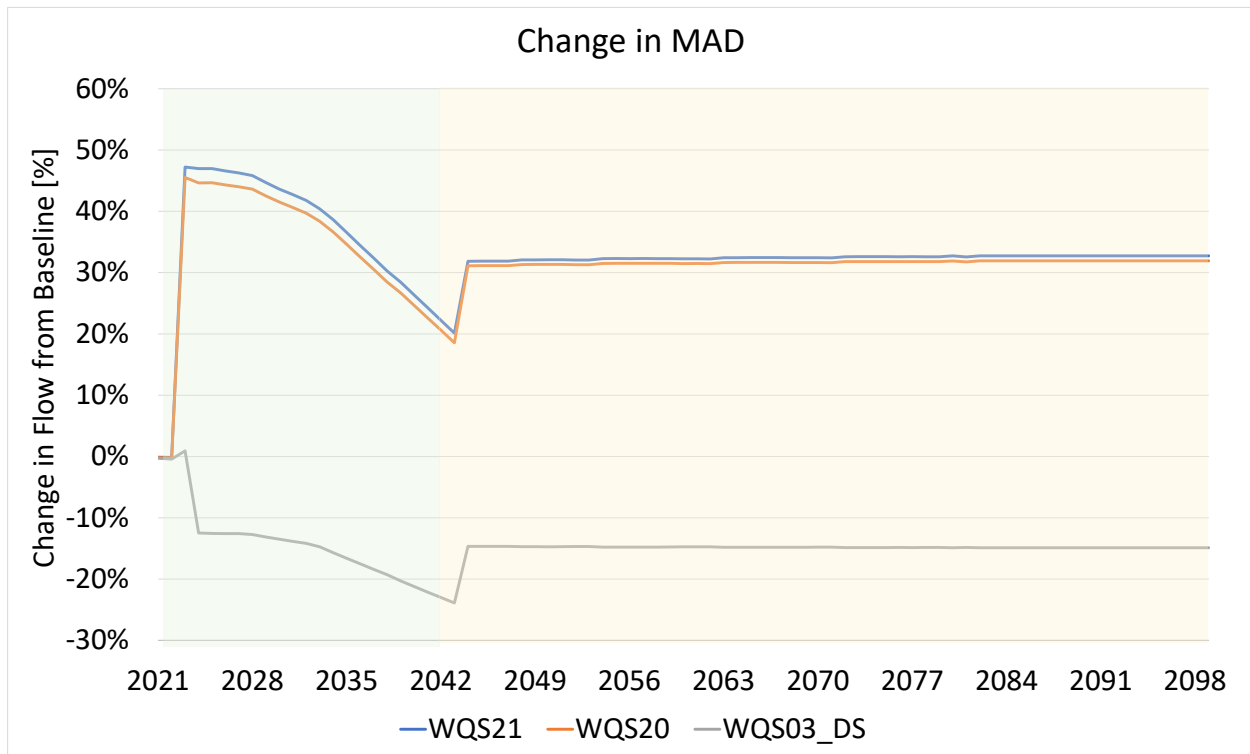

Appendix F Project Case Results

Figure F-1. Four Creek Streamflow Effect to Mean Annual Discharge relative to Base Case Conditions



Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\WaterQuantity_Results_Rev01.xlsm

Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

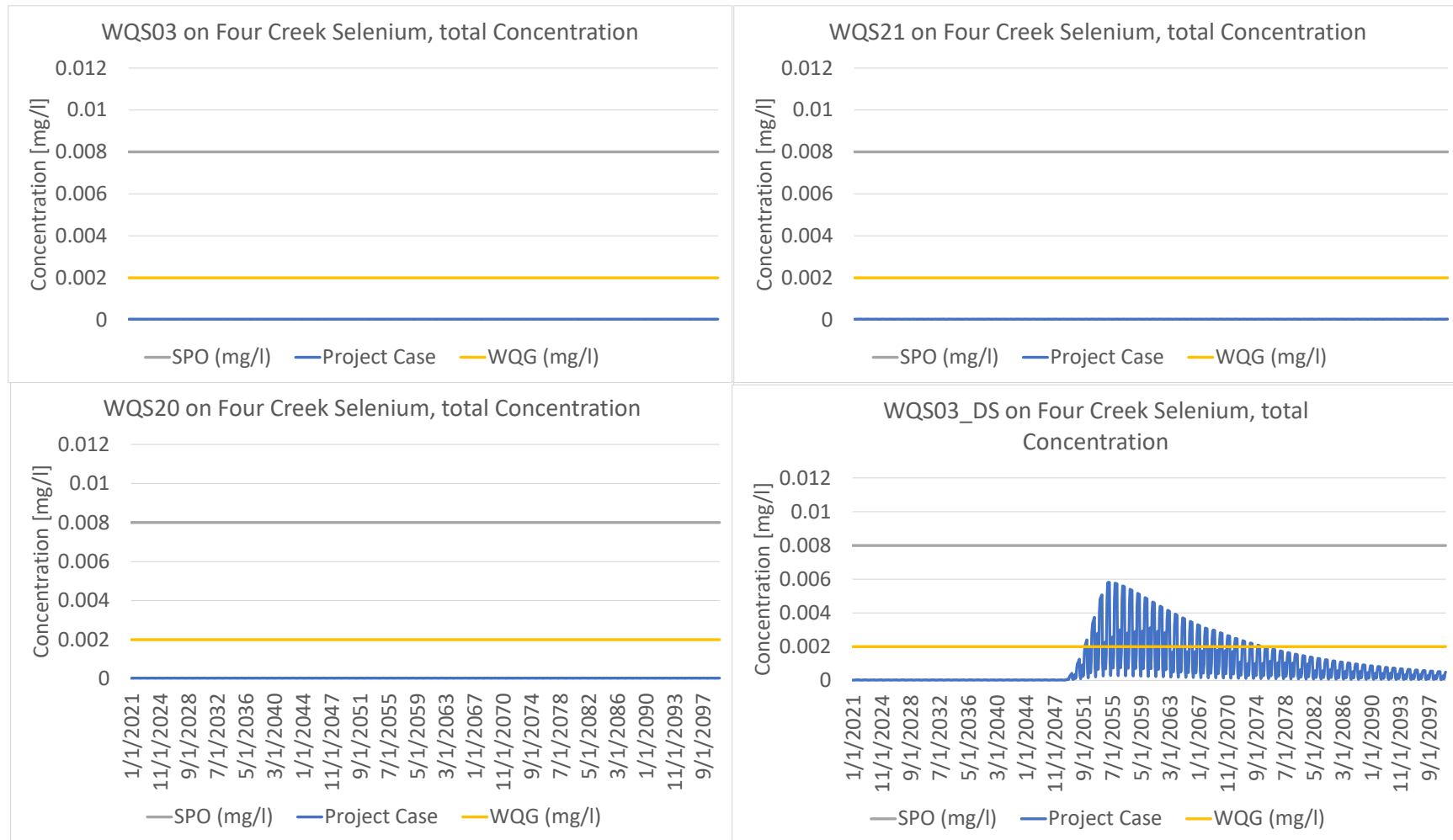
Figure F-2. Four Creek Streamflow Effect to Monthly Average Discharge relative to Base Case Conditions in the Project Case



Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\WaterQuantity_Results_Rev01.xlsm

Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-3. Total Selenium Model Results for Project Case in Four Creek



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-4. Total Selenium Model Results for Project Case in Tenas Creek

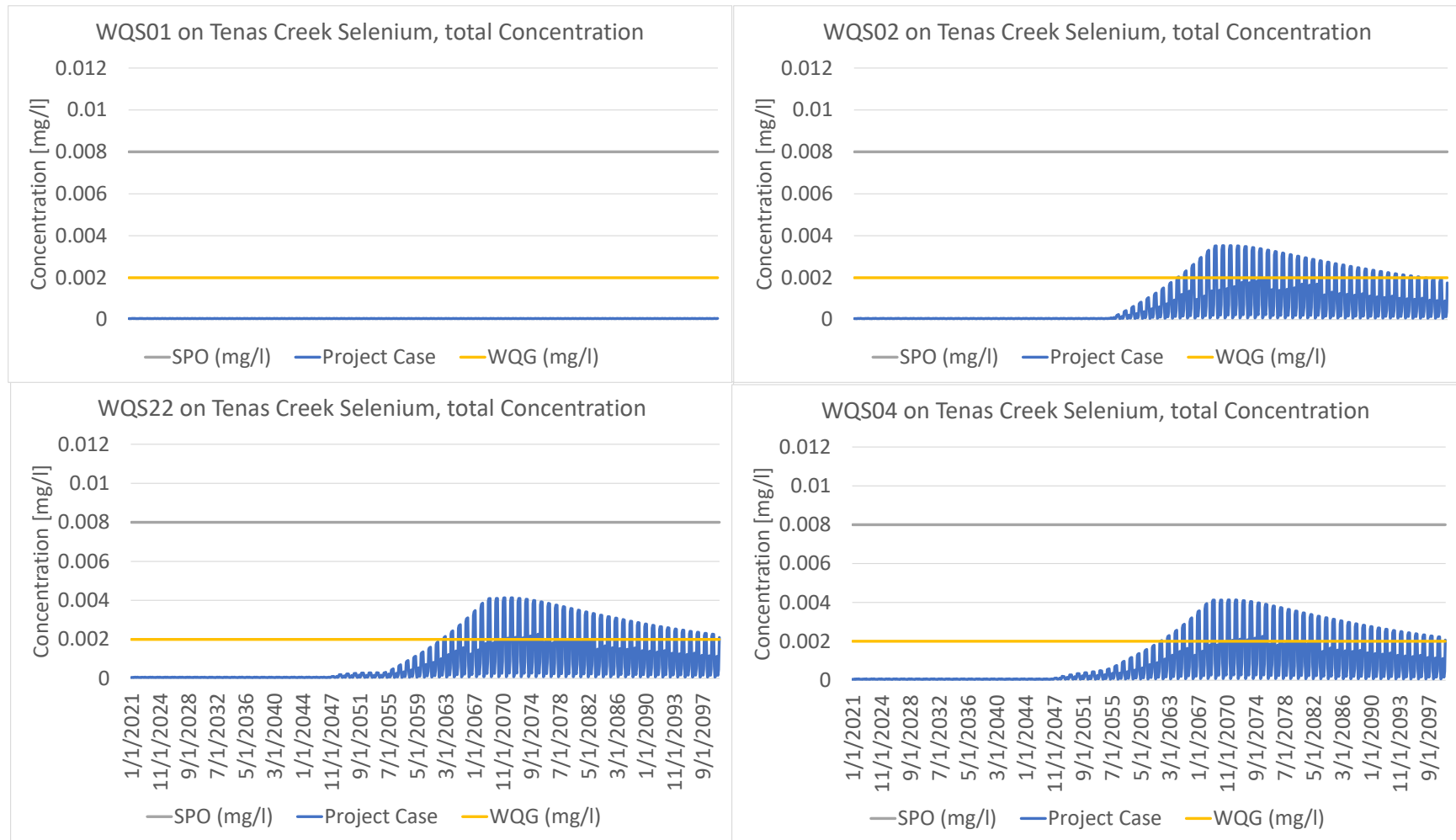
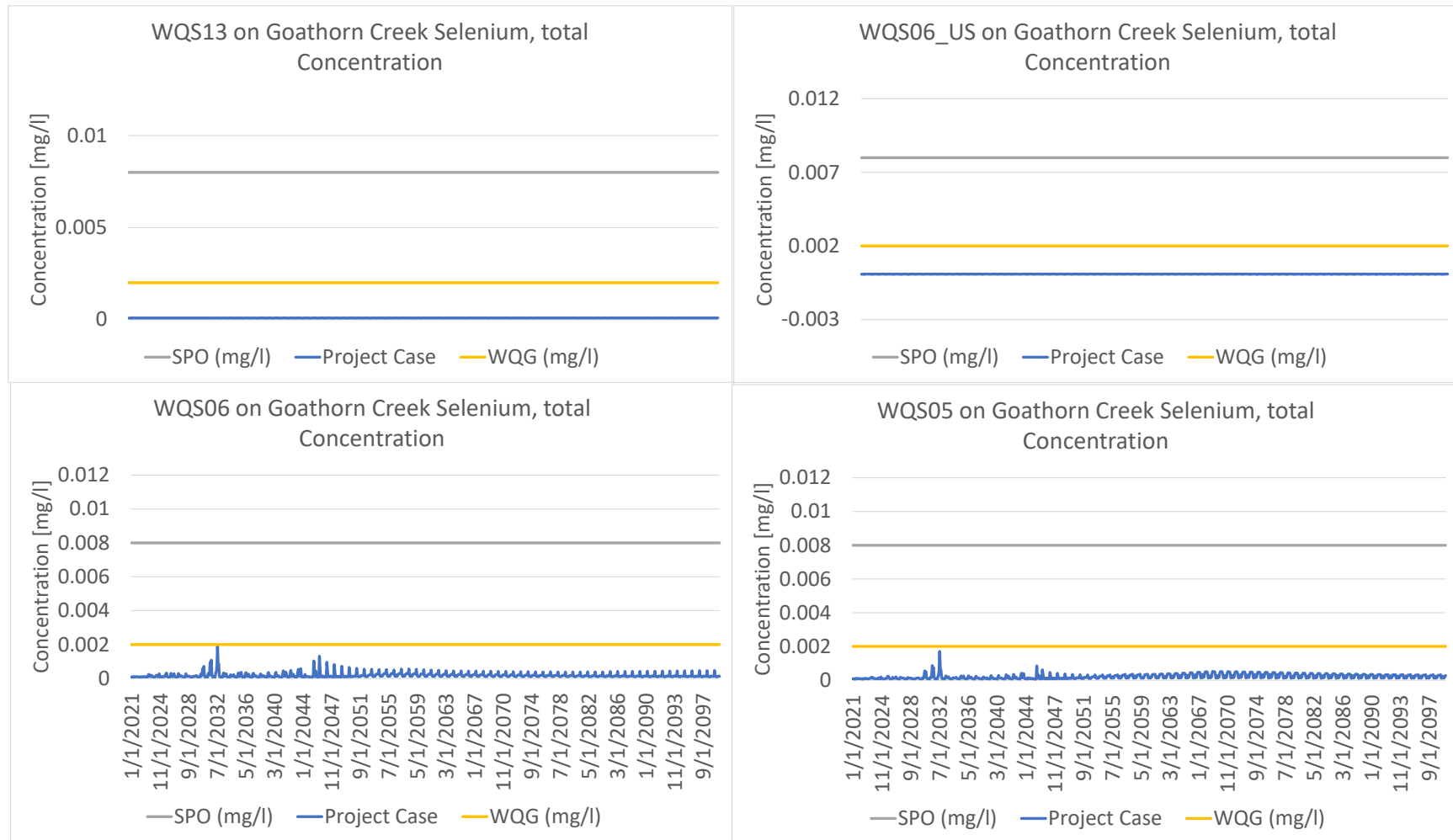
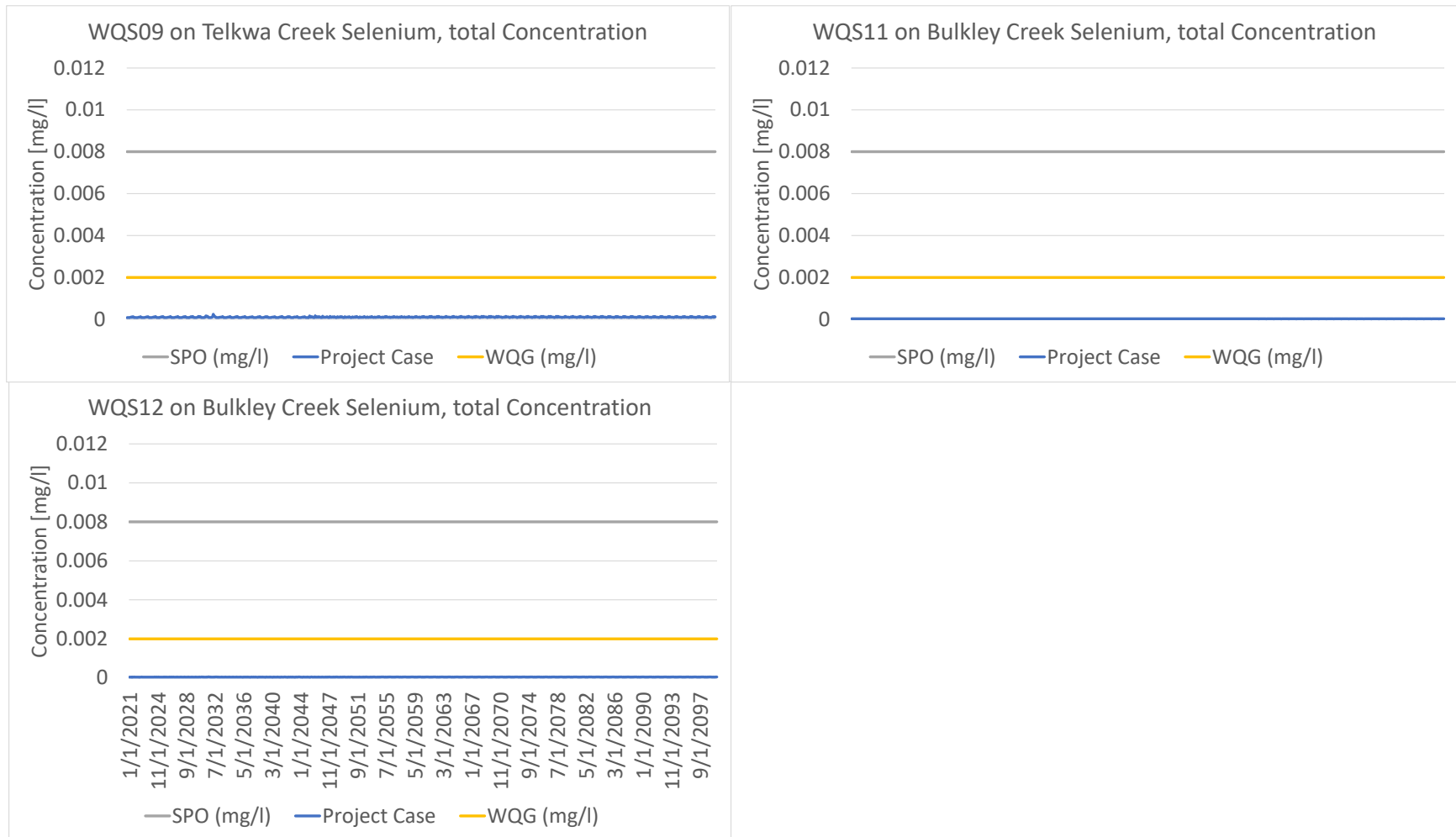


Figure F-5. Total Selenium Model Results for Project Case in Goathorn Creek



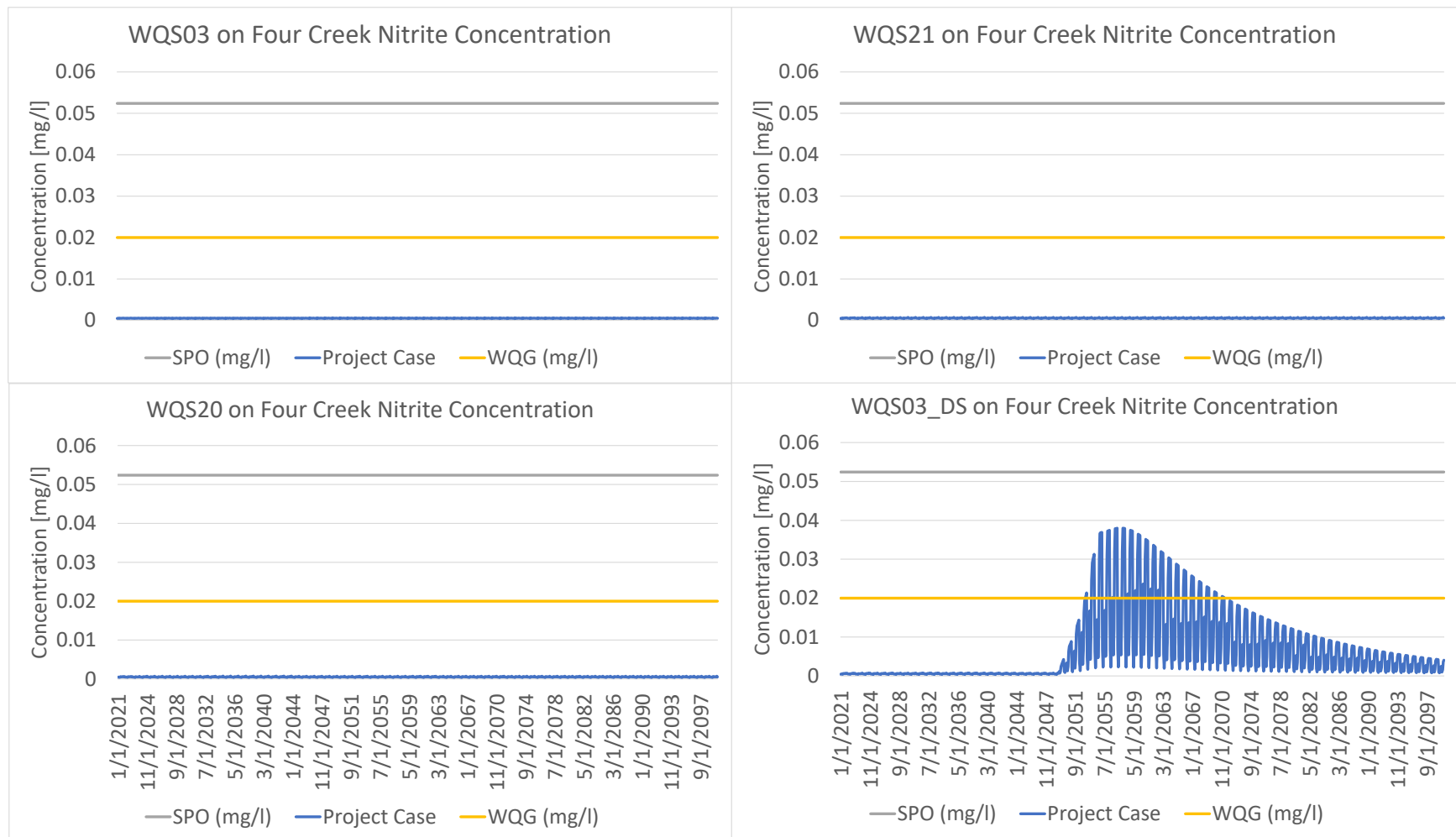
Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-6. Total Selenium Model Results for Project Case in Telkwa and Bulkley River



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-7. Nitrite Model Results for Project Case in Four Creek



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-8. Nitrite Model Results for Project Case in Tenas Creek

