

6-I: Addendum Water Quality Prediction Summary

Table 6-I-1: Predicted Effluent Quality - Operations

Parameter	Unit	Guidelines for the protection of:									Yearly Summary													
		Aquatic Life		SSWQO	Trigger	Threshold	Type A Water License (max monthly mean)	Type A Water License (max grab sample)	MDMER (max monthly mean)	MDMER (Max grab sample)	Operations													
		Acute	Chronic								Mean	Min	Max	Standard Deviation	Count	% Above Guideline								
Conventional Parameters																								
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	-	-	45	2.7	627	86	71	-	-	-	-	-	-	-	-	-
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	1,400	1,400	-	-	119	6.9	781	124	71	-	-	-	-	-	-	-	-	-
Major Ions																								
Calcium	mg/L	-	-	-	-	-	-	-	-	-	14	0.75	238	31	71	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640	120	-	60	120	-	-	-	-	25	2.0	448 ^(C, R, T)	56	71	-	1.0	-	7.0	1.0	-	-	-	-
Fluoride	mg/L	-	0.12	-	-	-	-	-	-	-	0.11	0.0047	0.45 ^(C)	0.13	71	-	34	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	2.3	0.10	13	3.2	71	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	3.6	0.085	17	5.4	71	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	18	0.57	39	11	71	-	-	-	-	-	-	-	-	-
Sulphate	mg/L	-	-	-	65	128	-	-	-	-	15	0.55	68 ^(R)	21	71	-	-	-	1.0	-	-	-	-	-
Nutrients																								
Nitrate	mg-N/L	124	2.9	-	1.5	3.0	-	-	-	-	3.3 ^(C, R, T)	0.013	10 ^(C, R, T)	3.9	71	-	39	-	39	39	-	-	-	-
Total ammonia	mg-N/L	-	0.019 ^(a)	-	0.065	0.13	16	32	0.5 ^(a)	1.0 ^(a)	1.2 ^(R, T)	0.0090	2.4 ^(R, T)	0.96	71	-	-	-	79	75	-	-	61	52
Dissolved phosphorus	mg-P/L	-	0.010	-	0.0060	0.0040	0.30	0.60	-	-	0.048 ^(C, R, T)	0.0031	0.13 ^(C, R, T)	0.030	71	-	77	-	85	97	-	-	-	-
Dissolved Metals																								
Aluminum	µg/L	-	100 ^(b)	-	54	100	500	1,000	-	-	39	0.0041	100 ^(R)	49	71	-	-	-	38	-	-	-	-	-
Antimony	µg/L	-	-	-	10	20	-	-	-	-	2.1	0.0068	11 ^(R)	3.0	71	-	-	-	1.0	-	-	-	-	-
Arsenic	µg/L	-	-	25	12	25	100	200			34 ^(S, R, T)	0.047	100 ^(S, R, T)	43	71	-	-	39	39	39	-	-	-	-
Barium	µg/L	-	-	-	501	1,000	-	-	-	-	19	1.3	79	24	71	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	-	-	-	2.7	5.3	-	-	-	-	0.042	0.0016	0.11	0.026	71	-	-	-	-	-	-	-	-	-
Bismuth	µg/L	-	-	-	-	-	-	-	-	-	0.33	0.0023	1.2	0.40	71	-	-	-	-	-	-	-	-	-
Boron	µg/L	29,000	1,500	-	760	1,500	-	-	-	-	161	5.1	608	178	71	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	0.11 - 7.7 ^(c)	0.040 - 0.37 ^(c)	-	0.025	0.040	2.0	4.0	-	-	0.021	0.0014	0.077 ^(R, T)	0.020	71	-	-	-	35	23	-	-	-	-
Chromium	µg/L	-	1.0	-	0.56	1.0	20	40	-	-	1.6 ^(C, R, T)	0.019	7.2 ^(C, R, T)	2.0	71	-	39	-	39	39	-	-	-	-
Cobalt	µg/L	-	-	-	-	-	-	-	-	-	1.1	0.024	4.3	1.5	71	-	-	-	-	-	-	-	-	-
Copper	µg/L	-	2.0 - 4.0 ^(c)	-	1.2	2.0	100	200	300	600	7.4 ^(C, R, T)	0.059	14 ^(C, R, T)	5.6	71	-	76	-	79	77	-	-	-	-
Iron	µg/L	-	300	-	155	300	1,000	2,000	-	-	73	1.2	300 ^(R)	99	71	-	-	-	17	-	-	-	-	-
Lead	µg/L	-	1.0 - 7.0 ^(c)	-	0.53	1.0	50	100	100	200	0.53 ^(R)	0.014	2.3 ^(R, T)	0.69	71	-	1.0	-	39	24	-	-	-	-
Lithium	µg/L	-	-	-	48	96	-	-	-	-	3.2	0.19	11	3.1	71	-	-	-	-	-	-	-	-	-
Manganese	µg/L	-	-	-	316	679	-	-	-	-	187	1.0	611 ^(R)	237	71	-	-	-	37	-	-	-	-	-
Mercury	µg/L	-	0.026	-	0.018	0.026	4.0	8.0	-	-	0.016	0.00022	0.051 ^(C, R, T)	0.015	71	-	24	-	27	24	-	-	-	-
Molybdenum	µg/L	-	73	-	37	73	-	-	-	-	2.1	0.054	12	2.9	71	-	-	-	-	-	-	-	-	-
Nickel	µg/L	-	25 - 150 ^(c)	-	13	25	250	500	500	1,000	13 ^(R)	0.098	50 ^(R, T)	18	71	-	3.0	-	39	30	-	-	-	-
Selenium	µg/L	-	1.0	-	0.55	1.0	-	-	-	-	0.82 ^(R)	0.010	2.9 ^(C, R, T)	0.82	71	-	27	-	34	27	-	-	-	-
Silver	µg/L	-	0.25	-	-	-	-	-	-	-	0.10	0.00065	0.20	0.082	71	-	-	-	-	-	-	-	-	-
Strontium	µg/L	-	-	-	28	49	-	-	-	-	71 ^(R, T)	5.6	272 ^(R, T)	77	71	-	-	-	39	37	-	-	-	-
Thallium	µg/L	-	0.80	-	0.41	0.80	-	-	-	-	0.024	0.00043	0.074	0.020	71	-	-	-	-	-	-	-	-	-
Tin	µg/L	-	-	-	0.20	-	-	-	-	-	0.15	0.0045	0.49 ^(R)	0.14	71	-	-	-	30	-	-	-	-	-
Uranium	µg/L	33	15	-	7.5	15	-	-	-	-	0.77	0.010	4.0	1.1	71	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	-	-	-	3.5	6.0	-	-	-	-	1.7	0.022	6.6 ^(R, T)	1.8	71	-	-	-	17	1.0	-	-	-	-
Zinc	µg/L	20 ^(d)	7 ^(e)	-	6.3	24	100	200	500	1,000	5.5	0.16	15 ^(R)	4.0	71	-	-	-	27	-	-	-	-	-

^(a) = the guideline shown is for unionized ammonia. Model predictions were for total ammonia. For each prediction, the proportion of predicted total ammonia that would be unionized ammonia was based on the assumption of pH of 7 and water temperature of 10^oC (receiving environment) and pH of 8.5 and

^(b) = guideline is pH dependent. The guideline range shown is based on an assumed pH value of more than or equal to 6.5, which is comparable to baseline values determined in the receiving environment.

^(c) = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (3 to 627 mg/L). The guideline is calculated based on the individual hardness value for each sample.

^(d) = guideline is hardness and dissolved organic carbon dependent. The guideline value shown is based on hardness of 17 mg/L and dissolved organic carbon of 1.7 mg/L. Guideline for each prediction was determined using predicted hardness and minimum dissolved organic carbon from the measured b

^(e) = guideline is hardness, dissolved organic carbon, and pH dependent. The guideline value shown is based on hardness of 23.4 mg/L, dissolved organic carbon of 1.7 mg/L, and pH of 7.2. Guideline for each prediction was determined using predicted hardness, minimum dissolved organic carbon from th

^(C) = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

^(S) = concentration is higher than the Site-specific Water Quality Objective (SSWQO) developed for the Whale Tail Project (Volume 6, Appendix 6-N) guideline.

^(R) = concentration higher than the relevant trigger developed for Meadowbank

^(T) = concentration higher than the relevant threshold developed for Meadowbank.

Bolded values represent constituents of potential concern (COPC)

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision^{after} comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the g

- = no guideline or no data.

Table 6-4-2: Predicted Whale Tail Attenuation Pond - Mid and Late Closures

Parameter	Unit	Guidelines for the protection of:																											
		Aquatic Life		Drinking Water	SSWQO	Trigger	Threshold	Mid-Closure										Late-Closure											
		Acute	Chronic					Mean	Min	Max	Standard Deviation	Count	% Above Guideline						Mean	Min	Max	Standard Deviation	Count	% Above Guideline					
													A	C	D	S	R	T						A	C	D	S	R	T
Conventional Parameters																													
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	9.2	9.0	9.3	0.10	12	-	-	-	-	-	-	9.2	8.9	9.3	0.098	12	-	-	-	-	-	-
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	12	12	12	0.17	12	-	-	-	-	-	-	12	12	12	0.17	12	-	-	-	-	-	-
Major Ions																													
Calcium	mg/L	-	-	-	-	-	-	2.4	2.3	2.4	0.029	12	-	-	-	-	-	-	2.4	2.3	2.4	0.028	12	-	-	-	-	-	-
Chloride	mg/L	640	120	-	-	60	120	2.9	2.8	2.9	0.023	12	-	-	-	-	-	-	2.8	2.8	2.9	0.021	12	-	-	-	-	-	-
Fluoride	mg/L	-	0.12	1.5	-	-	-	0.033	0.031	0.034	0.00083	12	-	-	-	-	-	-	0.033	0.031	0.034	0.00082	12	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	0.80	0.78	0.80	0.0068	12	-	-	-	-	-	-	0.80	0.78	0.80	0.0066	12	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	0.55	0.51	0.57	0.020	12	-	-	-	-	-	-	0.55	0.51	0.57	0.020	12	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	0.61	0.60	0.62	0.0063	12	-	-	-	-	-	-	0.61	0.59	0.61	0.0046	12	-	-	-	-	-	-
Sulphate	mg/L	-	-	-	-	65	128	1.7	1.6	1.8	0.046	12	-	-	-	-	-	-	1.7	1.6	1.8	0.045	12	-	-	-	-	-	-
Nutrients																													
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.0066	0.0060	0.0072	0.00060	12	-	-	-	-	-	-	0.0057	0.0056	0.0057	0.000031	12	-	-	-	-	-	-
Total ammonia	mg-N/L	-	0.019 ^(a)	-	-	0.065	0.13	0.0066	0.0064	0.0066	0.000078	12	-	-	-	-	-	-	0.0065	0.0064	0.0065	0.000026	12	-	-	-	-	-	-
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0025	0.0024	0.0026	0.000053	12	-	-	-	-	-	-	0.0025	0.0024	0.0025	0.000045	12	-	-	-	-	-	-
Dissolved Metals																													
Aluminum	µg/L	-	100 ^(b)	-	-	54	100	0.10	0.10	0.10	0	12	-	-	-	-	-	-	0.10	0.10	0.10	0	12	-	-	-	-	-	-
Antimony	µg/L	-	-	6.0	-	10	20	0.14	0.13	0.15	0.0056	12	-	-	-	-	-	-	0.14	0.13	0.15	0.0055	12	-	-	-	-	-	-
Arsenic	µg/L	-	-	10	25	12	25	0.73	0.54	0.80	0.092	12	-	-	-	-	-	-	0.67	0.50	0.76	0.080	12	-	-	-	-	-	-
Barium	µg/L	-	-	1,000	-	501	1,000	4.7	4.6	4.7	0.060	12	-	-	-	-	-	-	4.7	4.6	4.7	0.056	12	-	-	-	-	-	-
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.022	0.021	0.022	0.00016	12	-	-	-	-	-	-	0.022	0.021	0.022	0.00016	12	-	-	-	-	-	-
Bismuth	µg/L	-	-	-	-	-	-	0.054	0.053	0.054	0.00029	12	-	-	-	-	-	-	0.054	0.053	0.054	0.00029	12	-	-	-	-	-	-
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	11	11	11	0.096	12	-	-	-	-	-	-	11	11	11	0.073	12	-	-	-	-	-	-
Cadmium	µg/L	0.17 - 4.9^(b)	0.040 - 0.32^(b)	5.0	-	0.025	0.040	0.0056	0.0054	0.0056	0.000061	12	-	-	-	-	-	-	0.0056	0.0054	0.0056	0.000058	12	-	-	-	-	-	-
Chromium	µg/L	-	1.0	50 ^(b)	-	0.56	1.0	0.12	0.11	0.12	0.0012	12	-	-	-	-	-	-	0.12	0.11	0.12	0.0011	12	-	-	-	-	-	-
Cobalt	µg/L	-	-	-	-	-	-	0.12	0.11	0.12	0.0024	12	-	-	-	-	-	-	0.12	0.11	0.12	0.0021	12	-	-	-	-	-	-
Copper	µg/L	-	2.0 - 4.0 ^(c)	-	-	1.2	2.0	0.55	0.53	0.55	0.0055	12	-	-	-	-	-	-	0.54	0.53	0.55	0.0051	12	-	-	-	-	-	-
Iron	µg/L	-	300	-	-	155	300	20	20	21	0.30	12	-	-	-	-	-	-	20	20	21	0.27	12	-	-	-	-	-	-
Lead	µg/L	-	1.0 - 7.0 ^(c)	10	-	0.53	1.0	0.062	0.061	0.063	0.00068	12	-	-	-	-	-	-	0.062	0.060	0.062	0.00058	12	-	-	-	-	-	-
Lithium	µg/L	-	-	-	-	48	96	1.1	1.1	1.1	0.013	12	-	-	-	-	-	-	1.1	1.1	1.1	0.013	12	-	-	-	-	-	-
Manganese	µg/L	-	-	-	-	316	679	2.3	2.0	2.5	0.21	12	-	-	-	-	-	-	2.0	1.9	2.1	0.065	12	-	-	-	-	-	-
Mercury	µg/L	-	0.026	1.0	-	0.018	0.026	0.0061	0.0058	0.0062	0.00013	12	-	-	-	-	-	-	0.0061	0.0058	0.0062	0.00013	12	-	-	-	-	-	-
Molybdenum	µg/L	-	73	-	-	37	73	0.16	0.13	0.18	0.017	12	-	-	-	-	-	-	0.16	0.12	0.18	0.017	12	-	-	-	-	-	-
Nickel	µg/L	-	25 - 150 ^(c)	-	-	13	25	0.73	0.71	0.74	0.012	12	-	-	-	-	-	-	0.72	0.70	0.72	0.0072	12	-	-	-	-	-	-
Selenium	µg/L	-	1.0	50	-	0.55	1.0	0.061	0.058	0.063	0.0014	12	-	-	-	-	-	-	0.061	0.058	0.063	0.0014	12	-	-	-	-	-	-
Silver	µg/L	-	0.25	-	-	-	-	0.011	0.011	0.011	0.000083	12	-	-	-	-	-	-	0.011	0.011	0.011	0.000080	12	-	-	-	-	-	-
Strontium	µg/L	-	-	-	-	28	49	15	15	16	0.15	12	-	-	-	-	-	-	15	15	16	0.14	12	-	-	-	-	-	-
Thallium	µg/L	-	0.80	-	-	0.41	0.80	0.011	0.011	0.011	0.00011	12	-	-	-	-	-	-	0.011	0.011	0.011	0.00011	12	-	-	-	-	-	-
Tin	µg/L	-	-	-	-	0.20	-	0.12	0.11	0.12	0.0017	12	-	-	-	-	-	-	0.12	0.11	0.12	0.0017	12	-	-	-	-	-	-
Uranium	µg/L	33	15	20	-	7.5	15	0.088	0.071	0.096	0.0081	12	-	-	-	-	-	-	0.087	0.070	0.095	0.0080	12	-	-	-	-	-	-
Vanadium	µg/L	-	-	-	-	3.5	6.0	0.58	0.56	0.58	0.0086	12	-	-	-	-	-	-	0.58	0.56	0.58	0.0085	12	-	-	-	-	-	-
Zinc	µg/L	20 ^(d)	7 ^(e)	-	-	6.3	24	1.3	1.3	1.4	0.027	12	-	-	-	-	-	-	1.3	1.3	1.4	0.026	12	-	-	-	-	-	-

^(a) = the guideline shown is for unionized ammonia. Model predictions were for total ammonia. For each prediction, the proportion of predicted total ammonia that would be unionized ammonia was based on the assumption of pH of 7 and water temperature of 10.0°C (receiving environment) and pH of 8.5 and water temperature of 15.0°C (effluent)

^(b) = guideline is pH dependent. The guideline range shown is based on an assumed pH value of more than or equal to 6.5, which is comparable to baseline values determined in the receiving environment.

^(c) = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (8 to 232 mg/L). The guideline is calculated based on the individual hardness value for each sample.

^(d) = guideline is hardness and dissolved organic carbon dependent. The guideline value shown is based on hardness of 17 mg/L and dissolved organic carbon of 1.7 mg/L. Guideline for each prediction was determined using predicted hardness and minimum dissolved organic carbon from the measured baseline.

^(e) = guideline is hardness, dissolved organic carbon, and pH dependent. The guideline value shown is based on hardness of 23.4 mg/L, dissolved organic carbon of 1.7 mg/L, and pH of 7.2. Guideline for each prediction was determined using predicted hardness, minimum dissolved organic carbon from the measured baseline, and 95th percentile pH from the measured baseline.

^(f) = guideline is for chromium VI.

^(c) = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

^(d) = concentration is higher than the drinking water Health Canada guideline.

^(b) = concentration is higher than the Site-specific Water Quality Objective (SSWQO) developed for the Whale Tail Project (Volume 6, Appendix 6-N) guideline.

^(f) = concentration higher than the relevant trigger developed for Meadowbank.

^(t) = concentration higher than the relevant threshold developed for Meadowbank.

