than a proposed dam) must use the risk management framework to produce a written report on all foreseeable risks to the dam:

- at least once every 5 years
- when a major change to the dam is proposed, and
- when required by Dams Safety NSW.

Regulation, subclause 15 (1)

Date of last risk report	Desktop risk assessment by designer. Risk Report yet to be drafted.
Individual risk rating of the dam	3 x 10-9 - Highest individual risk is for operators visiting TD1
Societal risk rating of the dam	5 x 10-8
Date of next planned risk report	end of 2022

Other safety requirements – Part 6

Incident reporting

The declared dam owner must report incidents that happen at or in relation to the dam to Dams Safety NSW. Regulation, clause 19

Number of incidents during the 2021 calendar year	none
Topic/subject of each incident(s)	

Safety review

The declared dam owner must ensure a competent person conducts a safety review at least once every 15 years, and as soon as practicable after:

- a deficiency or weakness in the dam is identified
- there is a change in the accepted technology or methods used in one of the relevant specialties or design criteria for dams
- the dam consequence category changes, or
- it is required by Dams Safety NSW.

Regulation, clause 20

Date of last safety review (Regulation, subclause 20(2))	Annual survelliance reviews completed annually. Recently reviewed February 2022
Planned date for next safety review	1st quarter 2023

For extreme and high consequence dams only

If the consequence category is Extreme, High A, High B, or High C, the safety review must be reviewed by an independent competent person - Regulation, subclause 20(6)

Name of independent reviewer (must be a competent person)	

Notification of significant changes to the dam

Before making any significant change to the configuration of the declared dam that may affect the safety of the dam, the dam owner must inform Dams Safety NSW of the proposed change in writing.
Regulation, clause 21

Has any significant change to the configuration of the dam been made during the 2021 calendar year?	☐ Yes ■ No
If yes, describe the change	
Is any significant change to the configuration of the dam planned?	Stage 7 construction is planned for 2022. This will take TD1 to the design level in the 2018 design report.
If yes, describe the change and when it is planned to happen?	2022

Emergency exercises

The declared dam owner must ensure that staff who are involved in the operation of the dam undertake emergency exercises at least once every 3 years. Regulation, clause 22

Date of last 'theoretical classroom' emergency exercise (Regulation, subclause 22(1))	30 August 2019
Planned date of next 'theoretical classroom' emergency exercise	next planned for August 2022

For extreme or high consequence dams only

The declared dam owner must ensure that staff who are involved in operating the dam undertake practical emergency exercises at least once every 5 years, where possible including relevant agencies identified in the emergency plan. Regulation, subclauses 22 (3) and 22 (4)

Date of last practical emergency exercise	
Planned date of next practical emergency exercise	

Design and construction

This section is for dams in the design/construction/commissioning/decommissioning phase

Dam safety management system for design and construction

Does the dam safety management system cover dam design and construction? Regulation, clause 12(3)	Current dam safety management system does cover dam design, which outlines construction specifications, which we have independently verified / tested. Both the design and construction reports are submitted to the regulators for review
Was the risk management framework used to prepare a risk report at the dam design stage? Regulation, clause 15(2)	Risk report to be compiled by the end of 2025.

Certain work must be carried out by a person subject to a quality management system

Regulation, subclause 23(1)

How have you ensured that design and construction are carried out by a person subject to an AS ISO 9001:2016 quality management system?	The designer CMW is certified to AS/NZS ISO 9001:2015.

A competent person must check work involving dam design

Regulation, clause 24

For extreme or high consequence dams, provide the name of the independent person who checked the design (Regulation, clause 24)	
For dams still in an early design phase, have you planned independent competent person design checks/ reviews?	☐ Yes ☐ No

Attestation

This attestation must be signed by the dam owner office holder(s) as follows:

Dam owner	**Attesting office holder(s)**
Local council	General Manager
Company	• 2 directors, or • 1 director and 1 company secretary • The combined director and company secretary (Where there is only 1 director)
Statutory state-owned corporation	Chief Executive Officer or Managing Director responsible for managing the operation of the statutory state-owned corporation in accordance with the general policies and specific directions of the board
Statutory corporation	Corporation with 2 or more members: • President, chairperson or another principal officer of the corporation Sole corporation • The person who constituted the constitution • The person managing the affairs of the corporation
Government department	Secretary
Individual	Individual

Declared dam owner office holder(s) attesting to the accuracy of this report

Name and signature of declared dam owner office holder attesting to the accuracy of this report	
Position of the declared dam owner office holder attesting to the accuracy of this report	
Name and signature of declared dam owner office holder attesting to the accuracy of this report	
Position of the declared dam owner office holder attesting to the accuracy of this report	