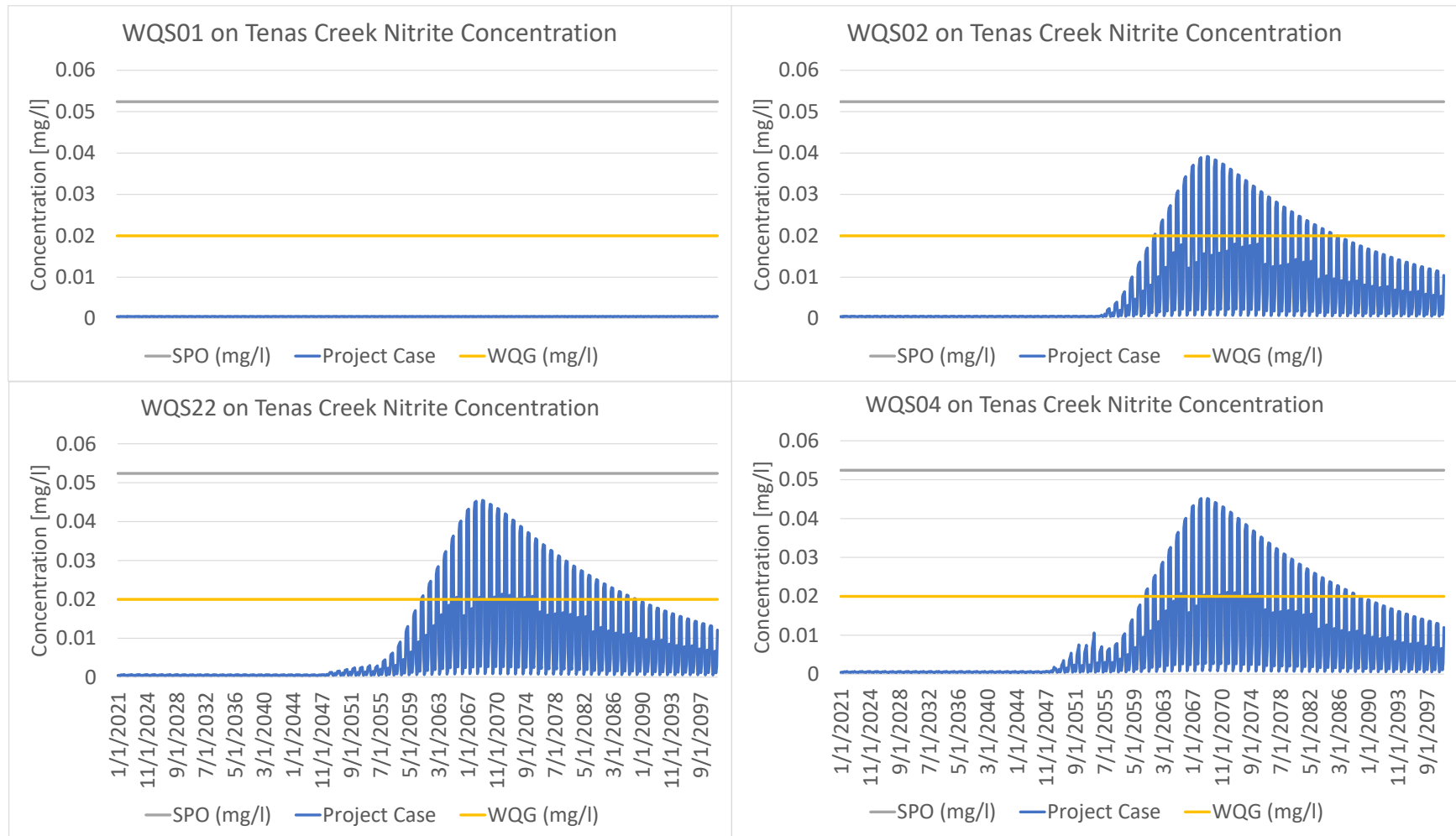


Figure F-9. Nitrite Model Results for Project Case in Goathorn Creek

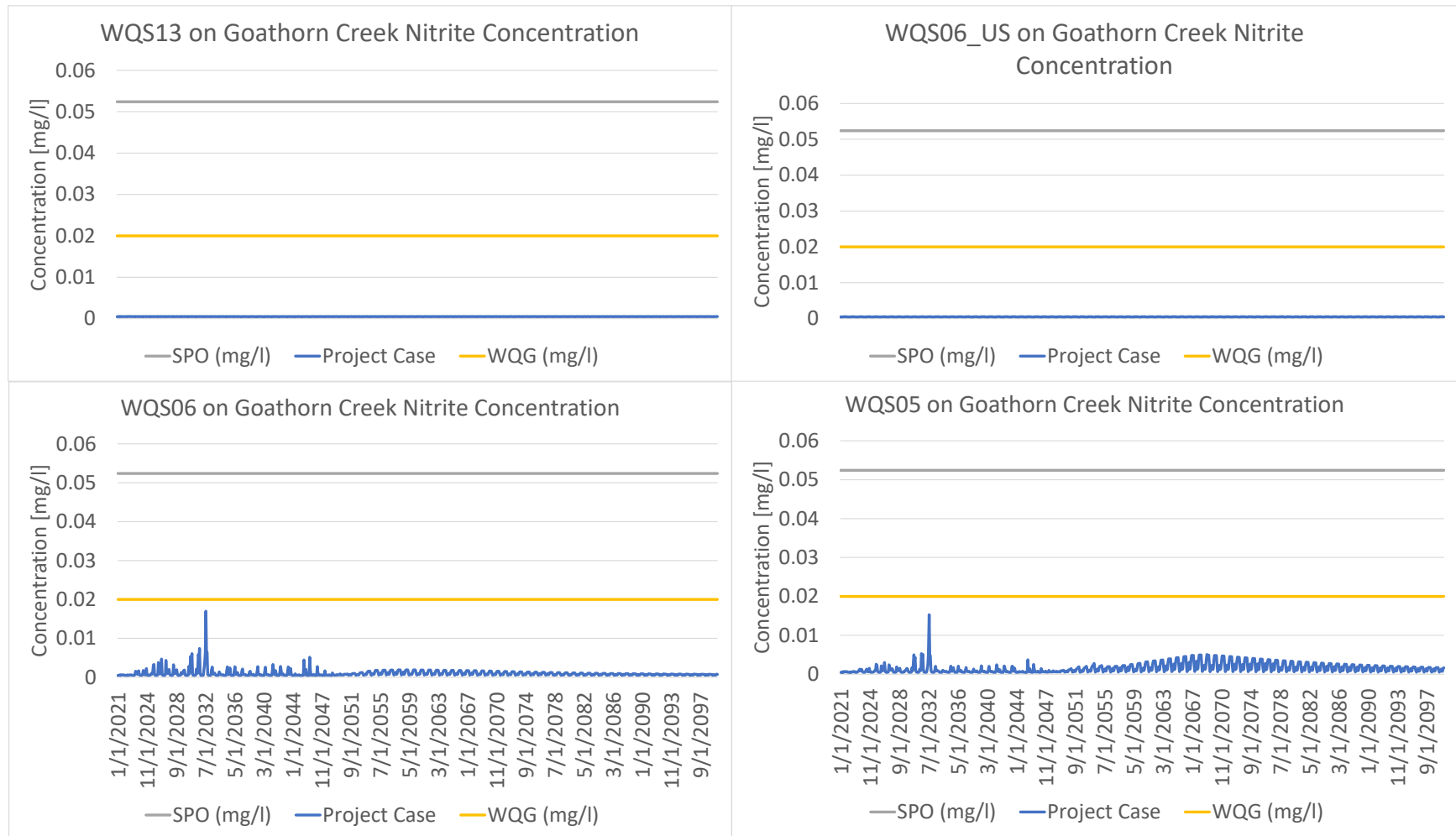
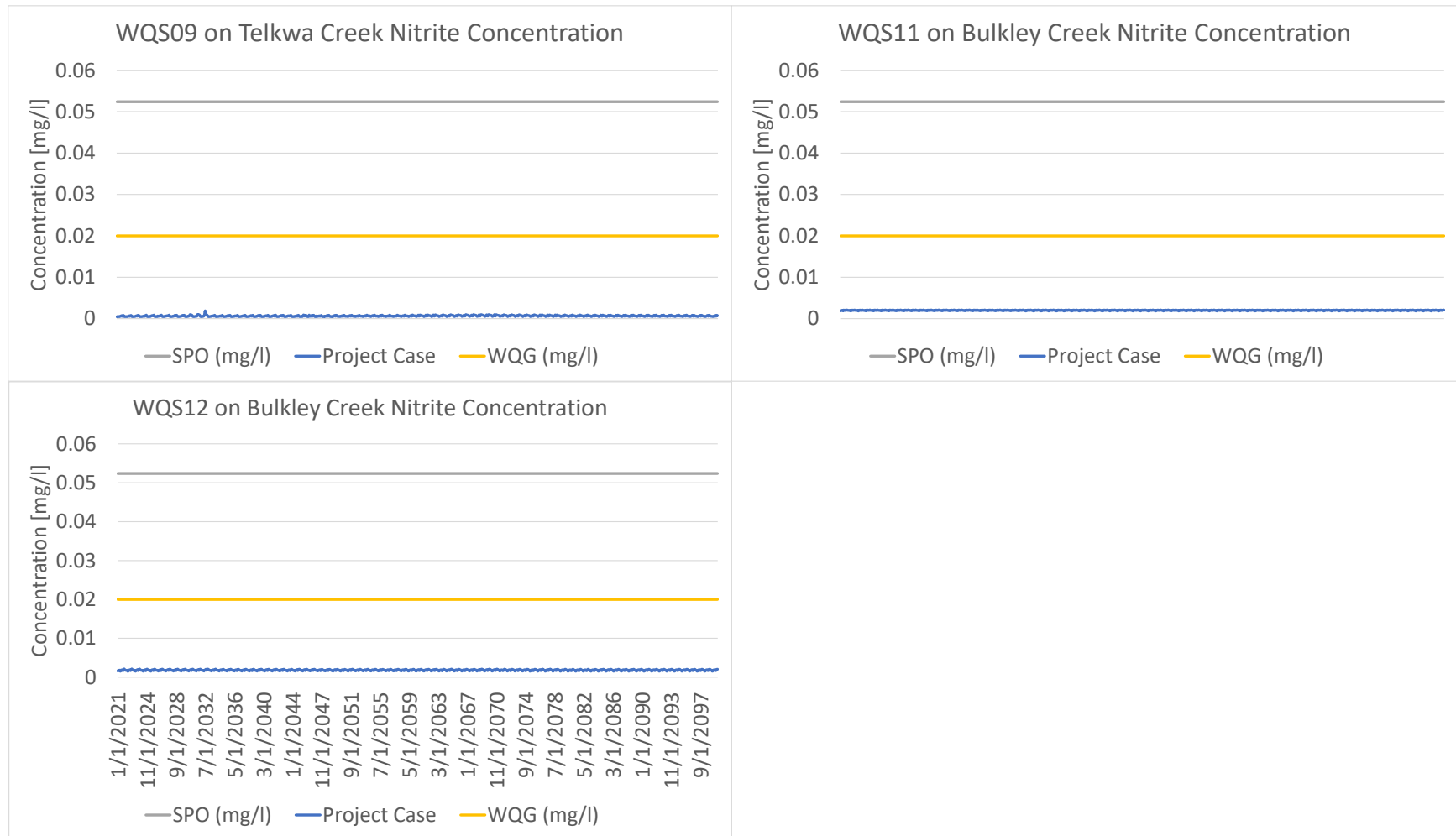
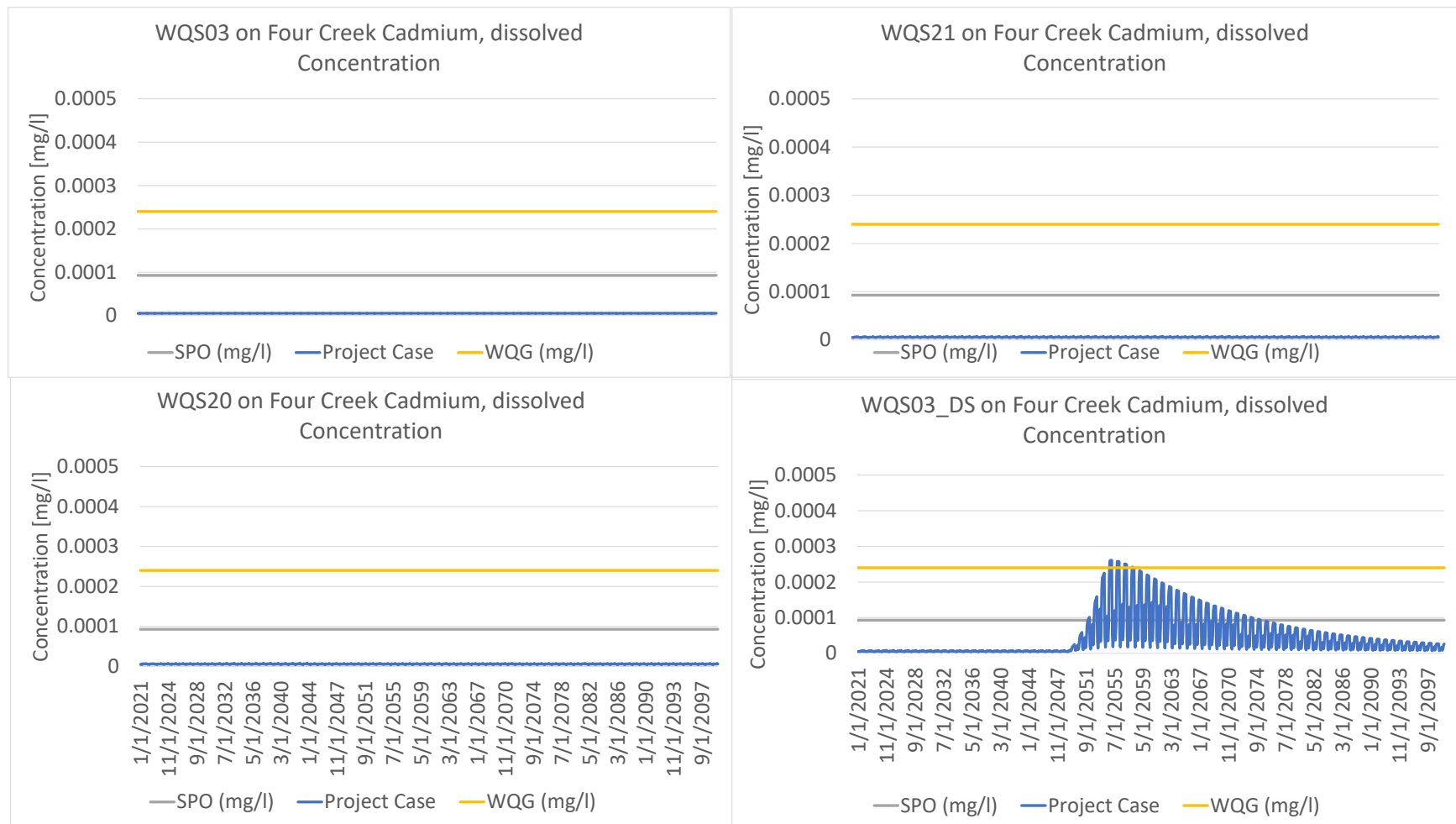


Figure F-10. Nitrite Model Results for Project Case in Telkwa and Bulkley River



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-11. Dissolved Cadmium Model Results for Project Case in Four Creek



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-12. Dissolved Cadmium Model Results for Project Case in Tenas Creek

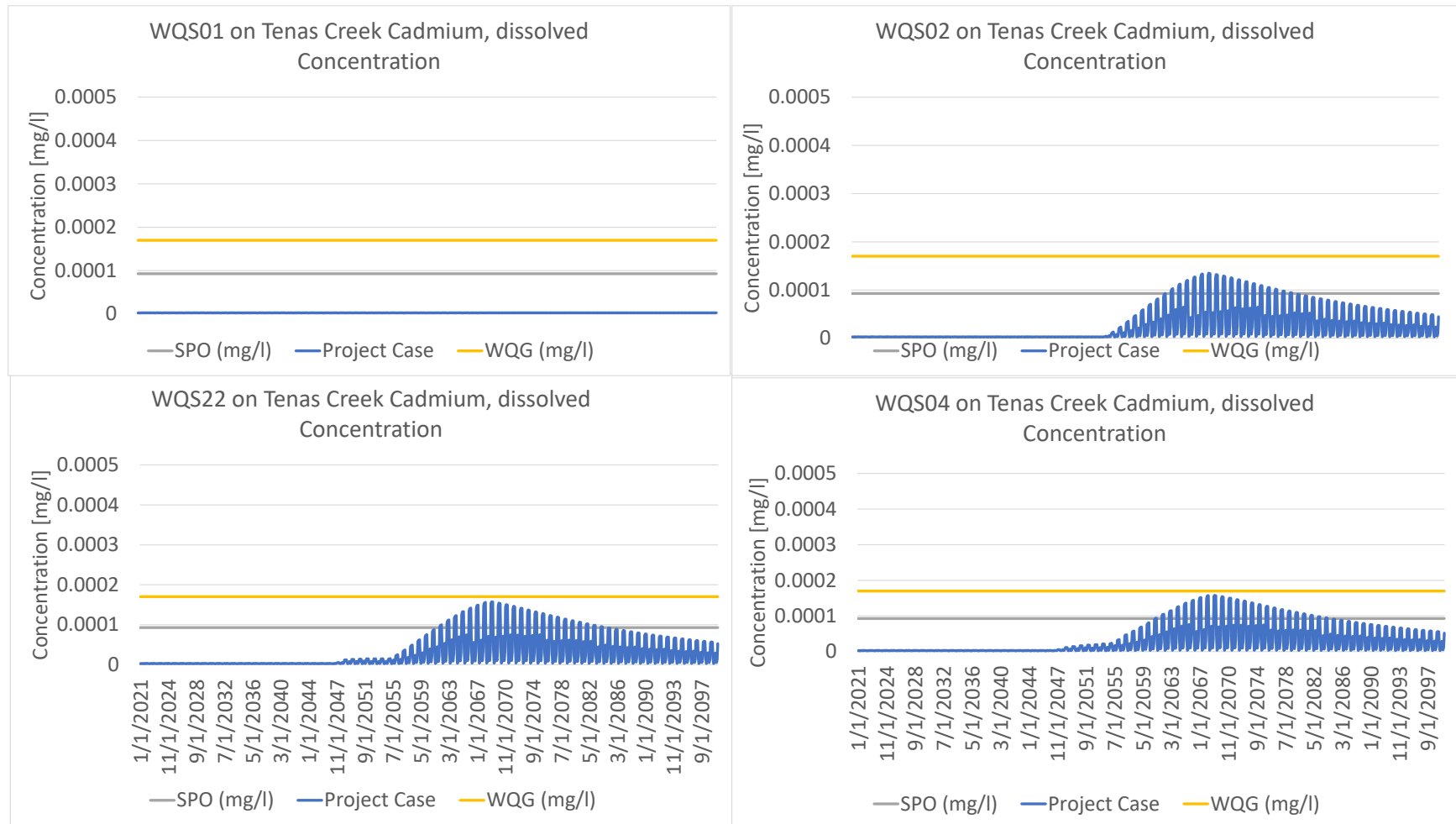


Figure F-13. Dissolved Cadmium Model Results for Project Case in Goathorn Creek

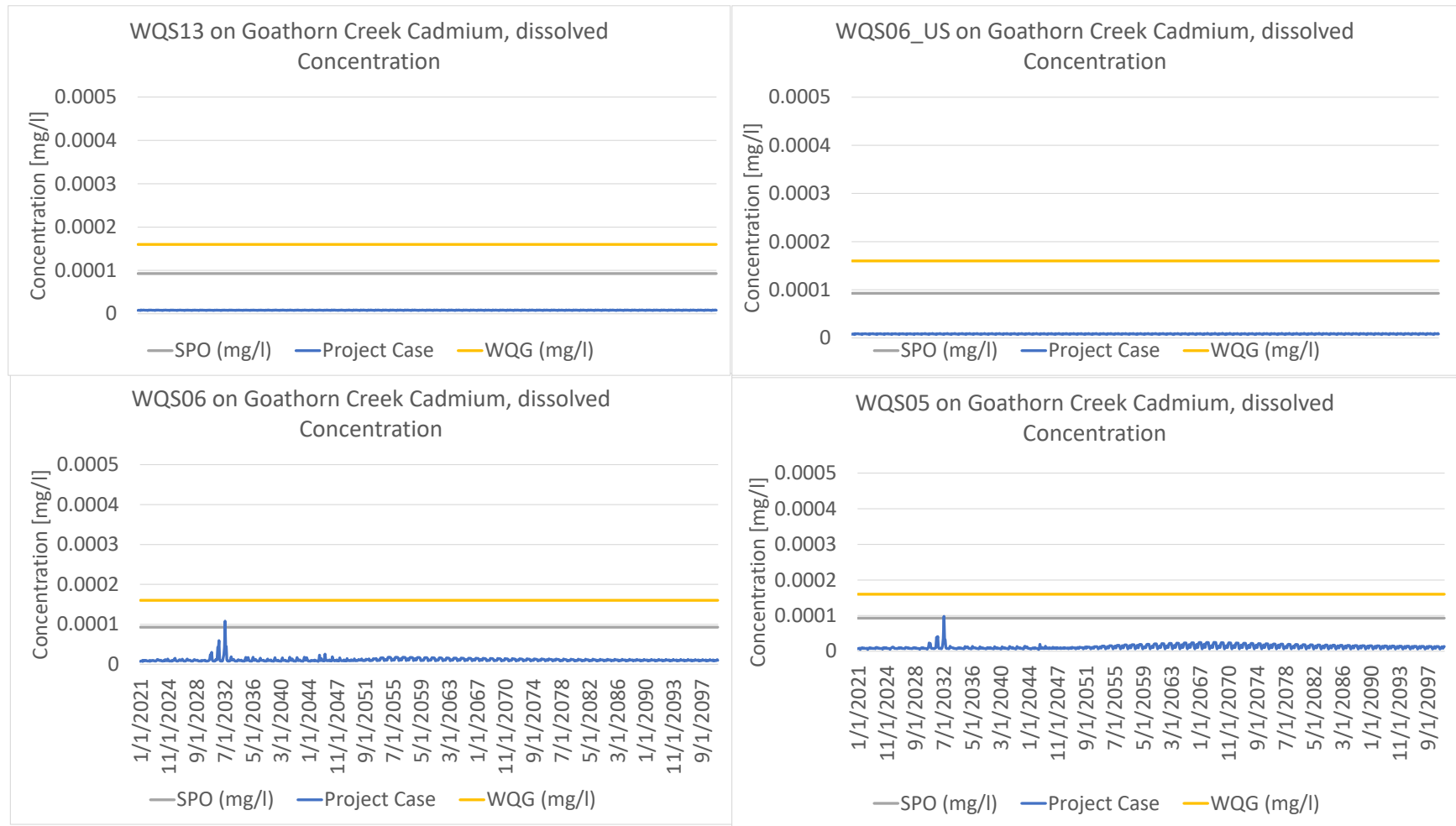
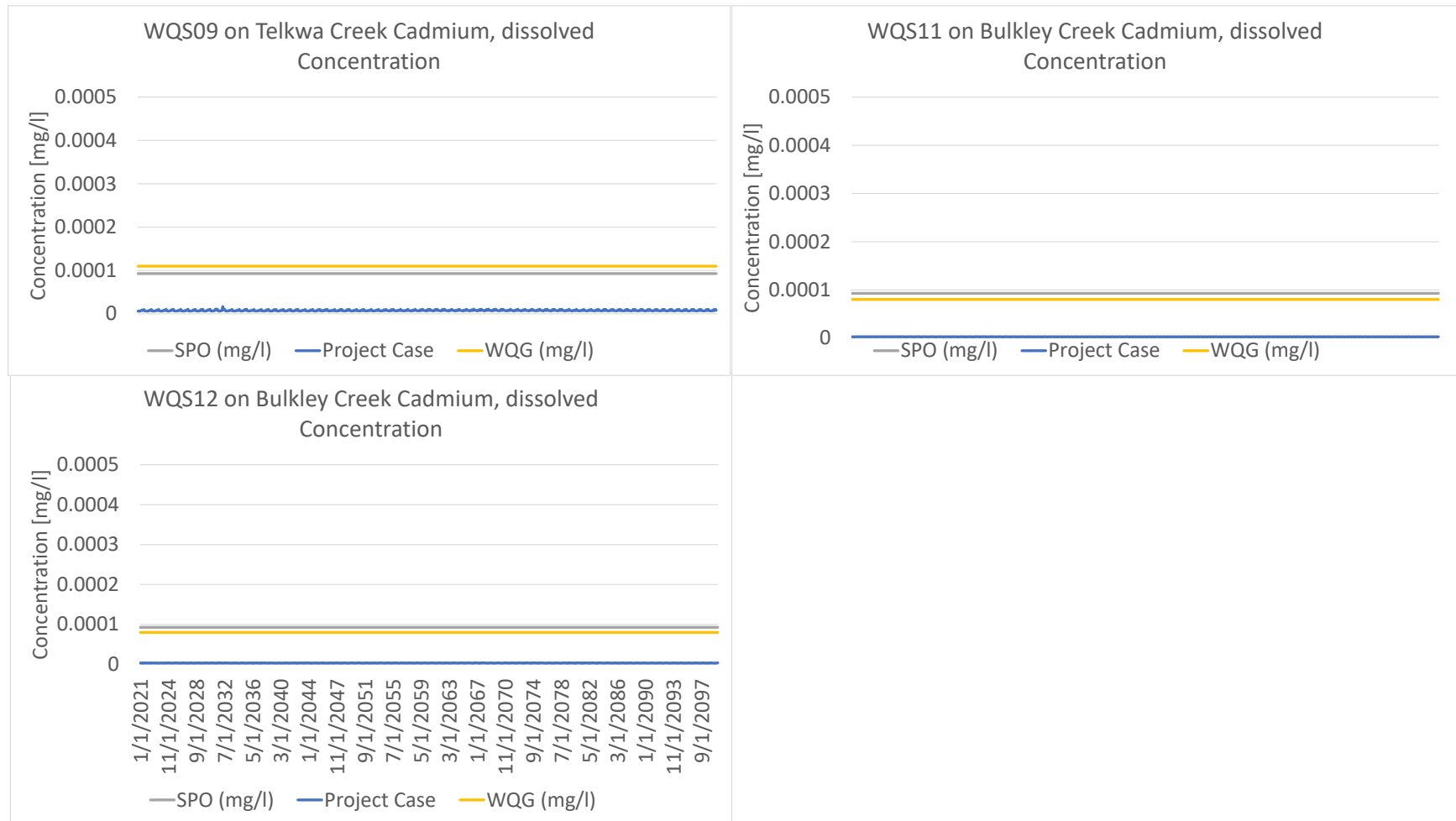


Figure F-14. Dissolved Cadmium Model Results for Project Case in Telkwa and Bulkley River