Bolded values represent constituents of potential concern (COPC)

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

- = no guideline or no data

Table 6-1-3: Whale Tail Pit - Mid and Late Closure

Parameter	Unit	Guidelines for the protection of:							Whale Tail Pit (Mid-Closure)										Whale Tail Pit (Late-Closure)															
		Aquatic Life (CCME 1999)		Drinking Water (HC 2014)	Aquatic Life	Meadowbank (Azimuth 2015b)		Baseline (Whale Tail)	Mean	Min	Max	Standard Deviation	Count	% Above Guideline								Mean	Min	Max	Standard Deviation	Count	% Above Guideline							
		Acute	Chronic		SSWQO	Trigger	Threshold							A	C	D	S	R	T	B	A						C	D	S	R	T	B		
Conventional Parameters																																		
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	16	16	16	0.20	12	-	-	-	-	-	-	-	14	14	15	0.14	12	-	-	-	-	-	-	-	-	
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	30	29	30	0.50	12	-	-	-	-	-	-	-	25	25	25	0.36	12	-	-	-	-	-	-	-		
Major Ions																																		
Calcium	mg/L	-	-	-	-	-	-	1.5	4.5 ^(B)	4.4 ^(B)	4.5 ^(B)	0.058	12	-	-	-	-	-	-	100	3.9 ^(B)	3.9 ^(B)	4.0 ^(B)	0.042	12	-	-	-	-	-	-	100		
Chloride	mg/L	640	120	-	-	60	120	0.85	5.7 ^(B)	5.6 ^(B)	5.8 ^(B)	0.088	12	-	-	-	-	-	-	100	4.9 ^(B)	4.8 ^(B)	5.0 ^(B)	0.063	12	-	-	-	-	-	-	100		
Fluoride	mg/L	-	0.12	1.5	-	-	-	0.024	0.071 ^(B)	0.070 ^(B)	0.072 ^(B)	0.00094	12	-	-	-	-	-	-	100	0.063 ^(B)	0.062 ^(B)	0.063 ^(B)	0.00068	12	-	-	-	-	-	-	100		
Magnesium	mg/L	-	-	-	-	-	-	0.59	1.2 ^(B)	1.2 ^(B)	1.3 ^(B)	0.013	12	-	-	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.0095	12	-	-	-	-	-	-	100		
Potassium	mg/L	-	-	-	-	-	-	0.35	1.6 ^(B)	1.6 ^(B)	1.6 ^(B)	0.025	12	-	-	-	-	-	-	100	1.4 ^(B)	1.4 ^(B)	1.4 ^(B)	0.018	12	-	-	-	-	-	-	100		
Sodium	mg/L	-	-	-	-	-	-	0.48	2.6 ^(B)	2.6 ^(B)	2.6 ^(B)	0.060	12	-	-	-	-	-	-	100	2.0 ^(B)	2.0 ^(B)	2.1 ^(B)	0.043	12	-	-	-	-	-	-	100		
Sulphate	mg/L	-	-	-	-	65	128	1.2	5.9 ^(B)	5.8 ^(B)	6.0 ^(B)	0.11	12	-	-	-	-	-	-	100	4.9 ^(B)	4.8 ^(B)	5.0 ^(B)	0.080	12	-	-	-	-	-	-	100		
Nutrients																																		
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.0025	0.43 ^(B)	0.42 ^(B)	0.44 ^(B)	0.013	12	-	-	-	-	-	-	100	0.31 ^(B)	0.30 ^(B)	0.32 ^(B)	0.0093	12	-	-	-	-	-	-	100		
Total ammonia	mg-N/L	-	0.019 ^(A)	-	-	0.065	0.13	0.0025	0.056 ^(B)	0.054 ^(B)	0.058 ^(B)	0.0015	12	-	-	-	-	-	-	100	0.042 ^(B)	0.041 ^(B)	0.043 ^(B)	0.0011	12	-	-	-	-	-	-	100		
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0010	0.013 ^(C, R, T, B)	0.013 ^(C, R, T, B)	0.014 ^(C, R, T, B)	0.00032	12	-	100	-	-	100	100	100	0.010 ^(C, R, T, B)	0.010 ^(C, R, T, B)	0.011 ^(C, R, T, B)	0.00023	12	-	100	-	-	100	100	100		
Dissolved Metals																																		
Aluminum	µg/L	-	100 ^(B)	-	-	54	100	2.7	0.20	0.20	0.20	0	12	-	-	-	-	-	-	100	0.20	0.20	0.20	0	12	-	-	-	-	-	-	-		
Antimony	µg/L	-	-	6.0	-	10	20	0.050	0.61 ^(B)	0.59 ^(B)	0.62 ^(B)	0.011	12	-	-	-	-	-	-	100	0.50 ^(B)	0.49 ^(B)	0.51 ^(B)	0.0083	12	-	-	-	-	-	-	100		
Arsenic	µg/L	-	-	10	25	12	25	0.13	29 ^(B, S, R, T, B)	28 ^(B, S, R, T, B)	30 ^(B, S, R, T, B)	0.73	12	-	-	100	100	100	100	100	23 ^(B, R, B)	22 ^(B, R, B)	23 ^(B, R, B)	0.53	12	-	-	100	-	100	-	100		
Barium	µg/L	-	-	1,000	-	501	1,000	3.0	11 ^(B)	11 ^(B)	11 ^(B)	0.19	12	-	-	-	-	-	-	100	9.4 ^(B)	9.2 ^(B)	9.5 ^(B)	0.13	12	-	-	-	-	-	-	100		
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.010	0.025 ^(B)	0.025 ^(B)	0.025 ^(B)	0.00010	12	-	-	-	-	-	-	100	0.024 ^(B)	0.024 ^(B)	0.024 ^(B)	0.000076	12	-	-	-	-	-	-	100		
Bismuth	µg/L	-	-	-	-	-	-	0.025	0.055 ^(B)	0.055 ^(B)	0.055 ^(B)	0.000093	12	-	-	-	-	-	-	100	0.054 ^(B)	0.054 ^(B)	0.054 ^(B)	0.000070	12	-	-	-	-	-	-	100		
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	5.0	38 ^(B)	37 ^(B)	39 ^(B)	0.84	12	-	-	-	-	-	-	100	30 ^(B)	30 ^(B)	31 ^(B)	0.60	12	-	-	-	-	-	-	100		
Cadmium	µg/L	0.29 - 0.34 ^(C)	0.040 ^(C)	5.0	-	0.025	0.040	0.0025	0.012 ^(B)	0.012 ^(B)	0.012 ^(B)	0.00019	12	-	-	-	-	-	-	100	0.010 ^(B)	0.010 ^(B)	0.010 ^(B)	0.00013	12	-	-	-	-	-	-	100		
Chromium	µg/L	-	1.0	50 ^(J)	-	0.56	1.0	0.050	0.35 ^(B)	0.34 ^(B)	0.36 ^(B)	0.0071	12	-	-	-	-	-	-	100	0.28 ^(B)	0.28 ^(B)	0.29 ^(B)	0.0051	12	-	-	-	-	-	-	100		
Cobalt	µg/L	-	-	-	-	-	-	0.050	0.54 ^(B)	0.53 ^(B)	0.56 ^(B)	0.013	12	-	-	-	-	-	-	100	0.43 ^(B)	0.42 ^(B)	0.44 ^(B)	0.0090	12	-	-	-	-	-	-	100		
Copper	µg/L	-	2.0 ^(D)	-	-	1.2	2.0	0.31	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.017	12	-	-	-	-	-	-	100	0.95 ^(B)	0.94 ^(B)	0.97 ^(B)	0.012	12	-	-	-	-	-	-	100		
Iron	µg/L	-	300	-	-	155	300	5.0	58 ^(B)	56 ^(B)	59 ^(B)	1.1	12	-	-	-	-	-	-	100	47 ^(B)	46 ^(B)	48 ^(B)	0.80	12	-	-	-	-	-	-	100		
Lead	µg/L	-	1.0 ^(D)	10	-	0.53	1.0	0.025	0.20 ^(B)	0.20 ^(B)	0.21 ^(B)	0.0043	12	-	-	-	-	-	-	100	0.16 ^(B)	0.16 ^(B)	0.17 ^(B)	0.0031	12	-	-	-	-	-	-	100		
Lithium	µg/L	-	-	-	-	48	96	0.25	1.7 ^(B)	1.7 ^(B)	1.8 ^(B)	0.017	12	-	-	-	-	-	-	100	1.6 ^(B)	1.6 ^(B)	1.6 ^(B)	0.012	12	-	-	-	-	-	-	100		
Manganese	µg/L	-	-	-	-	316	679	0.37	106 ^(B)	103 ^(B)	109 ^(B)	3.2	12	-	-	-	-	-	-	100	77 ^(B)	74 ^(B)	79 ^(B)	2.3	12	-	-	-	-	-	-	100		
Mercury	µg/L	-	0.026	1.0	-	0.018	0.026	0.0025	0.010 ^(B)	0.0099 ^(B)	0.010 ^(B)	0.000087	12	-	-	-	-	-	-	100	0.0092 ^(B)	0.0091 ^(B)	0.0093 ^(B)	0.000064	12	-	-	-	-	-	-	100		
Molybdenum	µg/L	-	73	-	-	37	73	0.025	0.94 ^(B)	0.92 ^(B)	0.96 ^(B)	0.018	12	-	-	-	-	-	-	100	0.78 ^(B)	0.77 ^(B)	0.80 ^(B)	0.013	12	-	-	-	-	-	-	100		
Nickel	µg/L	-	25 ^(C)	-	-	13	25	0.25	5.3 ^(B)	5.1 ^(B)	5.4 ^(B)	0.14	12	-	-	-	-	-	-	100	4.0 ^(B)	3.9 ^(B)	4.1 ^(B)	0.100	12	-	-	-	-	-	-	100		
Selenium	µg/L	-	1.0	50	-	0.55	1.0	0.025	0.19 ^(B)	0.19 ^(B)	0.20 ^(B)	0.0036	12	-	-	-	-	-	-	100	0.16 ^(B)	0.16 ^(B)	0.16 ^(B)	0.0026	12	-	-	-	-	-	-	100		
Silver	µg/L	-	0.25	-	-	-	-	0.0050	0.015 ^(B)	0.015 ^(B)	0.015 ^(B)	0.00013	12	-	-	-	-	-	-	100	0.014 ^(B)	0.014 ^(B)	0.014 ^(B)	0.000096	12	-	-	-	-	-	-	100		
Strontium	µg/L	-	-	-	-	28	49	7.5	27 ^(B)	27 ^(B)	28 ^(B)	0.34	12	-	-	-	-	-	-	100	24 ^(B)	24 ^(B)	24 ^(B)	0.25	12	-	-	-	-	-	-	100		
Thallium	µg/L	-	0.80	-	-	0.41	0.80	0.0050	0.014 ^(B)	0.014 ^(B)	0.014 ^(B)	0.000087	12	-	-	-	-	-	-	100	0.014 ^(B)	0.014 ^(B)	0.014 ^(B)	0.000063	12	-	-	-	-	-	-	100		
Tin	µg/L	-	-	-	-	0.20	-	0.050	0.16 ^(B)	0.16 ^(B)	0.16 ^(B)	0.0011	12	-	-	-	-	-	-	100	0.15 ^(B)	0.15 ^(B)	0.15 ^(B)	0.00079	12	-	-	-	-	-	-	100		
Uranium	µg/L	33	15	20	-	7.5	15	0.023	0.44 ^(B)	0.43 ^(B)	0.45 ^(B)	0.0079	12	-	-	-	-	-	-	100	0.37 ^(B)	0.37 ^(B)	0.38 ^(B)	0.0057	12	-	-	-	-	-	-	100		
Vanadium	µg/L	-	-	-	-	3.5	6.0	0.25	0.91 ^(B)	0.90 ^(B)	0.91 ^(B)	0.0081	12	-	-	-	-	-	-	100	0.83 ^(B)	0.83 ^(B)	0.84 ^(B)	0.0059	12	-	-	-	-	-	-	100		
Zinc	µg/L	20 ^(D)	7 ^(E)	-	-	6.3	24	0.50	2.4 ^(B)	2.4 ^(B)	2.4 ^(B)	0.027	12	-	-	-	-	-	-	100	2.2 ^(B)	2.2 ^(B)	2.2 ^(B)	0.019	12	-	-	-	-	-	-	100		

