

**Appendix I Surface Water Quality Summary Tables
for Cement Hill Pit and Spring Creek**

Parameter	Total / Filtered	Unit	ANZECC Irrigation	ANZECC Stockwater	CEMENT HILL PIT				SPRING CREEK			
					Count	Min	Median	Max	Count	Min	Median	Max
Electrical Conductivity		µS/cm	1250	-	9	209	320	431	6	119	286	489
pH			-	-	9	7.7	8.2	8.7	6	7.4	8.0	8.2
Suspended Solids		mg/L	-	-	9	3	8	26	6	3	445	12700
TDS		mg/L	-	2500	9	104	196	280	6	100	244	620
Turbidity		NTU	-	-	0	-	-	-	0	-	-	-
Total Kjeldahl Nitrogen as N		mg/L	-	-	1	-	0.6	-	2	1.2	1.6	2
Ammonia		mg/L	-	-	1	-	0.10	-	2	0.03	0.07	0.10
Nitrate as N		mg/L	-	90	1	-	<0.01	-	2	0.14	0.33	0.52
Nitrite as N		mg/L	-	9	1	-	<0.01	-	2	<0.01	0.02	0.04
Total Nitrogen as N		mg/L	5	-	1	-	0.6	-	2	1.4	2.0	2.6
Total Phosphorus as P		mg/L	0.05	-	1	-	0.02	-	2	0.36	0.55	0.74
Calcium		mg/L	-	1000	9	16	19	28	4	10	33	37
Chloride		mg/L	175	-	10	24	38	55	6	2	29	58
Fluoride		mg/L	1	2	1	-	0.20	-	2	0.10	0.15	0.20
Hardness as CaCO3		mg/L	60	-	0	-	-	-	0	-	-	-
Magnesium		mg/L	-	-	10	3	10	15	4	4	14	14
Potassium		mg/L	-	-	8	1	3	3	3	<1	4	6
Sodium		mg/L	-	-	9	19	29	46	4	25	30	35
Sulphate		mg/L	-	1000	9	1	2	6	4	<1	1	3
Alkalinity as CaCO3		mg/l	-	-	1	-	108	-	2	76	76	76
Aluminium	Total	mg/L	5	5	0	-	-	-	0	-	-	-
Arsenic	Total	mg/L	0.1	0.5	1	-	<0.001	-	0	-	-	-
Boron	Total	mg/L	0.5	5	0	-	-	-	0	-	-	-
Cadmium	Total	mg/L	0.01	0.01	1	-	<0.001	-	0	-	-	-
Chromium	Total	mg/L	0.1	1	1	-	0.001	-	0	-	-	-
Copper	Total	mg/L	0.2	0.4	1	-	0.001	-	0	-	-	-
Iron	Total	mg/L	0.2	-	0	-	-	-	0	-	-	-
Lead	Total	mg/L	2	0.1	1	-	0.002	-	0	-	-	-
Manganese	Total	mg/L	0.2	-	0	-	-	-	0	-	-	-
Mercury	Total	mg/L	0.002	0.002	1	-	<0.0001	-	0	-	-	-
Molybdenum	Total	mg/L	0.01	0.15	0	-	-	-	0	-	-	-
Nickel	Total	mg/L	0.2	1	1	0.002	0.002	0.002	0	-	-	-
Selenium	Total	mg/L	0.02	0.02	0	-	-	-	0	-	-	-
Zinc	Total	mg/L	2	20	1	-	0.022	-	0	-	-	-

Note: **Bold** indicates median values in exceedence of guideline value for ANZECC Irrigation or Stockwatering.

Parameter	Total / Filtered	Unit	ANZECC Aquatic Ecosystems	CEMENT HILL PIT				SPRING CREEK			
				Count	20th %tile	Median	80th %tile	Count	20th %tile	Median	80th %tile
Electrical Conductivity		µS/cm	250	9	261	320	373	6	182	286	421
pH			6.0-7.5	9	7.9	8.2	8.5	6	7.6	8.0	8.1
Suspended Solids		mg/L	-	9	5	8	13	6	23	445	7500
TDS		mg/L	-	9	149	196	243	6	138	244	372
Turbidity		NTU	15	0	-	-	-	0	-	-	-
Total Kjeldahl Nitrogen as N		mg/L	-	1	-	0.6	-	2	1.4	1.6	1.8
Ammonia		mg/L	0.006	1	-	0.10	-	2	0.04	0.07	0.09
Nitrate as N		mg/L	0.030	1	-	<0.01	-	2	0.216	0.33	0.444
Nitrite as N		mg/L	0.030	1	-	<0.01	-	2	0.016	0.025	0.034
Total Nitrogen as P		mg/L	0.010	1	-	0.60	-	2	1.64	2.00	2.36
Reactive Phosphorus as P	Filtered	mg/L	0.005	1	<0.01	<0.01	<0.01	2	0.032	0.065	0.098
Calcium	Filtered	mg/L	-	2	19	20	20	2	11	12	13
Chloride		mg/L	-	10	32	38	53	6	7	29	46
Hardness as Ca CO3		mg/L	-	0	-	-	-	0	-	-	-
Magnesium	Filtered	mg/L	-	1	-	9	-	2	5.2	5.4	5.6
Potassium		mg/L	-	2	3.5	4.1	4.6	2	1.3	1.8	2.3
Sodium		mg/L	-	2	36	36	37	2	13	14	15
Sulphate		mg/L	-	2	2	3	3	2	1	1	2
Total Alkalinity		mg/l	-	1	-	108	-	2	76	76	76
Toxicant 90% protection guideline value											
Aluminium	Filtered	mg/L	0.08	1	-	0.020	-	2	0.158	0.275	0.392
Antimony	Filtered	mg/L	-	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Arsenic	Filtered	mg/L	0.042	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Barium	Filtered	mg/L	-	1	-	0.013	-	2	0.003	0.005	0.007
Beryllium	Filtered	mg/L	-	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Boron	Filtered	mg/L	0.68	1	-	<0.1	-	2	<0.1	<0.1	<0.1
Cadmium	Filtered	mg/L	0.0004	1	-	<0.0001	-	2	<0.0001	<0.0001	<0.0001
Chromium	Filtered	mg/L	0.006	1	-	<0.01	-	2	<0.01	<0.01	<0.01
Cobalt	Filtered	mg/L	-	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Copper	Filtered	mg/L	0.0018	1	-	0.001	-	2	0.003	0.003	0.003
Iron	Filtered	mg/L	-	1	-	<0.01	-	2	0.188	0.320	0.452
Lead	Filtered	mg/L	0.0056	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Manganese	Filtered	mg/L	2.5	1	-	<0.001	-	2	<0.001	<0.001	<0.001

Parameter	Total / Filtered	Unit	ANZECC Aquatic Ecosystems	CEMENT HILL PIT				SPRING CREEK			
				Count	20th %tile	Median	80th %tile	Count	20th %tile	Median	80th %tile
Mercury	Filtered	mg/L	0.0019	1	-	<0.0001	-	2	<0.0001	<0.0001	<0.0001
Molybdenum	Filtered	mg/L	-	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Nickel	Filtered	mg/L	0.013	1	-	0.002	-	2	0.002	0.003	0.003
Selenium	Filtered	mg/L	0.018	1	-	<0.01	-	2	<0.01	<0.01	<0.01
Silver	Filtered	mg/L	0.0001	1	-	<0.001	-	2	<0.001	<0.001	<0.001
Zinc	Filtered	mg/L	0.015	1	-	<0.001	-	2	<0.001	<0.001	0.001

Note: **Bold** indicates median values in exceedence of the guideline value.