Tenas Project Water and Load Balance Report
Appendix F: Project Case Figures

Figure F-15. Sulphate Model Results for Project Case in Four Creek

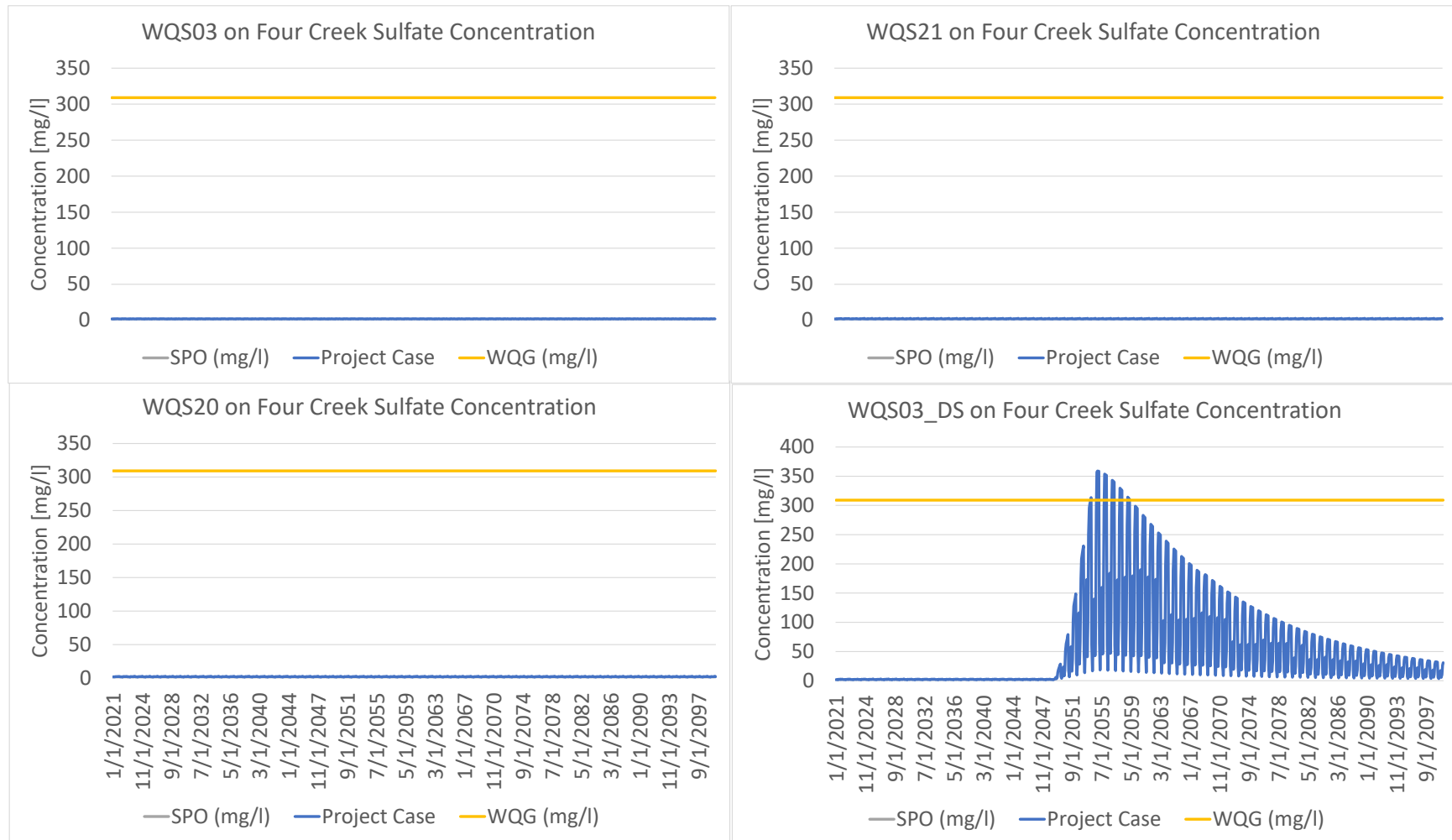


Figure F-16. Sulphate Model Results for Project Case in Tenas Creek

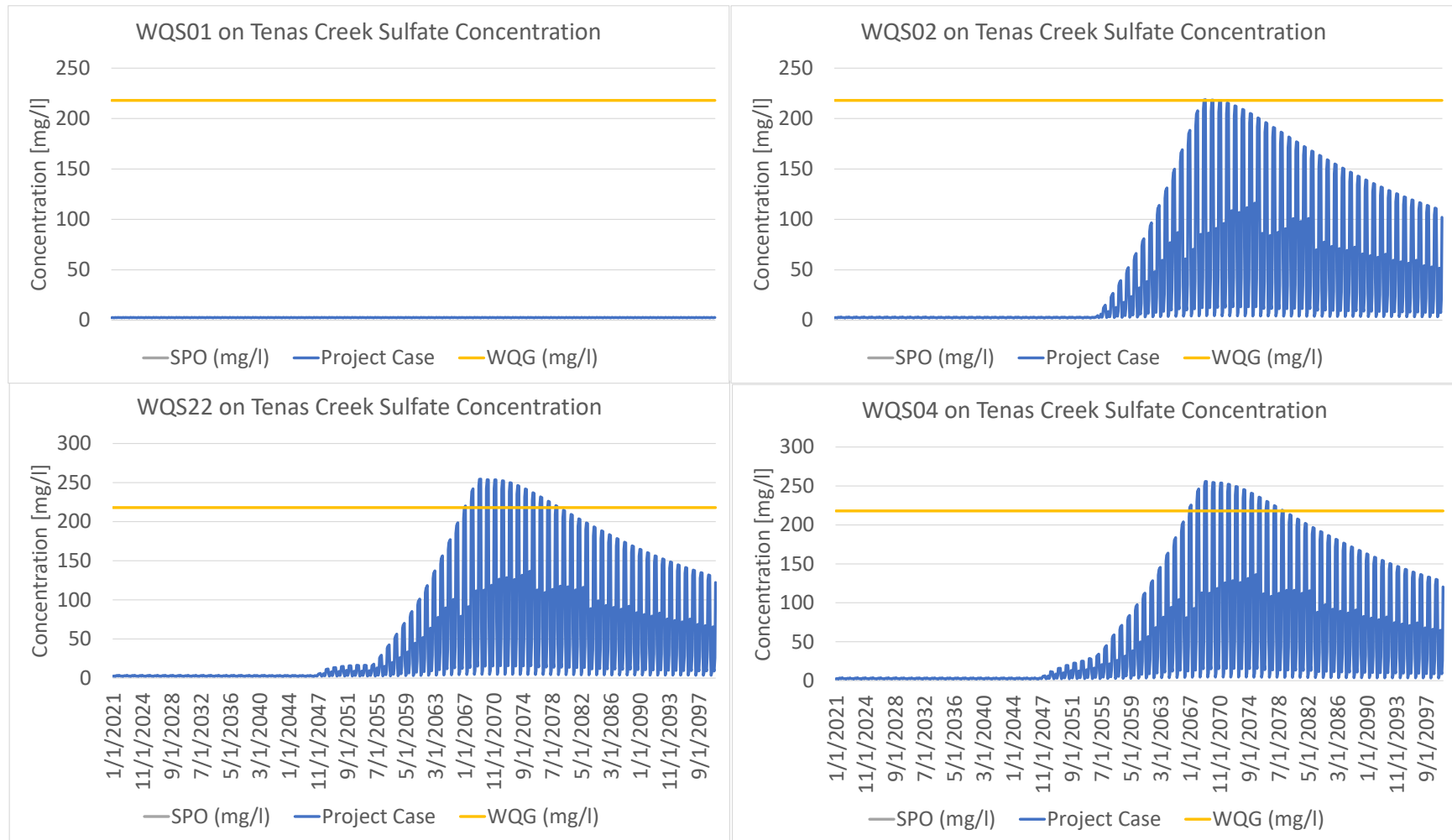


Figure F-17. Sulphate Model Results for Project Case in Goathorn Creek

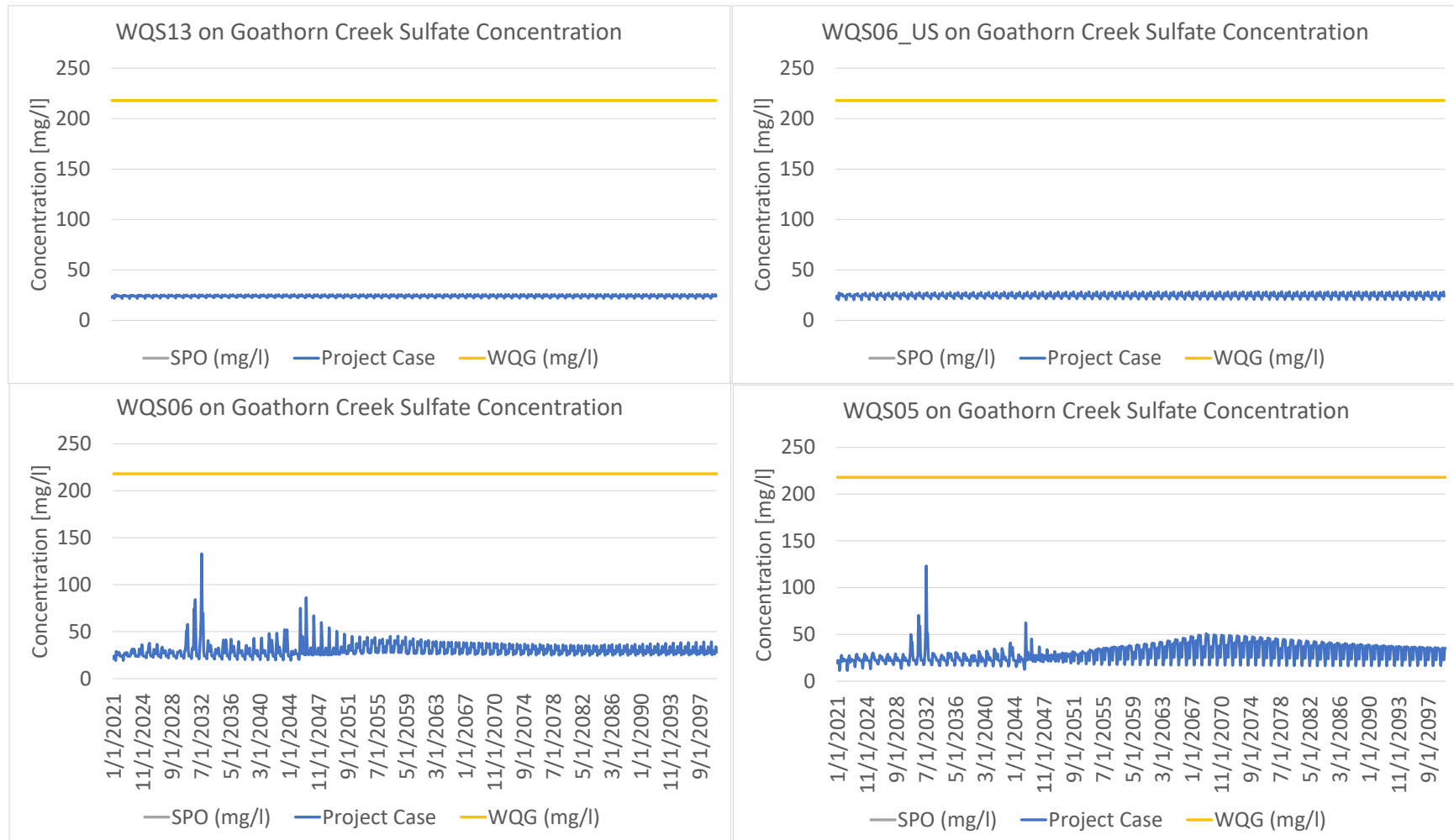


Figure F-18. Sulphate Model Results for Project Case in Telkwa and Bulkley River

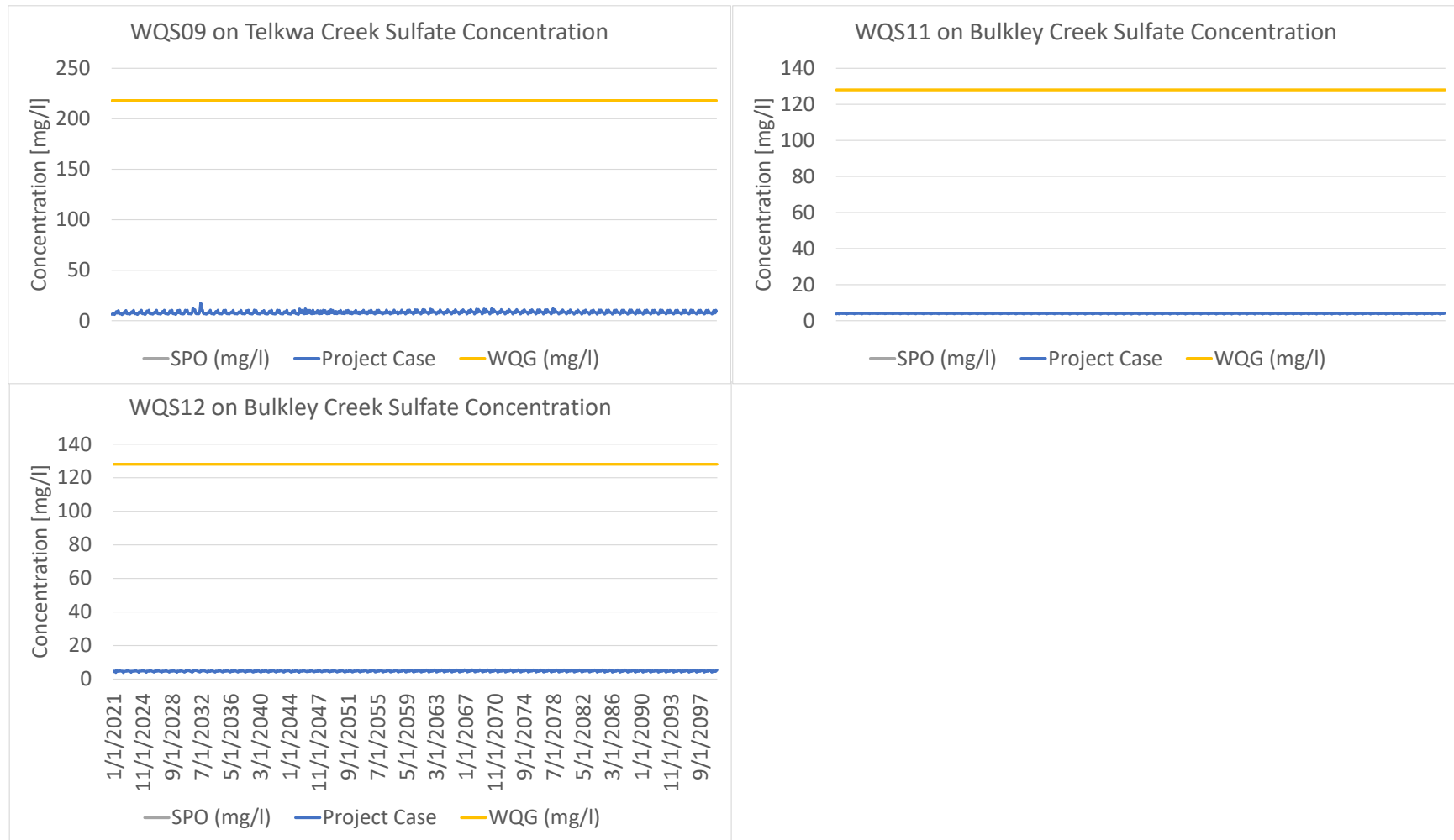


Figure F-19. Management Pond Water Quality Results for Total Selenium with Project Case

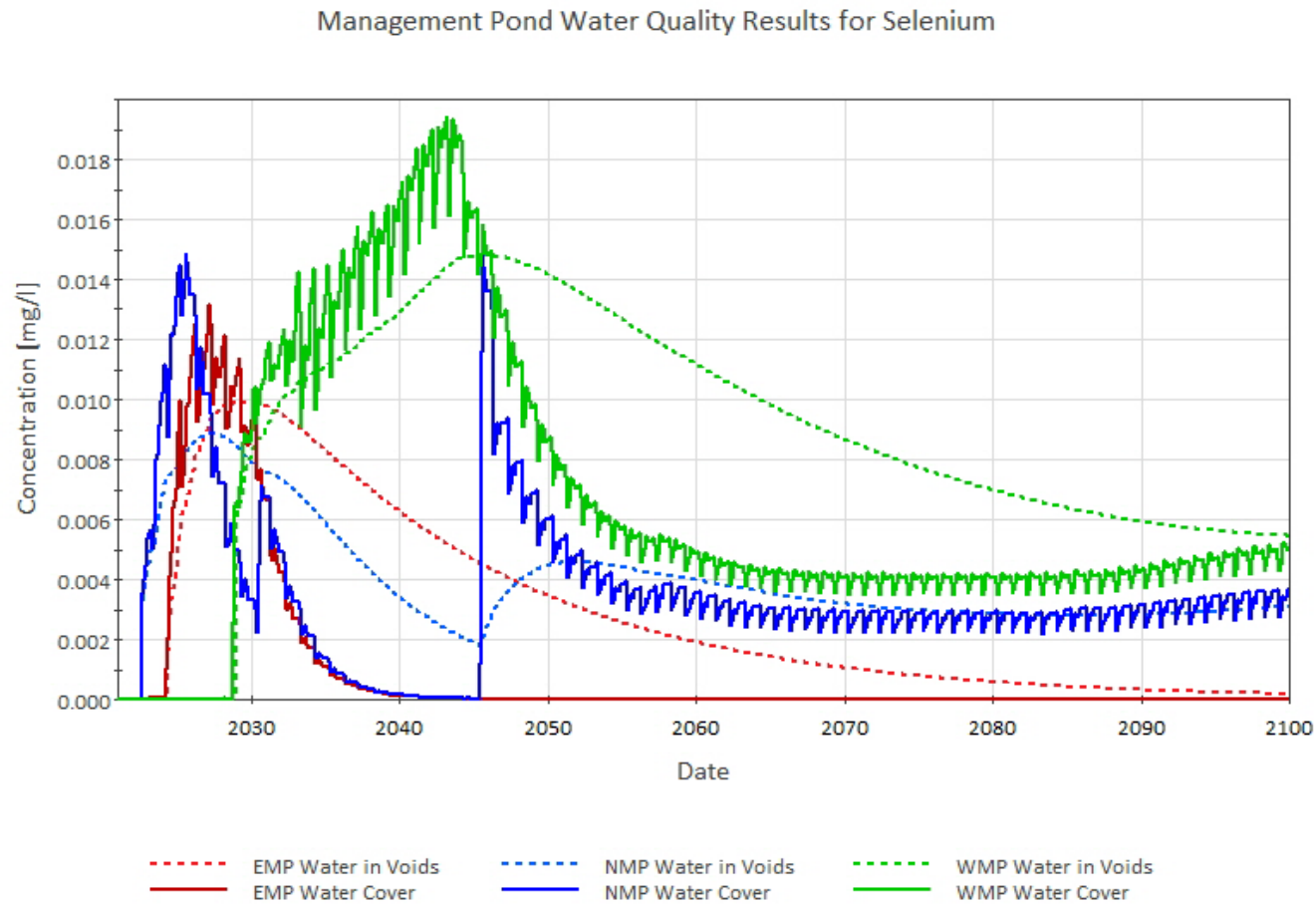


Figure F-20. Tenas Control Pond Water Quality Results for Total Selenium with Project Case

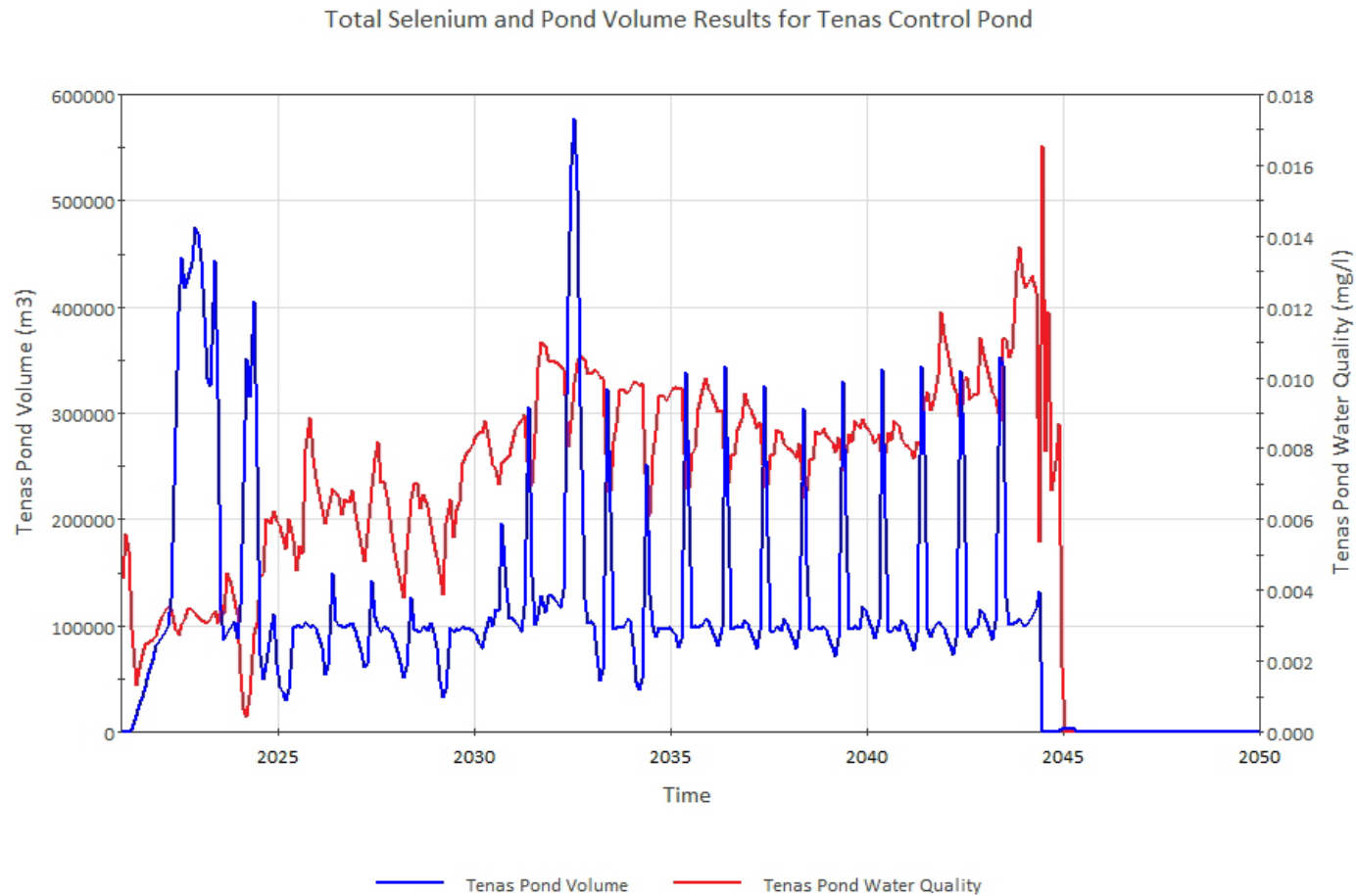


Figure F-21. Rail Infrastructure Sedimentation Pond Water Quality Results for Total Selenium with Project Case

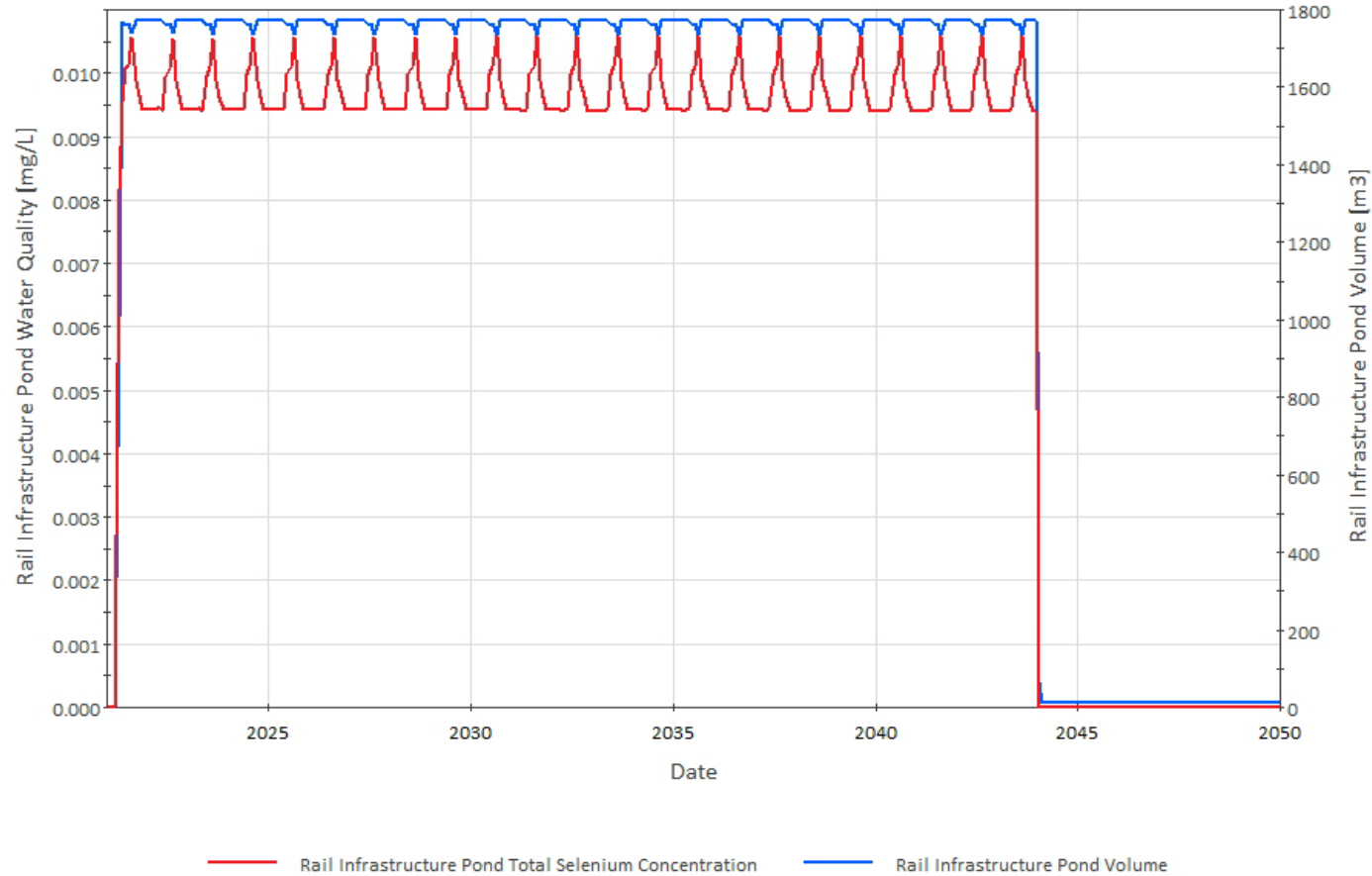


Table F-1

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	West Management Pond									
				Goathorn Baseline		Operations				Closure			
				P50	P95	Project Case				Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	160	158	83	87	109	111	67	68
Alkalinity, total	mg CaCO ₃ /L			52	87	1600	1600	750	810	1000	1100	480	500
Chloride	mg/L		150	0.25	0.50	44	44	19	21	27	30	11	12
Fluoride	mg/L		0.12	0.032	0.041	0.035	0.034	0.014	0.015	0.13	0.14	0.11	0.12
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	1.2	1.4	0.55	0.61	0.13	0.18	0.051	0.055
Nitrate	mg/L	18.8	3	0.041	0.076	9.1	11	4.3	4.8	0.79	1.2	0.042	0.052
Nitrite	mg/L		0.02	0.00050	0.0020	0.21	0.26	0.099	0.11	0.019	0.028	0.0019	0.0021
Sulfate	mg/L		218	24	37	1100	1100	550	600	650	710	260	270
Aluminum, total	mg/L		0.1	0.092	0.75	0.24	0.28	0.100	0.11	0.39	0.40	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.20	0.24	0.067	0.075	0.022	0.032	0.0059	0.0061
Antimony, total	mg/L			0.000073	0.00014	0.0023	0.0023	0.0012	0.0012	0.0015	0.0016	0.00065	0.00068
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0023	0.0023	0.0012	0.0012	0.0015	0.0016	0.00065	0.00068
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0016	0.0016	0.00098	0.0010	0.0014	0.0015	0.00100	0.0010
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0015	0.0015	0.00085	0.00087	0.00090	0.00099	0.00049	0.00051
Barium, total	mg/L		1	0.058	0.072	0.068	0.098	0.039	0.042	0.055	0.056	0.049	0.051
Barium, dissolved	mg/L			0.059	0.073	0.068	0.097	0.038	0.041	0.049	0.049	0.042	0.044
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000023	0.000038	0.000010	0.000011	0.000039	0.000039	0.000034	0.000035
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000023	0.000038	0.000010	0.000011	0.000039	0.000039	0.000034	0.000035
Boron, total	mg/L		1.2	0.0050	0.050	0.63	0.64	0.29	0.32	0.39	0.43	0.18	0.18
Boron, dissolved	mg/L			0.0050	0.050	0.63	0.64	0.29	0.32	0.39	0.43	0.18	0.18
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00079	0.00073	0.00039	0.00037	0.00015	0.00017	0.000058	0.000060
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00079	0.00073	0.00039	0.00037	0.00014	0.00016	0.000055	0.000058
Calcium, total	mg/L			21	30	18	17	10	10	14	13	12	12
Calcium, dissolved	mg/L			22	32	18	17	10	10	13	13	12	12
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0062	0.0062	0.0030	0.0032	0.0050	0.0053	0.0029	0.0030
Chromium, dissolved	mg/L			0.00010	0.00027	0.0061	0.0061	0.0028	0.0030	0.0038	0.0041	0.0017	0.0018
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0037	0.0038	0.0019	0.0020	0.0019	0.0021	0.0012	0.0012
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0035	0.0037	0.0017	0.0018	0.0013	0.0015	0.00051	0.00053
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0079	0.0079	0.0039	0.0041	0.0060	0.0063	0.0035	0.0036
Copper, dissolved	mg/L			0.0014	0.0039	0.0077	0.0077	0.0037	0.0039	0.0047	0.0050	0.0022	0.0023
Iron, total	mg/L		0.3	0.085	0.78	0.36	0.39	0.30	0.31	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.11	0.14	0.052	0.058	0.018	0.023	0.014	0.014
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0011	0.0010	0.00065	0.00065	0.00087	0.00090	0.00066	0.00067
Lead, dissolved	mg/L			0.000025	0.000050	0.0010	0.00096	0.00056	0.00056	0.00047	0.00051	0.00027	0.00028
Lithium, total	mg/L			0.00050	0.0011	0.42	0.43	0.19	0.21	0.26	0.28	0.11	0.11
Lithium, dissolved	mg/L			0.00050	0.0010	0.42	0.43	0.19	0.21	0.26	0.28	0.11	0.11

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	End-of-Pipe Limit	West Management Pond										
			Goathorn WQG	Goathorn Baseline		Operations				Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	28	28	14	15	18	19	8.9	9.2
Magnesium, dissolved	mg/L			3.8	7.4	28	28	14	15	17	19	8.6	8.9
Manganese, total	mg/L		0.12	0.0059	0.033	0.24	0.26	0.10	0.11	0.080	0.086	0.050	0.051
Manganese, dissolved	mg/L			0.0026	0.0084	0.24	0.25	0.100	0.11	0.055	0.061	0.025	0.026
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.011	0.010	0.0049	0.0052	0.0066	0.0071	0.0033	0.0034
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.011	0.010	0.0049	0.0052	0.0065	0.0071	0.0032	0.0033
Nickel, total	mg/L		0.080	0.00025	0.0011	0.014	0.014	0.0065	0.0070	0.0072	0.0077	0.0040	0.0041
Nickel, dissolved	mg/L			0.00025	0.00060	0.013	0.014	0.0063	0.0068	0.0053	0.0059	0.0022	0.0023
Phosphorus, total	mg/L			0.0045	0.019	0.0012	0.0012	0.0012	0.0012	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00019	0.00038	0.000084	0.000089	0.00015	0.00014	0.00013	0.00013
Potassium, total	mg/L			0.39	1.0	46	46	20	22	29	32	12	13
Potassium, dissolved	mg/L			0.36	0.48	46	46	20	22	29	32	12	13
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.019	0.019	0.0087	0.0094	0.012	0.013	0.0048	0.0050
Selenium, dissolved	mg/L			0.000076	0.00012	0.019	0.019	0.0087	0.0094	0.012	0.013	0.0048	0.0050
Silica, dissolved	mg/L			5.6	6.2	25	24	11	12	15	16	7.3	7.5
Sodium, total	mg/L			2.3	4.8	1100	1100	500	540	740	790	330	340
Sodium, dissolved	mg/L			2.4	4.8	1100	1100	500	540	740	790	330	340
Strontium, total	mg/L		7.0	0.076	0.11	2.1	2.1	1.1	1.2	1.2	1.4	0.50	0.52
Strontium, dissolved	mg/L			0.077	0.12	2.1	2.1	1.1	1.2	1.2	1.4	0.50	0.52
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.00079	0.00074	0.00039	0.00037	0.00020	0.00024	0.000093	0.000098
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00079	0.00074	0.00039	0.00037	0.00020	0.00024	0.000093	0.000098
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0070	0.0071	0.0033	0.0035	0.0043	0.0047	0.0019	0.0020
Uranium, dissolved	mg/L			0.000051	0.00014	0.0070	0.0070	0.0032	0.0035	0.0043	0.0047	0.0019	0.0019
Vanadium, total	mg/L			0.00025	0.0020	0.019	0.019	0.0086	0.0093	0.013	0.014	0.0064	0.0066
Vanadium, dissolved	mg/L			0.00025	0.00052	0.019	0.019	0.0084	0.0091	0.012	0.013	0.0049	0.0051
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.019	0.019	0.0097	0.010	0.013	0.013	0.0081	0.0083
Zinc, dissolved	mg/L			0.0015	0.0021	0.018	0.018	0.0090	0.0098	0.0089	0.0096	0.0045	0.0047