Table 6-l-4: IVR Pit - Mid and Late Closure

Parameter	Unit	Guidelines for the protection of:							IVR Pit (Mid-Closure)										IVR Pit (Late-Closure)															
		Aquatic Life (CCME 1999)		Drinking Water (HC 2014)	Aquatic Life	Meadowbank (Azimuth 2015b)		Baseline (Whale Tail)	Mean	Min	Max	Standard Deviation	Count	% Above Guideline								Mean	Min	Max	Standard Deviation	Count	% Above Guideline							
		Acute	Chronic		SSWQO	Trigger	Threshold							A	C	D	S	R	T	B	A						C	D	S	R	T	B		
Conventional Parameters																																		
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	10	10	10	0.016	12	-	-	-	-	-	-	-	10	10	10	0.015	12	-	-	-	-	-	-	-	-	
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	15	15	15	0.023	12	-	-	-	-	-	-	-	14	14	15	0.022	12	-	-	-	-	-	-	-		
Major Ions																																		
Calcium	mg/L	-	-	-	-	-	-	1.5	2.7 ^(B)	2.7 ^(B)	2.7 ^(B)	0.0054	12	-	-	-	-	-	-	100	2.7 ^(B)	2.7 ^(B)	2.7 ^(B)	0.0050	12	-	-	-	-	-	-	-	100	
Chloride	mg/L	640	120	-	-	60	120	0.85	3.0 ^(B)	3.0 ^(B)	3.0 ^(B)	0.0061	12	-	-	-	-	-	-	100	2.9 ^(B)	2.9 ^(B)	2.9 ^(B)	0.0056	12	-	-	-	-	-	-	-	100	
Fluoride	mg/L	-	0.12	1.5	-	-	-	0.024	0.044 ^(B)	0.044 ^(B)	0.044 ^(B)	0.000098	12	-	-	-	-	-	-	100	0.044 ^(B)	0.044 ^(B)	0.045 ^(B)	0.000095	12	-	-	-	-	-	-	-	100	
Magnesium	mg/L	-	-	-	-	-	-	0.59	0.86 ^(B)	0.86 ^(B)	0.86 ^(B)	0.00083	12	-	-	-	-	-	-	100	0.86 ^(B)	0.86 ^(B)	0.86 ^(B)	0.00083	12	-	-	-	-	-	-	-	100	
Potassium	mg/L	-	-	-	-	-	-	0.35	0.94 ^(B)	0.93 ^(B)	0.94 ^(B)	0.00019	12	-	-	-	-	-	-	100	0.94 ^(B)	0.93 ^(B)	0.94 ^(B)	0.00019	12	-	-	-	-	-	-	-	100	
Sodium	mg/L	-	-	-	-	-	-	0.48	0.68 ^(B)	0.68 ^(B)	0.68 ^(B)	0.00061	12	-	-	-	-	-	-	100	0.68 ^(B)	0.68 ^(B)	0.68 ^(B)	0.00060	12	-	-	-	-	-	-	-	100	
Sulphate	mg/L	-	-	-	-	65	128	1.2	2.5 ^(B)	2.6 ^(B)	2.6 ^(B)	0.0046	12	-	-	-	-	-	-	100	2.5 ^(B)	2.5 ^(B)	2.5 ^(B)	0.0046	12	-	-	-	-	-	-	-	100	
Nutrients																																		
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.0025	0.040 ^(B)	0.039 ^(B)	0.040 ^(B)	0.00029	12	-	-	-	-	-	-	100	0.037 ^(B)	0.036 ^(B)	0.037 ^(B)	0.00026	12	-	-	-	-	-	-	-	100	
Total ammonia	mg-N/L	-	0.019 ^(B)	-	-	0.065	0.13	0.0025	0.010 ^(B)	0.010 ^(B)	0.011 ^(B)	0.000044	12	-	-	-	-	-	-	100	0.010 ^(B)	0.010 ^(B)	0.010 ^(B)	0.000040	12	-	-	-	-	-	-	-	100	
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0010	0.0032 ^(B)	0.0032 ^(B)	0.0032 ^(B)	0.0000048	12	-	-	-	-	-	-	100	0.0032 ^(B)	0.0032 ^(B)	0.0032 ^(B)	0.0000048	12	-	-	-	-	-	-	-	100	
Dissolved Metals																																		
Aluminum	µg/L	-	100 ^(B)	-	-	54	100	2.7	0.20	0.20	0.20	0	12	-	-	-	-	-	-	100	0.20	0.20	0.20	0	12	-	-	-	-	-	-	-	-	
Antimony	µg/L	-	-	6.0	-	10	20	0.050	0.28 ^(B)	0.28 ^(B)	0.28 ^(B)	0.00066	12	-	-	-	-	-	-	100	0.28 ^(B)	0.28 ^(B)	0.28 ^(B)	0.00064	12	-	-	-	-	-	-	-	100	
Arsenic	µg/L	-	-	-	25	12	25	0.13	13 ^(D, R, B)	13 ^(D, R, B)	13 ^(D, R, B)	0.087	12	-	-	100	-	100	-	100	12 ^(D, B)	12 ^(D, B)	12 ^(D, B)	0.080	12	-	-	100	-	100	-	-	100	
Barium	µg/L	-	-	1,000	-	501	1,000	3.0	5.4 ^(B)	5.4 ^(B)	5.4 ^(B)	0.0064	12	-	-	-	-	-	-	100	5.4 ^(B)	5.4 ^(B)	5.4 ^(B)	0.0064	12	-	-	-	-	-	-	-	100	
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.010	0.022 ^(B)	0.022 ^(B)	0.022 ^(B)	0.000026	12	-	-	-	-	-	-	100	0.022 ^(B)	0.022 ^(B)	0.022 ^(B)	0.000025	12	-	-	-	-	-	-	-	100	
Bismuth	µg/L	-	-	-	-	-	-	0.025	0.053 ^(B)	0.053 ^(B)	0.053 ^(B)	0.000061	12	-	-	-	-	-	-	100	0.052 ^(B)	0.052 ^(B)	0.052 ^(B)	0.000058	12	-	-	-	-	-	-	-	100	
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	5.0	12 ^(B)	12 ^(B)	12 ^(B)	0.019	12	-	-	-	-	-	-	100	12 ^(B)	12 ^(B)	12 ^(B)	0.017	12	-	-	-	-	-	-	-	100	
Cadmium	µg/L	0.21 - 0.21 ^(C)	0.040 ^(C)	5.0	-	0.025	0.040	0.0025	0.0061 ^(B)	0.0061 ^(B)	0.0061 ^(B)	0.0000076	12	-	-	-	-	-	-	100	0.0060 ^(B)	0.0060 ^(B)	0.0060 ^(B)	0.0000075	12	-	-	-	-	-	-	-	100	
Chromium	µg/L	-	1.0	50 ^(B)	-	0.56	1.0	0.050	0.13 ^(B)	0.13 ^(B)	0.13 ^(B)	0.00060	12	-	-	-	-	-	-	100	0.14 ^(B)	0.14 ^(B)	0.14 ^(B)	0.00054	12	-	-	-	-	-	-	-	100	
Cobalt	µg/L	-	-	-	-	-	-	0.050	0.15 ^(B)	0.15 ^(B)	0.15 ^(B)	0.00024	12	-	-	-	-	-	-	100	0.15 ^(B)	0.15 ^(B)	0.15 ^(B)	0.00024	12	-	-	-	-	-	-	-	100	
Copper	µg/L	-	2.0 ^(C)	-	-	1.2	2.0	0.31	0.59 ^(B)	0.59 ^(B)	0.59 ^(B)	0.0013	12	-	-	-	-	-	-	100	0.60 ^(B)	0.60 ^(B)	0.60 ^(B)	0.0012	12	-	-	-	-	-	-	-	100	
Iron	µg/L	-	300	-	-	155	300	5.0	23 ^(B)	23 ^(B)	24 ^(B)	0.31	12	-	-	-	-	-	-	100	26 ^(B)	26 ^(B)	27 ^(B)	0.28	12	-	-	-	-	-	-	-	100	
Lead	µg/L	-	1.0 ^(C)	10	-	0.53	1.0	0.025	0.068 ^(B)	0.068 ^(B)	0.068 ^(B)	0.00015	12	-	-	-	-	-	-	100	0.070 ^(B)	0.069 ^(B)	0.070 ^(B)	0.00013	12	-	-	-	-	-	-	-	100	
Lithium	µg/L	-	-	-	-	48	96	0.25	1.2 ^(B)	1.2 ^(B)	1.2 ^(B)	0.0016	12	-	-	-	-	-	-	100	1.2 ^(B)	1.2 ^(B)	1.2 ^(B)	0.0016	12	-	-	-	-	-	-	-	100	
Manganese	µg/L	-	-	-	-	316	679	0.37	4.5 ^(B)	4.5 ^(B)	4.5 ^(B)	0.011	12	-	-	-	-	-	-	100	4.4 ^(B)	4.4 ^(B)	4.5 ^(B)	0.010	12	-	-	-	-	-	-	-	100	
Mercury	µg/L	-	0.026	1.0	-	0.018	0.026	0.0025	0.0076 ^(B)	0.0076 ^(B)	0.0076 ^(B)	0.000013	12	-	-	-	-	-	-	100	0.0077 ^(B)	0.0076 ^(B)	0.0077 ^(B)	0.000013	12	-	-	-	-	-	-	-	100	
Molybdenum	µg/L	-	73	-	-	37	73	0.025	0.45 ^(B)	0.45 ^(B)	0.45 ^(B)	0.00017	12	-	-	-	-	-	-	100	0.46 ^(B)	0.45 ^(B)	0.46 ^(B)	0.00016	12	-	-	-	-	-	-	-	100	
Nickel	µg/L	-	25 ^(C)	-	-	13	25	0.25	0.89 ^(B)	0.89 ^(B)	0.89 ^(B)	0.0012	12	-	-	-	-	-	-	100	0.90 ^(B)	0.90 ^(B)	0.90 ^(B)	0.0012	12	-	-	-	-	-	-	-	100	
Selenium	µg/L	-	1.0	50	-	0.55	1.0	0.025	0.088 ^(B)	0.087 ^(B)	0.088 ^(B)	0.00015	12	-	-	-	-	-	-	100	0.087 ^(B)	0.087 ^(B)	0.087 ^(B)	0.00015	12	-	-	-	-	-	-	-	100	
Silver	µg/L	-	0.25	-	-	-	-	0.0050	0.011 ^(B)	0.011 ^(B)	0.011 ^(B)	0.000014	12	-	-	-	-	-	-	100	0.011 ^(B)	0.011 ^(B)	0.011 ^(B)	0.000014	12	-	-	-	-	-	-	-	100	
Strontium	µg/L	-	-	-	-	28	49	7.5	17 ^(B)	17 ^(B)	17 ^(B)	0.043	12	-	-	-	-	-	-	100	17 ^(B)	17 ^(B)	17 ^(B)	0.040	12	-	-	-	-	-	-	-	100	
Thallium	µg/L	-	0.80	-	-	0.41	0.80	0.0050	0.012 ^(B)	0.012 ^(B)	0.012 ^(B)	0.000015	12	-	-	-	-	-	-	100	0.012 ^(B)	0.012 ^(B)	0.012 ^(B)	0.000015	12	-	-	-	-	-	-	-	100	
Tin	µg/L	-	-	-	-	0.20	-	0.050	0.13 ^(B)	0.13 ^(B)	0.13 ^(B)	0.00018	12	-	-	-	-	-	-	100	0.13 ^(B)	0.13 ^(B)	0.13 ^(B)	0.00018	12	-	-	-	-	-	-	-	100	
Uranium	µg/L	33	15	20	-	7.5	15	0.023	0.22 ^(B)	0.22 ^(B)	0.23 ^(B)	0.00095	12	-	-	-	-	-	-	100	0.23 ^(B)	0.23 ^(B)	0.23 ^(B)	0.00090	12	-	-	-	-	-	-	-	100	
Vanadium	µg/L	-	-	-	-	3.5	6.0	0.25	0.70 ^(B)	0.70 ^(B)	0.70 ^(B)	0.0010	12	-	-	-	-	-	-	100	0.70 ^(B)	0.69 ^(B)	0.70 ^(B)	0.0010	12	-	-	-	-	-	-	-	100	
Zinc	µg/L	20 ^(D)	7 ^(B)	-	-	6.3	24	0.50	1.7 ^(B)	1.6 ^(B)	1.7 ^(B)	0.0027	12	-	-	-	-	-	-	100	1.7 ^(B)	1.7 ^(B)	1.7 ^(B)	0.0027	12	-	-	-	-	-	-	-	100	

^(a) = the guideline shown is for unionized ammonia. Model predictions were for total ammonia. For each prediction, the proportion of predicted total ammonia that would be unionized ammonia was based on the assumption of pH of 7 and water temperature of 10.0°C (receiving environment) and pH of 8.5 and water temperature of 15.0°C (effluent).

^(b) = guideline is pH dependent. The guideline range shown is based on an assumed pH value of more than or equal to 6.5, which is comparable to baseline values determined in the receiving environment.

^(c) = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (10 to 10 mg/L). The guideline is calculated based on the individual hardness value for each sample.

(d) = guideline is hardness and dissolved organic carbon dependent. The guideline value shown is based on hardness of 17 mg/L and dissolved organic carbon of 1.7 mg/L. Guideline for each prediction was determined using predicted hardness and minimum dissolved organic carbon from the measured baseline.

(e) = guideline is hardness, dissolved organic carbon, and pH dependent. The guideline value shown is based on hardness of 23.4 mg/L, dissolved organic carbon of 1.7 mg/L, and pH of 7.2. Guideline for each prediction was determined using predicted hardness, minimum dissolved organic carbon from the measured baseline, and 95th percentile pH from the measured baseline.

(f) = guideline is for chromium VI.

(D) = concentration is higher than the drinking water Health Canada guideline.

^(R) = concentration higher than the relevant trigger developed for Meadowbank

^(B) = Concentration higher than the relevant baseline level, or beyond the recommended pH or DO concentration range.

Bolded values represent constituents of potential concern (COPC)

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

- = no guideline or no data.

Table 6.4-5: Whale Tail South - Operations and Closure

Parameter	Unit	Guidelines for the protection of:										Whale Tail South (Operations)										Whale Tail South (Early Closure)										Whale Tail South (Mid Closure)										Whale Tail South (Late Closure)																																																																
		Aquatic Life (CCME 1999)					Aquatic Life (SSWGO)					Meadowbank (Whale Tail)					Baseline (Whale Tail)					Mean					Max					Standard Deviation					Count					% Above Guideline					Mean					Min					Max					Standard Deviation					Count					% Above Guideline					Mean					Min					Max					Standard Deviation					Count					% Above Guideline				
		Acute	Chronic	Drinking Water (HC 2014)	Aquatic Life SSWGO	Trigger Threshold	Mean	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B																																																					
Conventional Parameters																																																																																																										
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	17	27	5.3	84	-	-	-	-	-	12	8.8	27	4.8	188	-	-	-	-	-	-	9.0	8.8	9.0	0.062	12	-	-	-	-	-	-	-	9.0	8.8	9.0	0.062	12	-	-	-	-	-	-	-	-	-																																																				
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	32	59	15	84	-	-	-	-	-	19	11	59	13	188	-	-	-	-	-	-	11	11	12	0.079	12	-	-	-	-	-	-	11	11	12	0.079	12	-	-	-	-	-	-	-	-	-																																																					
Major Ions																																																																																																										
Calcium	mg/L	-	-	-	-	-	-	-	1.5	4.6 ^(B)	7.8 ^(B)	1.7	84	-	-	-	-	3.1 ^(B)	2.3 ^(B)	7.8 ^(B)	1.5	188	-	-	-	-	-	100	2.3 ^(B)	2.3 ^(B)	2.3 ^(B)	0.016	12	-	-	-	-	-	-	100	2.3 ^(B)	2.3 ^(B)	2.3 ^(B)	0.016	12	-	-	-	-	-	-	-	-	-																																																				
Chloride	mg/L	840	120	-	-	60	120	0.85	7.2 ^(B)	0.024	84	-	-	-	-	-	-	12 ^(B)	2.4 ^(B)	2.8 ^(B)	0.022	12	-	-	-	-	-	100	2.9 ^(B)	2.8 ^(B)	2.9 ^(B)	0.020	12	-	-	-	-	-	-	100	2.9 ^(B)	2.8 ^(B)	2.9 ^(B)	0.020	12	-	-	-	-	-	-	-	-	-																																																				
Fluoride	mg/L	-	0.12	1.5	-	-	0.024	0.026 ^(B)	0.026 ^(B)	0.015	84	-	-	-	-	-	-	0.026 ^(B)	0.026 ^(B)	0.026 ^(B)	0.0020	12	-	-	-	-	-	100	0.026 ^(B)	0.026 ^(B)	0.026 ^(B)	0.00020	12	-	-	-	-	-	-	100	0.026 ^(B)	0.026 ^(B)	0.026 ^(B)	0.00020	12	-	-	-	-	-	-	-	-	-																																																				
Magnesium	mg/L	-	-	-	-	-	0.59	1.8 ^(B)	0.94 ^(B)	0.28	84	-	-	-	-	-	-	0.94 ^(B)	0.77 ^(B)	1.8 ^(B)	0.054	12	-	-	-	-	-	100	0.78 ^(B)	0.77 ^(B)	0.78 ^(B)	0.00054	12	-	-	-	-	-	-	100	0.78 ^(B)	0.77 ^(B)	0.78 ^(B)	0.00054	12	-	-	-	-	-	-	-	-	-																																																				
Potassium	mg/L	-	-	-	-	-	0.35	1.1 ^(B)	0.71 ^(B)	0.60	84	-	-	-	-	-	-	0.71 ^(B)	0.43 ^(B)	2.2 ^(B)	0.030	12	-	-	-	-	-	100	0.44 ^(B)	0.43 ^(B)	0.44 ^(B)	0.00030	12	-	-	-	-	-	-	100	0.44 ^(B)	0.43 ^(B)	0.44 ^(B)	0.00030	12	-	-	-	-	-	-	-	-	-																																																				
Sodium	mg/L	-	-	-	-	-	0.48	2.0 ^(B)	4.9 ^(B)	1.4	84	-	-	-	-	-	-	4.9 ^(B)	3.0 ^(B)	1.1	188	-	-	-	-	-	-	100	0.60 ^(B)	0.59 ^(B)	0.60 ^(B)	0.0041	12	-	-	-	-	-	-	100	0.60 ^(B)	0.59 ^(B)	0.60 ^(B)	0.0041	12	-	-	-	-	-	-	-	-	-																																																				
Sulfate	mg/L	-	-	-	-	65	128	1.2	4.7 ^(B)	0.2 ^(B)	2.5	84	-	-	-	-	-	2.6 ^(B)	1.5 ^(B)	8.9 ^(B)	2.0	188	-	-	-	-	-	100	1.5 ^(B)	1.5 ^(B)	1.5 ^(B)	0.010	12	-	-	-	-	-	-	100	1.5 ^(B)	1.5 ^(B)	1.5 ^(B)	0.010	12	-	-	-	-	-	-	-	-	-																																																				
Nutrients																																																																																																										
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.0025	1.0 ^(B)	2.8 ^(B)	0.99	84	-	-	-	36	-	0.43 ^(B)	0.0060 ^(B)	2.8 ^(B)	0.75	188	-	-	-	-	10	-	0.0057 ^(B)	0.0056 ^(B)	0.0057 ^(B)	0.00045	12	-	-	-	-	-	-	100	0.0056 ^(B)	0.0055 ^(B)	0.0056 ^(B)	0.00045	12	-	-	-	-	-	-	-	-	-																																																				
Total ammonia	mg-N/L	-	0.019 ^(B)	-	-	0.065	0.13	0.0025	0.10 ^(B)	0.066 ^(B)	0.11	84	-	-	-	48	35	0.0069 ^(B)	0.0066 ^(B)	0.34 ^(B)	0.067	188	-	-	-	-	22	15	0.0067 ^(B)	0.0066 ^(B)	0.0067 ^(B)	0.00047	12	-	-	-	-	-	-	100	0.0067 ^(B)	0.0066 ^(B)	0.0067 ^(B)	0.00047	12	-	-	-	-	-	-	-	-	-																																																				
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0010	0.012 ^(B)	0.020 ^(B)	0.0052	84	-	60	-	95	95	0.0050 ^(B)	0.0022 ^(B)	0.020 ^(B)	0.0048	188	-	15	-	-	22	29	0.0023 ^(B)	0.0022 ^(B)	0.0023 ^(B)	0.00016	12	-	-	-	-	-	-	100	0.0023 ^(B)	0.0022 ^(B)	0.0023 ^(B)	0.00016	12	-	-	-	-	-	-	-	-	-																																																				
Dissolved Metals																																																																																																										
Aluminum	µg/L	-	100 ^(B)	-	-	54	100	2.7	4.0 ^(B)	0.40	84	-	-	-	-	-	100	5.8 ^(B)	5.4 ^(B)	5.8 ^(B)	0.090	188	-	-	-	-	-	100	5.8 ^(B)	5.7 ^(B)	5.8 ^(B)	0.040	12	-	-	-	-	-	-	100	5.8 ^(B)	5.7 ^(B)	5.8 ^(B)	0.040	12	-	-	-	-	-	-	-	-	-																																																				
Antimony	µg/L	-	-	-	6.0	-	10	20	0.050	0.49 ^(B)	1.0 ^(B)	0.34	84	-	-	-	-	0.25 ^(B)	0.11 ^(B)	1.0 ^(B)	0.25	188	-	-	-	-	-	100	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	100	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	-	-	-																																																				
Arsenic	µg/L	-	-	-	10	25	12	25	0.13	1.1 ^(B)	2.6 ^(B)	9.4	84	-	-	-	50	6.0	4.8	6.0	4.1 ^(B)	0.16 ^(B)	26 ^(B)	9.4	188	-	15	3.0	15	3.0	100	0.16 ^(B)	0.16 ^(B)	0.16 ^(B)	0.0011	12	-	-	-	-	-	-	100	0.16 ^(B)	0.16 ^(B)	0.16 ^(B)	0.0011	12	-	-	-	-	-	-	-	-	-																																																	
Barium	µg/L	-	-	-	1,000	3.0	9.2 ^(B)	14 ^(B)	3.2	84	-	-	-	-	-	-	100	6.0 ^(B)	4.4 ^(B)	77 ^(B)	1.7	188	-	-	-	-	-	100	4.5 ^(B)	4.4 ^(B)	4.5 ^(B)	0.031	12	-	-	-	-	-	-	100	4.5 ^(B)	4.4 ^(B)	4.5 ^(B)	0.031	12	-	-	-	-	-	-	-	-	-																																																				
Beryllium	µg/L	-	-	-	2.7	5.3	0.010	0.026 ^(B)	0.031 ^(B)	0.0030	84	-	-	-	-	-	-	0.023 ^(B)	0.021 ^(B)	0.031 ^(B)	0.0028	188	-	-	-	-	-	100	0.022 ^(B)	0.021 ^(B)	0.022 ^(B)	0.00015	12	-	-	-	-	-	-	100	0.022 ^(B)	0.021 ^(B)	0.022 ^(B)	0.00015	12	-	-	-	-	-	-	-	-	-																																																				
Bismuth	µg/L	-	-	-	-	-	0.025	0.061 ^(B)	0.044	0.057 ^(B)	0.069 ^(B)	0.0043	84	-	-	-	-	-	0.054 ^(B)	0.054 ^(B)	0.057 ^(B)	0.00043	12	-	-	-	-	-	100	0.054 ^(B)	0.054 ^(B)	0.055 ^(B)	0.00038	12	-	-	-	-	-	-	100	0.054 ^(B)	0.054 ^(B)	0.055 ^(B)	0.00038	12	-	-	-	-	-	-	-	-	-																																																			
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	5.0	40 ^(B)	0.98 ^(B)	0.061	84	-	-	-	-	-	0.057 ^(B)	0.054 ^(B)	0.98 ^(B)	0.0043	188	-	-	-	-	-	100	0.054 ^(B)	0.054 ^(B)	0.055 ^(B)	0.00038	12	-	-	-	-	-	-	100	0.054 ^(B)	0.054 ^(B)	0.055 ^(B)	0.00038	12	-	-	-	-	-	-	-	-	-																																																				
Cadmium	µg/L	0.17-0.50 ^(B)	0.040-0.053 ^(B)	5.0	-	0.025	0.040	0.0025	0.010 ^(B)	0.015 ^(B)	0.0031	84	-	-	-	-	-	0.0069 ^(B)	0.0054 ^(B)	0.015 ^(B)	0.0026	188	-	-	-	-	-	100	0.0054 ^(B)	0.0054 ^(B)	0.0055 ^(B)	0.00038	12	-	-	-	-	-	-	100	0.0054 ^(B)	0.0054 ^(B)	0.0055 ^(B)	0.00038	12	-	-	-	-	-	-	-	-	-																																																				
Chromium	µg/L	-	1.0	50 ^(B)	-	0.58	1.0	0.050	0.39 ^(B)	0.22	84	-	-	-	-	33	-	0.20 ^(B)	0.11 ^(B)	0.73 ^(B)	0.0075	12	-	-	-	-	9.0	-	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	100	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	-	-	-																																																				
Cobalt	µg/L	-	-	-	-	-	0.050	0.38 ^(B)	0.74 ^(B)	0.27	84	-	-	-	-	-	100	0.20 ^(B)	0.11 ^(B)	0.74 ^(B)	0.17	188	-	-	-	-	-	100	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	100	0.11 ^(B)	0.11 ^(B)	0.11 ^(B)	0.00075	12	-	-	-	-	-	-	-	-	-																																																				
Copper	µg/L	-	1.0	2.0	-	0.31	1.0 ^(B)	0.12	0.38	0.13	1.2 ^(B)	0.38	84	-	-	38	-	0.12 ^(B)	0.038 ^(B)	1.2 ^(B)	0.038	188	-	-	-	-	10	-	0.038 ^(B)	0.038 ^(B)	0.038 ^(B)	0.00038	12	-	-	-	-	-	-	100	0.038 ^(B)	0.038 ^(B)	0.038 ^(B)	0.00038	12	-	-	-	-	-	-	-	-	-																																																				
Iron	µg/L	-	200	-	-	155	300	5.0	30 ^(B)	22 ^(B)	12	84	-	-	-	-	100	17 ^(B)	17 ^(B)	17 ^(B)	0.012	12	-	-	-	-	-	100	17 ^(B)	17 ^(B)	17 ^(B)	0.012	12	-	-	-	-	-	-	100	17 ^(B)	17 ^(B)	17 ^(B)	0.012	12	-	-	-	-	-	-	-	-	-																																																				
Lead	µg/L	-	1.0 ^(B)	10	-	0.53	1.0	0.025	0.18 ^(B)	0.32 ^(B)	0.091	84	-	-	-	-	100	0.099 ^(B)	0.058 ^(B)	0.32 ^(B)	0.069	188	-	-	-	-	-	100	0.059 ^(B)	0.058 ^(B)	0.060 ^(B)	0.00041	12	-	-	-	-	-	-	100	0.059 ^(B)	0.058 ^(B)	0.060 ^(B)	0.00041	12	-	-	-	-	-	-	-	-	-																																																				
Lithium	µg/L	-	-	-	48	96	0.25	1.7 ^(B)	1.7 ^(B)	0.42	84	-	-	-	-	-	100	1.3 ^(B)	1.1 ^(B)	2.4 ^(B)	0.37	188	-	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.075	12	-	-	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.075	12	-	-	-	-	-	-	-	-	-																																																				
Manganese	µg/L	-	-	-	316	679	0.37	66 ^(B)	131 ^(B)	46	131 ^(B)	131 ^(B)	84	-	-	-	-	100	17 ^(B)	17 ^(B)	17 ^(B)	0.012	12	-	-	-	-	100	17 ^(B)	17 ^{(B}																																																																												

