

Appendix 7-2 Detailed Assessment Results of Ecological Risk Assessment – Aquatic Life

Table 1 Ecological Risk to Aquatic Life at edge of Mixing Zone due to Contaminants of Concern (Scenario 1)

COC	Conc. in Effluent (mg/L)	Conc. in Seawater (mg/L)	Conc. at edge of Mixing Zone – Daily Max. (mg/L)	Conc. at edge of Mixing Zone – Annual Avg. (mg/L)	Conc. at edge of Mixing Zone – 4-day Avg. (mg/L)	Conc. at edge of Mixing Zone – Lowest Seasonal Avg. Dilution Factor (mg/L)	Conc. at edge of Mixing Zone – 10%tile dilution factor (mg/L)	Toxicity Reference Value (mg/L)	Hazard Quotient
Total Residual Chlorine	0.1	0	1.61E-03	5.49E-04	5.08E-04	5.88E-04	8.70E-04	0.013	1.24E-01
Chloroform	0.007	0	1.13E-04	3.85E-05	3.55E-05	4.12E-05	6.09E-05	0.012	3.21E-03
Chloroacetic acid	0.004	0	6.45E-05	2.20E-05	2.03E-05	2.35E-05	3.48E-05	32	7.35E-07
Dibromoacetic acid	0.004	0	6.45E-05	2.20E-05	2.03E-05	2.35E-05	3.48E-05	0.69	3.41E-05
Dichloroacetic acid	0.0459	0	7.40E-04	2.52E-04	2.33E-04	2.70E-04	3.99E-04	0.23	1.17E-03
Trichloroacetic acid	0.022	0	3.55E-04	1.21E-04	1.12E-04	1.29E-04	1.91E-04	93	1.39E-06
Tetrachloroethylene	0.0013	0	2.10E-05	7.14E-06	6.60E-06	7.65E-06	1.13E-05	0.00885	8.07E-04
Trichloroethylene	0.002	0	3.23E-05	1.10E-05	1.02E-05	1.18E-05	1.74E-05	0.01	1.10E-03
2,4,6-trichlorophenol	0.002	0	3.23E-05	1.10E-05	1.02E-05	1.18E-05	1.74E-05	0.0121	9.72E-04
Hexachlorobenzene	0.00025	0	4.03E-06	1.37E-06	1.27E-06	1.47E-06	2.17E-06	0.00003	4.58E-02
b-BHC	0.0005	0	8.06E-06	2.75E-06	2.54E-06	2.94E-06	4.35E-06	0.000046	5.97E-02
g-BHC	0.0005	0	8.06E-06	2.75E-06	2.54E-06	2.94E-06	4.35E-06	0.000063	4.36E-02
								<b>Hazard Index</b>	<b>2.80E-01</b>

Concentration adopted for Hazard Quotient calculation

Table 2 Ecological Risk to Aquatic Life at edge of Mixing Zone due to Contaminants of Concern (Scenario 2)

COC	Conc. in Effluent (mg/L)	Conc. in Seawater (mg/L)	Conc. at edge of Mixing Zone – Daily Max. (mg/L)	Conc. at edge of Mixing Zone – Annual Avg. (mg/L)	Conc. at edge of Mixing Zone – 4-day Avg. (mg/L)	Conc. at edge of Mixing Zone – Lowest Seasonal Avg. Dilution Factor (mg/L)	Conc. at edge of Mixing Zone – 10%tile dilution factor (mg/L)	Toxicity Reference Value (mg/L)	Hazard Quotient
Total Residual Chlorine	0.1	0	1.67E-03	5.78E-04	5.32E-04	6.17E-04	9.09E-04	0.013	1.28E-01
Chloroform	0.007	0	1.17E-04	4.05E-05	3.72E-05	4.32E-05	6.36E-05	0.012	3.37E-03
Chloroacetic acid	0.004	0	6.67E-05	2.31E-05	2.13E-05	2.47E-05	3.64E-05	32	7.72E-07
Dibromoacetic acid	0.004	0	6.67E-05	2.31E-05	2.13E-05	2.47E-05	3.64E-05	0.69	3.58E-05
Dichloroacetic acid	0.0459	0	7.65E-04	2.65E-04	2.44E-04	2.83E-04	4.17E-04	0.23	1.23E-03
Trichloroacetic acid	0.022	0	3.67E-04	1.27E-04	1.17E-04	1.36E-04	2.00E-04	93	1.46E-06
Tetrachloroethylene	0.0013	0	2.17E-05	7.51E-06	6.91E-06	8.02E-06	1.18E-05	0.00885	8.49E-04
Trichloroethylene	0.002	0	3.33E-05	1.16E-05	1.06E-05	1.23E-05	1.82E-05	0.01	1.16E-03
2,4,6-trichlorophenol	0.002	0	3.33E-05	1.16E-05	1.06E-05	1.23E-05	1.82E-05	0.0121	1.02E-03
Hexachlorobenzene	0.00025	0	4.17E-06	1.45E-06	1.33E-06	1.54E-06	2.27E-06	0.00003	4.82E-02
b-BHC	0.0005	0	8.33E-06	2.89E-06	2.66E-06	3.09E-06	4.55E-06	0.000046	6.28E-02
g-BHC	0.0005	0	8.33E-06	2.89E-06	2.66E-06	3.09E-06	4.55E-06	0.000063	4.59E-02
								<b>Hazard Index</b>	<b>2.93E-01</b>