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Table F-2

Parameter	Units	West Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		72	103	22	23	11	11	37	37	32	32
Alkalinity, total	mg CaCO ₃ /L		83	110	1200	1300	660	650	1200	1300	790	790
Chloride	mg/L	150	0.25	0.50	32	32	16	16	32	33	20	20
Fluoride	mg/L	0.12	0.031	0.045	0.025	0.025	0.010	0.010	0.11	0.11	0.083	0.082
Ammonia, total	mg-N/L	1.2	0.0025	0.0074	0.98	0.98	0.52	0.51	0.83	0.84	0.36	0.36
Nitrate	mg/L	3	0.0050	0.060	7.7	7.7	4.1	4.0	6.5	6.6	2.6	2.6
Nitrite	mg/L	0.02	0.00050	0.0020	0.18	0.18	0.093	0.092	0.15	0.15	0.060	0.060
Sulfate	mg/L	218	2.6	7.4	910	920	480	480	900	910	520	520
Aluminum, total	mg/L	0.1	0.056	1.8	0.024	0.024	0.011	0.011	0.077	0.077	0.060	0.060
Aluminum, dissolved	mg/L	0.05	0.016	0.14	0.15	0.15	0.069	0.068	0.11	0.11	0.046	0.046
Antimony, total	mg/L		0.00013	0.00024	0.0019	0.0019	0.0010	0.0010	0.0019	0.0019	0.0012	0.0012
Antimony, dissolved	mg/L	0.009	0.00011	0.00023	0.000038	0.000039	0.000018	0.000017	0.00012	0.00012	0.000097	0.000096
Arsenic, total	mg/L	0.005	0.00048	0.00090	0.00013	0.00013	0.000064	0.000063	0.00030	0.00030	0.00025	0.00025
Arsenic, dissolved	mg/L		0.00041	0.00054	0.0013	0.0013	0.00079	0.00078	0.0013	0.0013	0.00082	0.00082
Barium, total	mg/L	1	0.034	0.047	0.020	0.020	0.0095	0.0093	0.061	0.061	0.048	0.048
Barium, dissolved	mg/L		0.033	0.043	0.072	0.071	0.040	0.039	0.059	0.059	0.049	0.049
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000016	0.000016	0.0000080	0.0000079	0.000033	0.000033	0.000028	0.000028
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000016	0.000016	0.0000080	0.0000079	0.000033	0.000033	0.000028	0.000028
Boron, total	mg/L	1.2	0.015	0.050	0.0064	0.0065	0.0026	0.0025	0.028	0.028	0.021	0.021
Boron, dissolved	mg/L		0.013	0.050	0.49	0.49	0.25	0.25	0.49	0.49	0.30	0.30
Cadmium, total	mg/L	0.00009	0.0000050	0.000021	0.0000037	0.0000037	0.0000017	0.0000016	0.000012	0.000012	0.0000095	0.0000095
Cadmium, dissolved	mg/L	0.00017	0.0000025	0.0000058	0.000064	0.000064	0.000038	0.000038	0.000052	0.000052	0.000024	0.000024
Calcium, total	mg/L		22	31	6.8	6.9	3.4	3.4	11	11	9.7	9.7
Calcium, dissolved	mg/L		21	31	16	16	9.4	9.3	15	15	13	13
Chromium, total	mg/L	0.0089	0.00032	0.0018	0.000096	0.000096	0.000046	0.000045	0.00027	0.00027	0.00021	0.00021
Chromium, dissolved	mg/L		0.00025	0.00041	0.0047	0.0047	0.0025	0.0024	0.0047	0.0047	0.0029	0.0029
Cobalt, total	mg/L	0.004	0.000050	0.00099	0.000029	0.000029	0.000012	0.000012	0.00011	0.00011	0.000084	0.000084
Cobalt, dissolved	mg/L		0.000050	0.00011	0.0029	0.0029	0.0016	0.0016	0.0027	0.0027	0.0014	0.0014
Copper, total	mg/L	0.003	0.0011	0.0050	0.00037	0.00037	0.00019	0.00018	0.00068	0.00068	0.00058	0.00058
Copper, dissolved	mg/L		0.0011	0.0030	0.0061	0.0061	0.0032	0.0032	0.0060	0.0060	0.0038	0.0038
Iron, total	mg/L	0.3	0.048	1.2	0.029	0.029	0.012	0.012	0.11	0.11	0.088	0.088
Iron, dissolved	mg/L	0.30	0.015	0.14	0.10	0.099	0.055	0.054	0.079	0.080	0.039	0.040
Lead, total	mg/L	0.0050	0.000025	0.00039	0.000031	0.000032	0.000012	0.000012	0.00015	0.00015	0.00012	0.00012
Lead, dissolved	mg/L		0.000025	0.000050	0.00089	0.00089	0.00053	0.00053	0.00082	0.00083	0.00049	0.00049
Lithium, total	mg/L		0.00050	0.0012	0.00013	0.00013	0.000068	0.000068	0.00013	0.00013	0.00013	0.00013
Lithium, dissolved	mg/L		0.00050	0.0010	0.32	0.32	0.16	0.16	0.32	0.32	0.19	0.19

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	West Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		4.2	6.3	1.3	1.3	0.65	0.64	2.3	2.3	2.0	2.0
Magnesium, dissolved	mg/L		4.1	6.3	23	23	12	12	22	22	14	14
Manganese, total	mg/L	0.12	0.0050	0.058	0.0030	0.0030	0.0012	0.0012	0.013	0.013	0.0097	0.0097
Manganese, dissolved	mg/L		0.0020	0.0062	0.17	0.17	0.090	0.089	0.15	0.15	0.075	0.075
Mercury, total	mg/L	0.00001	0.0000025	0.0000089	0.00000090	0.00000090	0.00000044	0.00000043	0.0000023	0.0000023	0.0000018	0.0000018
Mercury, dissolved	mg/L		0.0000025	0.0000055	0.00052	0.00052	0.00030	0.00030	0.00039	0.00040	0.00017	0.00018
Molybdenum, total	mg-N/L	0.073	0.00012	0.00019	0.00010	0.00010	0.000049	0.000048	0.00027	0.00027	0.00022	0.00022
Molybdenum, dissolved	mg-N/L		0.00010	0.00019	0.0080	0.0081	0.0042	0.0042	0.0081	0.0081	0.0052	0.0052
Nickel, total	mg/L	0.080	0.00025	0.0017	0.000099	0.000099	0.000047	0.000046	0.00029	0.00029	0.00023	0.00023
Nickel, dissolved	mg/L		0.00025	0.00054	0.010	0.010	0.0057	0.0056	0.0099	0.0099	0.0053	0.0053
Phosphorus, total	mg/L		0.0042	0.046	0.0023	0.0024	0.0010	0.00099	0.0090	0.0090	0.0070	0.0069
Orthophosphate, dissolved	mg/L		0.0010	0.0040	0.00013	0.00013	0.000068	0.000068	0.00013	0.00013	0.00013	0.00013
Potassium, total	mg/L		0.23	1.0	0.16	0.16	0.072	0.071	0.49	0.49	0.39	0.39
Potassium, dissolved	mg/L		0.19	0.30	34	34	17	17	34	34	21	21
Selenium, total	mg/L	0.002	0.000051	0.00020	0.000022	0.000022	0.000011	0.000011	0.000042	0.000042	0.000035	0.000035
Selenium, dissolved	mg/L		0.000040	0.000073	0.015	0.015	0.0075	0.0075	0.015	0.015	0.0088	0.0088
Silica, dissolved	mg/L		7.0	8.0	18	18	9.1	9.0	18	18	12	12
Sodium, total	mg/L		3.5	4.8	7.2	7.3	2.6	2.5	39	39	29	29
Sodium, dissolved	mg/L		3.5	4.8	830	840	420	410	840	840	540	540
Strontium, total	mg/L	7.0	0.11	0.13	0.024	0.024	0.012	0.012	0.024	0.024	0.023	0.023
Strontium, dissolved	mg/L		0.10	0.14	1.8	1.8	0.96	0.95	1.7	1.7	1.00	1.00
Silver, total	mg/L	0.00005	0.0000050	0.000020	0.0000019	0.0000019	0.00000092	0.00000090	0.0000053	0.0000053	0.0000043	0.0000043
Silver, dissolved	mg/L		0.0000050	0.000010	0.00048	0.00048	0.00028	0.00028	0.00035	0.00035	0.00015	0.00015
Tin, total	mg/L		0.000050	0.00010	0.000029	0.000030	0.000013	0.000012	0.00011	0.00011	0.000087	0.000087
Tin, dissolved	mg/L		0.000050	0.00010	0.020	0.020	0.010	0.010	0.020	0.020	0.012	0.012
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000013	0.0000013	0.00000068	0.00000068	0.0000013	0.0000013	0.0000013	0.0000013
Thallium, dissolved	mg/L		0.0000050	0.000010	0.00065	0.00065	0.00038	0.00038	0.00054	0.00054	0.00027	0.00027
Uranium, total	mg/L	0.0085	0.00011	0.00025	0.000051	0.000051	0.000021	0.000020	0.00022	0.00022	0.00017	0.00017
Uranium, dissolved	mg/L		0.00011	0.00024	0.0054	0.0054	0.0028	0.0028	0.0054	0.0054	0.0033	0.0033
Vanadium, total	mg/L		0.00094	0.0037	0.00021	0.00022	0.00010	0.00010	0.00050	0.00050	0.00041	0.00041
Vanadium, dissolved	mg/L		0.00072	0.0010	0.014	0.014	0.0072	0.0071	0.014	0.014	0.0087	0.0087
Zinc, total	mg/L	0.0075	0.0015	0.0060	0.00057	0.00058	0.00027	0.00027	0.0016	0.0016	0.0013	0.0013
Zinc, dissolved	mg/L		0.0015	0.0015	0.015	0.015	0.0082	0.0081	0.014	0.014	0.0084	0.0085

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Table F-3

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	East Management Pond									
				Goathorn Baseline		Operations				Closure			
				P50	P95	Project Case				Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	115	168	37	41	11	10	10	10
Alkalinity, total	mg CaCO ₃ /L			52	87	970	1100	270	310	7.9	7.6	7.0	7.1
Chloride	mg/L		150	0.25	0.50	25	29	6.8	7.7	0.038	0.039	0.025	0.025
Fluoride	mg/L		0.12	0.032	0.041	0.034	0.089	0.0059	0.0068	0.0036	0.0034	0.0032	0.0032
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.46	0.55	0.16	0.19	0.0011	0.0013	0.00029	0.00030
Nitrate	mg/L	18.8	3	0.041	0.076	3.6	4.3	1.3	1.5	0.0094	0.011	0.0030	0.0031
Nitrite	mg/L		0.02	0.00050	0.0020	0.083	0.100	0.030	0.034	0.00020	0.00024	0.000057	0.000059
Sulfate	mg/L		218	24	37	690	800	190	210	0.94	0.98	0.61	0.62
Aluminum, total	mg/L		0.1	0.092	0.75	0.42	0.43	0.30	0.30	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.32	0.34	0.059	0.063	0.0017	0.0015	0.0015	0.0015
Antimony, total	mg/L			0.000073	0.00014	0.0015	0.0016	0.00048	0.00051	0.0000062	0.0000061	0.0000049	0.0000050
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0015	0.0016	0.00048	0.00052	0.0000081	0.0000081	0.0000069	0.0000069
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0016	0.0016	0.00074	0.00077	0.00054	0.00054	0.00054	0.00054
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0011	0.0011	0.00038	0.00041	0.000034	0.000032	0.000030	0.000031
Barium, total	mg/L		1	0.058	0.072	0.080	0.081	0.028	0.030	0.012	0.011	0.011	0.011
Barium, dissolved	mg/L			0.059	0.073	0.079	0.080	0.023	0.025	0.0051	0.0047	0.0045	0.0045
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000034	0.000083	0.0000074	0.0000085	0.0000055	0.0000051	0.0000049	0.0000049
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000034	0.000083	0.0000074	0.0000085	0.0000055	0.0000051	0.0000049	0.0000049
Boron, total	mg/L		1.2	0.0050	0.050	0.37	0.44	0.10	0.12	0.0010	0.0011	0.00085	0.00085
Boron, dissolved	mg/L			0.0050	0.050	0.37	0.44	0.10	0.12	0.00069	0.00071	0.00050	0.00050
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00057	0.00054	0.00015	0.00015	0.0000033	0.0000033	0.0000030	0.0000030
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00056	0.00054	0.00015	0.00015	0.00000076	0.00000080	0.00000050	0.00000051
Calcium, total	mg/L			21	30	18	36	6.1	6.6	3.1	2.9	2.8	2.9
Calcium, dissolved	mg/L			22	32	18	36	5.7	6.2	2.5	2.4	2.2	2.3
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0038	0.0043	0.0018	0.0019	0.0012	0.0012	0.0012	0.0012
Chromium, dissolved	mg/L			0.00010	0.00027	0.0037	0.0042	0.0010	0.0011	0.000018	0.000018	0.000016	0.000016
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0025	0.0026	0.0011	0.0011	0.00065	0.00065	0.00065	0.00065
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0021	0.0023	0.00065	0.00070	0.0000065	0.0000066	0.0000050	0.0000050
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0049	0.0055	0.0023	0.0024	0.0014	0.0014	0.0014	0.0014
Copper, dissolved	mg/L			0.0014	0.0039	0.0047	0.0053	0.0014	0.0016	0.00012	0.00011	0.00011	0.00011
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.0	1.0	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.14	0.17	0.029	0.031	0.0017	0.0015	0.0015	0.0015
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00088	0.0010	0.00049	0.00050	0.00040	0.00040	0.00040	0.00040
Lead, dissolved	mg/L			0.000025	0.000050	0.00076	0.00075	0.00021	0.00022	0.0000029	0.0000029	0.0000025	0.0000025
Lithium, total	mg/L			0.00050	0.0011	0.25	0.29	0.068	0.076	0.00017	0.00019	0.000055	0.000056
Lithium, dissolved	mg/L			0.00050	0.0010	0.25	0.29	0.068	0.076	0.00017	0.00019	0.000055	0.000056

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	East Management Pond									
				Goathorn Baseline		Operations				Closure			
				P50	P95	Project Case				Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	17	19	5.4	6.0	0.80	0.76	0.74	0.75
Magnesium, dissolved	mg/L			3.8	7.4	17	19	5.2	5.8	0.47	0.44	0.42	0.42
Manganese, total	mg/L		0.12	0.0059	0.033	0.11	0.13	0.045	0.048	0.026	0.026	0.026	0.026
Manganese, dissolved	mg/L			0.0026	0.0084	0.11	0.12	0.028	0.031	0.00024	0.00024	0.00020	0.00020
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0063	0.0071	0.0022	0.0025	0.00047	0.00044	0.00042	0.00042
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0063	0.0071	0.0022	0.0025	0.00044	0.00041	0.00039	0.00039
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0076	0.0085	0.0033	0.0035	0.0019	0.0019	0.0018	0.0018
Nickel, dissolved	mg/L			0.00025	0.00060	0.0074	0.0083	0.0021	0.0023	0.000030	0.000029	0.000025	0.000025
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.0097	0.0097	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00032	0.00075	0.000072	0.000083	0.000055	0.000051	0.000049	0.000049
Potassium, total	mg/L			0.39	1.0	25	30	7.0	7.9	0.11	0.11	0.095	0.096
Potassium, dissolved	mg/L			0.36	0.48	25	30	6.9	7.8	0.044	0.045	0.031	0.031
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.011	0.013	0.0032	0.0036	0.000017	0.000018	0.000011	0.000011
Selenium, dissolved	mg/L			0.000076	0.00012	0.011	0.013	0.0032	0.0036	0.000012	0.000013	0.0000058	0.0000059
Silica, dissolved	mg/L			5.6	6.2	14	16	4.3	4.8	0.69	0.64	0.62	0.62
Sodium, total	mg/L			2.3	4.8	620	720	170	190	0.67	0.73	0.39	0.39
Sodium, dissolved	mg/L			2.4	4.8	620	720	170	190	0.60	0.65	0.31	0.31
Strontium, total	mg/L		7.0	0.076	0.11	1.3	1.6	0.40	0.44	0.014	0.013	0.013	0.013
Strontium, dissolved	mg/L			0.077	0.12	1.3	1.6	0.40	0.44	0.010	0.010	0.0092	0.0093
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.00057	0.00057	0.00017	0.00017	0.00000092	0.00000090	0.0000005	0.00000052
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00057	0.00057	0.00017	0.00017	0.00000092	0.00000090	0.0000005	0.00000052
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0042	0.0048	0.0012	0.0013	0.000021	0.000021	0.000019	0.000019
Uranium, dissolved	mg/L			0.000051	0.00014	0.0042	0.0048	0.0012	0.0013	0.0000087	0.0000088	0.0000064	0.0000065
Vanadium, total	mg/L			0.00025	0.0020	0.011	0.013	0.0040	0.0043	0.0015	0.0015	0.0015	0.0015
Vanadium, dissolved	mg/L			0.00025	0.00052	0.011	0.013	0.0030	0.0034	0.000031	0.000031	0.000025	0.000025
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.012	0.013	0.0057	0.0060	0.0038	0.0038	0.0038	0.0038
Zinc, dissolved	mg/L			0.0015	0.0021	0.011	0.012	0.0032	0.0035	0.00017	0.00015	0.00015	0.00015

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table F-4

Parameter	Units	East Management Pond Void Space and Seepage Water Quality										
		WQG in Four Creek	Four Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		118	163	42	42	17	16	11	11	8	8
Alkalinity, total	mg CaCO ₃ /L		130	190	870	870	580	570	350	360	110	110
Chloride	mg/L	150	0.25	0.50	22	22	14	14	8.8	8.9	2.7	2.7
Fluoride	mg/L	0.12	0.059	0.068	0.028	0.028	0.010	0.0099	0.0062	0.0063	0.0041	0.0041
Ammonia, total	mg-N/L	0.95	0.0025	0.0092	0.35	0.35	0.26	0.25	0.17	0.18	0.053	0.054
Nitrate	mg/L	3	0.013	0.058	2.8	2.8	2.0	2.0	1.4	1.4	0.42	0.43
Nitrite	mg/L	0.02	0.00050	0.0010	0.064	0.064	0.047	0.046	0.031	0.032	0.0097	0.0098
Sulfate	mg/L	309	1.9	28	610	610	400	400	250	250	76	77
Aluminum, total	mg/L	0.1	0.099	1.2	0.037	0.037	0.014	0.013	0.0090	0.0090	0.0065	0.0065
Aluminum, dissolved	mg/L	0.05	0.032	0.49	0.27	0.27	0.16	0.15	0.083	0.085	0.027	0.027
Antimony, total	mg/L		0.000050	0.00012	0.0013	0.0013	0.00090	0.00089	0.00057	0.00058	0.00018	0.00018
Antimony, dissolved	mg/L	0.009	0.000050	0.00010	0.000058	0.000057	0.000022	0.000021	0.000014	0.000014	0.000010	0.000010
Arsenic, total	mg/L	0.005	0.00074	0.0011	0.00023	0.00023	0.000088	0.000083	0.000058	0.000058	0.000043	0.000043
Arsenic, dissolved	mg/L		0.00064	0.00086	0.00098	0.00098	0.00069	0.00067	0.00043	0.00044	0.00015	0.00016
Barium, total	mg/L	1	0.071	0.13	0.032	0.031	0.012	0.011	0.0077	0.0078	0.0057	0.0057
Barium, dissolved	mg/L		0.075	0.13	0.067	0.068	0.041	0.040	0.026	0.026	0.011	0.011
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000030	0.000029	0.000011	0.000011	0.0000075	0.0000075	0.0000057	0.0000057
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000030	0.000029	0.000011	0.000011	0.0000075	0.0000075	0.0000057	0.0000057
Boron, total	mg/L	1.2	0.012	0.020	0.0069	0.0069	0.0026	0.0025	0.0015	0.0015	0.0010	0.0010
Boron, dissolved	mg/L		0.011	0.019	0.33	0.33	0.22	0.22	0.13	0.14	0.042	0.042
Cadmium, total	mg/L	0.00009	0.0000063	0.000019	0.0000054	0.0000053	0.0000020	0.0000019	0.0000013	0.0000013	0.00000094	0.00000094
Cadmium, dissolved	mg/L	0.00024	0.0000052	0.000012	0.00044	0.00044	0.00029	0.00029	0.00018	0.00018	0.000055	0.000056
Calcium, total	mg/L		24	34	13	13	5.1	4.8	3.4	3.4	2.6	2.6
Calcium, dissolved	mg/L		23	36	16	16	9.5	9.2	6.2	6.3	3.4	3.5
Chromium, total	mg/L	0.0089	0.00026	0.0016	0.00016	0.00016	0.000060	0.000057	0.000039	0.000039	0.000029	0.000029
Chromium, dissolved	mg/L		0.00015	0.00079	0.0032	0.0032	0.0021	0.0021	0.0013	0.0013	0.00041	0.00042
Cobalt, total	mg/L	0.004	0.000050	0.00047	0.000037	0.000037	0.000014	0.000013	0.0000086	0.0000087	0.0000060	0.0000060
Cobalt, dissolved	mg/L		0.000050	0.00015	0.0019	0.0019	0.0013	0.0012	0.00078	0.00080	0.00024	0.00025
Copper, total	mg/L	0.0047	0.0014	0.0044	0.00070	0.00069	0.00027	0.00025	0.00018	0.00018	0.00014	0.00014
Copper, dissolved	mg/L		0.0014	0.0034	0.0043	0.0043	0.0029	0.0028	0.0018	0.0018	0.00062	0.00062
Iron, total	mg/L	0.3	0.095	1.1	0.036	0.036	0.014	0.013	0.0084	0.0085	0.0058	0.0058
Iron, dissolved	mg/L	0.30	0.015	0.41	0.13	0.13	0.074	0.072	0.040	0.040	0.013	0.013
Lead, total	mg/L	0.0050	0.000025	0.00028	0.000028	0.000029	0.000010	0.0000099	0.0000057	0.0000058	0.0000035	0.0000035
Lead, dissolved	mg/L		0.000025	0.000091	0.00063	0.00063	0.00042	0.00042	0.00026	0.00026	0.000082	0.000082
Lithium, total	mg/L		0.0015	0.0019	0.00028	0.00027	0.00011	0.00010	0.000072	0.000072	0.000056	0.000056
Lithium, dissolved	mg/L		0.0014	0.0019	0.22	0.22	0.14	0.14	0.088	0.089	0.027	0.027

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	East Management Pond Void Space and Seepage Water Quality										
		WQG in Four Creek	Four Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		14	19	2.4	2.4	0.94	0.88	0.62	0.63	0.47	0.48
Magnesium, dissolved	mg/L		13	20	15	15	10	10	6.4	6.6	2.3	2.3
Manganese, total	mg/L	0.12	0.0025	0.024	0.0034	0.0034	0.0013	0.0012	0.00077	0.00078	0.00052	0.00052
Manganese, dissolved	mg/L		0.00067	0.0074	0.094	0.094	0.061	0.061	0.037	0.038	0.011	0.012
Mercury, total	mg/L	0.00001	0.0000025	0.000013	0.0000015	0.0000015	0.00000059	0.00000056	0.00000038	0.00000039	0.00000029	0.00000029
Mercury, dissolved	mg/L		0.0000025	0.0000093	0.00034	0.00034	0.00022	0.00022	0.00014	0.00014	0.000043	0.000044
Molybdenum, total	mg-N/L	0.073	0.00023	0.00038	0.00017	0.00017	0.000064	0.000061	0.000042	0.000042	0.000031	0.000031
Molybdenum, dissolved	mg-N/L		0.00019	0.00036	0.0059	0.0059	0.0041	0.0040	0.0026	0.0026	0.0011	0.0011
Nickel, total	mg/L	0.080	0.00025	0.0018	0.00016	0.00016	0.000061	0.000057	0.000039	0.000039	0.000029	0.000029
Nickel, dissolved	mg/L		0.00025	0.0011	0.0065	0.0065	0.0043	0.0043	0.0027	0.0027	0.00083	0.00084
Phosphorus, total	mg/L		0.0041	0.044	0.0030	0.0030	0.0011	0.0011	0.00069	0.00070	0.00048	0.00048
Orthophosphate, dissolved	mg/L		0.00050	0.0012	0.00028	0.00027	0.00011	0.00010	0.000072	0.000072	0.000056	0.000056
Potassium, total	mg/L		0.36	0.77	0.24	0.24	0.090	0.085	0.058	0.058	0.042	0.042
Potassium, dissolved	mg/L		0.35	0.84	22	22	14	14	8.9	9.1	2.8	2.8
Selenium, total	mg/L	0.002	0.000025	0.000095	0.000040	0.000039	0.000015	0.000014	0.000010	0.000010	0.0000077	0.0000077
Selenium, dissolved	mg/L		0.000025	0.00011	0.0099	0.0099	0.0066	0.0065	0.0040	0.0041	0.0012	0.0013
Silica, dissolved	mg/L				12	12	8.3	8.2	5.2	5.3	2.0	2.0
Sodium, total	mg/L		7.0	13	5.4	5.5	1.9	1.8	0.97	0.98	0.49	0.50
Sodium, dissolved	mg/L		7.4	13	540	540	350	350	220	220	67	68
Strontium, total	mg/L	7.0	0.17	0.24	0.050	0.049	0.019	0.018	0.013	0.013	0.010	0.010
Strontium, dissolved	mg/L		0.16	0.24	1.2	1.2	0.82	0.81	0.50	0.51	0.16	0.16
Silver, total	mg/L	0.0015	0.0000050	0.000022	0.0000031	0.0000031	0.0000012	0.0000011	0.00000078	0.00000078	0.00000058	0.00000058
Silver, dissolved	mg/L		0.0000050	0.000012	0.00031	0.00031	0.00020	0.00020	0.00013	0.00013	0.000040	0.000040
Tin, total	mg/L		0.000050	0.00010	0.000037	0.000037	0.000014	0.000013	0.0000086	0.0000087	0.0000060	0.0000060
Tin, dissolved	mg/L		0.000050	0.00010	0.014	0.014	0.0089	0.0088	0.0054	0.0055	0.0017	0.0017
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000028	0.0000027	0.0000011	0.0000010	0.00000072	0.00000072	0.00000056	0.00000056
Thallium, dissolved	mg/L		0.0000050	0.000010	0.00044	0.00044	0.00030	0.00030	0.00019	0.00020	0.000060	0.000060
Uranium, total	mg/L	0.0085	0.000078	0.00025	0.000056	0.000056	0.000021	0.000020	0.000013	0.000013	0.0000084	0.0000084
Uranium, dissolved	mg/L		0.000075	0.00025	0.0037	0.0037	0.0024	0.0024	0.0015	0.0015	0.00046	0.00047
Vanadium, total	mg/L		0.00061	0.0027	0.00037	0.00037	0.00014	0.00014	0.000094	0.000095	0.000071	0.000071
Vanadium, dissolved	mg/L		0.00025	0.0013	0.0096	0.0096	0.0063	0.0062	0.0039	0.0039	0.0012	0.0012
Zinc, total	mg/L	0.029	0.0015	0.0059	0.00094	0.00093	0.00036	0.00034	0.00023	0.00024	0.00017	0.00017
Zinc, dissolved	mg/L		0.0015	0.0025	0.010	0.010	0.0067	0.0066	0.0041	0.0041	0.0013	0.0014

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Table F-5

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	North Management Pond									
				Baseline in Goathorn Creek		Operations				Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	171	157	41	42	73	83	46	51
Alkalinity, total	mg CaCO ₃ /L			52	87	1200	1100	290	310	660	780	310	360
Chloride	mg/L		150	0.25	0.50	31	31	7.5	8.2	18	21	7.4	8.6
Fluoride	mg/L		0.12	0.032	0.041	0.046	0.038	0.0054	0.0055	0.090	0.098	0.075	0.085
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.65	0.65	0.20	0.21	0.10	0.16	0.034	0.039
Nitrate	mg/L	18.8	3	0.041	0.076	5.2	5.1	1.6	1.7	0.65	1.1	0.032	0.046
Nitrite	mg/L		0.02	0.00050	0.0020	0.12	0.12	0.036	0.039	0.015	0.026	0.0013	0.0017
Sulfate	mg/L		218	24	37	790	790	200	210	430	510	170	200
Aluminum, total	mg/L		0.1	0.092	0.75	0.47	0.47	0.35	0.36	0.39	0.40	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.32	0.36	0.040	0.047	0.018	0.031	0.0042	0.0049
Antimony, total	mg/L			0.000073	0.00014	0.0024	0.0022	0.00058	0.00062	0.00097	0.0012	0.00042	0.00049
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0024	0.0022	0.00059	0.00062	0.00097	0.0012	0.00042	0.00049
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0023	0.0021	0.00090	0.00092	0.0011	0.0012	0.00083	0.00088
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0018	0.0016	0.00046	0.00047	0.00060	0.00074	0.00032	0.00037
Barium, total	mg/L		1	0.058	0.072	0.094	0.086	0.031	0.032	0.040	0.042	0.035	0.039
Barium, dissolved	mg/L			0.059	0.073	0.088	0.080	0.026	0.027	0.033	0.035	0.028	0.032
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000063	0.000046	0.0000070	0.0000069	0.000027	0.000028	0.000023	0.000026
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000063	0.000046	0.0000070	0.0000069	0.000027	0.000028	0.000023	0.000026
Boron, total	mg/L		1.2	0.0050	0.050	0.45	0.45	0.11	0.12	0.26	0.31	0.11	0.13
Boron, dissolved	mg/L			0.0050	0.050	0.45	0.45	0.11	0.12	0.26	0.30	0.11	0.13
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00068	0.00064	0.00017	0.00017	0.00010	0.00013	0.000038	0.000044
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00068	0.00064	0.00017	0.00017	0.000098	0.00013	0.000036	0.000042
Calcium, total	mg/L			21	30	32	25	6.4	6.3	9.6	10	8.6	9.4
Calcium, dissolved	mg/L			22	32	32	25	5.9	5.8	9.0	9.5	8.0	8.8
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0057	0.0057	0.0021	0.0022	0.0036	0.0041	0.0023	0.0025
Chromium, dissolved	mg/L			0.00010	0.00027	0.0045	0.0046	0.0011	0.0012	0.0025	0.0029	0.0011	0.0013
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0036	0.0033	0.0013	0.0013	0.0015	0.0018	0.00097	0.0010
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0030	0.0027	0.00075	0.00079	0.00088	0.0011	0.00033	0.00039
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0070	0.0071	0.0026	0.0027	0.0044	0.0049	0.0028	0.0030
Copper, dissolved	mg/L			0.0014	0.0039	0.0057	0.0058	0.0015	0.0016	0.0031	0.0036	0.0015	0.0017
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.3	1.3	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.16	0.19	0.022	0.025	0.014	0.020	0.0093	0.010
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0013	0.0013	0.00058	0.00058	0.00070	0.00076	0.00057	0.00059
Lead, dissolved	mg/L			0.000025	0.000050	0.00091	0.00088	0.00024	0.00024	0.00031	0.00036	0.00017	0.00020
Lithium, total	mg/L			0.00050	0.0011	0.30	0.30	0.073	0.079	0.17	0.20	0.069	0.080
Lithium, dissolved	mg/L			0.00050	0.0010	0.30	0.30	0.073	0.079	0.17	0.20	0.069	0.080