Table 6-1-8: Lake A12 - Operations and Closure

Parameter	Unit	Guidelines for the protection of:										A12 (Operations)														A12 (Early-Closure)														A12 (Mid-Closure)														A12 (Late-Closure)													
		Aquatic Life (CCME 1999)				Drinking Water (HC 2014)	Aquatic Life (SSWQO)		Meadowbank (Azimuth 2015b)		Baseline (A15/A12)		A12 (Operations)										A12 (Early-Closure)										A12 (Mid-Closure)										A12 (Late-Closure)																								
		Acute		Chronic			Trigger	Threshold			Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	A	C	D	S	R	T	B									
Conventional Parameters																																																																			
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	-	35	11	75	21	84	-	-	-	-	-	-	-	-	14	12	21	1.9	188	-	-	-	-	-	-	-	15	15	15	0.089	12	-	-	-	-	-	14	14	14	0.12	12	-	-	-	-	-	-	-	-	-	-	-							
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	-	52	14	105	28	84	-	-	-	-	-	-	-	-	22	17	38	4.9	188	-	-	-	-	-	-	26	26	26	0.11	12	-	-	-	-	-	23	23	24	0.26	12	-	-	-	-	-	-	-	-	-	-	-								
Major Ions																																																																			
Calcium	mg/L	-	-	-	-	-	-	2.5	1.1 ^(B)	2.8 ^(B)	26 ^(B)	7.7	84	-	-	-	-	-	-	-	-	-	100	3.8 ^(B)	3.2 ^(B)	5.9 ^(B)	0.59	188	-	-	-	-	-	-	100	4.2 ^(B)	4.1 ^(B)	4.2 ^(B)	0.024	12	-	-	-	-	-	100	3.9 ^(B)	3.8 ^(B)	3.9 ^(B)	0.034	12	-	-	-	-	-	-	-	-	-	-	-					
Chloride	mg/L	640	120	-	-	60	120	2.1	20 ^(B)	3.4 ^(B)	49 ^(B)	15	84	-	-	-	-	-	-	-	-	-	100	5.0 ^(B)	3.9 ^(B)	9.2 ^(B)	1.1	188	-	-	-	-	-	-	100	5.2 ^(B)	5.1 ^(B)	5.2 ^(B)	0.042	12	-	-	-	-	-	100	4.6 ^(B)	4.6 ^(B)	4.7 ^(B)	0.046	12	-	-	-	-	-	-	-	-	-	-	-					
Fluoride	mg/L	-	0.12	1.5	-	-	-	0.025	0.050 ^(B)	0.028 ^(B)	0.068 ^(B)	0.011	84	-	-	-	-	-	-	-	-	-	100	0.036 ^(B)	0.030 ^(B)	0.052 ^(B)	0.0049	188	-	-	-	-	-	-	100	0.062 ^(B)	0.062 ^(B)	0.063 ^(B)	0.00038	12	-	-	-	-	-	-	100	0.058 ^(B)	0.058 ^(B)	0.059 ^(B)	0.00049	12	-	-	-	-	-	-	-	-	-	-	-				
Magnesium	mg/L	-	-	-	-	-	-	0.89	1.6 ^(B)	0.88	2.3 ^(B)	0.42	84	-	-	-	-	-	-	-	-	-	100	1.2 ^(B)	1.2 ^(B)	1.2 ^(B)	0.0075	12	-	-	-	-	-	-	100	1.2 ^(B)	1.2 ^(B)	1.2 ^(B)	0.0075	12	-	-	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.0091	12	-	-	-	-	-	-	-	-	-	-	-				
Potassium	mg/L	-	-	-	-	-	-	0.58	1.1 ^(B)	0.56	1.4 ^(B)	0.23	84	-	-	-	-	-	-	-	-	-	100	0.82 ^(B)	0.66 ^(B)	1.4 ^(B)	0.188	188	-	-	-	-	-	-	100	1.4 ^(B)	1.4 ^(B)	1.4 ^(B)	0.0067	12	-	-	-	-	-	-	100	1.3 ^(B)	1.3 ^(B)	1.3 ^(B)	0.013	12	-	-	-	-	-	-	-	-	-	-	-				
Sodium	mg/L	-	-	-	-	-	-	0.67	3.0 ^(B)	0.63	5.2 ^(B)	1.2	84	-	-	-	-	-	-	-	-	-	100	1.3 ^(B)	0.84 ^(B)	2.8 ^(B)	0.46	188	-	-	-	-	-	-	100	2.0 ^(B)	2.0 ^(B)	2.0 ^(B)	0.011	12	-	-	-	-	-	-	100	1.7 ^(B)	1.6 ^(B)	1.7 ^(B)	0.029	12	-	-	-	-	-	-	-	-	-	-	-				
Sulphate	mg/L	-	-	-	-	65	128	3.3	4.9 ^(B)	2.2	7.1 ^(B)	1.3	84	-	-	-	-	-	-	-	-	-	100	3.4 ^(B)	2.7	5.4 ^(B)	0.63	188	-	-	-	-	-	-	42	5.1 ^(B)	5.1 ^(B)	5.2 ^(B)	0.018	12	-	-	-	-	-	-	100	4.6 ^(B)	4.5 ^(B)	4.6 ^(B)	0.056	12	-	-	-	-	-	-	-	-	-	-	-				
Nutrients																																																																			
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.014	0.75 ^(B)	0.012	1.3 ^(B)	0.33	84	-	-	-	-	-	-	-	-	-	100	0.40 ^(B)	0.11 ^(B)	1.3 ^(B)	0.28	188	-	-	-	-	-	-	100	0.30 ^(B)	0.30 ^(B)	0.31 ^(B)	0.0040	12	-	-	-	-	-	100	0.23 ^(B)	0.22 ^(B)	0.24 ^(B)	0.0064	12	-	-	-	-	-	-	-	-	-	-	-					
Total ammonia	mg-N/L	-	0.019 ^(B)	-	-	0.065	0.13	0.0071	0.071 ^(B)	0.0065	0.13 ^(B)	0.038	84	-	-	-	-	-	-	-	-	-	100	0.041 ^(B)	0.017 ^(B)	0.13 ^(B)	0.027	188	-	-	-	-	-	22	188	-	-	-	100	0.041 ^(B)	0.041 ^(B)	0.042 ^(B)	0.00042	12	-	-	-	-	-	100	0.033 ^(B)	0.032 ^(B)	0.033 ^(B)	0.00074	12	-	-	-	-	-	-	-	-	-	-	-	
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0010	0.012^(B)	0.0029^(B)	0.020^(B)	0.0048	84	-	80	-	-	-	-	-	-	-	89	93	100	0.0053 ^(B)	0.0031^(B)	0.012^(B)	0.0021	188	-	4.0	-	-	28	66	100	0.010 ^(B)	0.0096^(B)	0.010^(B)	0.000052	12	-	33	-	-	-	100	100	100	0.0084 ^(B)	0.0082^(B)	0.0086^(B)	0.00015	12	-	-	-	-	-	-	-	-	-	-	-	
Dissolved Metals																																																																			
Aluminum	µg/L	-	100 ^(B)	-	-	54	100	3.2	3.6 ^(B)	2.5	4.7 ^(B)	0.77	84	-	-	-	-	-	-	-	-	-	62	4.2 ^(B)	3.9 ^(B)	4.7 ^(B)	0.18	188	-	-	-	-	-	-	100	1.6	1.4	1.6	0.081	12	-	-	-	-	-	100	1.4	1.3	1.5	0.050	12	-	-	-	-	-	-	-	-	-	-	-					
Antimony	µg/L	-	-	6.0	-	10	20	0.050	0.36 ^(B)	0.11 ^(B)	0.53 ^(B)	0.12	84	-	-	-	-	-	-	-	-	-	100	0.24 ^(B)	0.14 ^(B)	0.53 ^(B)	0.093	188	-	-	-	-	-	-	100	0.48 ^(B)	0.48 ^(B)	0.48 ^(B)	0.0032	12	-	-	-	-	-	100	3.43 ^(B)	0.42 ^(B)	0.43 ^(B)	0.0056	12	-	-	-	-	-	-	-	-	-	-	-					
Arsenic	µg/L	-	-	10	25	12	25	0.32	8.2 ^(B)	0.29	13 ^(B)	3.5	84	-	-	43	-	10	-	94	4.0 ^(B)	1.9 ^(B)	12 ^(B)	2.7	188	-	-	4.0	-	3.0	-	100	20 ^(B)	20 ^(B)	20 ^(B)	0.19	12	-	-	-	-	-	100	17 ^(B)	16 ^(B)	17 ^(B)	0.36	12	-	-	-	-	-	-	-	-	-	-	-								
Barium	µg/L	-	-	1,000	-	501	1,000	6.1	10 ^(B)	5.8	15 ^(B)	2.5	84	-	-	-	-	-	-	-	-	-	93	7.6 ^(B)	6.6 ^(B)	10 ^(B)	0.83	188	-	-	-	-	-	-	100	9.9 ^(B)	9.8 ^(B)	10 ^(B)	0.054	12	-	-	-	-	-	100	8.9 ^(B)	8.8 ^(B)	9.0 ^(B)	0.10	12	-	-	-	-	-	-	-	-	-	-	-					
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.001	0.0026 ^(B)	0.0021 ^(B)	0.0029 ^(B)	0.00021	84	-	-	-	-	-	-	-	-	-	100	0.024 ^(B)	0.022 ^(B)	0.027 ^(B)	0.00099	188	-	-	-	-	-	-	100	0.025 ^(B)	0.024 ^(B)	0.025 ^(B)	0.00021	12	-	-	-	-	-	-	100	0.024 ^(B)	0.024 ^(B)	0.024 ^(B)	0.00022	12	-	-	-	-	-	-	-	-	-	-	-				
Bismuth	µg/L	-	-	-	-	-	-	0.025	0.057 ^(B)	0.051 ^(B)	0.062 ^(B)	0.0027	84	-	-	-	-	-	-	-	-	-	100	0.058 ^(B)	0.055 ^(B)	0.062 ^(B)	0.0014	188	-	-	-	-	-	-	100	0.055 ^(B)	0.054 ^(B)	0.056 ^(B)	0.00056	12	-	-	-	-	-	-	100	0.055 ^(B)	0.054 ^(B)	0.055 ^(B)	0.00056	12	-	-	-	-	-	-	-	-	-	-	-				
Boron	µg/L	29,000	1,600	5,000	-	760	1,500	5.0	44 ^(B)	14 ^(B)	72 ^(B)	15	84	-	-	-	-	-	-	-	-	100	21 ^(B)	14 ^(B)	44 ^(B)	7.1	188	-	-	-	-	-	-	100	30 ^(B)	29 ^(B)	30 ^(B)	0.15	12	-	-	-	-	-	100	25	25	26 ^(B)	0.26 ^(B)	12	-	-	-	-	-	-	-	-	-	-	-						
Calcium	mg/L	0.22 - 1.6 ^(B)	0.040 - 0.13 ^(B)	5.0	-	0.025	0.040	0.0025	0.010 ^(B)	0.0053 ^(B)	0.014 ^(B)	0.0025	84	-	-	-	-	-	-	-	-	100	0.0371 ^(B)	0.0050 ^(B)	0.24 ^(B)	0.068	188	-	-	-	-	-	-	100	0.010 ^(B)	0.010 ^(B)	0.010 ^(B)	0.00049	12	-	-	-	-	-	100	0.0092 ^(B)	0.0091 ^(B)	0.0093 ^(B)	0.00099	12	-	-	-	-	-	-	-	-	-	-	-						
Chromium	µg/L	1.0	50 ^(B)	-	-	0.050	1.6	0.10	0.41 ^(B)	0.11 ^(B)	0.68 ^(B)	0.11	84	-	-	15	-	-	-	-	-	100	0.21 ^(B)	0.13 ^(B)	0.42 ^(B)	0.098	188	-	-	-	-	-	-	100	0.23 ^(B)	0.23 ^(B)	0.23 ^(B)	0.0034	12	-	-	-	-	-	100	0.24 ^(B)	0.23 ^(B)	0.24 ^(B)	0.0034	12	-	-	-	-	-	-	-	-	-	-	-						
Cobalt	µg/L	-	-	-	-	-	-	0.050	0.36 ^(B)	0.11 ^(B)	0.53 ^(B)	0.12	84	-	-	-	-	-	-	-	-	100	0.20 ^(B)	0.13 ^(B)	0.41 ^(B)	0.066	188	-	-	-	-	-	-	100	0.42 ^(B)	0.42 ^(B)	0.42 ^(B)	0.0021	12	-	-	-	-	-	100	0.35 ^(B)	0.35 ^(B)	0.36 ^(B)	0.0061	12	-	-	-	-	-	-	-	-	-	-	-						
Copper	µg/L	-	-	200	-	1.2	2.0	0.79	0.90 ^(B)	0.48 ^(B)	1.3 ^(B)	0.22	84	-	-	15	-	-	-	-	-	100	0.70	0.55	1.1 ^(B)	0.12	188	-	-	-	-	-	-	21	0.93 ^(B)	0.92 ^(B)	0.95 ^(B)	0.0061	12	-	-	-	-	-	100	0.85 ^(B)	0.84 ^(B)	0.86 ^(B)	0.0094	12	-	-	-	-	-	-	-	-	-	-	-						
Iron	µg/L	-	300	-	-	153	300	5.0	40 ^(B)	13 ^(B)	60 ^(B)	12	84	-	-	100	-	-	-	-	-	100	19 ^(B)	14 ^(B)	30 ^(B)	5.0	188	-	-	-	-	-	-	100	43 ^(B)	43 ^(B)	43 ^(B)	0.30	12	-	-	-	-	-	100	38 ^(B)	38 ^(B)	39 ^(B)	0.53	12	-	-	-	-	-	-	-	-	-	-	-						
Lead	µg/L	-	1.0 - 2.2 ^(B)	10	-	0.53	1.0	0.025	0.10 ^(B)	0.0067	0.10 ^(B)	0.006	84	-	-	-	-	-	-	-	-	100																																													