Concentration adopted for Hazard Quotient calculation

**Table 3 Ecological Risk to Aquatic Life at edge of Mixing Zone due to Contaminants of Concern (Scenario 3)**

COC	Conc. in Effluent (mg/L)	Conc. in Seawater (mg/L)	Conc. at edge of Mixing Zone – Daily Max. (mg/L)	Conc. at edge of Mixing Zone – Annual Avg. (mg/L)	Conc. at edge of Mixing Zone – 4-day Avg. (mg/L)	Conc. at edge of Mixing Zone – Lowest Seasonal Avg. Dilution Factor (mg/L)	Conc. at edge of Mixing Zone – 10%tile dilution factor (mg/L)	Toxicity Reference Value (mg/L)	Hazard Quotient
Total Residual Chlorine	0.1	0	2.00E-03	8.47E-04	7.69E-04	9.01E-04	1.35E-03	0.013	1.54E-01
Chloroform	0.007	0	1.40E-04	5.93E-05	5.38E-05	6.31E-05	9.46E-05	0.012	4.94E-03
Chloroacetic acid	0.004	0	8.00E-05	3.39E-05	3.08E-05	3.60E-05	5.41E-05	32	1.13E-06
Dibromoacetic acid	0.004	0	8.00E-05	3.39E-05	3.08E-05	3.60E-05	5.41E-05	0.69	5.22E-05
Dichloroacetic acid	0.0459	0	9.18E-04	3.89E-04	3.53E-04	4.14E-04	6.20E-04	0.23	1.80E-03
Trichloroacetic acid	0.022	0	4.40E-04	1.86E-04	1.69E-04	1.98E-04	2.97E-04	93	2.13E-06
Tetrachloroethylene	0.0013	0	2.60E-05	1.10E-05	1.00E-05	1.17E-05	1.76E-05	0.00885	1.24E-03
Trichloroethylene	0.002	0	4.00E-05	1.69E-05	1.54E-05	1.80E-05	2.70E-05	0.01	1.69E-03
2,4,6-trichlorophenol	0.002	0	4.00E-05	1.69E-05	1.54E-05	1.80E-05	2.70E-05	0.0121	1.49E-03
Hexachlorobenzene	0.00025	0	5.00E-06	2.12E-06	1.92E-06	2.25E-06	3.38E-06	0.00003	7.06E-02
b-BHC	0.0005	0	1.00E-05	4.24E-06	3.85E-06	4.50E-06	6.76E-06	0.000046	9.21E-02
g-BHC	0.0005	0	1.00E-05	4.24E-06	3.85E-06	4.50E-06	6.76E-06	0.000063	6.73E-02
								<b>Hazard Index</b>	<b>3.95E-01</b>