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	North Management Pond									
				Baseline in Goathorn Creek		Operations				Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	22	23	6.0	6.3	12	14	6.0	6.8
Magnesium, dissolved	mg/L			3.8	7.4	22	22	5.7	6.0	11	13	5.6	6.5
Manganese, total	mg/L		0.12	0.0059	0.033	0.11	0.11	0.045	0.047	0.062	0.070	0.041	0.044
Manganese, dissolved	mg/L			0.0026	0.0084	0.091	0.11	0.023	0.025	0.036	0.044	0.016	0.018
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0092	0.0084	0.0025	0.0026	0.0044	0.0053	0.0022	0.0025
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0091	0.0084	0.0025	0.0026	0.0044	0.0052	0.0022	0.0025
Nickel, total	mg/L		0.080	0.00025	0.0011	0.010	0.0096	0.0037	0.0039	0.0054	0.0062	0.0033	0.0035
Nickel, dissolved	mg/L			0.00025	0.00060	0.0084	0.0078	0.0022	0.0023	0.0035	0.0043	0.0014	0.0017
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.013	0.013	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00062	0.00044	0.000068	0.000067	0.00011	0.00011	0.000094	0.00010
Potassium, total	mg/L			0.39	1.0	32	33	7.7	8.3	19	23	8.0	9.2
Potassium, dissolved	mg/L			0.36	0.48	32	33	7.6	8.3	19	23	7.9	9.1
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.015	0.014	0.0035	0.0039	0.0078	0.0093	0.0031	0.0036
Selenium, dissolved	mg/L			0.000076	0.00012	0.015	0.014	0.0035	0.0038	0.0078	0.0093	0.0031	0.0036
Silica, dissolved	mg/L			5.6	6.2	17	18	4.6	4.9	10	12	4.8	5.5
Sodium, total	mg/L			2.3	4.8	780	800	180	200	480	560	210	240
Sodium, dissolved	mg/L			2.4	4.8	780	800	180	200	480	560	210	240
Strontium, total	mg/L		7.0	0.076	0.11	1.7	1.6	0.42	0.46	0.82	0.99	0.33	0.38
Strontium, dissolved	mg/L			0.077	0.12	1.7	1.6	0.42	0.45	0.81	0.98	0.32	0.37
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.000086	0.00078	0.00022	0.00023	0.00014	0.00019	0.000060	0.000070
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00086	0.00078	0.00022	0.00023	0.00014	0.00019	0.000060	0.000070
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0052	0.0053	0.0013	0.0014	0.0028	0.0034	0.0012	0.0014
Uranium, dissolved	mg/L			0.000051	0.00014	0.0052	0.0052	0.0013	0.0014	0.0028	0.0033	0.0012	0.0014
Vanadium, total	mg/L			0.00025	0.0020	0.015	0.015	0.0045	0.0048	0.0091	0.011	0.0046	0.0051
Vanadium, dissolved	mg/L			0.00025	0.00052	0.014	0.014	0.0033	0.0035	0.0076	0.0091	0.0032	0.0037
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.016	0.015	0.0063	0.0066	0.0095	0.011	0.0066	0.0070
Zinc, dissolved	mg/L			0.0015	0.0021	0.012	0.013	0.0032	0.0035	0.0058	0.0070	0.0029	0.0034

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table F-6

Parameter	Units	North Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		72	103	78	75	25	26	29	29	25	25
Alkalinity, total	mg CaCO ₃ /L		83	110	770	770	470	470	400	400	330	330
Chloride	mg/L	150	0.25	0.50	19	19	12	12	10	10	8.0	8.0
Fluoride	mg/L	0.12	0.031	0.045	0.039	0.038	0.014	0.014	0.082	0.082	0.069	0.069
Ammonia, total	mg-N/L	1.2	0.0025	0.0074	0.34	0.34	0.23	0.23	0.13	0.13	0.051	0.051
Nitrate	mg/L	3	0.0050	0.060	2.6	2.6	1.8	1.8	0.99	0.99	0.19	0.19
Nitrite	mg/L	0.02	0.00050	0.0020	0.061	0.061	0.042	0.042	0.023	0.023	0.0049	0.0050
Sulfate	mg/L	218	2.6	7.4	520	520	320	320	250	250	180	190
Aluminum, total	mg/L	0.1	0.056	1.8	0.061	0.058	0.021	0.021	0.058	0.058	0.049	0.049
Aluminum, dissolved	mg/L	0.05	0.016	0.14	0.28	0.28	0.12	0.13	0.034	0.034	0.0091	0.0092
Antimony, total	mg/L		0.00013	0.00024	0.0014	0.0014	0.00085	0.00085	0.00061	0.00061	0.00046	0.00046
Antimony, dissolved	mg/L	0.009	0.00011	0.00023	0.000094	0.000091	0.000032	0.000033	0.000093	0.000093	0.000079	0.000079
Arsenic, total	mg/L	0.005	0.00048	0.00090	0.00040	0.00038	0.00013	0.00013	0.00023	0.00023	0.00020	0.00020
Arsenic, dissolved	mg/L		0.00041	0.00054	0.0011	0.0011	0.00070	0.00071	0.00042	0.00042	0.00035	0.00035
Barium, total	mg/L	1	0.034	0.047	0.053	0.051	0.018	0.018	0.046	0.046	0.039	0.039
Barium, dissolved	mg/L		0.033	0.043	0.074	0.075	0.045	0.046	0.031	0.031	0.029	0.029
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000052	0.000050	0.000017	0.000018	0.000025	0.000025	0.000022	0.000022
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000052	0.000050	0.000017	0.000018	0.000025	0.000025	0.000022	0.000022
Boron, total	mg/L	1.2	0.015	0.050	0.0096	0.0092	0.0035	0.0035	0.021	0.021	0.018	0.018
Boron, dissolved	mg/L		0.013	0.050	0.29	0.29	0.18	0.18	0.15	0.15	0.12	0.12
Cadmium, total	mg/L	0.00009	0.0000050	0.000021	0.0000087	0.0000084	0.0000030	0.0000030	0.0000091	0.0000092	0.0000077	0.0000077
Cadmium, dissolved	mg/L	0.00017	0.0000025	0.0000058	0.00049	0.00049	0.00029	0.00029	0.00010	0.00010	0.000049	0.000049
Calcium, total	mg/L		22	31	24	23	7.8	7.9	8.5	8.5	7.4	7.4
Calcium, dissolved	mg/L		21	31	27	26	12	12	8.6	8.6	7.8	7.8
Chromium, total	mg/L	0.0089	0.00032	0.0018	0.00027	0.00026	0.000089	0.000091	0.00020	0.00020	0.00017	0.00017
Chromium, dissolved	mg/L		0.00025	0.00041	0.0029	0.0029	0.0018	0.0018	0.0015	0.0015	0.0012	0.0012
Cobalt, total	mg/L	0.004	0.000050	0.00099	0.000056	0.000054	0.000020	0.000020	0.000082	0.000082	0.000069	0.000069
Cobalt, dissolved	mg/L		0.000050	0.00011	0.0019	0.0019	0.0012	0.0012	0.00064	0.00064	0.00040	0.00040
Copper, total	mg/L	0.003	0.0011	0.0050	0.0013	0.0012	0.00041	0.00042	0.00052	0.00052	0.00045	0.00045
Copper, dissolved	mg/L		0.0011	0.0030	0.0042	0.0042	0.0025	0.0025	0.0019	0.0019	0.0015	0.0015
Iron, total	mg/L	0.3	0.048	1.2	0.055	0.052	0.019	0.019	0.086	0.086	0.073	0.073
Iron, dissolved	mg/L	0.30	0.015	0.14	0.14	0.14	0.065	0.066	0.019	0.019	0.011	0.011
Lead, total	mg/L	0.0050	0.000025	0.00039	0.000033	0.000032	0.000013	0.000013	0.00012	0.00012	0.000097	0.000097
Lead, dissolved	mg/L		0.000025	0.000050	0.00066	0.00066	0.00039	0.00040	0.00021	0.00021	0.00018	0.00018
Lithium, total	mg/L		0.00050	0.0012	0.00051	0.00049	0.00017	0.00017	0.00010	0.00010	0.000092	0.000092
Lithium, dissolved	mg/L		0.00050	0.0010	0.19	0.19	0.11	0.11	0.100	0.100	0.075	0.075

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	North Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Project Case				Project Case			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		4.2	6.3	4.4	4.2	1.4	1.5	1.8	1.8	1.5	1.5
Magnesium, dissolved	mg/L		4.1	6.3	15	15	9.4	9.5	7.1	7.1	5.9	5.9
Manganese, total	mg/L	0.12	0.0050	0.058	0.0049	0.0047	0.0018	0.0018	0.0096	0.0096	0.0081	0.0080
Manganese, dissolved	mg/L		0.0020	0.0062	0.077	0.077	0.044	0.044	0.024	0.024	0.018	0.018
Mercury, total	mg/L	0.00001	0.0000025	0.0000089	0.0000026	0.0000025	0.00000088	0.00000090	0.0000017	0.0000017	0.0000015	0.0000015
Mercury, dissolved	mg/L		0.0000025	0.0000055	0.00039	0.00039	0.00023	0.00023	0.000077	0.000077	0.000032	0.000033
Molybdenum, total	mg-N/L	0.073	0.00012	0.00019	0.00029	0.00028	0.000096	0.000098	0.00021	0.00021	0.00018	0.00017
Molybdenum, dissolved	mg-N/L		0.00010	0.00019	0.0067	0.0067	0.0041	0.0042	0.0028	0.0028	0.0023	0.0023
Nickel, total	mg/L	0.080	0.00025	0.0017	0.00027	0.00026	0.000090	0.000091	0.00022	0.00022	0.00018	0.00018
Nickel, dissolved	mg/L		0.00025	0.00054	0.0058	0.0058	0.0035	0.0036	0.0023	0.0023	0.0016	0.0016
Phosphorus, total	mg/L		0.0042	0.046	0.0045	0.0043	0.0016	0.0016	0.0068	0.0068	0.0058	0.0057
Orthophosphate, dissolved	mg/L		0.0010	0.0040	0.00051	0.00049	0.00017	0.00017	0.00010	0.00010	0.000092	0.000092
Potassium, total	mg/L		0.23	1.0	0.39	0.37	0.13	0.13	0.37	0.37	0.32	0.32
Potassium, dissolved	mg/L		0.19	0.30	19	19	12	12	11	11	8.4	8.5
Selenium, total	mg/L	0.002	0.000051	0.00020	0.000071	0.000068	0.000023	0.000024	0.000032	0.000032	0.000028	0.000028
Selenium, dissolved	mg/L		0.000040	0.000073	0.0089	0.0089	0.0054	0.0055	0.0046	0.0046	0.0034	0.0034
Silica, dissolved	mg/L		7.0	8.0	13	13	7.7	7.8	6.2	6.2	5.1	5.1
Sodium, total	mg/L		3.5	4.8	5.1	5.1	2.2	2.2	29	29	24	24
Sodium, dissolved	mg/L		3.5	4.8	460	460	280	280	280	280	220	220
Strontium, total	mg/L	7.0	0.11	0.13	0.092	0.089	0.030	0.030	0.018	0.018	0.017	0.017
Strontium, dissolved	mg/L		0.10	0.14	1.1	1.1	0.67	0.67	0.50	0.50	0.36	0.36
Silver, total	mg/L	0.00005	0.0000050	0.000020	0.0000053	0.0000051	0.0000018	0.0000018	0.0000040	0.0000040	0.0000034	0.0000034
Silver, dissolved	mg/L		0.0000050	0.000010	0.00037	0.00037	0.00021	0.00022	0.000066	0.000067	0.000024	0.000024
Tin, total	mg/L		0.000050	0.00010	0.000057	0.000054	0.000020	0.000020	0.000085	0.000085	0.000072	0.000072
Tin, dissolved	mg/L		0.000050	0.00010	0.012	0.012	0.0071	0.0072	0.0059	0.0059	0.0043	0.0043
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000051	0.0000049	0.0000017	0.0000017	0.0000010	0.0000010	0.00000092	0.00000092
Thallium, dissolved	mg/L		0.0000050	0.000010	0.00054	0.00054	0.00034	0.00034	0.00014	0.00014	0.000077	0.000078
Uranium, total	mg/L	0.0085	0.00011	0.00025	0.000079	0.000076	0.000029	0.000029	0.00016	0.00016	0.00014	0.00014
Uranium, dissolved	mg/L		0.00011	0.00024	0.0033	0.0033	0.0020	0.0020	0.0017	0.0017	0.0013	0.0013
Vanadium, total	mg/L		0.00094	0.0037	0.00065	0.00063	0.00022	0.00022	0.00038	0.00038	0.00033	0.00033
Vanadium, dissolved	mg/L		0.00072	0.0010	0.0084	0.0084	0.0051	0.0051	0.0045	0.0045	0.0034	0.0034
Zinc, total	mg/L	0.0075	0.0015	0.0060	0.0016	0.0015	0.00054	0.00054	0.0012	0.0012	0.0010	0.0010
Zinc, dissolved	mg/L		0.0015	0.0015	0.0097	0.0097	0.0057	0.0058	0.0037	0.0037	0.0031	0.0031

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Table F-7

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Tenas Control Pond					
				Baseline in Goathorn Creek		Operations			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	154	154	103	110
Alkalinity, total	mg CaCO ₃ /L			52	87	1100	1200	650	700
Chloride	mg/L		150	0.25	0.50	30	31	16	17
Fluoride	mg/L		0.12	0.032	0.041	0.076	0.16	0.049	0.085
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.91	2.7	0.31	0.49
Nitrate	mg/L	18.8	3	0.041	0.076	7.0	21	2.4	3.7
Nitrite	mg/L		0.02	0.00050	0.0020	0.16	0.48	0.055	0.085
Sulfate	mg/L		218	24	37	730	770	410	420
Aluminum, total	mg/L		0.1	0.092	0.75	0.50	0.46	0.41	0.40
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.13	0.095	0.036	0.029
Antimony, total	mg/L			0.000073	0.00014	0.0016	0.0016	0.00094	0.00098
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0016	0.0016	0.00094	0.00098
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0017	0.0016	0.0013	0.0013
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0012	0.0011	0.00075	0.00078
Barium, total	mg/L		1	0.058	0.072	0.072	0.079	0.055	0.063
Barium, dissolved	mg/L			0.059	0.073	0.065	0.072	0.048	0.056
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000058	0.000061	0.000038	0.000046
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000058	0.000061	0.000038	0.000046
Boron, total	mg/L		1.2	0.0050	0.050	0.43	0.45	0.24	0.26
Boron, dissolved	mg/L			0.0050	0.050	0.43	0.45	0.24	0.26
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00057	0.00051	0.00018	0.00015
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00057	0.00051	0.00018	0.00015
Calcium, total	mg/L			21	30	27	27	20	21
Calcium, dissolved	mg/L			22	32	26	26	19	21
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0054	0.0056	0.0036	0.0037
Chromium, dissolved	mg/L			0.00010	0.00027	0.0042	0.0044	0.0024	0.0025
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0027	0.0025	0.0016	0.0016
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0021	0.0019	0.00100	0.00095
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0068	0.0070	0.0048	0.0049
Copper, dissolved	mg/L			0.0014	0.0039	0.0055	0.0057	0.0035	0.0036
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.065	0.056	0.029	0.027
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0012	0.0011	0.00076	0.00077
Lead, dissolved	mg/L			0.000025	0.000050	0.00079	0.00073	0.00036	0.00038
Lithium, total	mg/L			0.00050	0.0011	0.29	0.30	0.16	0.16
Lithium, dissolved	mg/L			0.00050	0.0010	0.29	0.30	0.16	0.16

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Tenas Control Pond					
				Baseline in Goathorn Creek		Operations			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	21	21	13	14
Magnesium, dissolved	mg/L			3.8	7.4	20	21	13	14
Manganese, total	mg/L		0.12	0.0059	0.033	0.12	0.13	0.073	0.071
Manganese, dissolved	mg/L			0.0026	0.0084	0.096	0.10	0.048	0.045
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0084	0.0086	0.0060	0.0063
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0084	0.0085	0.0060	0.0062
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0087	0.0084	0.0057	0.0056
Nickel, dissolved	mg/L			0.00025	0.00060	0.0069	0.0066	0.0039	0.0038
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00056	0.00056	0.00032	0.00034
Potassium, total	mg/L			0.39	1.0	32	33	18	19
Potassium, dissolved	mg/L			0.36	0.48	32	33	18	18
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.013	0.014	0.0072	0.0075
Selenium, dissolved	mg/L			0.000076	0.00012	0.013	0.014	0.0072	0.0075
Silica, dissolved	mg/L			5.6	6.2	19	19	12	13
Sodium, total	mg/L			2.3	4.8	790	830	440	470
Sodium, dissolved	mg/L			2.4	4.8	790	830	440	470
Strontium, total	mg/L		7.0	0.076	0.11	1.4	1.5	0.83	0.85
Strontium, dissolved	mg/L			0.077	0.12	1.4	1.5	0.83	0.84
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.00058	0.00052	0.00019	0.00018
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00058	0.00052	0.00019	0.00018
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0048	0.0050	0.0027	0.0028
Uranium, dissolved	mg/L			0.000051	0.00014	0.0048	0.0050	0.0027	0.0028
Vanadium, total	mg/L			0.00025	0.0020	0.014	0.015	0.0086	0.0090
Vanadium, dissolved	mg/L			0.00025	0.00052	0.013	0.014	0.0072	0.0075
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.014	0.015	0.010	0.011
Zinc, dissolved	mg/L			0.0015	0.0021	0.011	0.011	0.0067	0.0070

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table F-8

Parameter	Units	End-of-Pipe Limit	Bulkley WQG	Rail Infrastructure Sedimentation Pond					
				Baseline in Bulkley River		Operations			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			28	38	2073	1841	1957	1816
Alkalinity, total	mg CaCO ₃ /L			27	35	34	30	32	30
Chloride	mg/L		150	0.25	0.86	2.5	2.3	2.4	2.2
Fluoride	mg/L		0.12	0.023	0.035	0	0	0	0
Ammonia, total	mg-N/L		1.7	0.0050	0.017	0	0	0	0
Nitrate	mg/L	18.8	3	0.013	0.041	0	0	0	0
Nitrite	mg/L		0.02	0.0020	0.0050	0	0	0	0
Sulfate	mg/L		128	4.0	5.0	2200	2000	2100	1900
Aluminum, total	mg/L		0.1	0.13	1.3	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.017	0.13	0.0029	0.0026	0.0028	0.0026
Antimony, total	mg/L			0.000050	0.00011	0.00010	0.000091	0.000095	0.000088
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00010	0.000093	0.000097	0.000090
Arsenic, total	mg/L		0.005	0.00024	0.00070	0.00061	0.00060	0.00060	0.00060
Arsenic, dissolved	mg/L			0.00016	0.00033	0.00010	0.000091	0.000095	0.000088
Barium, total	mg/L		1	0.026	0.038	0.010	0.0097	0.0099	0.0097
Barium, dissolved	mg/L			0.023	0.032	0.0035	0.0031	0.0033	0.0030
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0	0	0	0
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000050	0.00010	0.000050	0.00010
Boron, total	mg/L		1.2	0.0050	0.010	0.25	0.23	0.24	0.22
Boron, dissolved	mg/L			0.0050	0.010	0.25	0.23	0.24	0.22
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	0.0029	0.0026	0.0027	0.0025
Cadmium, dissolved	mg/L		0.00008	0.0000025	0.0000065	0.0029	0.0026	0.0027	0.0025
Calcium, total	mg/L			8.8	11	550	490	520	480
Calcium, dissolved	mg/L			8.8	12	550	490	520	480
Chromium, total	mg/L		0.0089	0.00025	0.0012	0.0017	0.0016	0.0017	0.0016
Chromium, dissolved	mg/L			0.000050	0.00023	0.00051	0.00045	0.00048	0.00044
Cobalt, total	mg/L		0.004	0.000050	0.00068	0.028	0.025	0.027	0.025
Cobalt, dissolved	mg/L			0.000050	0.00010	0.028	0.025	0.026	0.024
Copper, total	mg/L		0.002	0.00090	0.0029	0.0098	0.0089	0.0093	0.0087
Copper, dissolved	mg/L			0.00067	0.0020	0.0085	0.0076	0.0080	0.0074
Iron, total	mg/L		0.3	0.18	1.3	2.0	2.0	2.0	1.9
Iron, dissolved	mg/L		0.30	0.024	0.16	0.57	0.51	0.53	0.49
Lead, total	mg/L		0.004	0.000095	0.00051	0.0019	0.0017	0.0018	0.0017
Lead, dissolved	mg/L			0.000025	0.000050	0.0015	0.0013	0.0014	0.0013
Lithium, total	mg/L			0.00050	0.0010	0.072	0.064	0.067	0.062
Lithium, dissolved	mg/L			0.00050	0.0010	0.072	0.064	0.067	0.062

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	Rail Infrastructure Sedimentation Pond						
			Bulkley WQG	Baseline in Bulkley River		Operations			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			1.4	2.5	170	150	160	150
Magnesium, dissolved	mg/L			1.3	2.7	170	150	160	150
Manganese, total	mg/L		0.12	0.016	0.059	1.7	1.5	1.6	1.5
Manganese, dissolved	mg/L			0.0052	0.020	1.6	1.5	1.5	1.4
Mercury, total	mg/L		0.00002	0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00037	0.00055	0.0050	0.0044	0.0047	0.0043
Molybdenum, dissolved	mg-N/L			0.00037	0.00045	0.0049	0.0044	0.0046	0.0043
Nickel, total	mg/L		0.025	0.00025	0.0014	0.068	0.061	0.064	0.059
Nickel, dissolved	mg/L			0.00025	0.0013	0.066	0.059	0.062	0.057
Phosphorus, total	mg/L			0.0057	0.043	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.0013	0.0040	0	0	0	0
Potassium, total	mg/L			0.33	0.68	4.9	4.4	4.6	4.3
Potassium, dissolved	mg/L			0.32	0.52	4.8	4.3	4.5	4.2
Selenium, total	mg/L	0.050	0.002	0.000025	0.00020	0.011	0.0095	0.0099	0.0092
Selenium, dissolved	mg/L			0.000025	0.000050	0.011	0.0095	0.0099	0.0092
Silica, dissolved	mg/L					5.1	4.6	4.8	4.4
Sodium, total	mg/L			1.0	2.5	2.2	2.0	2.1	1.9
Sodium, dissolved	mg/L			1.0	2.5	2.1	1.9	2.0	1.8
Strontium, total	mg/L		7.0	0.040	0.061	2.1	1.9	1.9	1.8
Strontium, dissolved	mg/L			0.040	0.055	2.1	1.9	1.9	1.8
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000014	0.0035	0.0031	0.0033	0.0030
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0035	0.0031	0.0033	0.0030
Uranium, total	mg/L		0.0085	0.000036	0.000094	0.00061	0.00055	0.00058	0.00053
Uranium, dissolved	mg/L			0.000028	0.000052	0.00060	0.00054	0.00056	0.00052
Vanadium, total	mg/L			0.00057	0.0050	0.0025	0.0024	0.0024	0.0023
Vanadium, dissolved	mg/L			0.00025	0.00060	0.0010	0.00091	0.00095	0.00088
Zinc, total	mg/L		0.0075	0.0015	0.0055	0.13	0.12	0.12	0.11
Zinc, dissolved	mg/L			0.0013	0.0045	0.13	0.11	0.12	0.11

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table F-9

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Pit Lake					
				Goathorn Baseline		Closure			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	70	70	31	30
Alkalinity, total	mg CaCO ₃ /L			52	87	750	750	160	150
Chloride	mg/L		150	0.25	0.50	21	21	4.2	4.0
Fluoride	mg/L		0.12	0.032	0.041	0.0081	0.0081	0.0076	0.0076
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.0014	0.0014	0.00078	0.00078
Nitrate	mg/L	18.8	3	0.041	0.076	0.013	0.013	0.0079	0.0078
Nitrite	mg/L		0.02	0.00050	0.0020	0.00027	0.00027	0.00015	0.00015
Sulfate	mg/L		218	24	37	500	500	99	96
Aluminum, total	mg/L		0.1	0.092	0.75	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.0037	0.0037	0.0036	0.0036
Antimony, total	mg/L			0.000073	0.00014	0.0010	0.0010	0.00021	0.00020
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0010	0.0010	0.00021	0.00020
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0011	0.0011	0.00068	0.00068
Arsenic, dissolved	mg/L			0.00017	0.00035	0.00057	0.00057	0.00017	0.00017
Barium, total	mg/L		1	0.058	0.072	0.018	0.018	0.017	0.017
Barium, dissolved	mg/L			0.059	0.073	0.011	0.011	0.011	0.011
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000012	0.000012	0.000012	0.000012
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000012	0.000012	0.000012	0.000012
Boron, total	mg/L		1.2	0.0050	0.050	0.29	0.29	0.058	0.057
Boron, dissolved	mg/L			0.0050	0.050	0.29	0.29	0.058	0.056
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.000098	0.000098	0.000022	0.000021
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.000095	0.000095	0.000020	0.000019
Calcium, total	mg/L			21	30	6.7	6.6	6.3	6.2
Calcium, dissolved	mg/L			22	32	6.1	6.1	5.7	5.6
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0040	0.0040	0.0018	0.0017
Chromium, dissolved	mg/L			0.00010	0.00027	0.0028	0.0028	0.00058	0.00057
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0015	0.0015	0.00081	0.00081
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00084	0.00084	0.00017	0.00017
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0049	0.0049	0.0022	0.0022
Copper, dissolved	mg/L			0.0014	0.0039	0.0035	0.0035	0.00090	0.00088
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.0037	0.0037	0.0035	0.0035
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00069	0.00069	0.00046	0.00045
Lead, dissolved	mg/L			0.000025	0.000050	0.00030	0.00030	0.000063	0.000061
Lithium, total	mg/L			0.00050	0.0011	0.20	0.20	0.039	0.038
Lithium, dissolved	mg/L			0.00050	0.0010	0.20	0.20	0.039	0.038

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Pit Lake					
				Goathorn Baseline		Closure			
				P50	P95	Project Case			
						Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	13	13	3.7	3.6
Magnesium, dissolved	mg/L			3.8	7.4	13	13	3.4	3.3
Manganese, total	mg/L		0.12	0.0059	0.033	0.063	0.063	0.033	0.033
Manganese, dissolved	mg/L			0.0026	0.0084	0.038	0.038	0.0077	0.0075
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0050	0.0050	0.0018	0.0018
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0050	0.0050	0.0018	0.0017
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0056	0.0056	0.0026	0.0026
Nickel, dissolved	mg/L			0.00025	0.00060	0.0038	0.0038	0.00079	0.00076
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00012	0.00012	0.00012	0.00012
Potassium, total	mg/L			0.39	1.0	23	23	4.6	4.4
Potassium, dissolved	mg/L			0.36	0.48	23	23	4.5	4.4
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.0092	0.0092	0.0018	0.0017
Selenium, dissolved	mg/L			0.000076	0.00012	0.0092	0.0092	0.0018	0.0017
Silica, dissolved	mg/L			5.6	6.2	12	12	3.6	3.5
Sodium, total	mg/L			2.3	4.8	560	560	110	110
Sodium, dissolved	mg/L			2.4	4.8	560	560	110	110
Strontium, total	mg/L		7.0	0.076	0.11	0.94	0.94	0.20	0.20
Strontium, dissolved	mg/L			0.077	0.12	0.94	0.94	0.20	0.19
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.000089	0.000090	0.000018	
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000089	0.000090	0.000018	
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0033	0.0033	0.00067	0.00065
Uranium, dissolved	mg/L			0.000051	0.00014	0.0033	0.0033	0.00066	0.00063
Vanadium, total	mg/L			0.00025	0.0020	0.011	0.011	0.0033	0.0032
Vanadium, dissolved	mg/L			0.00025	0.00052	0.0091	0.0091	0.0018	0.0018
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.0098	0.0098	0.0051	0.0051
Zinc, dissolved	mg/L			0.0015	0.0021	0.0061	0.0061	0.0015	0.0014

