

Table L.1: Water Corporation treated wastewater flow and quality from SDOO - 2050

	Woodman Point WWTP	ERWWTP and KWWTP	CPWWTP	Total Water Corporation conc.	Loads (kg/d) or (cfu/d)	Seawater conc.	ANZECC 99% (cobalt 95%)	ANZECC 99% (cobalt 95%) End of SDOOL concentration
Volume (ML/day)	200	160	0			0		
Enterococci (cfu/100 ml)	20,000	24,000	2,000,000	21,895	8.32E+13	0		
TTC (cfu/100 mL)	196,250	100,000	10,642,857	150,658	5.73E+14	0		
Suspended solids (mg/L)	25.7	15	114	21	7,840	5		
TDS (mg/L)	812	730	812	773	293,800	37000		
Colour (TCU)					0	0		
pH (units)	7.1	7.3	7.1	7	2734	8.2		
Sodium (mg/L)	197	185	197	191	72,700	10500		
Potassium (mg/L)	27.97	18.0	28.0	23	8,834	420		
Calcium (mg/L)	33	39	33	36	13,620	425		
Magnesium (mg/L)	11	12.0	11	11	4,360	1350		
Iron (mg/L)	0.1	0.038	0.1	0	27	0.001		
Manganese (mg/L)	0.041	0.016	0.041	0	11	0.0004		
Boron (mg/L)	0.15	0.135	0.15	0	54	4.5		
Bicarbonate (mg/L)	120		120	63	24,000	123		
Chloride (mg/L)	254	220	254	238	90,400	20000		
Fluoride (mg/L)	0.87	0.85	0.87	1	327	0.8		
Sulphate (mg/L)	74.9	76	74.9	75	28,660	2800		
Sulphide (mg/L)	0		0	-	-	0		
Silica as SiO ₂ (mg/L)	15.1	20	15.1	17	6,620	0.13		
Cyanide (total) (mg/L)	0.05	0.005	0.05	0	11	0	0.002	0.5
Chlorate (mg/L)				-	-	0		
Ammonia N (mg/L)	3.1	3.2	46.1	3	1,196	0.003	0.5	124
Nitrate N (mg/L)	8	5.1	0.8	7	2,518	0.002		
Organic N (mg/L)	1.9	1.7	5.66	2	686	0.18		

	Woodman Point WWTP	ERWWTP and KWWTP	CPWWTP	Total Water Corporation conc.	Loads (kg/d) or (cfu/d)	Seawater conc.	ANZECC 99% (cobalt 95%)	ANZECC 99% (cobalt 95%) End of SDOOL concentration
Total N (mg/L)	13	10	52.6	12	4,400	0.2		
Total P (mg/L)	10	10	12.3	10	3,800	0.38		
Arsenic (mg/L)	0.002	0.001	0.002	0.001526	0.58	0.0018	0.0023	0.13
Cadmium (mg/L)	0.0002	0.0005	0.0005	0.000342	0.13	0.000004	0.0007	0.174
Chromium (mg/L)	0.003	0.001	0.017	0.002053	0.78	0.00015	0.00014	-0.003
Cobalt (mg/L)	0.001	0.0003	0.042	0.000668	0.25	0.0000093	0.001	0.248
Copper (mg/L)#	0.034	0.017	0.131	0.025947	9.86	0.0000845	0.0003	0.053875
Lead (mg/L)	0.002	0.0014	0.0034	0.001716	0.65	0.00019	0.0022	0.50
Mercury (mg/L)	0.0005	0.0001	0.0003	0.000311	0.12	0.000002	0.0001	0.0245
Molybdenum (mg/L)	0.0024	0.002	0.009	0.002211	0.84	0.005	0.023	4.5
Nickel (mg/L)	0.0128	0.002	0.0041	0.007684	2.92	0.004	0.007	0.75
Selenium (mg/L)	0.003	0.0001	0.003	0.001626	0.62	0.0009	0.003	0.525
Silver (mg/L)	0.001	0.004	0.0035	0.002421	0.92	0.0000007	0.0008	0.199825
Vanadium (mg/L)	0.005	0.0018	0.014	0.003484	1.32	0.0019	0.05	12.0
Zinc (mg/L)	0.08	0.0595	0.11	0.070289	26.71	0.00015	0.007	1.71
BOD (mg/L)	6.6	10	161	8	3,120	2		
COD (mg/L)	59	42	59	51	19,360	2		
TOC (mg/L)				-	-	1.5		
Oil and grease (mg/L)	0	15		7	2,700.00	1		
Phenols (mg/L)	0			-	-	0	0.27	67.5
PCBs (mg/L)				-	0	0		
AOX (mg/L)	0.25		0.250	0	50.00	0		