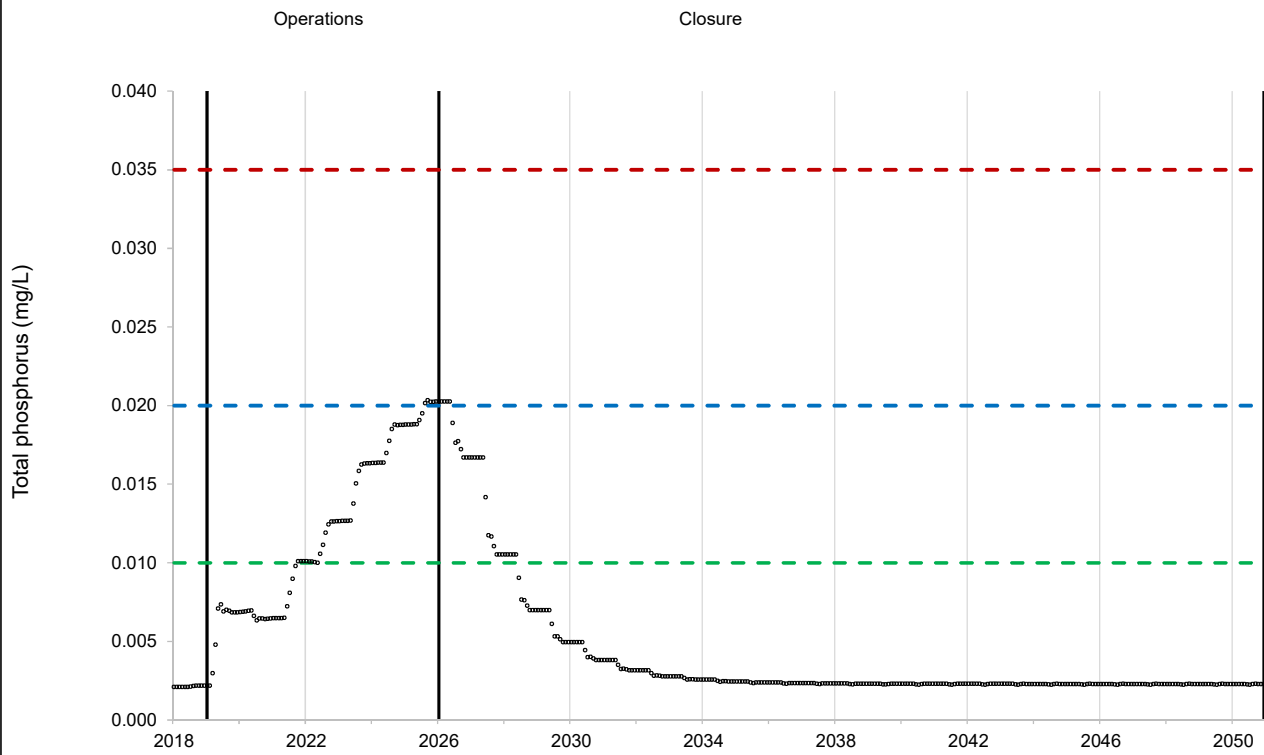
Table 6.4-9: Lake A76 - Operations and Closure

Parameter	Unit	Guidelines for the protection of:										A76 (Operations)										A76 (Early-Closure)										A76 (Mid-Closure)										A76 (Late-Closure)												
		Aquatic Life (CME 1999)										Meadowbank (Azmuth 2015b)										A76 (Early-Closure)										A76 (Mid-Closure)										A76 (Late-Closure)												
		Drinking Water (HC 2014)										Baseline (A76)										A76 (Early-Closure)										A76 (Mid-Closure)										A76 (Late-Closure)												
		Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic	Mean	Min	Max	Standard Deviation	Count	% Above Guideline	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	% Above Guideline	A	C	D	S	R	T	B	Mean	Min	Max	Standard Deviation	Count	% Above Guideline	A	C	D	S	R	T	B				
Conventional Parameters																																																						
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	-	-	29	9.5	50	13	84	-	-	-	-	-	-	-	-	14	12	21	2.4	188	-	-	-	-	-	-	15	14	15	0.12	12	-	-	-	-	-	14	14	14	0.16	12	-	-	-	-	-
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	-	-	42	13	70	19	84	-	-	-	-	-	-	-	-	22	16	36	5.1	188	-	-	-	-	-	-	24	24	25	0.25	12	-	-	-	-	-	23	22	23	0.30	12	-	-	-	-	-
Major Ions																																																						
Calcium	mg/L	-	-	-	-	-	-	3.8	9.3 ^(a)	2.5	17 ^(a)	4.8	84	-	-	-	79	3.9 ^(a)	3.1	6.2 ^(a)	0.78	188	-	-	-	-	35	4.0 ^(a)	3.9 ^(a)	4.1 ^(a)	0.032	12	-	-	-	-	100	3.8	3.7	3.8 ^(a)	0.044	12	-	-	-	-	-	42						
Chloride	mg/L	640	120	-	-	60	120	5.3	16 ^(a)	2.3	31 ^(a)	9.4	84	-	-	-	79	4.7	3.2	9.6 ^(a)	1.6	188	-	-	-	-	23	4.7	4.7	4.7	0.025	12	-	-	-	-	-	4.3	4.2	4.4	0.049	12	-	-	-	-	-	-						
Fluoride	mg/L	-	0.12	-	1.5	-	-	0.034	0.046 ^(a)	0.028	0.057 ^(a)	0.0092	84	-	-	-	79	0.039 ^(a)	0.034	0.046 ^(a)	0.0042	188	-	-	-	-	98	0.037 ^(a)	0.036 ^(a)	0.039 ^(a)	0.0013	12	-	-	-	-	100	0.037 ^(a)	0.036 ^(a)	0.038 ^(a)	0.0042	12	-	-	-	-	-	100						
Magnesium	mg/L	-	-	-	-	-	-	1.3	1.4 ^(a)	0.79	1.8 ^(a)	0.32	84	-	-	-	75	1.1	0.96	1.4 ^(a)	0.11	188	-	-	-	-	3.0	1.1	1.2	0.010	12	-	-	-	-	-	1.1	1.1	1.1	0.013	12	-	-	-	-	-	-							
Potassium	mg/L	-	-	-	-	-	-	0.84	0.94 ^(a)	0.55	1.2 ^(a)	0.20	84	-	-	-	75	0.84	0.69	1.1 ^(a)	0.12	188	-	-	-	-	40	1.3 ^(a)	1.3 ^(a)	1.3 ^(a)	0.028	12	-	-	-	-	100	1.3 ^(a)	1.2 ^(a)	1.3 ^(a)	0.014	12	-	-	-	-	-	100						
Sodium	mg/L	-	-	-	-	-	-	0.80	2.4 ^(a)	0.68	3.8 ^(a)	0.94	84	-	-	-	90	1.8 ^(a)	0.91	2.5 ^(a)	0.43	188	-	-	-	-	100	1.8 ^(a)	1.8 ^(a)	1.8 ^(a)	0.071	12	-	-	-	-	100	1.8 ^(a)	1.7 ^(a)	1.8 ^(a)	0.031	12	-	-	-	-	-	100						
Sulfate	mg/L	-	-	-	-	-	-	65	128	3.8	4.3 ^(a)	2.3	84	-	-	-	76	3.6	2.9	4.8 ^(a)	0.54	188	-	-	-	-	28	4.8 ^(a)	4.7 ^(a)	4.9 ^(a)	0.078	12	-	-	-	-	100	4.8 ^(a)	4.4 ^(a)	4.8 ^(a)	0.064	12	-	-	-	-	-	100						
Nutrients																																																						
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.0058	0.52 ^(a)	0.0052 ^(a)	0.89 ^(a)	0.27	84	-	-	-	100	0.36 ^(a)	0.098 ^(a)	0.89 ^(a)	0.23	188	-	-	-	-	100	0.26 ^(a)	0.26 ^(a)	0.26 ^(a)	0.0025	12	-	-	-	-	100	0.21 ^(a)	0.20 ^(a)	0.22 ^(a)	0.0060	12	-	-	-	-	-	100						
Total ammonia	mg-N/L	-	0.019 ^(a)	-	-	0.065	0.13	0.013	0.050 ^(a)	0.0062	0.085 ^(a)	0.026	84	-	-	-	36	79	0.041 ^(a)	0.016 ^(a)	0.085 ^(a)	0.021	188	-	-	-	17	100	0.036 ^(a)	0.036 ^(a)	0.037 ^(a)	0.00038	12	-	-	-	-	100	0.031 ^(a)	0.030 ^(a)	0.031 ^(a)	0.00072	12	-	-	-	-	-	100					
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0012	0.0094 ^(a)	0.0025 ^(a)	0.014 ^(a)	0.0038	84	-	84	-	79	80	0.0054 ^(a)	0.0032 ^(a)	0.010 ^(a)	0.0020	188	-	3.0	-	29	67	100	0.0087 ^(a)	0.0085 ^(a)	0.0090 ^(a)	0.00021	12	-	-	-	-	100	100	0.0080 ^(a)	0.0078 ^(a)	0.0081 ^(a)	0.00015	12	-	-	-	-	-	100			
Dissolved Metals																																																						
Aluminum	µg/L	-	100 ^(a)	-	-	-	54	100	2.6	3.9 ^(a)	3.1 ^(a)	4.3 ^(a)	0.47	84	-	-	-	100	4.7 ^(a)	4.4 ^(a)	4.9 ^(a)	0.10	188	-	-	-	100	2.3	2.1	2.5	0.14	12	-	-	-	-	-	2.0	1.8	2.0	0.055	12	-	-	-	-	-	100						
Antimony	µg/L	-	-	6.0	-	10	20	0.050	0.29 ^(a)	0.11 ^(a)	0.43 ^(a)	0.10	84	-	-	-	100	0.24 ^(a)	0.15 ^(a)	0.43 ^(a)	0.080	188	-	-	-	-	100	0.42 ^(a)	0.40 ^(a)	0.43 ^(a)	0.012	12	-	-	-	-	100	0.40 ^(a)	0.40 ^(a)	0.41 ^(a)	0.0054	12	-	-	-	-	-	100						
Arsenic	µg/L	-	-	-	10	25	32	25	0.23	5.8 ^(a)	0.24 ^(a)	9.1 ^(a)	3.0	84	-	-	-	100	3.7 ^(a)	1.1 ^(a)	9.1 ^(a)	2.3	188	-	-	-	-	100	16 ^(a)	16 ^(a)	17 ^(a)	0.67	12	-	-	-	-	100	15 ^(a)	15 ^(a)	16 ^(a)	0.32	12	-	-	-	-	100						
Barium	µg/L	-	-	1,000	-	501	1,000	8.0	5.9 ^(a)	5.9	12 ^(a)	1.9	84	-	-	-	79	8.2 ^(a)	7.2	9.9 ^(a)	0.72	188	-	-	-	-	45	9.6 ^(a)	9.4 ^(a)	9.7 ^(a)	0.11	12	-	-	-	-	100	9.0 ^(a)	8.8 ^(a)	9.2 ^(a)	0.13	12	-	-	-	-	-	100						
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.010	0.028 ^(a)	0.021 ^(a)	0.028 ^(a)	0.0021	84	-	-	-	100	0.026 ^(a)	0.025 ^(a)	0.028 ^(a)	0.00031	188	-	-	-	-	100	0.025 ^(a)	0.025 ^(a)	0.026 ^(a)	0.00031	12	-	-	-	-	100	0.025 ^(a)	0.024 ^(a)	0.025 ^(a)	0.00033	12	-	-	-	-	-	100						
Bismuth	µg/L	-	-	-	-	-	-	0.025	0.059 ^(a)	0.053 ^(a)	0.063 ^(a)	0.0026	84	-	-	-	100	0.026 ^(a)	0.061 ^(a)	0.065 ^(a)	0.00090	188	-	-	-	-	100	0.059 ^(a)	0.057 ^(a)	0.059 ^(a)	0.00083	12	-	-	-	-	100	0.058 ^(a)	0.056 ^(a)	0.058 ^(a)	0.00080	12	-	-	-	-	-	100						
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	5.0	35 ^(a)	11 ^(a)	52 ^(a)	13	84	-	-	-	100	22 ^(a)	14 ^(a)	38 ^(a)	6.6	188	-	-	-	-	100	27 ^(a)	27 ^(a)	28 ^(a)	0.43	12	-	-	-	-	100	25 ^(a)	24 ^(a)	25 ^(a)	0.44	12	-	-	-	-	-	100						
Cadmium	µg/L	0.19 - 1.0 ^(a)	0.040 - 0.089 ^(a)	5.0	-	0.025	0.040	0.014	0.0063	0.0055	0.012	0.0020	84	-	-	-	-	0.0077	0.0066	0.0098	0.00091	188	-	-	-	-	-	0.0096	0.0085	0.0098	0.00014	12	-	-	-	-	100	0.0092	0.0089	0.0093	0.00013	12	-	-	-	-	-	100						
Chromium	µg/L	-	1.0	50 ^(a)	-	0.56	1.0	0.050	0.33 ^(a)	0.11 ^(a)	0.48 ^(a)	0.12	84	-	-	-	100	0.24 ^(a)	0.14 ^(a)	0.35 ^(a)	0.062	188	-	-	-	-	100	0.29 ^(a)	0.25 ^(a)	0.26 ^(a)	0.0030	12	-	-	-	-	100	0.23 ^(a)	0.23 ^(a)	0.24 ^(a)	0.00039	12	-	-	-	-	-	100						
Cobalt	µg/L	-	-	-	-	-	-	0.071	0.29 ^(a)	0.11 ^(a)	0.41 ^(a)	0.098	84	-	-	-	100	0.21 ^(a)	0.14 ^(a)	0.35 ^(a)	0.058	188	-	-	-	-	100	0.37 ^(a)	0.36 ^(a)	0.38 ^(a)	0.0090	12	-	-	-	-	100	0.34 ^(a)	0.33 ^(a)	0.34 ^(a)	0.0061	12	-	-	-	-	-	100						
Copper	µg/L	-	-	-	-	1.2	2.0	0.56	0.99 ^(a)	0.67 ^(a)	1.4 ^(a)	0.18	84	-	-	-	80	0.81 ^(a)	0.67 ^(a)	1.0 ^(a)	0.97	188	-	-	-	-	100	0.91 ^(a)	0.89 ^(a)	0.93 ^(a)	0.015	12	-	-	-	-	100	0.88 ^(a)	0.85 ^(a)	0.89 ^(a)	0.013	12	-	-	-	-	-	100						
Iron	µg/L	-	300	-	-	155	300	5.0	29 ^(a)	13 ^(a)	46 ^(a)	10	84	-	-	-	100	21 ^(a)	13 ^(a)	33 ^(a)	4.9	188	-	-	-	-	100	36 ^(a)	37 ^(a)	39 ^(a)	0.71	12	-	-	-	-	100	36 ^(a)	35 ^(a)	37 ^(a)	0.57	12	-	-	-	-	-	100						
Lead	µg/L	1.0 ^(a)	-	10	-	0.53	1.0	0.040	0.13 ^(a)	0.068	0.17 ^(a)	0.047	84	-	-	-	21	0.10 ^(a)	0.084	0.17 ^(a)	0.023	188	-	-	-	-	100	0.14 ^(a)	0.14 ^(a)	0.14 ^(a)	0.0023	12	-	-	-	-	100	0.14 ^(a)	0.13 ^(a)	0.14 ^(a)	0.0023	12	-	-	-	-	-	100						
Lithium	µg/L	-	-	-	-	48	96	1.50	1.6 ^(a)	1.1 ^(a)	1.7 ^(a)	0.26	84	-	-	-	100	1.5 ^(a)	1.3 ^(a)	1.7 ^(a)	0.11	188	-	-	-	-	100	1.6 ^(a)	1.6 ^(a)	1.6 ^(a)	0.018	12	-	-	-	-	100	1.5 ^(a)	1.5 ^(a)	1.6 ^(a)	0.019	12	-	-	-	-	-	100						
Manganese	µg/L	-	-	-	-	316	679	1.2	37 ^(a)	0.92	58 ^(a)	19	84	-	-	-	93	19 ^(a)	5.4 ^(a)	49 ^(a)	12	188	-	-	-	-	100	60 ^(a)	62 ^(a)	65 ^(a)	0.21	12	-	-	-	-	100	52 ^(a)	50 ^(a)	53 ^(a)	0.14	12	-	-	-	-	-	100						
Mercury	µg/L	-	0.026	1.0	-	0.018	0.026	0.0035	0.0070 ^(a)	0.0054 ^(a)	0.0078 ^(a)	0.00076	84	-	-	-	100	0.0070 ^(a)	0.0063 ^(a)	0.0078 ^(a)	0.00039	188	-	-	-	-	100	0.0089 ^(a)	0.0087 ^(a)	0.0091 ^(a)	0.00015	12	-	-	-	-	100	0.0089 ^(a)	0.0087 ^(a)	0.0090 ^(a)	0.00016	12	-	-	-	-	-	100						
Molybdenum	µg/L	-	73	-	-	3	73	0.020	0.33 ^(a)	0.055 ^(a)	0.066 ^(a)	0.012	84	-	-	-	100	0.036 ^(a)	0.025 ^(a)	0.066 ^(a)	0.012	188	-	-	-	-	100	0.41 ^(a)	0.40 ^(a)	0.41 ^(a)	0.0035	12	-	-	-	-																		

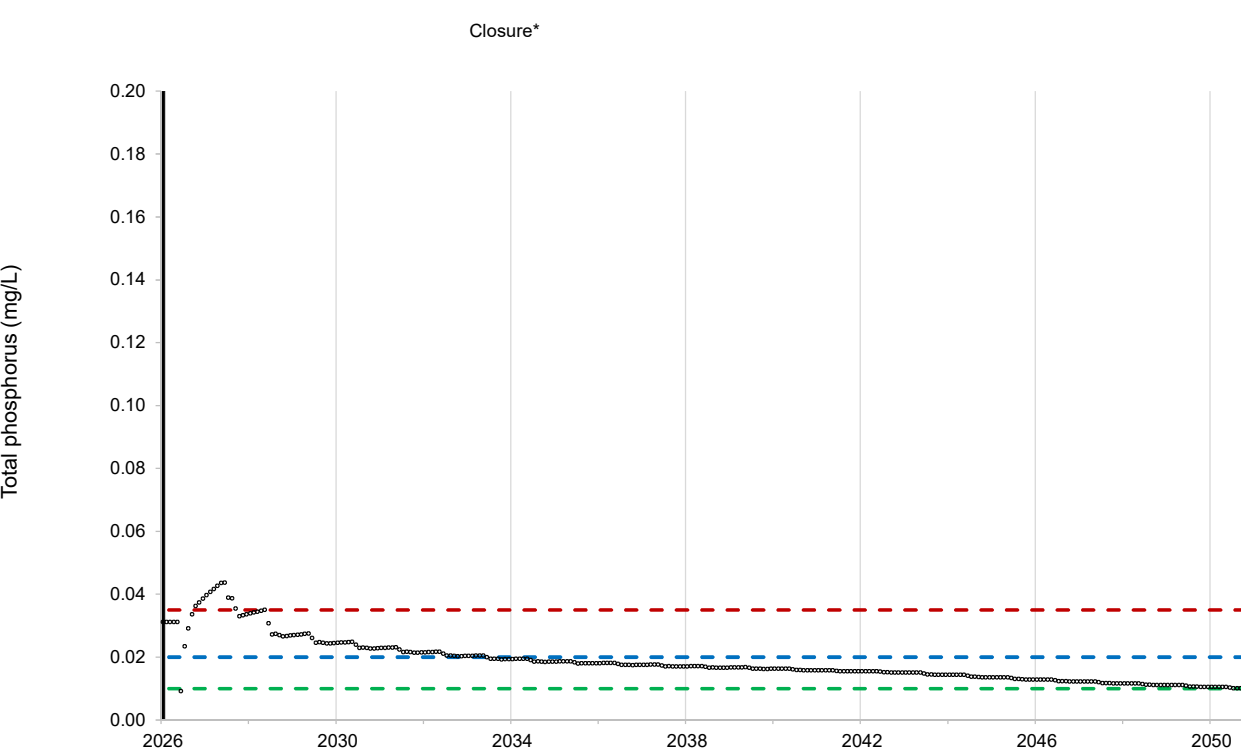
Table 64-10: Node DS1 - Operations and Closure