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table F-10

Parameter	Units	Pit Backfill and Seepage Water Quality						
		Four Creek WQG	Four Creek Baseline Water Quality		Closure			
			P50	P95	Project Case			
					Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		118	163	58	58	51	51
Alkalinity, total	mg CaCO ₃ /L		130	190	1800	1800	880	880
Chloride	mg/L	150	0.25	0.50	49	51	22	22
Fluoride	mg/L	0.12	0.059	0.068	0.20	0.21	0.17	0.17
Ammonia, total	mg-N/L	0.95	0.0025	0.0092	0.085	0.088	0.070	0.073
Nitrate	mg/L	3	0.013	0.058	0.066	0.070	0.021	0.022
Nitrite	mg/L	0.02	0.00050	0.0010	0.0025	0.0026	0.0018	0.0019
Sulfate	mg/L	309	1.9	28	1100	1200	510	500
Aluminum, total	mg/L	0.1	0.099	1.2	0.14	0.14	0.11	0.12
Aluminum, dissolved	mg/L	0.05	0.032	0.49	0.0076	0.0075	0.0069	0.0069
Antimony, total	mg/L		0.000050	0.00012	0.0024	0.0026	0.0012	0.0012
Antimony, dissolved	mg/L	0.009	0.000050	0.00010	0.00022	0.00022	0.00018	0.00019
Arsenic, total	mg/L	0.005	0.00074	0.0011	0.00050	0.00051	0.00043	0.00044
Arsenic, dissolved	mg/L		0.00064	0.00086	0.0014	0.0014	0.00081	0.00082
Barium, total	mg/L	1	0.071	0.13	0.11	0.11	0.090	0.093
Barium, dissolved	mg/L		0.075	0.13	0.069	0.071	0.059	0.061
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000054	0.000055	0.000047	0.000048
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000054	0.000055	0.000047	0.000048
Boron, total	mg/L	1.2	0.012	0.020	0.052	0.054	0.043	0.045
Boron, dissolved	mg/L		0.011	0.019	0.69	0.72	0.33	0.33
Cadmium, total	mg/L	0.00009	0.0000063	0.000019	0.000021	0.000022	0.000018	0.000019
Cadmium, dissolved	mg/L	0.00024	0.0000052	0.000012	0.00022	0.00023	0.00010	0.00010
Calcium, total	mg/L		24	34	17	17	15	15
Calcium, dissolved	mg/L		23	36	18	18	16	16
Chromium, total	mg/L	0.0089	0.00026	0.0016	0.00046	0.00047	0.00039	0.00040
Chromium, dissolved	mg/L		0.00015	0.00079	0.0066	0.0070	0.0032	0.0032
Cobalt, total	mg/L	0.004	0.000050	0.00047	0.00020	0.00020	0.00016	0.00017
Cobalt, dissolved	mg/L		0.000050	0.00015	0.0020	0.0020	0.00094	0.00094
Copper, total	mg/L	0.0047	0.0014	0.0044	0.0011	0.0011	0.00094	0.00095
Copper, dissolved	mg/L		0.0014	0.0034	0.0080	0.0084	0.0040	0.0040
Iron, total	mg/L	0.3	0.095	1.1	0.21	0.22	0.17	0.18
Iron, dissolved	mg/L	0.30	0.015	0.41	0.022	0.022	0.019	0.019
Lead, total	mg/L	0.0050	0.000025	0.00028	0.00029	0.00030	0.00024	0.00025
Lead, dissolved	mg/L		0.000025	0.000091	0.00078	0.00081	0.00046	0.00046
Lithium, total	mg/L		0.0015	0.0019	0.00017	0.00016	0.00016	0.00015
Lithium, dissolved	mg/L		0.0014	0.0019	0.46	0.48	0.21	0.21

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Parameter	Units	Pit Backfill and Seepage Water Quality						
		Four Creek WQG	Four Creek Baseline Water Quality		Closure			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		14	19	3.7	3.7	3.2	3.3
Magnesium, dissolved	mg/L		13	20	30	31	15	15
Manganese, total	mg/L	0.12	0.0025	0.024	0.023	0.024	0.019	0.020
Manganese, dissolved	mg/L		0.00067	0.0074	0.090	0.094	0.045	0.045
Mercury, total	mg/L	0.00001	0.0000025	0.000013	0.0000039	0.0000040	0.0000033	0.0000034
Mercury, dissolved	mg/L		0.0000025	0.0000093	0.00013	0.00014	0.000061	0.000061
Molybdenum, total	mg-N/L	0.073	0.00023	0.00038	0.00047	0.00048	0.00040	0.00041
Molybdenum, dissolved	mg-N/L		0.00019	0.00036	0.011	0.011	0.0056	0.0055
Nickel, total	mg/L	0.080	0.00025	0.0018	0.00050	0.00051	0.00042	0.00043
Nickel, dissolved	mg/L		0.00025	0.0011	0.0088	0.0092	0.0042	0.0041
Phosphorus, total	mg/L		0.0041	0.044	0.016	0.017	0.014	0.014
Orthophosphate, dissolved	mg/L		0.00050	0.0012	0.00017	0.00016	0.00016	0.00015
Potassium, total	mg/L		0.36	0.77	0.87	0.90	0.73	0.76
Potassium, dissolved	mg/L		0.35	0.84	52	55	24	23
Selenium, total	mg/L	0.002	0.000025	0.000095	0.000067	0.000069	0.000059	0.000060
Selenium, dissolved	mg/L		0.000025	0.00011	0.021	0.022	0.0093	0.0092
Silica, dissolved	mg/L				26	27	13	13
Sodium, total	mg/L		7.0	13	73	76	60	63
Sodium, dissolved	mg/L		7.4	13	1300	1400	620	620
Strontium, total	mg/L	7.0	0.17	0.24	0.030	0.029	0.028	0.028
Strontium, dissolved	mg/L		0.16	0.24	2.1	2.2	0.95	0.94
Silver, total	mg/L	0.0015	0.0000050	0.000022	0.0000092	0.0000094	0.0000078	0.0000080
Silver, dissolved	mg/L		0.0000050	0.000012	0.000072	0.000075	0.000037	0.000037
Tin, total	mg/L		0.000050	0.00010	0.00020	0.00021	0.00017	0.00018
Tin, dissolved	mg/L		0.000050	0.00010	0.027	0.028	0.012	0.012
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000017	0.0000016	0.0000016	0.0000015
Thallium, dissolved	mg/L		0.0000050	0.000010	0.00025	0.00026	0.00015	0.00015
Uranium, total	mg/L	0.0085	0.000078	0.00025	0.00040	0.00041	0.00033	0.00034
Uranium, dissolved	mg/L		0.000075	0.00025	0.0077	0.0080	0.0035	0.0035
Vanadium, total	mg/L		0.00061	0.0027	0.00084	0.00086	0.00072	0.00074
Vanadium, dissolved	mg/L		0.00025	0.0013	0.021	0.022	0.0094	0.0094
Zinc, total	mg/L	0.029	0.0015	0.0059	0.0028	0.0028	0.0023	0.0024
Zinc, dissolved	mg/L		0.0015	0.0025	0.015	0.015	0.0079	0.0079

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Tenas Project Water and Load Balance Report
Appendix F: Project Case Results

Table F-11. Four Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions

Scenario		Four Creek Monthly % Change											
Period	Month	WQS03			WQS21			WQS20			WQS03DS		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January		-0.18			-0.40			-0.67			-1.10	
	February		-0.19			-0.43			-0.72			-1.19	
	March		-0.20			-0.46			-0.77			-1.27	
	April		-0.07			-0.15			-0.25			-0.41	
	May		-0.02			-0.05			-0.09			-0.15	
	June		-0.07			-0.15			-0.25			-0.41	
	July		-0.04			-0.10			-0.16			-0.27	
	August		-0.15			-0.33			-0.56			-0.92	
	September		-0.03			-0.08			-0.13			-0.22	
	October		-0.10			-0.22			-0.38			-0.62	
	November		-0.28			-0.63			-1.06			-1.76	
	December		-0.33			-0.74			-1.25			-2.07	
Operations	January	-	-17.5	-29.1	-	-19.7	-33.6	-0.7	-19.2	-32.1	-0.6	-3.2	-5.0
	February	-	-17.6	-29.2	-	-19.8	-33.6	-0.7	-19.3	-32.1	-0.6	-3.2	-5.0
	March	-	-17.7	-29.2	-	-19.9	-33.7	-0.8	-19.4	-32.2	-0.6	-3.2	-4.9
	April	-	-3.9	-5.8	37.7	25.8	-0.3	35.7	24.3	-0.5	2.3	-12.4	-20.7
	May	-	-0.9	-1.3	49.9	36.8	-0.1	48.3	34.9	-0.1	3.4	-14.6	-24.8
	June	-	-3.3	-5.9	49.7	34.0	-0.2	48.0	32.1	-0.4	0.9	-15.2	-24.9
	July	-	-2.8	-4.9	49.8	34.5	-0.2	47.9	32.6	-0.3	-0.3	-15.2	-25.0
	August	-	-8.8	-17.8	49.5	25.9	-2.1	47.3	24.3	-2.6	-0.9	-14.5	-21.8
	September	-	-2.1	-3.6	49.8	35.0	-0.1	47.7	33.2	-0.2	-0.2	-15.4	-25.2
	October	-	-5.1	-8.7	49.5	31.5	-0.3	47.2	29.8	-0.6	-0.6	-16.0	-25.3
	November	-	-15.6	-25.0	20.8	-1.0	-19.4	18.9	-1.4	-18.9	-1.8	-8.1	-9.2
	December	-	-18.7	-29.7	-	-21.0	-34.4	-	-20.4	-32.8	-	-3.1	-5.0
Post-Closure	January	-	-22.7	-22.7	-	-25.0	-25.0	-	-22.3	-22.3	-	4.0	-
	February	-	-22.7	-22.7	-	-25.0	-25.0	-	-22.3	-22.3	-	4.0	-
	March	-	-22.7	-22.7	-	-25.0	-25.0	-	-22.3	-22.3	-	4.0	-
	April	-	-3.3	-3.4	37.7	27.5	-	35.7	27.0	-	2.3	-13.0	-13.4
	May	-	-0.8	-0.8	49.9	34.3	-	48.3	33.4	-	3.4	-15.4	-15.4
	June	-	-3.4	-4.1	49.7	31.5	-	48.0	30.9	-	0.9	-14.9	-15.0
	July	-	-3.6	-4.3	49.8	31.2	-	47.9	30.6	-	-	-14.9	-15.0
	August	-	-10.3	-14.6	49.5	22.9	-	47.3	23.2	-	-	-12.9	-14.1
	September	-	-2.4	-2.7	49.8	32.6	-	47.7	31.8	-	-	-15.1	-15.1
	October	-	-5.4	-6.3	49.5	29.3	-	47.2	28.9	-	-	-14.6	-14.7
	November	-	-18.2	-18.9	20.8	-2.9	-5.3	18.9	-1.3	-3.5	-	-3.2	-3.7
	December	-	-22.7	-22.7	-	-25.0	-25.0	-	-22.3	-22.3	-	4.0	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results

Tenas Project Water and Load Balance Report
Appendix F: Project Case Results

Table F-12. Tenas Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions

Scenario		Tenas Creek Monthly % Change											
Period	Month	WQS01			WQS02			WQS22			WQS04		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January	-	-0.01	-	-	-0.30	-	-	-0.26	-	-	-0.24	-
	February	-	-0.01	-	-	-0.32	-	-	-0.28	-	-	-0.26	-
	March	-	-0.02	-	-	-0.35	-	-	-0.30	-	-	-0.28	-
	April	-	-0.01	-	-	-0.26	-	-	-0.14	-	-	-0.13	-
	May	-	0.00	-	-	-0.01	-	-	-0.01	-	-	-0.01	-
	June	-	0.00	-	-	-0.01	-	-	-0.01	-	-	-0.01	-
	July	-	0.00	-	-	-0.04	-	-	-0.04	-	-	-0.04	-
	August	-	-0.01	-	-	-0.19	-	-	-0.18	-	-	-0.17	-
	September	-	0.00	-	-	-0.04	-	-	-0.03	-	-	-0.03	-
	October	-	0.00	-	-	-0.04	-	-	-0.03	-	-	-0.03	-
	November	-	-0.01	-	-	-0.26	-	-	-0.19	-	-	-0.18	-
	December	-	-0.02	-	-	-0.56	-	-	-0.49	-	-	-0.45	-
Operations	January	-	-0.2	-0.4	1.3	-1.5	-3.9	2.8	-1.8	-5.9	2.7	-1.7	-5.5
	February	-	-0.2	-0.4	1.4	-1.5	-3.9	2.8	-1.8	-5.8	2.7	-1.7	-5.5
	March	-	-0.2	-0.4	1.4	-1.5	-3.9	2.9	-1.8	-5.8	2.8	-1.7	-5.4
	April	-	-0.1	-0.2	-	-1.5	-3.0	-	-8.2	-10.8	-	-8.4	-10.8
	May	-	0.0	-	0.0	-1.4	-1.5	0.0	-6.2	-7.2	0.0	-7.2	-8.1
	June	-	0.0	-	0.0	-1.4	-1.5	0.0	-4.6	-5.3	0.0	-5.8	-6.6
	July	-	0.0	-	0.0	-1.5	-1.8	0.0	-5.1	-6.5	0.0	-6.3	-7.7
	August	-	-0.1	-0.2	-	-1.9	-3.3	-	-5.9	-9.6	-	-6.9	-10.4
	September	-	0.0	-	0.0	-1.5	-1.8	0.0	-5.4	-6.8	0.0	-6.5	-7.9
	October	-	0.0	-	0.0	-1.4	-1.7	0.0	-5.8	-7.3	0.0	-6.8	-8.3
	November	-	-0.1	-0.1	-	-1.7	-2.5	-	-6.3	-8.3	-	-7.3	-9.3
	December	-	-0.2	-0.4	1.4	-1.5	-4.0	2.3	-2.3	-6.4	2.0	-2.2	-6.2
Post-Closure	January	-	-0.3	-0.3	1.9	1.9	1.9	3.1	3.1	-	3.0	3.0	-
	February	-	-0.3	-0.3	1.9	1.9	1.9	3.1	3.1	-	3.0	3.0	-
	March	-	-0.3	-0.3	1.9	1.9	1.9	3.1	3.1	-	3.0	3.0	-
	April	-	-0.1	-0.1	0.1	0.0	-	-	-5.4	-5.8	-	-5.5	-5.9
	May	-	0.0	-	-	-0.8	-	-	-5.4	-5.5	-	-5.6	-5.7
	June	-	0.0	-	-	-0.8	-	-	-3.9	-4.1	-	-4.3	-4.4
	July	-	0.0	-	-	-0.6	-	-	-4.4	-4.9	-	-4.7	-5.1
	August	-	-0.1	-0.2	0.4	0.1	-	-	-3.2	-3.9	-	-3.5	-4.1
	September	-	0.0	-	-	-0.7	-	-	-4.8	-5.2	-	-5.0	-5.4
	October	-	0.0	-	-	-0.7	-	-	-4.8	-5.4	-	-5.1	-5.6
	November	-	-0.1	-0.1	-	-0.5	-	-	-4.5	-4.9	-	-4.8	-5.1
	December	-	-0.3	-0.3	1.6	1.6	1.6	2.1	2.0	-	2.0	1.8	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results

Tenas Project Water and Load Balance Report
Appendix F: Project Case Results

Table F-13. Goathorn Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions

Scenario		Goathorn Creek Monthly % Change								
Period	Month	WQS06US			WQS06			WQS05		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January	-	0.00	-	-	-2.58	-	-	-0.12	-
	February	-	0.00	-	-	-2.58	-	-	-0.13	-
	March	-	-0.01	-	-	-2.59	-	-	-0.14	-
	April	-	-0.01	-	-	-2.60	-	-	-0.14	-
	May	-	0.00	-	-	-2.51	-	-	-0.01	-
	June	-	0.00	-	-	-2.51	-	-	-0.02	-
	July	-	0.00	-	-	-2.51	-	-	-0.03	-
	August	-	0.00	-	-	-2.53	-	-	-0.10	-
	September	-	0.00	-	-	-2.51	-	-	-0.03	-
	October	-	0.00	-	-	-2.53	-	-	-0.06	-
	November	-	-0.01	-	-	-2.63	-	-	-0.20	-
	December	-	-0.01	-	-	-2.65	-	-	-0.23	-
Operations	January	-	-0.1	-0.2	-	-2.8	-3.0	0.6	-0.7	-1.9
	February	-	-0.1	-0.2	-	-2.8	-3.0	0.7	-0.7	-1.9
	March	-	-0.1	-0.2	-	-2.8	-3.0	0.7	-0.7	-1.8
	April	-	-0.1	-0.2	-	-4.7	-6.2	-	-4.6	-5.7
	May	-	0.0	-	4.0	-0.3	-2.5	4.1	-2.0	-3.6
	June	-	0.0	-	1.3	-0.4	-2.7	0.3	-0.7	-2.6
	July	-	0.0	-	4.1	-0.5	-2.9	3.7	0.3	-1.6
	August	-	-0.1	-0.1	18.5	-0.6	-2.9	11.8	0.6	-1.7
	September	-	0.0	0.0	3.8	-1.4	-2.9	3.0	-0.7	-2.0
	October	-	0.0	-0.1	8.9	0.3	-2.6	4.1	-0.9	-3.1
	November	-	-0.1	-0.2	-	-2.9	-3.1	-	-2.1	-3.2
	December	-	-0.1	-0.2	-	-2.8	-3.0	0.8	-0.6	-1.9
Post-Closure	January	-	0.0	-	-	-2.2	-2.2	1.1	1.1	-
	February	-	0.0	-	-	-2.2	-2.2	1.1	1.1	-
	March	-	0.0	-	-	-2.2	-2.2	1.1	1.1	-
	April	-	0.0	-	8.4	7.9	-	4.2	4.0	-
	May	-	0.0	-	-	-0.8	-1.1	-	-1.4	-1.5
	June	-	0.0	-	-	-2.6	-2.7	-	-1.6	-1.6
	July	-	0.0	-	-	-2.6	-2.6	-	-0.8	-0.9
	August	-	0.0	-	-	-2.5	-2.5	0.3	0.1	-0.1
	September	-	0.0	-	-	-2.7	-2.7	-	-1.1	-1.2
	October	-	0.0	-	-	-0.9	-1.4	-	-0.6	-1.0
	November	-	0.0	-	-	-2.2	-2.3	-	-0.6	-0.7
	December	-	0.0	-	-	-2.2	-2.2	1.1	1.1	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results

Tenas Project Water and Load Balance Report
Appendix F: Project Case Results

Table F-14. Telkwa River and Bulkley River Project Case Streamflow Effect as Monthly Change over Base Case Conditions

Scenario		Telkwa River Monthly % Change			Bulkley River Monthly % Change					
Period	Month	WQS09			WQS11			WQS12		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January	-	-0.10	-	-	0.00	-	-	0.00	-
	February	-	-0.11	-	-	0.00	-	-	0.00	-
	March	-	-0.12	-	-	0.00	-	-	0.00	-
	April	-	-0.13	-	-	0.00	-	-	0.00	-
	May	-	-0.03	-	-	0.00	-	-	0.00	-
	June	-	-0.02	-	-	0.00	-	-	0.00	-
	July	-	-0.03	-	-	0.00	-	-	0.00	-
	August	-	-0.07	-	-	0.00	-	-	0.00	-
	September	-	-0.03	-	-	0.00	-	-	0.00	-
	October	-	-0.07	-	-	0.00	-	-	0.00	-
	November	-	-0.17	-	-	0.00	-	-	0.00	-
	December	-	-0.19	-	-	0.00	-	-	0.00	-
Operations	January	0.6	-0.6	-1.6	-	0.0	-	0.0	0.0	-
	February	0.6	-0.6	-1.6	-	0.0	-	0.0	0.0	-
	March	0.6	-0.6	-1.6	-	0.0	-	0.0	0.0	-
	April	0.0	-0.8	-1.6	-	0.0	-	0.0	-0.1	-0.1
	May	0.2	-0.2	-0.5	-	0.0	-	0.1	0.0	-0.1
	June	0.0	-0.1	-0.2	-	0.0	-	0.0	0.0	0.0
	July	0.3	-0.1	-0.3	-	0.0	-	0.0	0.0	-
	August	0.3	-0.2	-1.0	-	0.0	-	0.1	0.0	-
	September	0.0	-0.1	-0.4	-	0.0	-	0.0	0.0	-
	October	0.1	-0.2	-0.6	-	0.0	-	0.0	0.0	-
	November	0.3	-0.6	-1.3	-	0.0	-	0.0	0.0	-
	December	0.7	-0.5	-1.6	-	0.0	-	0.0	0.0	-
Post-Closure	January	1.0	1.0	-	-	0.0	-	0.0	0.0	-
	February	1.0	1.0	-	-	0.0	-	0.0	0.0	-
	March	1.0	1.0	-	-	0.0	-	0.0	0.0	-
	April	0.7	0.7	-	-	0.0	-	0.1	0.1	-
	May	0.0	0.0	-0.1	-	0.0	-	0.0	0.0	-
	June	0.0	0.0	-	-	0.0	-	0.0	0.0	-
	July	0.1	0.1	-	-	0.0	-	0.0	0.0	-
	August	0.6	0.4	-	-	0.0	-	0.0	0.0	-
	September	0.1	0.1	-	-	0.0	-	0.0	0.0	-
	October	0.1	0.1	-	-	0.0	-	0.0	0.0	-
	November	0.5	0.4	-	-	0.0	-	0.0	0.0	-
	December	1.0	1.0	-	-	0.0	-	0.0	0.0	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results

Table F-15

Parameter	Units	SPO	WQG	Tenas Creek					
				Baseline		WQS02			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			72	103	99	110	77	87
Alkalinity, total	mg-CaCO ₃ /L			83	110	250	380	110	210
Chloride	mg/L		150	0.25	0.50	4.4	7.9	0.79	3.5
Fluoride	mg/L		0.12	0.031	0.045	0.045	0.055	0.033	0.038
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.10	0.22	0.015	0.079
Nitrate	mg/L		3	0.0050	0.060	0.76	1.7	0.099	0.59
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.018	0.039	0.0027	0.014
Sulfate	mg/L		218	2.6	7.4	120	220	17	92
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.076	0.088	0.060	0.067
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.031	0.043	0.018	0.026
Antimony, total	mg/L			0.00013	0.00024	0.00037	0.00056	0.00015	0.00031
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00039	0.00058	0.00017	0.00033
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00071	0.00084	0.00052	0.00063
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00063	0.00076	0.00045	0.00056
Barium, total	mg/L		1	0.034	0.047	0.046	0.051	0.037	0.042
Barium, dissolved	mg/L			0.033	0.043	0.045	0.050	0.036	0.041
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000059	0.000063	0.000053	0.000054
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000059	0.000063	0.000053	0.000054
Boron, total	mg/L		1.2	0.015	0.050	0.079	0.13	0.024	0.065
Boron, dissolved	mg/L			0.013	0.050	0.077	0.13	0.022	0.062
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.000067	0.00014	0.000013	0.000055
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.000064	0.00013	0.000011	0.000053
Calcium, total	mg/L			22	31	27	28	23	24
Calcium, dissolved	mg/L			21	31	26	27	22	23
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.00096	0.0014	0.00041	0.00080
Chromium, dissolved	mg/L			0.00025	0.00041	0.00088	0.0014	0.00034	0.00073
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00038	0.00071	0.000094	0.00031
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00038	0.00071	0.000094	0.00031
Copper, total	mg/L		0.003	0.0011	0.0050	0.0020	0.0026	0.0012	0.0017

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS02			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0020	0.0026	0.0012	0.0017
Iron, total	mg/L		0.3	0.048	1.2	0.063	0.073	0.051	0.057
Iron, dissolved	mg/L		0.30	0.015	0.14	0.026	0.036	0.017	0.023
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00013	0.00023	0.000040	0.00011
Lead, dissolved	mg/L			0.000025	0.000050	0.00013	0.00023	0.000040	0.00011
Lithium, total	mg/L			0.00050	0.0012	0.041	0.076	0.0057	0.033
Lithium, dissolved	mg/L			0.00050	0.0010	0.041	0.076	0.0057	0.033
Magnesium, total	mg/L			4.2	6.3	7.6	9.8	4.8	6.6
Magnesium, dissolved	mg/L			4.1	6.3	7.5	9.7	4.6	6.5
Manganese, total	mg/L		0.12	0.0050	0.058	0.024	0.043	0.0075	0.020
Manganese, dissolved	mg/L			0.0020	0.0062	0.020	0.040	0.0044	0.016
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0012	0.0020	0.00026	0.00095
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0058	0.0065	0.0045	0.0051
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0015	0.0027	0.00042	0.0012
Nickel, dissolved	mg/L			0.00025	0.00054	0.0015	0.0027	0.00042	0.0012
Phosphorus, total	mg/L			0.0042	0.046	0.0055	0.0064	0.0045	0.0049
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0012	0.0012	0.0010	0.0010
Potassium, total	mg/L			0.23	1.0	4.6	8.3	0.80	3.7
Potassium, dissolved	mg/L			0.19	0.30	4.6	8.3	0.76	3.6
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0019	0.0035	0.00029	0.0015
Selenium, dissolved	mg/L			0.000040	0.000073	0.0019	0.0035	0.00028	0.0015
Silica, dissolved	mg/L			7.0	8.0	10	12	7.6	9.0
Sodium, total	mg/L			3.5	4.8	110	200	17	89
Sodium, dissolved	mg/L			3.5	4.8	110	200	17	89
Strontium, total	mg/L		7.0	0.11	0.13	0.34	0.53	0.14	0.28
Strontium, dissolved	mg/L			0.10	0.14	0.33	0.52	0.13	0.27
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS02			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000070	0.00014	0.000014	0.000058
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000070	0.00014	0.000014	0.000058
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.00081	0.0014	0.00020	0.00065
Uranium, dissolved	mg/L			0.00011	0.00024	0.00081	0.0014	0.00020	0.00065
Vanadium, total	mg/L			0.00094	0.0037	0.0029	0.0043	0.0012	0.0024
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0026	0.0041	0.00098	0.0022
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0035	0.0050	0.0018	0.0030
Zinc, dissolved	mg/L			0.0015	0.0015	0.0035	0.0050	0.0018	0.0030

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-16

Parameter	Units	SPO	WQG	Tenas Creek					
				Baseline		WQS22			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			72	103	111	123	81	95
Alkalinity, total	mg-CaCO ₃ /L			83	110	290	430	120	240
Chloride	mg/L		150	0.25	0.50	5.2	9.3	0.95	4.2
Fluoride	mg/L		0.12	0.031	0.045	0.053	0.064	0.035	0.041
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.12	0.25	0.018	0.093
Nitrate	mg/L		3	0.0050	0.060	0.91	2.0	0.12	0.69
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.021	0.046	0.0033	0.016
Sulfate	mg/L		218	2.6	7.4	140	250	21	110
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.086	0.100	0.063	0.072
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.035	0.050	0.019	0.029
Antimony, total	mg/L			0.00013	0.00024	0.00043	0.00065	0.00016	0.00035
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00045	0.00067	0.00018	0.00037
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00081	0.00095	0.00055	0.00068
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00072	0.00086	0.00047	0.00060
Barium, total	mg/L		1	0.034	0.047	0.052	0.058	0.038	0.045
Barium, dissolved	mg/L			0.033	0.043	0.051	0.057	0.037	0.044
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000068	0.000071	0.000055	0.000057
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000068	0.000071	0.000055	0.000057
Boron, total	mg/L		1.2	0.015	0.050	0.092	0.15	0.027	0.075
Boron, dissolved	mg/L			0.013	0.050	0.090	0.15	0.024	0.073
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.000078	0.00016	0.000016	0.000065
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.000075	0.00016	0.000013	0.000063
Calcium, total	mg/L			22	31	30	31	24	26
Calcium, dissolved	mg/L			21	31	29	30	23	25
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.0011	0.0016	0.00045	0.00091
Chromium, dissolved	mg/L			0.00025	0.00041	0.0010	0.0016	0.00037	0.00084
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00045	0.00082	0.00011	0.00036
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00045	0.00082	0.00011	0.00036
Copper, total	mg/L		0.003	0.0011	0.0050	0.0023	0.0030	0.0013	0.0019