Concentration adopted for Hazard Quotient calculation

**Table 4 Ecological Risk to Aquatic Life at edge of Mixing Zone due to Contaminants of Concern (Scenario 4)**

COC	Conc. in Effluent (mg/L)	Conc. in Seawater (mg/L)	Conc. at edge of Mixing Zone – Daily Max. (mg/L)	Conc. at edge of Mixing Zone – Annual Avg. (mg/L)	Conc. at edge of Mixing Zone – 4-day Avg. (mg/L)	Conc. at edge of Mixing Zone – Lowest Seasonal Avg. Dilution Factor (mg/L)	Conc. at edge of Mixing Zone – 10%tile dilution factor (mg/L)	Toxicity Reference Value (mg/L)	Hazard Quotient
Total Residual Chlorine	0.1	0	2.33E-03	9.62E-04	7.87E-04	9.62E-04	1.56E-03	0.013	1.79E-01
Chloroform	0.007	0	1.63E-04	6.73E-05	5.51E-05	6.73E-05	1.09E-04	0.012	5.61E-03
Chloroacetic acid	0.004	0	9.30E-05	3.85E-05	3.15E-05	3.85E-05	6.25E-05	32	1.20E-06
Dibromoacetic acid	0.004	0	9.30E-05	3.85E-05	3.15E-05	3.85E-05	6.25E-05	0.69	5.57E-05
Dichloroacetic acid	0.0459	0	1.07E-03	4.41E-04	3.61E-04	4.41E-04	7.17E-04	0.23	1.92E-03
Trichloroacetic acid	0.022	0	5.12E-04	2.12E-04	1.73E-04	2.12E-04	3.44E-04	93	2.27E-06
Tetrachloroethylene	0.0013	0	3.02E-05	1.25E-05	1.02E-05	1.25E-05	2.03E-05	0.00885	1.41E-03
Trichloroethylene	0.002	0	4.65E-05	1.92E-05	1.57E-05	1.92E-05	3.13E-05	0.01	1.92E-03
2,4,6-trichlorophenol	0.002	0	4.65E-05	1.92E-05	1.57E-05	1.92E-05	3.13E-05	0.0121	1.59E-03
Hexachlorobenzene	0.00025	0	5.81E-06	2.40E-06	1.97E-06	2.40E-06	3.91E-06	0.00003	8.01E-02
b-BHC	0.0005	0	1.16E-05	4.81E-06	3.94E-06	4.81E-06	7.81E-06	0.000046	1.05E-01
g-BHC	0.0005	0	1.16E-05	4.81E-06	3.94E-06	4.81E-06	7.81E-06	0.000063	7.63E-02
								<b>Hazard Index</b>	<b>4.52E-01</b>

Concentration adopted for Hazard Quotient calculation

**Table 5 Ecological Risk to Aquatic Life at edge of Mixing Zone due to Contaminants of Concern (Scenario 5)**

COC	Conc. in Effluent (mg/L)	Conc. in Seawater (mg/L)	Conc. at edge of Mixing Zone – Daily Max. (mg/L)	Conc. at edge of Mixing Zone – Annual Avg. (mg/L)	Conc. at edge of Mixing Zone – 4-day Avg. (mg/L)	Conc. at edge of Mixing Zone – Lowest Seasonal Avg. Dilution Factor (mg/L)	Conc. at edge of Mixing Zone – 10%tile dilution factor (mg/L)	Toxicity Reference Value (mg/L)	Hazard Quotient
Total Residual Chlorine	0.01	0	2.33E-04	9.62E-05	7.87E-05	9.62E-05	1.56E-04	0.013	1.79E-02
Bromoform	0.049	0	1.14E-03	4.71E-04	3.86E-04	4.71E-04	7.66E-04	0.36	1.31E-03
Dibromochloromethane	0.008	0	1.86E-04	7.69E-05	6.30E-05	7.69E-05	1.25E-04	0.034	2.26E-03
Dibromoacetic acid	0.01	0	2.33E-04	9.62E-05	7.87E-05	9.62E-05	1.56E-04	0.69	1.39E-04
Dichloroacetic acid	0.003	0	6.98E-05	2.88E-05	2.36E-05	2.88E-05	4.69E-05	0.23	1.25E-04
Trichloroacetic acid	0.007	0	1.63E-04	6.73E-05	5.51E-05	6.73E-05	1.09E-04	93	7.24E-07
Hexachlorobenzene	0.00025	0	5.81E-06	2.40E-06	1.97E-06	2.40E-06	3.91E-06	0.00003	8.01E-02
b-BHC	0.0005	0	1.16E-05	4.81E-06	3.94E-06	4.81E-06	7.81E-06	0.000046	1.05E-01
g-BHC	0.0005	0	1.16E-05	4.81E-06	3.94E-06	4.81E-06	7.81E-06	0.000063	7.63E-02
								<b>Hazard Index</b>	<b>2.83E-01</b>

Concentration adopted for Hazard Quotient calculation