Parameter	Unit	Guidelines for the protection of:						Meadowbank (Azimuth 2015b)		DS1 (Operations)										DS1 (Early-Closure)										DS1 (Mid-Closure)										DS1 (Late-Closure)													
		Aquatic Life (CCME 1999)		Drinking Water (HC 2014)	Aquatic Life	Trigger	Threshold	Baseline (DS1)	Mean	Min	Max	Standard Deviation	Count	% Above Guideline										Mean	Min	Max	Standard Deviation	Count	% Above Guideline										Mean	Min	Max	Standard Deviation	Count	% Above Guideline									
		Acute	Chronic													A	C	D	S	R	T	B	A						C	D	S	R	T	B	A	C	D	S						R	T	B	A	C	D	S	R	T	B
Conventional Parameters																																																					
Hardness, as CaCO ₃	mg/L	-	-	-	-	-	-	-	10	7.6	13	1.8	44	-	-	-	-	-	8.0	7.8	8.9	0.21	63	-	-	-	-	-	-	8.5	8.4	8.6	0.10	4	-	-	-	-	-	8.4	8.3	8.5	0.094	4	-	-	-	-	-				
Total dissolved solids (calculated)	mg/L	-	-	-	-	-	-	-	14	11	18	2.5	44	-	-	-	-	-	11	11	13	0.41	63	-	-	-	-	-	-	12	12	13	0.19	4	-	-	-	-	-	12	12	12	0.17	4	-	-	-	-	-				
Major Ions																																																					
Calcium	mg/L	-	-	-	-	-	-	3.4	2.9	2.0	3.9 ^(B)	0.63	44	-	-	-	-	34	2.1	2.0	2.4	0.070	63	-	-	-	-	-	2.2	2.2	2.3	0.029	4	-	-	-	-	-	2.2	2.2	2.2	0.026	4	-	-	-	-	-					
Chloride	mg/L	640	120	-	-	-	60	120	2.4	3.0 ^(B)	1.2	4.9 ^(B)	1.2	44	-	-	-	-	61	1.4	1.3	2.1	0.15	63	-	-	-	-	-	1.6	1.6	1.7	0.044	4	-	-	-	-	-	1.6	1.6	1.6	0.040	4	-	-	-	-	-				
Fluoride	mg/L	-	0.12	1.5	-	-	-	-	0.055	0.029	0.027	0.031	0.0012	44	-	-	-	-	0.028	0.027	0.029	0.00035	63	-	-	-	-	-	0.031	0.030	0.031	0.00046	4	-	-	-	-	-	0.031	0.030	0.031	0.00041	4	-	-	-	-	-					
Magnesium	mg/L	-	-	-	-	-	-	-	1.1	0.74	0.65	0.81	0.045	44	-	-	-	-	0.68	0.66	0.71	0.0095	63	-	-	-	-	-	0.71	0.70	0.72	0.0078	4	-	-	-	-	-	0.71	0.70	0.72	0.0071	4	-	-	-	-	-					
Potassium	mg/L	-	-	-	-	-	-	-	0.75	0.54	0.49	0.58	0.027	44	-	-	-	-	0.51	0.50	0.54	0.0091	63	-	-	-	-	-	0.59	0.58	0.60	0.011	4	-	-	-	-	-	0.59	0.58	0.60	0.010	4	-	-	-	-	-					
Sodium	mg/L	-	-	-	-	-	-	-	1.0	0.65	0.65	1.0	0.12	44	-	-	-	-	0.70	0.67	0.81	0.032	63	-	-	-	-	-	0.78	0.76	0.82	0.015	4	-	-	-	-	-	0.78	0.77	0.80	0.013	4	-	-	-	-	-					
Sulphate	mg/L	-	-	-	-	-	65	128	2.8	2.4	2.2	2.6	0.14	44	-	-	-	-	2.3	2.2	2.4	0.040	63	-	-	-	-	-	2.5	2.5	2.5	0.037	4	-	-	-	-	-	2.5	2.4	2.5	0.032	4	-	-	-	-	-					
Nutrients																																																					
Nitrate	mg-N/L	124	2.9	10	-	1.5	3.0	0.029	0.064 ^(B)	0.0075	0.10 ^(B)	0.033	44	-	-	-	-	82	0.030 ^(B)	0.013	0.082 ^(B)	0.016	63	-	-	-	-	41	0.040 ^(B)	0.037 ^(B)	0.043 ^(B)	0.0031	4	-	-	-	-	100	0.034 ^(B)	0.032 ^(B)	0.037 ^(B)	0.0028	4	-	-	-	-	100					
Total ammonia	mg-N/L	-	0.019 ^(B)	-	-	0.065	0.13	0.010	0.010	0.0054	0.015 ^(B)	0.0032	44	-	-	-	-	57	0.0077	0.0061	0.012 ^(B)	0.0014	63	-	-	-	-	3.0	0.0093	0.0090	0.0098	0.00038	4	-	-	-	-	100	0.0088	0.0084	0.0091	0.00033	4	-	-	-	-	100					
Dissolved phosphorus	mg-P/L	-	0.010	-	-	0.0060	0.0040	0.0012	0.0030 ^(B)	0.0021 ^(B)	0.0037 ^(B)	0.00050	44	-	-	-	-	100	0.0023 ^(B)	0.0022 ^(B)	0.0026 ^(B)	0.00015	63	-	-	-	-	100	0.0029 ^(B)	0.0029 ^(B)	0.0031 ^(B)	0.000084	4	-	-	-	-	100	0.0029 ^(B)	0.0028 ^(B)	0.0030 ^(B)	0.000076	4	-	-	-	-	100					
Dissolved Metals																																																					
Aluminum	µg/L	-	100 ^(B)	-	-	54	100	7.2	3.8	3.7	3.9	0.051	44	-	-	-	-	3.8	3.8	3.9	0.026	63	-	-	-	-	-	3.6	3.6	3.6	0.031	4	-	-	-	-	100	3.5	3.5	3.6	0.042	4	-	-	-	-	100						
Antimony	µg/L	-	-	6.0	-	10	20	0.24	0.12	0.10	0.14	0.012	44	-	-	-	-	0.11	0.10	0.13	0.0055	63	-	-	-	-	-	0.14	0.14	0.15	0.0041	4	-	-	-	-	100	0.14	0.14	0.15	0.0039	4	-	-	-	-	100						
Arsenic	µg/L	-	-	-	10	25	12	25	0.19	0.80 ^(B)	0.18	1.2 ^(B)	0.37	44	-	-	-	-	95	0.41 ^(B)	0.24 ^(B)	0.95 ^(B)	0.16	63	-	-	-	-	100	2.2 ^(B)	2.0 ^(B)	2.5 ^(B)	0.20	4	-	-	-	-	100	2.2 ^(B)	2.0 ^(B)	2.3 ^(B)	0.20	4	-	-	-	-	100				
Barium	µg/L	-	-	1,000	-	501	1,000	6.9	6.1	5.5	6.5	0.27	44	-	-	-	-	-	5.7	5.6	5.9	0.063	63	-	-	-	-	-	6.1	6.0	6.2	0.068	4	-	-	-	-	100	6.0	6.0	6.1	0.057	4	-	-	-	-	100					
Beryllium	µg/L	-	-	-	-	2.7	5.3	0.010	0.021 ^(B)	0.021 ^(B)	0.021 ^(B)	0.00032	44	-	-	-	-	-	0.020 ^(B)	0.020 ^(B)	0.021 ^(B)	0.00014	63	-	-	-	-	-	0.021 ^(B)	0.021 ^(B)	0.021 ^(B)	0.00018	4	-	-	-	-	100	0.021 ^(B)	0.021 ^(B)	0.021 ^(B)	0.00017	4	-	-	-	-	100					
Bismuth	µg/L	-	-	-	-	-	-	0.025	0.052 ^(B)	0.050 ^(B)	0.053 ^(B)	0.00047	44	-	-	-	-	100	0.052 ^(B)	0.051 ^(B)	0.052 ^(B)	0.00034	63	-	-	-	-	-	100	0.052 ^(B)	0.051 ^(B)	0.052 ^(B)	0.00041	4	-	-	-	-	100	0.052 ^(B)	0.051 ^(B)	0.052 ^(B)	0.00042	4	-	-	-	-	100				
Boron	µg/L	29,000	1,500	5,000	-	760	1,500	5.0	13 ^(B)	10 ^(B)	16 ^(B)	1.7	44	-	-	-	-	100	11 ^(B)	10 ^(B)	13 ^(B)	0.48	63	-	-	-	-	100	12 ^(B)	12 ^(B)	13 ^(B)	0.23	4	-	-	-	-	100	12 ^(B)	12 ^(B)	12 ^(B)	0.19	4	-	-	-	-	100					
Cadmium	µg/L	0.15 - 0.26 ^(B)	0.040 ^(B)	5.0	-	0.025	0.040	0.037	0.0058	0.0052	0.0061	0.00027	44	-	-	-	-	0.0054	0.0053	0.0056	0.000073	63	-	-	-	-	-	0.0058	0.0057	0.0059	0.000071	4	-	-	-	-	100	0.0058	0.0057	0.0059	0.000060	4	-	-	-	-	100						
Chromium	µg/L	-	1.0	50 ^(B)	-	0.56	1.0	0.078	0.13 ^(B)	0.10 ^(B)	0.15 ^(B)	0.015	44	-	-	-	-	100	0.11 ^(B)	0.10 ^(B)	0.12 ^(B)	0.0045	63	-	-	-	-	100	0.12 ^(B)	0.12 ^(B)	0.12 ^(B)	0.0021	4	-	-	-	-	100	0.12 ^(B)	0.12 ^(B)	0.12 ^(B)	0.0018	4	-	-	-	-	100					
Cobalt	µg/L	-	-	-	-	-	-	0.050	0.12 ^(B)	0.10 ^(B)	0.14 ^(B)	0.013	44	-	-	-	-	100	0.11 ^(B)	0.10 ^(B)	0.12 ^(B)	0.0042	63	-	-	-	-	100	0.13 ^(B)	0.13 ^(B)	0.14 ^(B)	0.0034	4	-	-	-	-	100	0.13 ^(B)	0.13 ^(B)	0.14 ^(B)	0.0031	4	-	-	-	-	100					
Copper	µg/L	-	2.0 ^(B)	-	-	-	-	1.2	2.0	1.4	0.65	0.60	0.023	44	-	-	-	-	0.62	0.61	0.64	0.0076	63	-	-	-	-	-	0.65	0.64	0.66	0.0067	4	-	-	-	-	100	0.65	0.64	0.66	0.0054	4	-	-	-	-	100					
Iron	µg/L	-	300	-	-	155	300	31	15	13	17	1.4	44	-	-	-	-	13	13	14	0.37	63	-	-	-	-	-	16	15	16	0.34	4	-	-	-	-	100	16	15	16	0.31	4	-	-	-	-	100						
Lead	µg/L	-	1.0 ^(B)	10	-	0.53	1.0	5.1	0.075	0.063	0.084	0.0062	44	-	-	-	-	0.067	0.064	0.073	0.0018	63	-	-	-	-	-	0.074	0.073	0.076	0.0012	4	-	-	-	-	100	0.073	0.072	0.074	0.0010	4	-	-	-	-	100						
Lithium	µg/L	-	-	-	-	48	96	0.50	1.1 ^(B)	1.0 ^(B)	1.1 ^(B)	0.036	44	-	-	-	-	100	1.0 ^(B)	1.1 ^(B)	1.1 ^(B)	0.010	63	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.011	4	-	-	-	-	100	1.1 ^(B)	1.1 ^(B)	1.1 ^(B)	0.0098	4	-	-	-	-	100					
Manganese	µg/L	-	-	-	-	316	679	1.5	4.8 ^(B)	0.68	8.1 ^(B)	2.5	44	-	-	-	-	84	1.2 ^(B)	0.96	4.9 ^(B)	0.89	63	-	-	-	-	54	8.0 ^(B)	7.3 ^(B)	8.9 ^(B)	0.72	4	-	-	-	-	100	7.5 ^(B)	6.7 ^(B)	8.1 ^(B)	0.69	4	-	-	-	-	100					
Mercury	µg/L	-	0.026	0.1	-	0.018	0.026	0.0025	0.0053 ^(B)	0.0050 ^(B)	0.0054 ^(B)	0.00011	44	-	-	-	-	100	0.0052 ^(B)	0.0051 ^(B)	0.0053 ^(B)	0.000042	63	-	-	-	-	100	0.0059 ^(B)	0.0058 ^(B)	0.0060 ^(B)	0.000066	4	-	-	-	-	100	0.0059 ^(B)	0.0058 ^(B)	0.0059 ^(B)	0.000059	4	-	-	-	-	100					
Molybdenum	µg/L	-	37	37	-	37	73	0.029	0.14 ^(B)	0.13 ^(B)	0.14 ^(B)	0.0086	44	-	-	-	-	100	0.12 ^(B)	0.12 ^(B)	0.14 ^(B)	0.0083	63	-	-	-	-	100	0.12 ^(B)	0.12 ^(B)	0.14 ^(B)	0.0073	4	-	-	-	-	100	0.12 ^(B)	0.12 ^(B)	0.14 ^(B)	0.0071	4	-	-	-	-	100					
Nickel	µg/L	-	-	25 ^(B)	-	13	25	0.09	0.79	0.55	0.97	0.13	44	-	-	-	-	0.63	0.57	0.79	0.048	63	-	-	-	-	-	0.89	0.87	0.94	0.035	4	-	-	-	-	100	0.87	0.84	0.89	0.032	4	-	-	-	-	100						
Selenium	µg/L	-	-	1.0	50	-	0.55	1.0	0.025	0.061 ^(B)	0.050 ^(B)	0.069 ^(B)	0.0055	44	-	-	-	-	0.054 ^(B)	0.052 ^(B)	0.060 ^(B)	0.0019	63	-	-	-	-	100	0.061 ^(B)	0.061 ^(B)	0.064 ^(B)	0.0012	4	-	-	-	-	100	0.062 ^(B)	0.061 ^(B)	0.063 ^(B)	0.0011	4	-	-	-	-						