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS22			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0023	0.0030	0.0013	0.0019
Iron, total	mg/L		0.3	0.048	1.2	0.072	0.082	0.054	0.060
Iron, dissolved	mg/L		0.30	0.015	0.14	0.030	0.041	0.018	0.025
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00015	0.00026	0.000045	0.00013
Lead, dissolved	mg/L			0.000025	0.000050	0.00015	0.00026	0.000045	0.00013
Lithium, total	mg/L			0.00050	0.0012	0.049	0.089	0.0072	0.039
Lithium, dissolved	mg/L			0.00050	0.0010	0.049	0.089	0.0072	0.039
Magnesium, total	mg/L			4.2	6.3	8.7	11	5.0	7.2
Magnesium, dissolved	mg/L			4.1	6.3	8.6	11	4.9	7.1
Manganese, total	mg/L		0.12	0.0050	0.058	0.028	0.050	0.0084	0.022
Manganese, dissolved	mg/L			0.0020	0.0062	0.024	0.047	0.0051	0.019
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0014	0.0024	0.00030	0.0011
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0066	0.0074	0.0047	0.0055
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0017	0.0031	0.00047	0.0014
Nickel, dissolved	mg/L			0.00025	0.00054	0.0017	0.0031	0.00047	0.0014
Phosphorus, total	mg/L			0.0042	0.046	0.0065	0.0074	0.0047	0.0052
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0013	0.0013	0.0011	0.0011
Potassium, total	mg/L			0.23	1.0	5.5	9.7	0.97	4.4
Potassium, dissolved	mg/L			0.19	0.30	5.4	9.7	0.92	4.3
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0023	0.0041	0.00036	0.0018
Selenium, dissolved	mg/L			0.000040	0.000073	0.0023	0.0041	0.00035	0.0018
Silica, dissolved	mg/L			7.0	8.0	12	13	8.0	9.7
Sodium, total	mg/L			3.5	4.8	130	240	22	110
Sodium, dissolved	mg/L			3.5	4.8	130	240	22	110
Strontium, total	mg/L		7.0	0.11	0.13	0.40	0.60	0.16	0.32
Strontium, dissolved	mg/L			0.10	0.14	0.38	0.59	0.14	0.31
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS22			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000082	0.00016	0.000016	0.000069
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000082	0.00016	0.000016	0.000069
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.00095	0.0016	0.00023	0.00077
Uranium, dissolved	mg/L			0.00011	0.00024	0.00095	0.0016	0.00023	0.00077
Vanadium, total	mg/L			0.00094	0.0037	0.0033	0.0049	0.0013	0.0027
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0031	0.0047	0.0011	0.0025
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0040	0.0058	0.0019	0.0033
Zinc, dissolved	mg/L			0.0015	0.0015	0.0040	0.0058	0.0019	0.0033

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-17

Parameter	Units	SPO	WQG	Tenas Creek					
				Baseline		WQS04			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			72	103	117	132	83	95
Alkalinity, total	mg-CaCO ₃ /L			83	110	300	450	120	250
Chloride	mg/L		150	0.25	0.50	5.2	9.3	0.96	4.3
Fluoride	mg/L		0.12	0.031	0.045	0.054	0.066	0.036	0.042
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.12	0.25	0.018	0.094
Nitrate	mg/L		3	0.0050	0.060	0.89	1.9	0.12	0.71
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.021	0.045	0.0033	0.017
Sulfate	mg/L		218	2.6	7.4	140	260	22	110
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.090	0.10	0.064	0.073
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.037	0.053	0.020	0.030
Antimony, total	mg/L			0.00013	0.00024	0.00043	0.00066	0.00016	0.00036
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00046	0.00069	0.00019	0.00038
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00084	0.00098	0.00056	0.00069
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00074	0.00089	0.00048	0.00061
Barium, total	mg/L		1	0.034	0.047	0.054	0.060	0.039	0.045
Barium, dissolved	mg/L			0.033	0.043	0.053	0.059	0.038	0.044
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000070	0.000074	0.000056	0.000058
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000070	0.000074	0.000056	0.000058
Boron, total	mg/L		1.2	0.015	0.050	0.093	0.15	0.027	0.076
Boron, dissolved	mg/L			0.013	0.050	0.090	0.15	0.025	0.074
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.000080	0.00016	0.000016	0.000067
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.000076	0.00016	0.000013	0.000064
Calcium, total	mg/L			22	31	32	33	25	26
Calcium, dissolved	mg/L			21	31	30	32	24	25
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.0011	0.0017	0.00046	0.00093
Chromium, dissolved	mg/L			0.00025	0.00041	0.0010	0.0016	0.00038	0.00085
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00045	0.00082	0.00011	0.00037
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00045	0.00082	0.00011	0.00037
Copper, total	mg/L		0.003	0.0011	0.0050	0.0024	0.0031	0.0014	0.0019

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS04			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0024	0.0031	0.0014	0.0019
Iron, total	mg/L		0.3	0.048	1.2	0.075	0.085	0.055	0.061
Iron, dissolved	mg/L		0.30	0.015	0.14	0.031	0.043	0.018	0.026
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00015	0.00027	0.000046	0.00013
Lead, dissolved	mg/L			0.000025	0.000050	0.00015	0.00027	0.000046	0.00013
Lithium, total	mg/L			0.00050	0.0012	0.049	0.090	0.0073	0.040
Lithium, dissolved	mg/L			0.00050	0.0010	0.049	0.090	0.0073	0.040
Magnesium, total	mg/L			4.2	6.3	9.0	12	5.1	7.4
Magnesium, dissolved	mg/L			4.1	6.3	8.8	11	5.0	7.2
Manganese, total	mg/L		0.12	0.0050	0.058	0.028	0.050	0.0085	0.023
Manganese, dissolved	mg/L			0.0020	0.0062	0.024	0.046	0.0052	0.019
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0014	0.0024	0.00031	0.0012
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0068	0.0076	0.0048	0.0056
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0018	0.0031	0.00048	0.0014
Nickel, dissolved	mg/L			0.00025	0.00054	0.0018	0.0031	0.00048	0.0014
Phosphorus, total	mg/L			0.0042	0.046	0.0067	0.0076	0.0048	0.0053
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0014	0.0014	0.0011	0.0011
Potassium, total	mg/L			0.23	1.0	5.5	9.7	0.98	4.5
Potassium, dissolved	mg/L			0.19	0.30	5.4	9.7	0.94	4.4
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0023	0.0041	0.00036	0.0018
Selenium, dissolved	mg/L			0.000040	0.000073	0.0022	0.0041	0.00035	0.0018
Silica, dissolved	mg/L			7.0	8.0	12	14	8.2	9.8
Sodium, total	mg/L			3.5	4.8	130	240	22	110
Sodium, dissolved	mg/L			3.5	4.8	130	240	22	110
Strontium, total	mg/L		7.0	0.11	0.13	0.40	0.62	0.16	0.33
Strontium, dissolved	mg/L			0.10	0.14	0.39	0.60	0.15	0.32
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek						
			WQG	Baseline		WQS04			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000082	0.00016	0.000017	0.000071
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000082	0.00016	0.000017	0.000071
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.00095	0.0016	0.00024	0.00078
Uranium, dissolved	mg/L			0.00011	0.00024	0.00095	0.0016	0.00024	0.00078
Vanadium, total	mg/L			0.00094	0.0037	0.0034	0.0050	0.0013	0.0028
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0031	0.0048	0.0011	0.0025
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0041	0.0059	0.0020	0.0034
Zinc, dissolved	mg/L			0.0015	0.0015	0.0041	0.0059	0.0020	0.0034

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-18

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS20			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			118	163	152	176	133	124
Alkalinity, total	mg-CaCO ₃ /L			130	190	170	190	150	140
Chloride	mg/L		150	0.25	0.50	0.33	0.37	0.28	0.26
Fluoride	mg/L		0.12	0.059	0.068	0.077	0.087	0.067	0.062
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.0033	0.0037	0.0028	0.0026
Nitrate	mg/L		3	0.013	0.058	0.017	0.019	0.015	0.014
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.00065	0.00074	0.00057	0.00052
Sulfate	mg/L		309	1.9	28	2.5	2.8	2.2	2.0
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.13	0.15	0.11	0.10
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.042	0.047	0.036	0.034
Antimony, total	mg/L			0.000050	0.00012	0.000065	0.000074	0.000057	0.000052
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.000065	0.000074	0.000057	0.000052
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.00097	0.0011	0.00084	0.00078
Arsenic, dissolved	mg/L			0.00064	0.00086	0.00084	0.00095	0.00073	0.00067
Barium, total	mg/L		1	0.071	0.13	0.093	0.11	0.081	0.074
Barium, dissolved	mg/L			0.075	0.13	0.098	0.11	0.085	0.079
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000065	0.000074	0.000057	0.000052
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000065	0.000074	0.000057	0.000052
Boron, total	mg/L		1.2	0.012	0.020	0.016	0.018	0.014	0.013
Boron, dissolved	mg/L			0.011	0.019	0.014	0.016	0.013	0.012
Cadmium, total	mg/L		0.00009	0.000063	0.000019	0.000082	0.000093	0.000072	0.000066
Cadmium, dissolved	mg/L	0.00026	0.00024	0.000052	0.000012	0.000068	0.000077	0.000059	0.000055
Calcium, total	mg/L			24	34	31	36	27	25
Calcium, dissolved	mg/L			23	36	30	34	26	24
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.00034	0.00038	0.00030	0.00027
Chromium, dissolved	mg/L			0.00015	0.00079	0.00020	0.00022	0.00017	0.00016
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.000065	0.000074	0.000057	0.000052
Cobalt, dissolved	mg/L			0.000050	0.00015	0.000065	0.000074	0.000057	0.000052
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0018	0.0021	0.0016	0.0015

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS20			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0018	0.0021	0.0016	0.0015
Iron, total	mg/L		0.3	0.095	1.1	0.12	0.14	0.11	0.100
Iron, dissolved	mg/L		0.30	0.015	0.41	0.020	0.022	0.017	0.016
Lead, total	mg/L		0.0050	0.000025	0.00028	0.000033	0.000037	0.000028	0.000026
Lead, dissolved	mg/L			0.000025	0.000091	0.000033	0.000037	0.000028	0.000026
Lithium, total	mg/L			0.0015	0.0019	0.0020	0.0022	0.0017	0.0016
Lithium, dissolved	mg/L			0.0014	0.0019	0.0018	0.0021	0.0016	0.0015
Magnesium, total	mg/L			14	19	18	21	16	15
Magnesium, dissolved	mg/L			13	20	17	19	15	14
Manganese, total	mg/L		0.12	0.0025	0.024	0.0033	0.0037	0.0028	0.0026
Manganese, dissolved	mg/L			0.00067	0.0074	0.00088	0.00099	0.00076	0.00070
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.000023	0.00038	0.00030	0.00034	0.00026	0.00024
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0054	0.0061	0.0047	0.0043
Nickel, total	mg/L		0.080	0.00025	0.0018	0.00033	0.00037	0.00028	0.00026
Nickel, dissolved	mg/L			0.00025	0.0011	0.00033	0.00037	0.00028	0.00026
Phosphorus, total	mg/L			0.0041	0.044	0.0054	0.0061	0.0047	0.0043
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.00065	0.00074	0.00057	0.00052
Potassium, total	mg/L			0.36	0.77	0.47	0.53	0.41	0.38
Potassium, dissolved	mg/L			0.35	0.84	0.46	0.52	0.40	0.37
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.000033	0.000037	0.000028	0.000026
Selenium, dissolved	mg/L			0.000025	0.00011	0.000033	0.000037	0.000028	0.000026
Silica, dissolved	mg/L								
Sodium, total	mg/L			7.0	13	9.2	10	8.0	7.3
Sodium, dissolved	mg/L			7.4	13	9.7	11	8.4	7.8
Strontium, total	mg/L		7.0	0.17	0.24	0.22	0.25	0.19	0.18
Strontium, dissolved	mg/L			0.16	0.24	0.21	0.24	0.18	0.17
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS20			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.0000065	0.0000074	0.0000057	0.0000052
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0000065	0.0000074	0.0000057	0.0000052
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.00010	0.00012	0.000089	0.000082
Uranium, dissolved	mg/L			0.000075	0.00025	0.000098	0.00011	0.000085	0.000079
Vanadium, total	mg/L			0.00061	0.0027	0.00080	0.00090	0.00069	0.00064
Vanadium, dissolved	mg/L			0.00025	0.0013	0.00033	0.00037	0.00028	0.00026
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0020	0.0022	0.0017	0.0016
Zinc, dissolved	mg/L			0.0015	0.0025	0.0020	0.0022	0.0017	0.0016

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-19

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS21			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			118	163	152	167	127	124
Alkalinity, total	mg-CaCO ₃ /L			130	190	170	180	140	140
Chloride	mg/L		150	0.25	0.50	0.32	0.35	0.28	0.26
Fluoride	mg/L		0.12	0.059	0.068	0.076	0.083	0.065	0.062
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.0032	0.0035	0.0028	0.0026
Nitrate	mg/L		3	0.013	0.058	0.017	0.018	0.014	0.014
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.00064	0.00070	0.00055	0.00052
Sulfate	mg/L		309	1.9	28	2.4	2.7	2.1	2.0
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.13	0.14	0.11	0.10
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.041	0.045	0.035	0.034
Antimony, total	mg/L			0.000050	0.00012	0.000064	0.000070	0.000055	0.000052
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.000064	0.000070	0.000055	0.000052
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.00095	0.0010	0.00082	0.00078
Arsenic, dissolved	mg/L			0.00064	0.00086	0.00082	0.00090	0.00071	0.00067
Barium, total	mg/L		1	0.071	0.13	0.091	0.099	0.078	0.074
Barium, dissolved	mg/L			0.075	0.13	0.096	0.11	0.083	0.079
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000064	0.000070	0.000055	0.000052
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000064	0.000070	0.000055	0.000052
Boron, total	mg/L		1.2	0.012	0.020	0.015	0.017	0.013	0.013
Boron, dissolved	mg/L			0.011	0.019	0.014	0.015	0.012	0.012
Cadmium, total	mg/L		0.00009	0.000063	0.000019	0.000081	0.000088	0.000069	0.000066
Cadmium, dissolved	mg/L	0.00026	0.00024	0.000052	0.000012	0.000067	0.000073	0.000057	0.000054
Calcium, total	mg/L			24	34	31	34	26	25
Calcium, dissolved	mg/L			23	36	30	32	25	24
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.00033	0.00036	0.00029	0.00027
Chromium, dissolved	mg/L			0.00015	0.00079	0.00019	0.00021	0.00017	0.00016
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.000064	0.000070	0.000055	0.000052
Cobalt, dissolved	mg/L			0.000050	0.00015	0.000064	0.000070	0.000055	0.000052
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0018	0.0020	0.0015	0.0015

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS21			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0018	0.0020	0.0015	0.0015
Iron, total	mg/L		0.3	0.095	1.1	0.12	0.13	0.10	0.100
Iron, dissolved	mg/L		0.30	0.015	0.41	0.019	0.021	0.017	0.016
Lead, total	mg/L		0.0050	0.000025	0.00028	0.000032	0.000035	0.000028	0.000026
Lead, dissolved	mg/L			0.000025	0.000091	0.000032	0.000035	0.000028	0.000026
Lithium, total	mg/L			0.0015	0.0019	0.0019	0.0021	0.0017	0.0016
Lithium, dissolved	mg/L			0.0014	0.0019	0.0018	0.0020	0.0015	0.0015
Magnesium, total	mg/L			14	19	18	20	15	15
Magnesium, dissolved	mg/L			13	20	17	18	14	14
Manganese, total	mg/L		0.12	0.0025	0.024	0.0032	0.0035	0.0028	0.0026
Manganese, dissolved	mg/L			0.00067	0.0074	0.00086	0.00094	0.00074	0.00070
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00023	0.00038	0.00030	0.00032	0.00025	0.00024
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0053	0.0057	0.0045	0.0043
Nickel, total	mg/L		0.080	0.00025	0.0018	0.00032	0.00035	0.00028	0.00026
Nickel, dissolved	mg/L			0.00025	0.0011	0.00032	0.00035	0.00028	0.00026
Phosphorus, total	mg/L			0.0041	0.044	0.0053	0.0057	0.0045	0.0043
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.00064	0.00070	0.00055	0.00052
Potassium, total	mg/L			0.36	0.77	0.46	0.50	0.40	0.38
Potassium, dissolved	mg/L			0.35	0.84	0.45	0.49	0.39	0.37
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.000032	0.000035	0.000028	0.000026
Selenium, dissolved	mg/L			0.000025	0.00011	0.000032	0.000035	0.000028	0.000026
Silica, dissolved	mg/L			no data	no data				
Sodium, total	mg/L			7.0	13	9.0	9.8	7.7	7.3
Sodium, dissolved	mg/L			7.4	13	9.5	10	8.2	7.8
Strontium, total	mg/L		7.0	0.17	0.24	0.22	0.24	0.19	0.18
Strontium, dissolved	mg/L			0.16	0.24	0.21	0.22	0.18	0.17
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS21			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.0000064	0.0000070	0.0000055	0.0000052
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0000064	0.0000070	0.0000055	0.0000052
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.00010	0.00011	0.000086	0.000082
Uranium, dissolved	mg/L			0.000075	0.00025	0.000096	0.00011	0.000083	0.000079
Vanadium, total	mg/L			0.00061	0.0027	0.00078	0.00085	0.00067	0.00064
Vanadium, dissolved	mg/L			0.00025	0.0013	0.00032	0.00035	0.00028	0.00026
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0019	0.0021	0.0017	0.0016
Zinc, dissolved	mg/L			0.0015	0.0025	0.0019	0.0021	0.0017	0.0016

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-20

Parameter	Units	SPO	WQG	Four Creek					
				Baseline		WQS03_DS			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			118	163	194	220	152	144
Alkalinity, total	mg-CaCO ₃ /L			130	190	450	640	210	300
Chloride	mg/L		150	0.25	0.50	7.0	13	1.4	4.3
Fluoride	mg/L		0.12	0.059	0.068	0.087	0.095	0.074	0.065
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.13	0.21	0.023	0.077
Nitrate	mg/L		3	0.013	0.058	1.0	1.6	0.18	0.60
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.024	0.038	0.0043	0.014
Sulfate	mg/L		309	1.9	28	190	360	33	110
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.21	0.25	0.13	0.14
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.11	0.16	0.051	0.073
Antimony, total	mg/L			0.000050	0.00012	0.00050	0.00083	0.00013	0.00031
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00050	0.00083	0.00013	0.00031
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.0014	0.0016	0.00097	0.00097
Arsenic, dissolved	mg/L			0.00064	0.00086	0.0012	0.0014	0.00085	0.00087
Barium, total	mg/L		1	0.071	0.13	0.12	0.13	0.092	0.086
Barium, dissolved	mg/L			0.075	0.13	0.12	0.14	0.097	0.090
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000074	0.000081	0.000063	0.000056
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000074	0.000081	0.000063	0.000056
Boron, total	mg/L		1.2	0.012	0.020	0.12	0.21	0.032	0.074
Boron, dissolved	mg/L			0.011	0.019	0.12	0.20	0.031	0.073
Cadmium, total	mg/L		0.00009	0.0000063	0.000019	0.00014	0.00026	0.000030	0.000088
Cadmium, dissolved	mg/L	0.00026	0.00024	0.0000052	0.000012	0.00014	0.00026	0.000029	0.000086
Calcium, total	mg/L			24	34	38	42	31	28
Calcium, dissolved	mg/L			23	36	36	41	29	27
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.0014	0.0021	0.00049	0.00087
Chromium, dissolved	mg/L			0.00015	0.00079	0.0012	0.0020	0.00035	0.00076
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.00066	0.0011	0.00016	0.00041
Cobalt, dissolved	mg/L			0.000050	0.00015	0.00066	0.0011	0.00016	0.00041
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0033	0.0041	0.0020	0.0023

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS03_DS			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0033	0.0041	0.0020	0.0023
Iron, total	mg/L		0.3	0.095	1.1	0.16	0.19	0.12	0.12
Iron, dissolved	mg/L		0.30	0.015	0.41	0.052	0.076	0.024	0.034
Lead, total	mg/L		0.0050	0.000025	0.00028	0.00023	0.00040	0.000064	0.00014
Lead, dissolved	mg/L			0.000025	0.000091	0.00023	0.00040	0.000064	0.00014
Lithium, total	mg/L			0.0015	0.0019	0.069	0.13	0.013	0.042
Lithium, dissolved	mg/L			0.0014	0.0019	0.069	0.13	0.013	0.042
Magnesium, total	mg/L			14	19	24	28	18	18
Magnesium, dissolved	mg/L			13	20	23	27	17	17
Manganese, total	mg/L		0.12	0.0025	0.024	0.032	0.057	0.0078	0.020
Manganese, dissolved	mg/L			0.00067	0.0074	0.029	0.056	0.0055	0.018
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00023	0.00038	0.0021	0.0036	0.00061	0.0014
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0076	0.0089	0.0054	0.0055
Nickel, total	mg/L		0.080	0.00025	0.0018	0.0024	0.0040	0.00064	0.0015
Nickel, dissolved	mg/L			0.00025	0.0011	0.0024	0.0040	0.00064	0.0015
Phosphorus, total	mg/L			0.0041	0.044	0.0062	0.0068	0.0052	0.0046
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.00074	0.00081	0.00063	0.00056
Potassium, total	mg/L			0.36	0.77	7.3	13	1.6	4.5
Potassium, dissolved	mg/L			0.35	0.84	7.3	13	1.6	4.5
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.0031	0.0058	0.00054	0.0019
Selenium, dissolved	mg/L			0.000025	0.00011	0.0031	0.0058	0.00054	0.0019
Silica, dissolved	mg/L			no data	no data	3.8	7.1	0.66	2.4
Sodium, total	mg/L			7.0	13	180	320	36	110
Sodium, dissolved	mg/L			7.4	13	180	320	37	110
Strontium, total	mg/L		7.0	0.17	0.24	0.62	0.89	0.27	0.41
Strontium, dissolved	mg/L			0.16	0.24	0.60	0.87	0.26	0.40
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Four Creek						
			WQG	Baseline		WQS03_DS			
						Closure			
						Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00015	0.00027	0.000030	0.000091
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00015	0.00027	0.000030	0.000091
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.0012	0.0022	0.00028	0.00076
Uranium, dissolved	mg/L			0.000075	0.00025	0.0012	0.0022	0.00028	0.00076
Vanadium, total	mg/L			0.00061	0.0027	0.0038	0.0062	0.0012	0.0024
Vanadium, dissolved	mg/L			0.00025	0.0013	0.0033	0.0058	0.00080	0.0020
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0051	0.0074	0.0024	0.0034
Zinc, dissolved	mg/L			0.0015	0.0025	0.0051	0.0074	0.0024	0.0034

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-21

Parameter	Units	SPO	WQG	Goathorn Creek									
				Baseline	WQS05								
					Operations				Post-Closure				
					Project Case				Project Case				
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	103	110	80	76	96	113	82	77
Alkalinity, total	mg-CaCO ₃ /L			52	87	210	100	78	65	97	120	77	86
Chloride	mg/L		150	0.25	0.50	3.8	0.54	0.53	0.28	0.91	1.3	0.46	0.88
Fluoride	mg/L		0.12	0.032	0.041	0.043	0.049	0.037	0.036	0.044	0.051	0.037	0.036
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.085	0.0066	0.0079	0.0029	0.018	0.028	0.0057	0.014
Nitrate	mg/L		3	0.041	0.076	0.69	0.066	0.077	0.039	0.16	0.24	0.057	0.12
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.015	0.0013	0.0014	0.00057	0.0033	0.0051	0.0011	0.0025
Sulfate	mg/L		218	24	37	120	30	27	22	43	51	25	38
Aluminum, total	mg/L	0.236	0.1	0.092	0.75	0.17	0.12	0.099	0.095	0.12	0.13	0.097	0.097
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.026	0.023	0.017	0.016	0.021	0.026	0.017	0.018
Antimony, total	mg/L			0.000073	0.00014	0.00030	0.00012	0.000088	0.000066	0.00011	0.00015	0.000085	0.000100
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.00033	0.00015	0.00011	0.000090	0.00014	0.00018	0.00011	0.00012
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.00057	0.00049	0.00036	0.00031	0.00045	0.00052	0.00035	0.00033
Arsenic, dissolved	mg/L			0.00017	0.00035	0.00041	0.00039	0.00028	0.00024	0.00036	0.00042	0.00028	0.00026
Barium, total	mg/L		1	0.058	0.072	0.074	0.077	0.060	0.060	0.074	0.080	0.060	0.059
Barium, dissolved	mg/L			0.059	0.073	0.075	0.078	0.060	0.061	0.075	0.080	0.061	0.060
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000067	0.000077	0.000057	0.000055	0.000069	0.000079	0.000058	0.000054
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000067	0.000077	0.000057	0.000055	0.000069	0.000079	0.000058	0.000054
Boron, total	mg/L		1.2	0.0050	0.050	0.061	0.015	0.012	0.0076	0.016	0.022	0.011	0.016
Boron, dissolved	mg/L			0.0050	0.050	0.061	0.014	0.012	0.0072	0.017	0.022	0.011	0.016
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00010	0.000016	0.000014	0.000010	0.000022	0.000027	0.000012	0.000018
Cadmium, dissolved	mg/L	0.00019	0.00016	0.0000081	0.000036	0.000098	0.000013	0.000011	0.0000079	0.000020	0.000025	0.0000098	0.000016
Calcium, total	mg/L			21	30	29	33	24	23	29	34	25	23
Calcium, dissolved	mg/L			22	32	29	33	25	24	30	34	25	24
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.00097	0.00040	0.00031	0.00024	0.00036	0.00047	0.00029	0.00033
Chromium, dissolved	mg/L			0.00010	0.00027	0.00067	0.00025	0.00019	0.00014	0.00024	0.00033	0.00018	0.00022
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00055	0.00048	0.000094	0.000083	0.000056	0.00011	0.00014	0.000071	0.00010
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00038	0.000089	0.000074	0.000055	0.00011	0.00014	0.000069	0.000098
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0026	0.0021	0.0016	0.0016	0.0020	0.0023	0.0016	0.0016

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Goathorn Creek										
			WQG	Baseline		WQS05							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0014	0.0039	0.0023	0.0020	0.0015	0.0015	0.0019	0.0022	0.0016	0.0016
Iron, total	mg/L		0.3	0.085	0.78	0.33	0.12	0.11	0.088	0.11	0.14	0.093	0.098
Iron, dissolved	mg/L		0.30	0.015	0.13	0.027	0.023	0.017	0.016	0.021	0.025	0.018	0.017
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00021	0.000046	0.000040	0.000028	0.000048	0.000059	0.000034	0.000045
Lead, dissolved	mg/L			0.000025	0.000050	0.00015	0.000043	0.000035	0.000028	0.000048	0.000057	0.000033	0.000042
Lithium, total	mg/L			0.00050	0.0011	0.036	0.0024	0.0030	0.00064	0.0060	0.010	0.0021	0.0062
Lithium, dissolved	mg/L			0.00050	0.0010	0.036	0.0024	0.0030	0.00063	0.0064	0.011	0.0022	0.0065
Magnesium, total	mg/L			3.9	6.5	7.5	6.6	4.8	4.6	5.7	6.8	4.8	4.8
Magnesium, dissolved	mg/L			3.8	7.4	7.3	6.3	4.7	4.5	5.6	6.6	4.7	4.7
Manganese, total	mg/L		0.12	0.0059	0.033	0.026	0.0092	0.0075	0.0063	0.010	0.012	0.0072	0.0086
Manganese, dissolved	mg/L			0.0026	0.0084	0.018	0.0042	0.0036	0.0027	0.0060	0.0074	0.0034	0.0050
Mercury, total	mg/L		0.00001	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00047	0.00062	0.0015	0.00058	0.00051	0.00045	0.00069	0.00072	0.00048	0.00059
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0061	0.0068	0.0051	0.0049	0.0060	0.0070	0.0051	0.0049
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0016	0.00044	0.00037	0.00028	0.00050	0.00059	0.00034	0.00044
Nickel, dissolved	mg/L			0.00025	0.00060	0.0014	0.00042	0.00035	0.00028	0.00051	0.00059	0.00033	0.00043
Phosphorus, total	mg/L			0.0045	0.019	0.0075	0.0068	0.0052	0.0049	0.0060	0.0070	0.0052	0.0049
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00092	0.0010	0.00071	0.00064	0.00094	0.0010	0.00072	0.00062
Potassium, total	mg/L			0.39	1.0	4.1	0.68	0.66	0.41	1.0	1.4	0.57	0.99
Potassium, dissolved	mg/L			0.36	0.48	4.1	0.63	0.62	0.37	1.1	1.4	0.54	1.00
Selenium, total	mg/L	0.008	0.002	0.000086	0.00020	0.0017	0.00018	0.00020	0.000090	0.00035	0.00052	0.00016	0.00034
Selenium, dissolved	mg/L			0.000076	0.00012	0.0017	0.00017	0.00019	0.000079	0.00035	0.00054	0.00015	0.00035
Silica, dissolved	mg/L			5.6	6.2	8.7	9.3	6.8	6.3	8.4	9.7	6.9	6.5
Sodium, total	mg/L			2.3	4.8	93	8.3	9.5	3.0	17	27	7.2	18
Sodium, dissolved	mg/L			2.4	4.8	93	8.4	9.6	3.1	19	29	7.7	19
Strontium, total	mg/L		7.0	0.076	0.11	0.29	0.14	0.11	0.092	0.14	0.17	0.11	0.12
Strontium, dissolved	mg/L			0.077	0.12	0.29	0.14	0.11	0.091	0.14	0.17	0.10	0.12
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Goathorn Creek										
			WQG	Baseline		WQS05							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000097	0.000011	0.0000097	0.0000056	0.000017	0.000023	0.0000081	0.000015
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000097	0.000011	0.0000097	0.0000056	0.000017	0.000023	0.0000082	0.000015
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.00068	0.00014	0.00012	0.000071	0.00017	0.00023	0.00010	0.00016
Uranium, dissolved	mg/L			0.000051	0.00014	0.00068	0.00013	0.00012	0.000068	0.00017	0.00023	0.00010	0.00017
Vanadium, total	mg/L			0.00025	0.0020	0.0022	0.00082	0.00061	0.00041	0.00073	0.0010	0.00057	0.00066
Vanadium, dissolved	mg/L			0.00025	0.00052	0.0019	0.00069	0.00052	0.00036	0.00066	0.00091	0.00050	0.00062
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.0039	0.0024	0.0018	0.0017	0.0022	0.0026	0.0018	0.0019
Zinc, dissolved	mg/L			0.0015	0.0021	0.0034	0.0024	0.0018	0.0017	0.0022	0.0026	0.0018	0.0019