Assumptions

Dilution	250x
WP WWTP (ML/d)	200
ERWWTP + Kwinana (ML/d)	180
Total Water Corporation Flows (ML/d)	380

Table L.2: Industry wastewater flow and quality into SDOOL- 2050

	CSBP	BP	Total Industry Concentration	Loads (kg/d) or (cfu/d)	Seawater Concentration	ANZECC 99% (Cobalt 95%)	ANZECC 99% (Cobalt 95%) End of SDOOL concentration
Volume (ML/day)	2.7	7.93					
Enterococci (cfu/100 ml)	0	0	-	0.00E+00	0		
TTC (cfu/100 mL)	0	0	-	0.00E+00	0		
Suspended solids (mg/L)	100	59	69	738	5		
TDS (mg/L)	4800	20192	16,282	173,083	37000		
Colour (TCU)	15	52	43		0		
pH (units)	9	8.63	8.72		8.2		
Sodium (mg/L)	1034	5295	4,213	44,781	10500		
Potassium (mg/L)	32	196	154	1,641	420		
Calcium (mg/L)	315.1	235	255	2,714	425		
Magnesium (mg/L)	55.1	696	533	5,668	1350		
Iron (mg/L)	10.8	0.52	3	33	0.001		
Manganese (mg/L)	1.6	0.16	1	6	0.0004		
Boron (mg/L)		0.53	0	4	4.5		
Bicarbonate (mg/L)		468	349	3,711	123		
Chloride (mg/L)	1525	9804	7,701	81,863	20000		
Fluoride (mg/L)	28	36	34	361	0.8		
Sulphate (mg/L)	1071.8	1961	1,735	18,445	2800		
Sulphide (mg/L)	0	1.18	1	9	0		
Silica as SiO ₂ (mg/L)	15	31	27	286	0.13		
Cyanide (total) (mg/L)	1	0	0	3	0	0.002	0.5
Chlorate (mg/L)	20		5.08		0		
Ammonia N (mg/L)	47	4.8	15.5	165	0.003	0.5	124
Nitrate N (mg/L)	45.8	5.8	16.0	170	0.002		
Organic N (mg/L)	3	11.7	9.5	101	0.18		
Total N (mg/L)	74	25	37	398	0.2		

	CSBP	BP	Total Industry Concentration	Loads (kg/d) or (cfu/d)	Seawater Concentration	ANZECC 99% (Cobalt 95%)	ANZECC 99% (Cobalt 95%) End of SDOOL concentration
Total P (mg/L)	6	3.2	4	42	0.38		
Arsenic (mg/L)	0.060	0.10	0.090	0.96	0.0018	0.0023	0.125
Cadmium (mg/L)	0.15	0.20	0.187	1.99	0.000004	0.0007	0.174
Chromium (mg/L)	0.025	0.02	0.021	0.23	0.00015	0.00014	0.00
Cobalt (mg/L)	0.025	0.10	0.081	0.86	0.0000093	0.001	0.248
Copper (mg/L)#	0.025	0.21	0.163	1.73	0.0000845	0.0003	0.053875
Lead (mg/L)	0.2	0.10	0.125	1.33	0.00019	0.0022	0.50
Mercury (mg/L)	0.02	0.01	0.0125	0.13	0.000002	0.0001	0.025
Molybdenum (mg/L)	2	0.10	0.583	6.19	0.005	0.023	4.5
Nickel (mg/L)	0.025	0.11	0.088	0.94	0.004	0.007	0.750
Selenium (mg/L)	0.001	0.10	0.075	0.80	0.0009	0.003	0.525
Silver (mg/L)	0.02	0.10	0.080	0.85	0.0000007	0.0008	0.200
Vanadium (mg/L)	0.2	0.10	0.125	1.33	0.0019	0.05	12.0
Zinc (mg/L)	5.4	0.34	1.63	17.28	0.00015	0.007	1.71
BOD (mg/L)	80	80	80	850	2		
COD (mg/L)		550	410	4,362	2		
TOC (mg/L)	60		15	162	1.5		
Oil and grease (mg/L)	0.1	30	22.41	238	1		
Phenols (mg/L)	0.05	4.2	3.15	33.4	0	0.27	67.5
PCBs (mg/L)			-	0	0		
AOX (mg/L)		0.0078	0.01	0.06	0		

Assumptions

Dilution	250x
CSBP (ML/d)	2.7
BP (ML/d)	7.93
Total Industry flow (MLD)	10.63