A-Whale Tail South

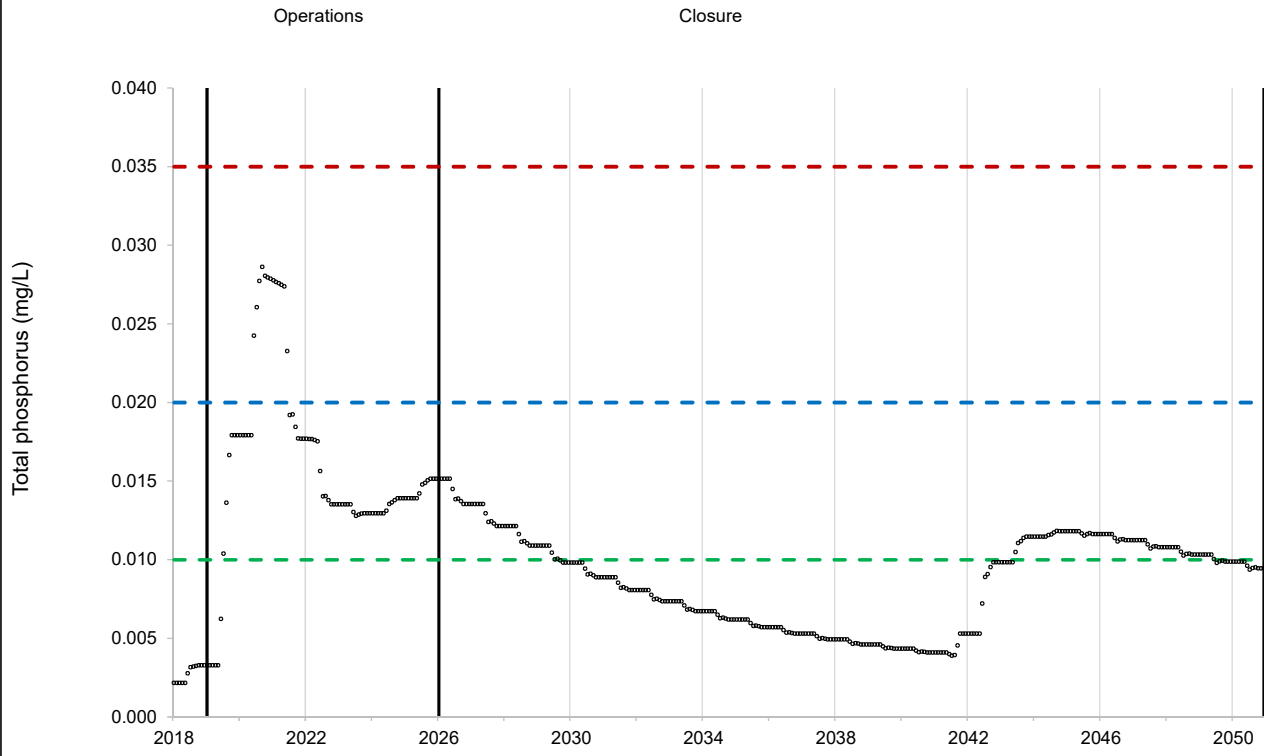


B-Whale Tail Pit

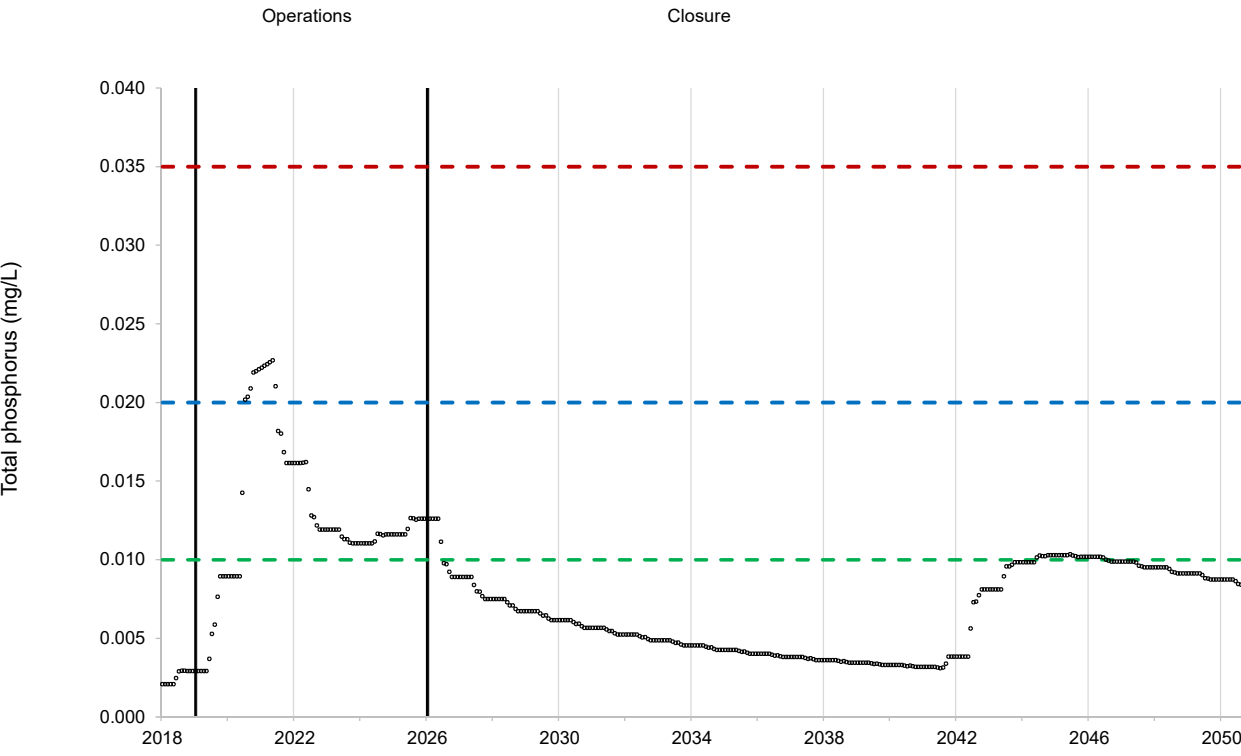


*Whale Tail Pit not connected to the receiving environment during Closure.

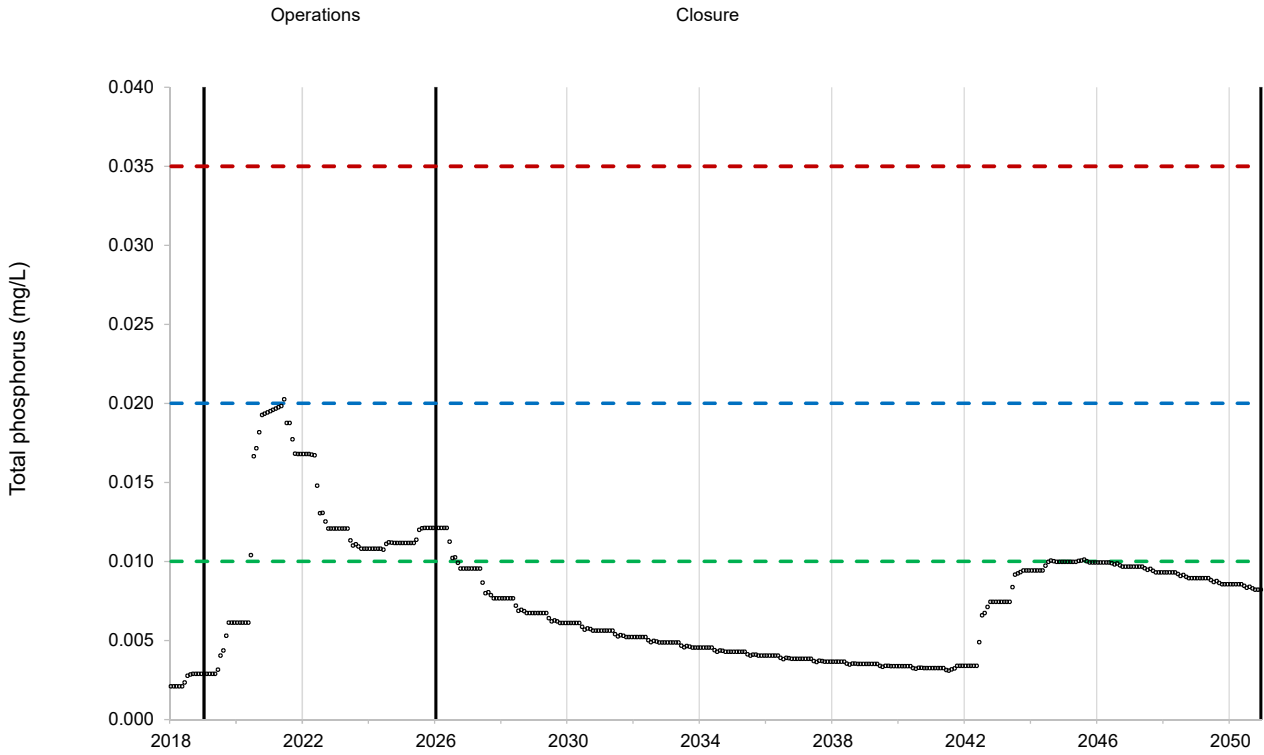
C-Mammoth Lake



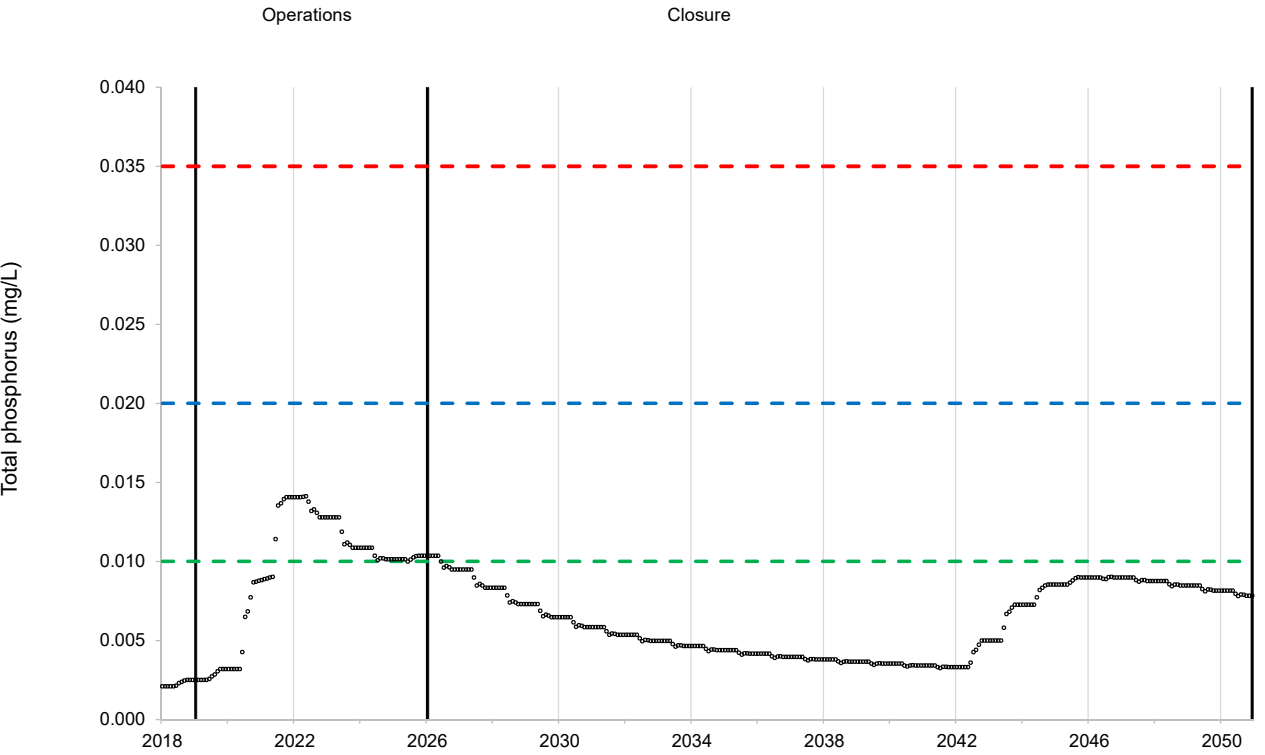
D-Lake A15



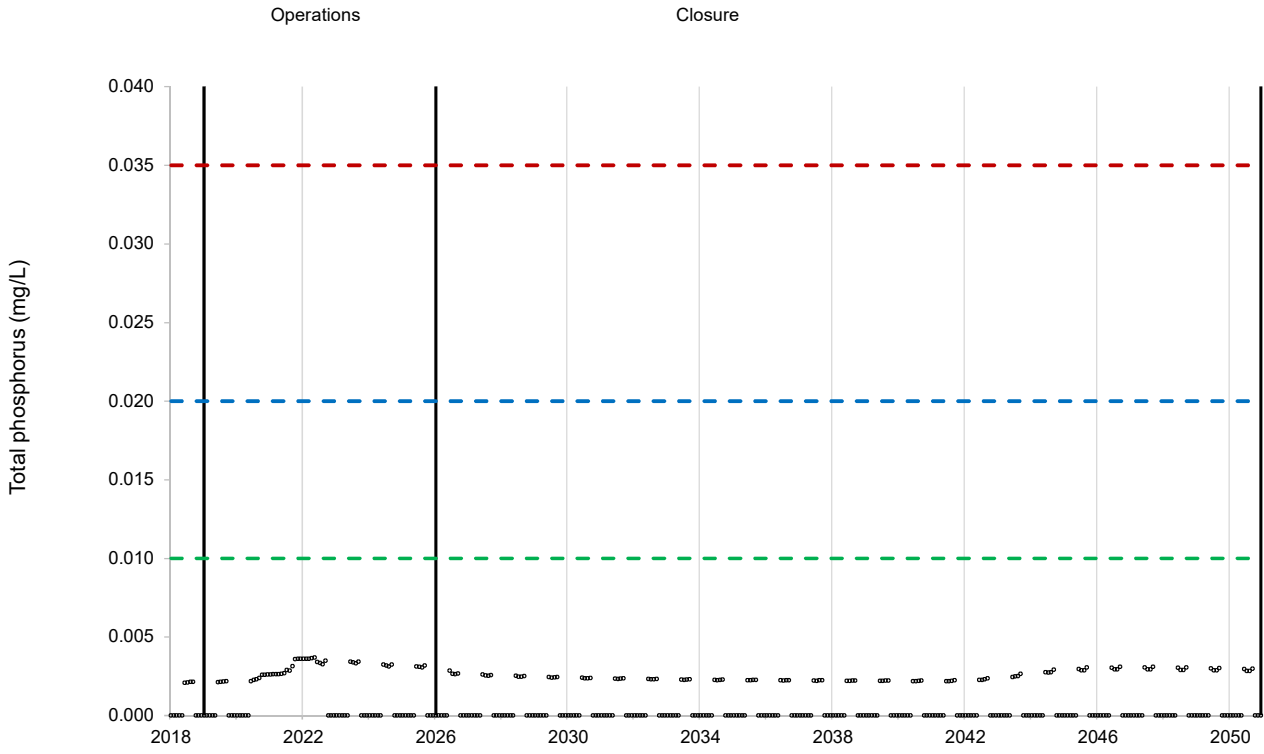
E-Lake A12



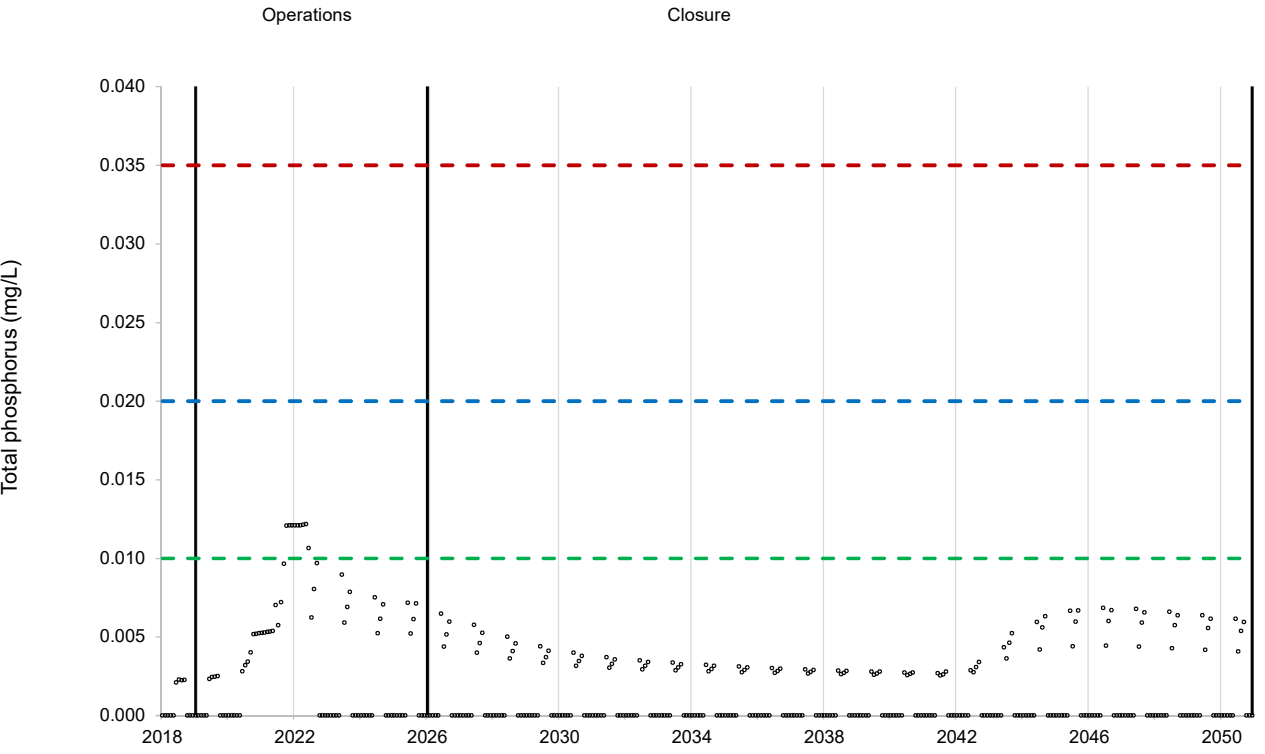
F-Lake A76



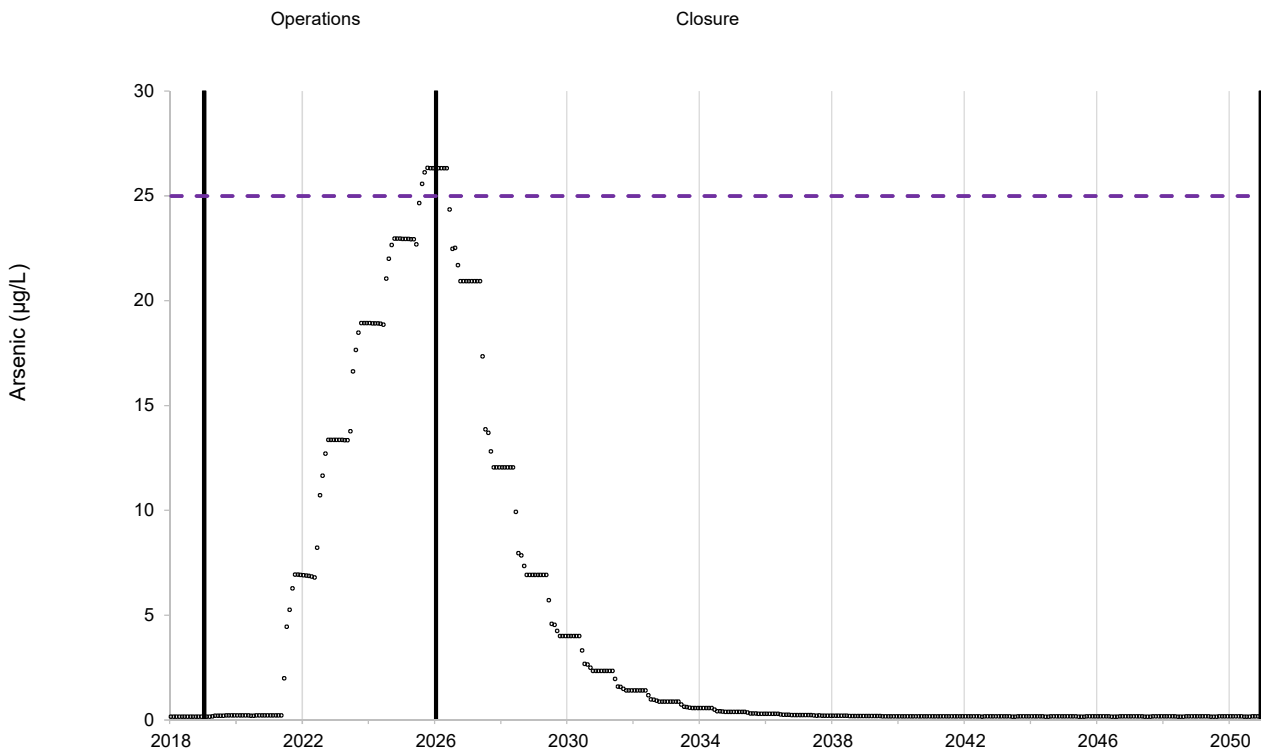
G-DS1



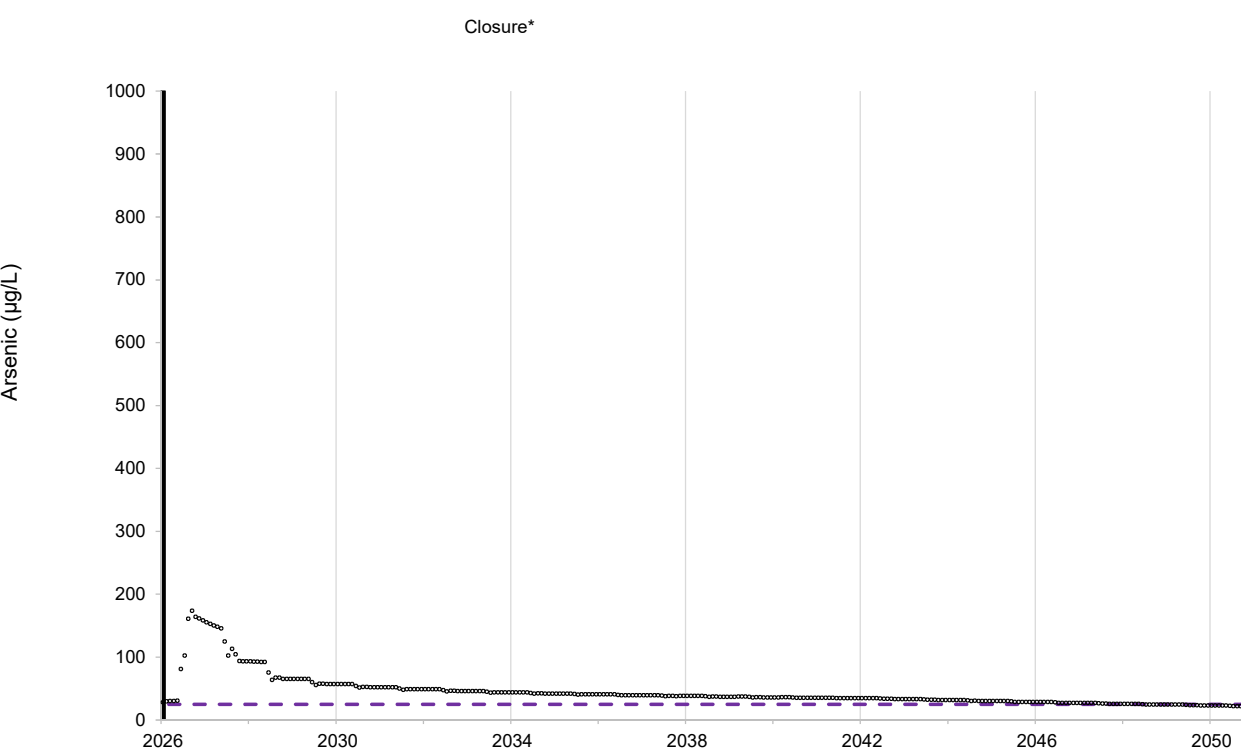
H-DS2



A-Whale Tail South

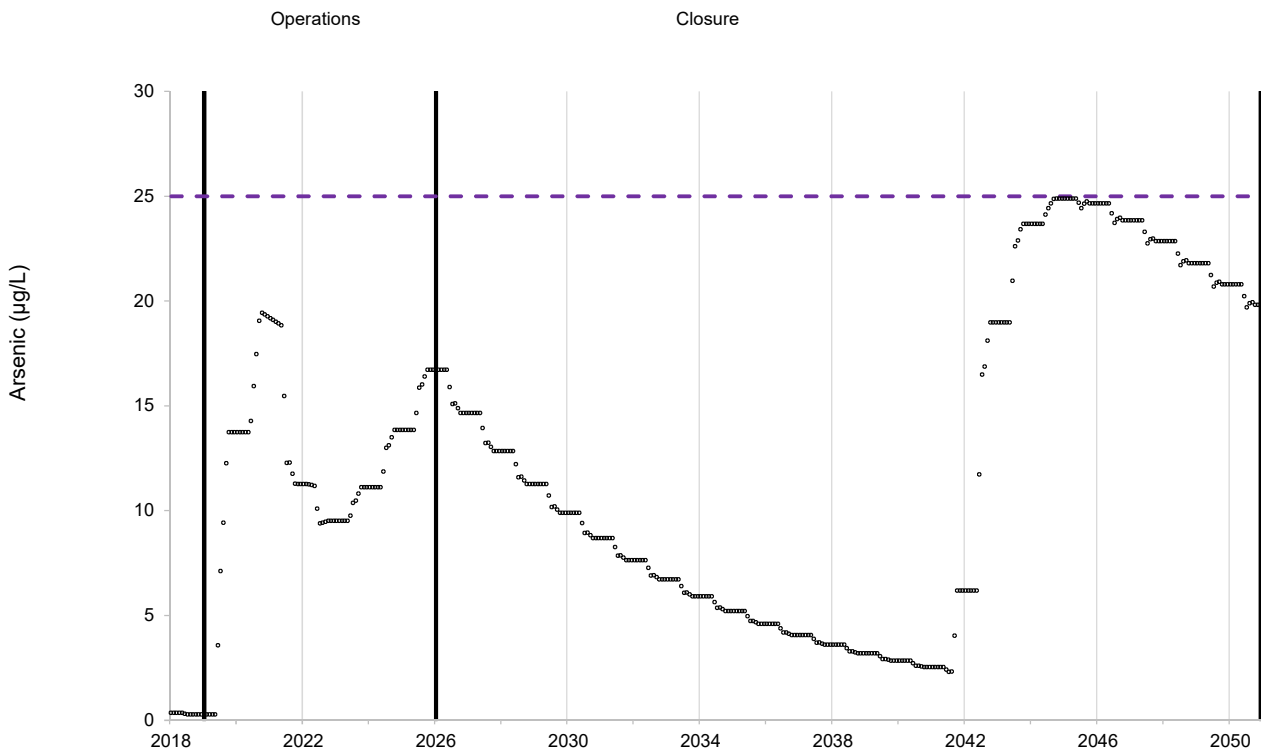


B-Whale Tail Pit

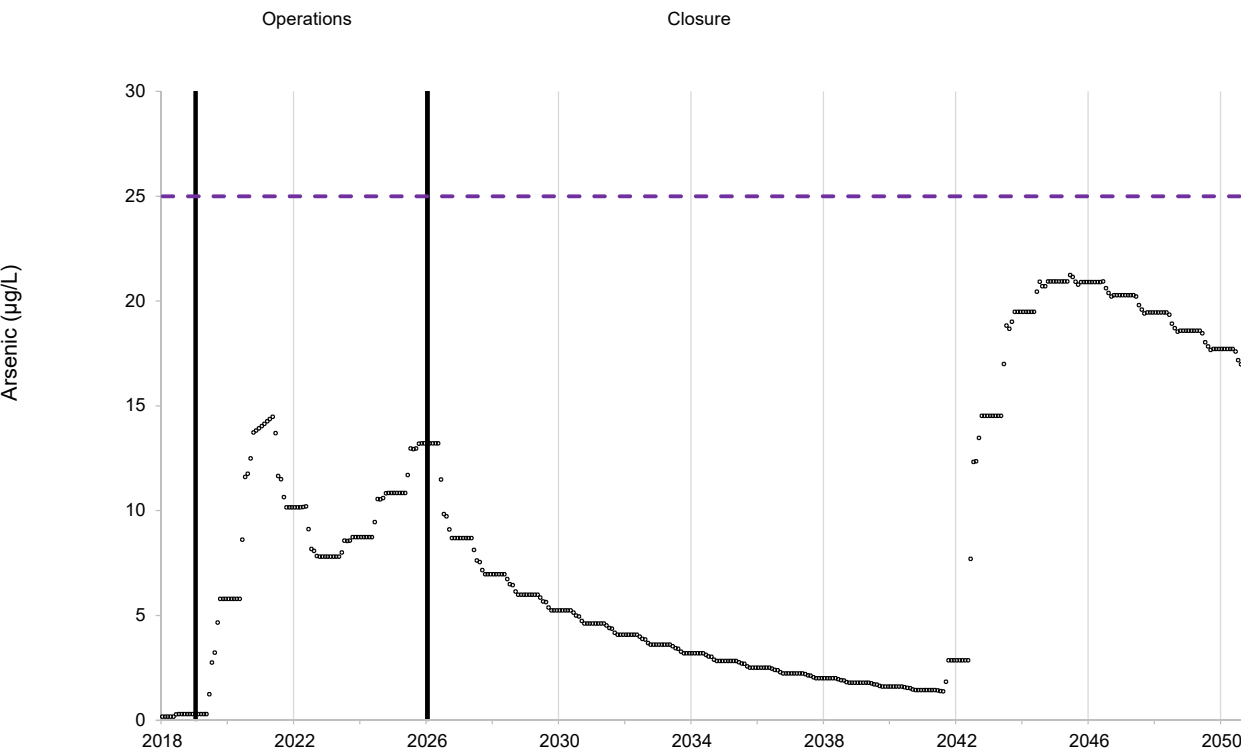


*Whale Tail Pit not connected to the receiving environment during Closure.

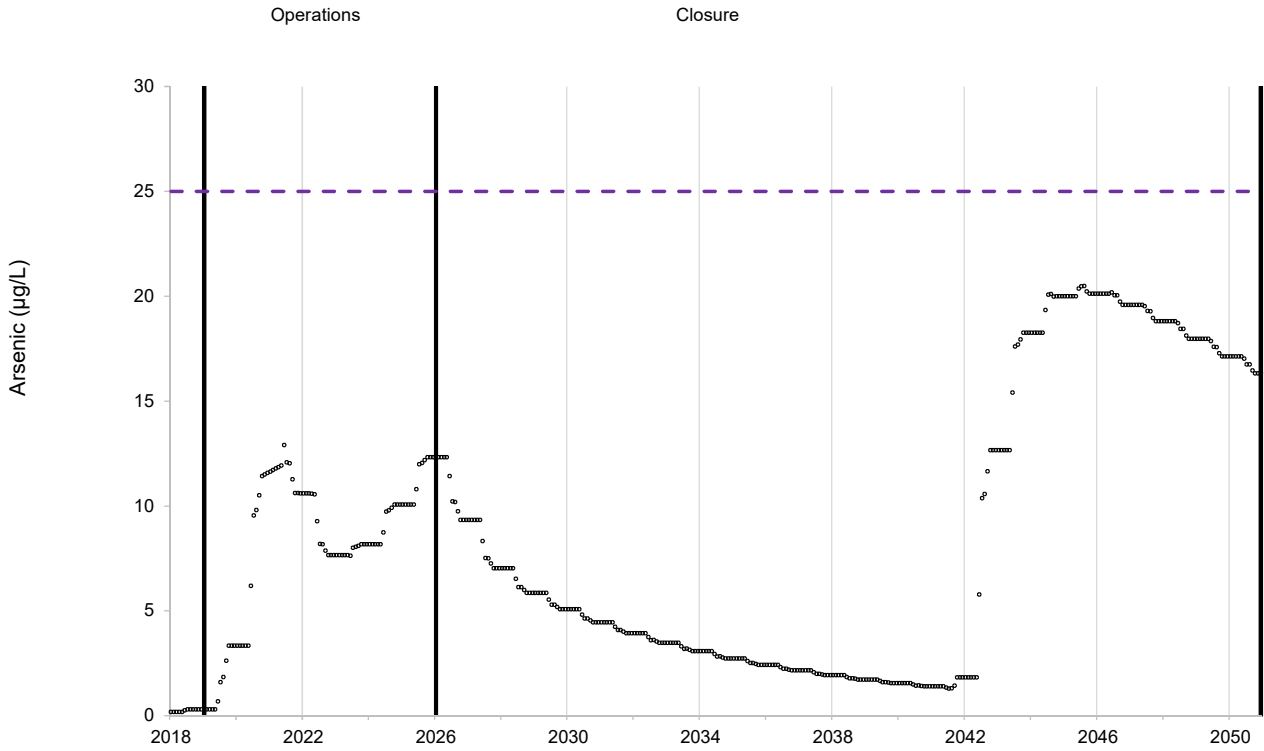
C-Mammoth Lake



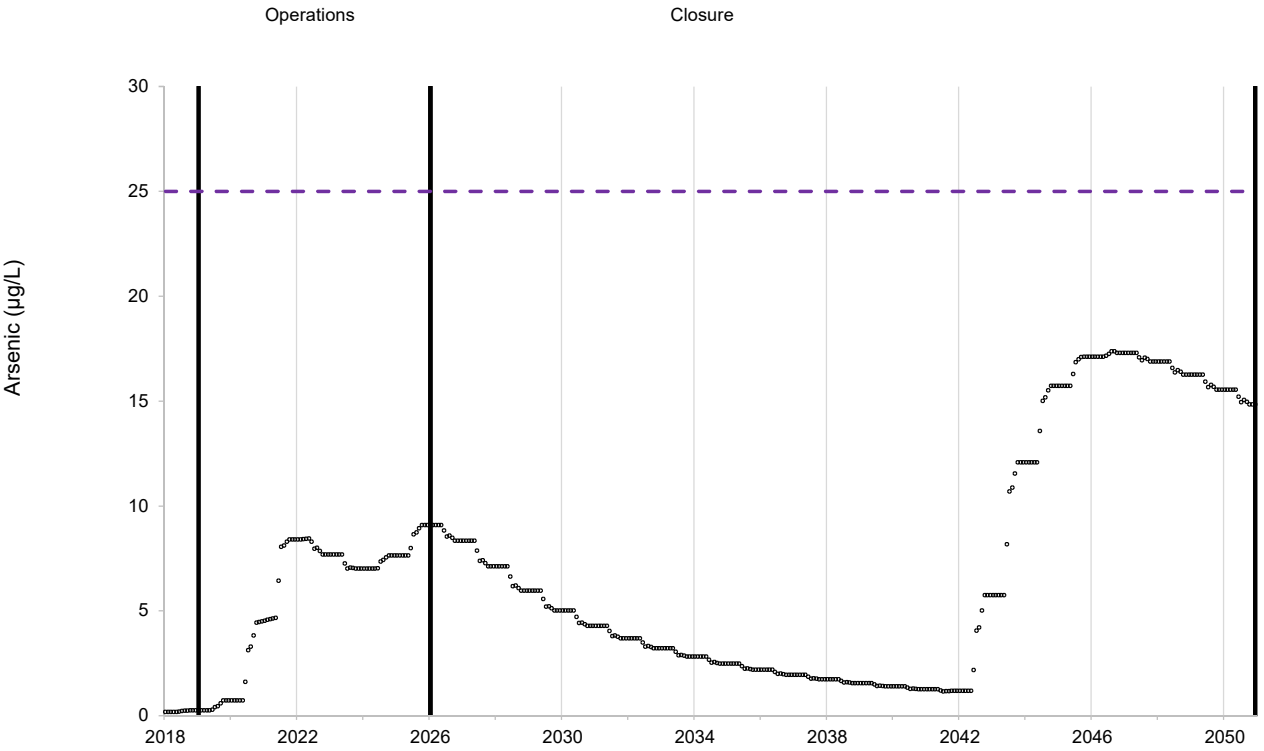
D-Lake A15



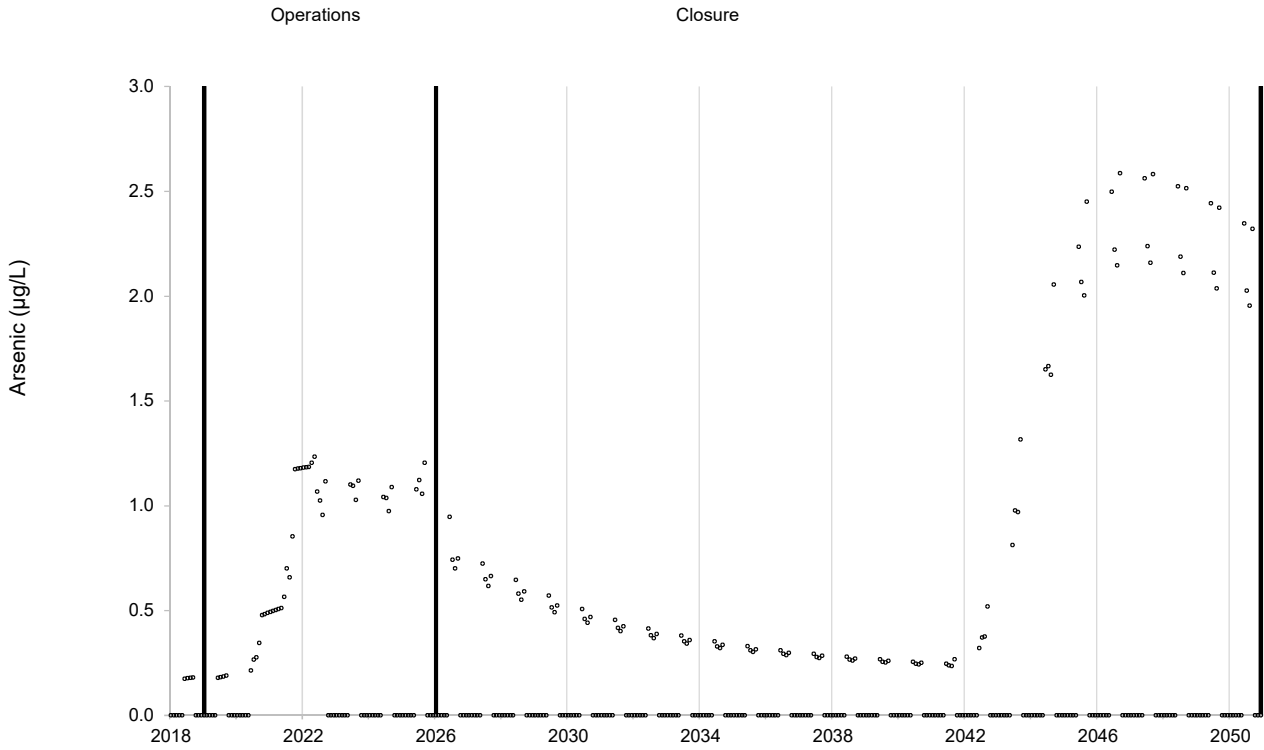
E-Lake A12



F-Lake A76



G-DS1



H-DS2