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-22

Parameter	Units	SPO	WQG	Goathorn Creek									
				Baseline	WQS06								
					Operations				Post-Closure				
					Project Case				Project Case				
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	93	103	74	74	85	95	76	73
Alkalinity, total	mg-CaCO ₃ /L			52	87	210	91	70	59	80	130	61	71
Chloride	mg/L		150	0.25	0.50	4.1	0.47	0.61	0.27	1.0	2.3	0.37	0.64
Fluoride	mg/L		0.12	0.032	0.041	0.039	0.050	0.035	0.035	0.040	0.042	0.035	0.035
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.094	0.0060	0.0098	0.0027	0.0072	0.016	0.0036	0.0067
Nitrate	mg/L		3	0.041	0.076	0.77	0.073	0.10	0.043	0.079	0.13	0.049	0.069
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.017	0.0011	0.0018	0.00055	0.0013	0.0027	0.00067	0.0012
Sulfate	mg/L		218	24	37	130	34	34	24	39	67	28	34
Aluminum, total	mg/L	0.236	0.1	0.092	0.75	0.16	0.12	0.10	0.098	0.11	0.12	0.10	0.10
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.023	0.024	0.016	0.016	0.019	0.022	0.016	0.016
Antimony, total	mg/L			0.000073	0.00014	0.00031	0.000073	0.000074	0.000053	0.000089	0.00016	0.000060	0.000074
Antimony, dissolved	mg/L	0.009	0.0009	0.000050	0.00011	0.00033	0.00010	0.000097	0.000077	0.00011	0.00017	0.000083	0.000094
Arsenic, total	mg/L	0.005	0.005	0.00023	0.00068	0.00051	0.00045	0.00028	0.00027	0.00029	0.00039	0.00026	0.00027
Arsenic, dissolved	mg/L			0.00017	0.00035	0.00037	0.00036	0.00020	0.00020	0.00022	0.00029	0.00020	0.00020
Barium, total	mg/L		1	0.058	0.072	0.071	0.079	0.062	0.062	0.072	0.076	0.063	0.061
Barium, dissolved	mg/L			0.059	0.073	0.072	0.081	0.063	0.063	0.073	0.078	0.064	0.062
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000061	0.000065	0.000053	0.000053	0.000062	0.000066	0.000054	0.000052
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000061	0.000065	0.000053	0.000053	0.000062	0.000066	0.000054	0.000052
Boron, total	mg/L		1.2	0.0050	0.050	0.065	0.0088	0.011	0.0057	0.016	0.034	0.0068	0.010
Boron, dissolved	mg/L			0.0050	0.050	0.065	0.0088	0.011	0.0057	0.016	0.035	0.0071	0.011
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00011	0.000016	0.000016	0.000010	0.000016	0.000020	0.000012	0.000014
Cadmium, dissolved	mg/L	0.00019	0.00016	0.0000081	0.000036	0.00011	0.000014	0.000014	0.0000085	0.000014	0.000019	0.0000096	0.000013
Calcium, total	mg/L			21	30	26	28	22	22	26	28	23	22
Calcium, dissolved	mg/L			22	32	27	29	23	23	27	29	24	23
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.00100	0.00028	0.00029	0.00022	0.00034	0.00057	0.00024	0.00027
Chromium, dissolved	mg/L			0.00010	0.00027	0.00070	0.00015	0.00016	0.00011	0.00020	0.00038	0.00012	0.00016
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00055	0.00052	0.000081	0.000089	0.000054	0.00011	0.00021	0.000063	0.000084
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00041	0.000076	0.000077	0.000053	0.000085	0.00015	0.000060	0.000076
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0024	0.0019	0.0017	0.0016	0.0019	0.0020	0.0016	0.0016

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Goathorn Creek										
			WQG	Baseline		WQS06							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.0014	0.0039	0.0021	0.0018	0.0015	0.0015	0.0017	0.0019	0.0015	0.0015
Iron, total	mg/L		0.3	0.085	0.78	0.34	0.12	0.12	0.091	0.14	0.22	0.10	0.11
Iron, dissolved	mg/L		0.30	0.015	0.13	0.025	0.019	0.016	0.016	0.019	0.021	0.016	0.016
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00023	0.000039	0.000043	0.000027	0.000053	0.000094	0.000032	0.000041
Lead, dissolved	mg/L			0.000025	0.000050	0.00016	0.000036	0.000035	0.000027	0.000036	0.000057	0.000029	0.000035
Lithium, total	mg/L			0.00050	0.0011	0.040	0.0022	0.0040	0.00063	0.0082	0.020	0.0014	0.0037
Lithium, dissolved	mg/L			0.00050	0.0010	0.040	0.0022	0.0039	0.00063	0.0083	0.020	0.0016	0.0043
Magnesium, total	mg/L			3.9	6.5	6.9	8.1	4.6	4.7	5.0	6.2	4.4	4.5
Magnesium, dissolved	mg/L			3.8	7.4	6.8	7.7	4.5	4.5	4.8	5.9	4.3	4.4
Manganese, total	mg/L		0.12	0.0059	0.033	0.027	0.0081	0.0078	0.0061	0.0078	0.011	0.0067	0.0074
Manganese, dissolved	mg/L			0.0026	0.0084	0.019	0.0039	0.0038	0.0027	0.0040	0.0063	0.0030	0.0038
Mercury, total	mg/L		0.00001	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00047	0.00062	0.0015	0.00064	0.00060	0.00049	0.00060	0.00088	0.00052	0.00057
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0055	0.0058	0.0048	0.0048	0.0056	0.0059	0.0048	0.0047
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0017	0.00037	0.00039	0.00027	0.00046	0.00080	0.00030	0.00037
Nickel, dissolved	mg/L			0.00025	0.00060	0.0014	0.00036	0.00035	0.00027	0.00038	0.00064	0.00029	0.00035
Phosphorus, total	mg/L			0.0045	0.019	0.0069	0.0058	0.0050	0.0048	0.0056	0.0059	0.0049	0.0048
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00061	0.00065	0.00053	0.00053	0.00062	0.00065	0.00054	0.00051
Potassium, total	mg/L			0.39	1.0	4.5	0.66	0.78	0.42	1.2	2.5	0.51	0.74
Potassium, dissolved	mg/L			0.36	0.48	4.5	0.62	0.75	0.39	1.2	2.5	0.50	0.77
Selenium, total	mg/L	0.008	0.002	0.000086	0.00020	0.0019	0.00018	0.00025	0.000090	0.00043	0.00095	0.00013	0.00023
Selenium, dissolved	mg/L			0.000076	0.00012	0.0019	0.00017	0.00024	0.000080	0.00042	0.00096	0.00013	0.00025
Silica, dissolved	mg/L			5.6	6.2	7.5	7.1	6.0	5.7	6.9	7.4	6.0	5.8
Sodium, total	mg/L			2.3	4.8	100	7.1	12	2.8	24	56	4.9	11
Sodium, dissolved	mg/L			2.4	4.8	100	7.3	12	2.9	24	57	5.5	13
Strontium, total	mg/L		7.0	0.076	0.11	0.30	0.13	0.10	0.086	0.11	0.17	0.088	0.097
Strontium, dissolved	mg/L			0.077	0.12	0.30	0.12	0.10	0.086	0.11	0.17	0.089	0.10
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Goathorn Creek										
			WQG	Baseline		WQS06							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00011	0.000010	0.000011	0.0000054	0.000011	0.000022	0.0000065	0.0000100
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00011	0.000010	0.000011	0.0000054	0.000011	0.000022	0.0000066	0.000010
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.00074	0.000096	0.00012	0.000059	0.00018	0.00037	0.000073	0.00011
Uranium, dissolved	mg/L			0.000051	0.00014	0.00073	0.000092	0.00011	0.000056	0.00018	0.00037	0.000072	0.00012
Vanadium, total	mg/L			0.00025	0.0020	0.0022	0.00043	0.00045	0.00029	0.00065	0.0013	0.00032	0.00043
Vanadium, dissolved	mg/L			0.00025	0.00052	0.0020	0.00038	0.00042	0.00027	0.00057	0.0011	0.00031	0.00042
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.0039	0.0020	0.0018	0.0016	0.0019	0.0023	0.0017	0.0017
Zinc, dissolved	mg/L			0.0015	0.0021	0.0033	0.0020	0.0017	0.0016	0.0019	0.0021	0.0016	0.0017

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-23

Parameter	Units	SPO	WQG	Telkwa River									
				Baseline	WQS09								
					Operations				Post-Closure				
					Project Case				Project Case				
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			39	64	65	68	49	46	65	65	49	46
Alkalinity, total	mg-CaCO ₃ /L			38	62	70	66	48	45	63	64	47	47
Chloride	mg/L		150	0.25	0.50	0.65	0.43	0.31	0.29	0.43	0.44	0.31	0.33
Fluoride	mg/L		0.12	0.029	0.038	0.045	0.048	0.035	0.033	0.046	0.047	0.035	0.034
Ammonia, total	mg-N/L		1.7	0.0025	0.0095	0.010	0.0044	0.0033	0.0029	0.0049	0.0050	0.0032	0.0037
Nitrate	mg/L		3	0.013	0.076	0.072	0.025	0.020	0.017	0.031	0.032	0.018	0.023
Nitrite	mg/L	0.0524	0.02	0.00050	0.0050	0.0019	0.00087	0.00066	0.00057	0.00096	0.00097	0.00063	0.00071
Sulfate	mg/L		218	5.6	9.0	18	11	8.1	7.6	12	11	8.0	8.7
Aluminum, total	mg/L	0.236	0.1	0.17	1.7	0.26	0.27	0.20	0.19	0.26	0.26	0.20	0.19
Aluminum, dissolved	mg/L		0.05	0.027	0.088	0.041	0.043	0.031	0.030	0.041	0.042	0.031	0.030
Antimony, total	mg/L			0.000050	0.000050	0.000095	0.000085	0.000062	0.000058	0.000081	0.000084	0.000061	0.000061
Antimony, dissolved	mg/L	0.009	0.009	0.000050	0.000050	0.000097	0.000088	0.000063	0.000060	0.000084	0.000086	0.000063	0.000062
Arsenic, total	mg/L	0.005	0.005	0.00024	0.00055	0.00039	0.00040	0.00029	0.00028	0.00038	0.00039	0.00029	0.00028
Arsenic, dissolved	mg/L			0.00016	0.00025	0.00026	0.00027	0.00020	0.00019	0.00026	0.00027	0.00020	0.00019
Barium, total	mg/L		1	0.040	0.049	0.063	0.067	0.049	0.047	0.065	0.065	0.049	0.047
Barium, dissolved	mg/L			0.034	0.048	0.055	0.058	0.042	0.040	0.056	0.056	0.042	0.041
Beryllium, total	mg/L		0.00013	0.000050	0.000050	0.000077	0.000082	0.000059	0.000057	0.000078	0.000080	0.000060	0.000057
Beryllium, dissolved	mg/L			0.000050	0.000050	0.000077	0.000082	0.000059	0.000057	0.000078	0.000080	0.000060	0.000057
Boron, total	mg/L		1.2	0.0050	0.050	0.012	0.0088	0.0064	0.0059	0.0085	0.0088	0.0063	0.0065
Boron, dissolved	mg/L			0.0050	0.050	0.012	0.0088	0.0064	0.0058	0.0085	0.0088	0.0063	0.0065
Cadmium, total	mg/L	0.00009	0.00009	0.000011	0.000036	0.000024	0.000018	0.000013	0.000012	0.000018	0.000018	0.000013	0.000013
Cadmium, dissolved	mg/L	0.00012	0.00011	0.0000063	0.0000099	0.000017	0.000011	0.0000078	0.0000072	0.000011	0.000011	0.0000077	0.0000079
Calcium, total	mg/L			12	20	20	21	15	14	20	20	15	14
Calcium, dissolved	mg/L			12	21	20	21	15	14	20	20	15	14
Chromium, total	mg/L		0.0089	0.00020	0.0010	0.00036	0.00034	0.00024	0.00023	0.00032	0.00033	0.00024	0.00024
Chromium, dissolved	mg/L			0.000050	0.00021	0.00012	0.000095	0.000069	0.000064	0.000092	0.000095	0.000068	0.000070
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00088	0.00011	0.000084	0.000061	0.000057	0.000081	0.000083	0.000061	0.000061
Cobalt, dissolved	mg/L			0.000050	0.00010	0.00010	0.000084	0.000061	0.000057	0.000081	0.000083	0.000060	0.000060
Copper, total	mg/L		0.002	0.0011	0.0042	0.0018	0.0018	0.0013	0.0013	0.0018	0.0018	0.0013	0.0013

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Telkwa River										
			WQG	Baseline		WQS09							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.00067	0.0017	0.0011	0.0012	0.00085	0.00082	0.0011	0.0011	0.00085	0.00083
Iron, total	mg/L		0.3	0.31	1.5	0.47	0.48	0.35	0.33	0.46	0.47	0.35	0.34
Iron, dissolved	mg/L		0.30	0.076	0.27	0.11	0.12	0.086	0.082	0.11	0.12	0.086	0.082
Lead, total	mg/L		0.0044	0.00014	0.0014	0.00022	0.00022	0.00016	0.00015	0.00021	0.00021	0.00016	0.00015
Lead, dissolved	mg/L			0.000025	0.00010	0.000048	0.000042	0.000030	0.000029	0.000040	0.000041	0.000030	0.000030
Lithium, total	mg/L			0.00050	0.0010	0.0035	0.00099	0.00076	0.00058	0.0012	0.0019	0.00070	0.0010
Lithium, dissolved	mg/L			0.00050	0.00050	0.0035	0.00099	0.00076	0.00058	0.0012	0.0019	0.00071	0.0010
Magnesium, total	mg/L			2.1	3.5	3.6	3.7	2.7	2.6	3.6	3.6	2.7	2.6
Magnesium, dissolved	mg/L			2.0	3.8	3.4	3.5	2.5	2.5	3.4	3.4	2.5	2.5
Manganese, total	mg/L		0.12	0.020	0.078	0.031	0.031	0.023	0.022	0.030	0.031	0.023	0.022
Manganese, dissolved	mg/L			0.0074	0.021	0.012	0.012	0.0085	0.0080	0.011	0.011	0.0085	0.0082
Mercury, total	mg/L		0.00001	0.0000025	0.0000070	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00053	0.00073	0.00087	0.00086	0.00062	0.00059	0.00082	0.00083	0.00062	0.00061
Molybdenum, dissolved	mg-N/L			0.00052	0.00068	0.0091	0.0097	0.0070	0.0067	0.0092	0.0094	0.0070	0.0067
Nickel, total	mg/L		0.025	0.00025	0.0011	0.00048	0.00042	0.00030	0.00029	0.00040	0.00041	0.00030	0.00030
Nickel, dissolved	mg/L			0.00025	0.00025	0.00046	0.00042	0.00030	0.00029	0.00040	0.00041	0.00030	0.00030
Phosphorus, total	mg/L			0.0060	0.050	0.0092	0.0097	0.0070	0.0067	0.0092	0.0094	0.0070	0.0067
Orthophosphate, dissolved	mg/L			0.0017	0.0030	0.0025	0.0027	0.0019	0.0018	0.0025	0.0026	0.0019	0.0019
Potassium, total	mg/L			0.31	1.0	0.76	0.53	0.39	0.36	0.53	0.54	0.38	0.40
Potassium, dissolved	mg/L			0.28	0.35	0.72	0.48	0.35	0.32	0.49	0.49	0.35	0.37
Selenium, total	mg/L	0.008	0.002	0.000080	0.00020	0.00025	0.00014	0.00010	0.000091	0.00014	0.00015	0.000100	0.00011
Selenium, dissolved	mg/L			0.000070	0.000095	0.00023	0.00012	0.000091	0.000080	0.00013	0.00014	0.000088	0.00010
Silica, dissolved	mg/L			6.7	8.6	10	11	7.9	7.5	10	11	7.9	7.6
Sodium, total	mg/L			1.0	2.9	8.6	2.3	1.8	1.3	2.8	5.1	1.6	2.4
Sodium, dissolved	mg/L			1.0	2.9	8.6	2.3	1.8	1.3	2.8	5.2	1.6	2.5
Strontium, total	mg/L		7.0	0.062	0.087	0.11	0.11	0.076	0.073	0.10	0.10	0.076	0.075
Strontium, dissolved	mg/L			0.056	0.091	0.10	0.096	0.070	0.066	0.092	0.094	0.069	0.068
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.000096	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Telkwa River										
			WQG	Baseline		WQS09							
						Operations				Post-Closure			
						Project Case				Project Case			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.0000050	0.000015	0.0000086	0.0000062	0.0000057	0.0000084	0.0000086	0.0000061	0.0000064
Thallium, dissolved	mg/L			0.0000050	0.0000050	0.000015	0.0000086	0.0000062	0.0000057	0.0000085	0.0000086	0.0000061	0.0000064
Uranium, total	mg/L		0.0085	0.000056	0.000092	0.00013	0.000097	0.000070	0.000065	0.000094	0.000097	0.000069	0.000072
Uranium, dissolved	mg/L			0.000043	0.000083	0.00011	0.000076	0.000056	0.000051	0.000075	0.000078	0.000055	0.000058
Vanadium, total	mg/L			0.00064	0.0036	0.0011	0.0010	0.00075	0.00071	0.00097	0.0010	0.00075	0.00073
Vanadium, dissolved	mg/L			0.00025	0.00055	0.00051	0.00043	0.00031	0.00029	0.00041	0.00043	0.00031	0.00031
Zinc, total	mg/L		0.0075	0.0015	0.0072	0.0025	0.0025	0.0018	0.0017	0.0024	0.0024	0.0018	0.0017
Zinc, dissolved	mg/L			0.0015	0.0015	0.0024	0.0025	0.0018	0.0017	0.0024	0.0024	0.0018	0.0017

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-24

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		Baseline Exceeding		WQS11							
								Operations				Post-Closure			
								Project Case				Project Case			
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			28	38	No WQG	No WQG	28	29	28	28	29	29	28	28
Alkalinity, total	mg-CaCO ₃ /L			27	35	No WQG	No WQG	28	28	27	27	28	28	27	27
Chloride	mg/L		150	0.25	0.86	No	No	0.26	0.26	0.25	0.25	0.26	0.26	0.25	0.25
Fluoride	mg/L		0.12	0.023	0.035	No	No	0.024	0.024	0.023	0.023	0.024	0.024	0.023	0.023
Ammonia, total	mg-N/L		1.7	0.0050	0.017	No	No	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0050	0.0050
Nitrate	mg/L		3	0.013	0.041	No	No	0.013	0.014	0.013	0.013	0.014	0.014	0.013	0.013
Nitrite	mg/L	0.0524	0.02	0.0020	0.0050	No	No	0.0021	0.0021	0.0020	0.0020	0.0021	0.0021	0.0020	0.0020
Sulfate	mg/L		128	4.0	5.0	No	No	4.1	4.2	4.0	4.0	4.2	4.2	4.0	4.0
Aluminum, total	mg/L	0.236	0.1	0.13	1.3	Yes	Yes	0.13	0.14	0.13	0.13	0.14	0.14	0.13	0.13
Aluminum, dissolved	mg/L		0.05	0.017	0.13	No	Yes	0.018	0.018	0.017	0.017	0.018	0.018	0.017	0.017
Antimony, total	mg/L			0.000050	0.00011	No WQG	No WQG	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	No	No	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Arsenic, total	mg/L		0.005	0.00024	0.00070	No	No	0.00025	0.00025	0.00024	0.00024	0.00025	0.00025	0.00024	0.00024
Arsenic, dissolved	mg/L			0.00016	0.00033	No WQG	No WQG	0.00017	0.00017	0.00016	0.00016	0.00017	0.00017	0.00016	0.00016
Barium, total	mg/L		1	0.026	0.038	No	No	0.027	0.027	0.026	0.026	0.027	0.027	0.026	0.026
Barium, dissolved	mg/L			0.023	0.032	No WQG	No WQG	0.024	0.024	0.023	0.023	0.024	0.024	0.023	0.023
Beryllium, total	mg/L		0.00013	0.000050	0.00010	No	No	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Beryllium, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Boron, total	mg/L		1.2	0.0050	0.010	No	No	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0050	0.0050
Boron, dissolved	mg/L			0.0050	0.010	No WQG	No WQG	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0050	0.0050
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	No	No	0.0000082	0.0000082	0.0000079	0.0000079	0.0000082	0.0000082	0.0000079	0.0000079
Cadmium, dissolved	mg/L	0.00009	0.00008	0.0000025	0.0000065	No	No	0.0000026	0.0000026	0.0000025	0.0000025	0.0000026	0.0000026	0.0000025	0.0000025
Calcium, total	mg/L			8.8	11	No WQG	No WQG	9.1	9.2	8.8	8.8	9.1	9.2	8.8	8.8
Calcium, dissolved	mg/L			8.8	12	No WQG	No WQG	9.1	9.2	8.8	8.8	9.1	9.2	8.8	8.8
Chromium, total	mg/L		0.0089	0.00025	0.0012	No	No	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00025	0.00025
Chromium, dissolved	mg/L			0.000050	0.00023	No WQG	No WQG	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00068	No	No	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Cobalt, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000050	0.000050
Copper, total	mg/L		0.002	0.00090	0.0029	No	Yes	0.00093	0.00094	0.00090	0.00090	0.00093	0.00094	0.00090	0.00090

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		Baseline Exceeding		WQS11							
								Operations				Post-Closure			
								Project Case				Project Case			
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.00067	0.0020	No WQG	No WQG	0.00069	0.00070	0.00067	0.00067	0.00070	0.00070	0.00067	0.00067
Iron, total	mg/L		0.3	0.18	1.3	No	Yes	0.19	0.19	0.18	0.18	0.19	0.19	0.18	0.18
Iron, dissolved	mg/L		0.30	0.024	0.16	No	No	0.025	0.025	0.024	0.024	0.025	0.025	0.024	0.024
Lead, total	mg/L		0.004	0.000095	0.00051	No	No	0.000098	0.000099	0.000095	0.000095	0.000099	0.000099	0.000095	0.000095
Lead, dissolved	mg/L			0.000025	0.000050	No WQG	No WQG	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000025	0.000025
Lithium, total	mg/L			0.00050	0.0010	No WQG	No WQG	0.00052	0.00052	0.00050	0.00050	0.00052	0.00052	0.00050	0.00050
Lithium, dissolved	mg/L			0.00050	0.0010	No WQG	No WQG	0.00052	0.00052	0.00050	0.00050	0.00052	0.00052	0.00050	0.00050
Magnesium, total	mg/L			1.4	2.5	No WQG	No WQG	1.4	1.5	1.4	1.4	1.5	1.5	1.4	1.4
Magnesium, dissolved	mg/L			1.3	2.7	No WQG	No WQG	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.3
Manganese, total	mg/L		0.12	0.016	0.059	No	No	0.017	0.017	0.016	0.016	0.017	0.017	0.016	0.016
Manganese, dissolved	mg/L			0.0052	0.020	No WQG	No WQG	0.0054	0.0054	0.0052	0.0052	0.0054	0.0054	0.0052	0.0052
Mercury, total	mg/L		0.00001	0.0000025	0.0000055	No	No	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	No WQG	No WQG	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00037	0.00055	No	No	0.00038	0.00039	0.00037	0.00037	0.00038	0.00039	0.00037	0.00037
Molybdenum, dissolved	mg-N/L			0.00037	0.00045	No WQG	No WQG	0.0059	0.0059	0.0057	0.0057	0.0059	0.0059	0.0057	0.0057
Nickel, total	mg/L		0.025	0.00025	0.0014	No	No	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00025	0.00025
Nickel, dissolved	mg/L			0.00025	0.0013	No WQG	No WQG	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00025	0.00025
Phosphorus, total	mg/L			0.0057	0.043	No WQG	No WQG	0.0059	0.0059	0.0057	0.0057	0.0059	0.0059	0.0057	0.0057
Orthophosphate, dissolved	mg/L			0.0013	0.0040	No WQG	No WQG	0.0013	0.0014	0.0013	0.0013	0.0014	0.0014	0.0013	0.0013
Potassium, total	mg/L			0.33	0.68	No WQG	No WQG	0.34	0.34	0.33	0.33	0.34	0.34	0.33	0.33
Potassium, dissolved	mg/L			0.32	0.52	No WQG	No WQG	0.33	0.33	0.32	0.32	0.33	0.33	0.32	0.32
Selenium, total	mg/L	0.008	0.002	0.000025	0.00020	No	No	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000025	0.000025
Selenium, dissolved	mg/L			0.000025	0.000050	No WQG	No WQG	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000025	0.000025
Silica, dissolved	mg/L			no data	no data	No WQG	No WQG	0.000093	0.00023	0.000025	0.000034				
Sodium, total	mg/L			1.0	2.5	No WQG	No WQG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00
Sodium, dissolved	mg/L			1.0	2.5	No WQG	No WQG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00
Strontium, total	mg/L		7.0	0.040	0.061	No	No	0.041	0.042	0.040	0.040	0.042	0.042	0.040	0.040
Strontium, dissolved	mg/L			0.040	0.055	No WQG	No WQG	0.041	0.042	0.040	0.040	0.042	0.042	0.040	0.040
Silver, total	mg/L		0.00005	0.0000050	0.000020	No	No	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	No WQG	No WQG	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	No WQG	No WQG	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		Baseline Exceeding		WQS11							
								Operations				Post-Closure			
								Project Case				Project Case			
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000014	No	No	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052	0.0000052	0.0000050	0.0000050
Thallium, dissolved	mg/L			0.0000050	0.000010	No WQG	No WQG	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052	0.0000052	0.0000050	0.0000050
Uranium, total	mg/L		0.0085	0.000036	0.000094	No	No	0.000037	0.000038	0.000036	0.000036	0.000037	0.000038	0.000036	0.000036
Uranium, dissolved	mg/L			0.000028	0.000052	No WQG	No WQG	0.000029	0.000029	0.000028	0.000028	0.000029	0.000029	0.000028	0.000028
Vanadium, total	mg/L			0.00057	0.0050	No WQG	No WQG	0.00059	0.00059	0.00057	0.00057	0.00059	0.00059	0.00057	0.00057
Vanadium, dissolved	mg/L			0.00025	0.00060	No WQG	No WQG	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00025	0.00025
Zinc, total	mg/L		0.0075	0.0015	0.0055	No	No	0.0016	0.0016	0.0015	0.0015	0.0016	0.0016	0.0015	0.0015
Zinc, dissolved	mg/L			0.0013	0.0045	No WQG	No WQG	0.0013	0.0014	0.0013	0.0013	0.0014	0.0014	0.0013	0.0013

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table F-25

Parameter	Units	SPO	WQG	Bulkley River											
				Baseline	Baseline Exceeding	WQS12									
						Operations					Post-Closure				
						Project Case					Project Case				
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			28	38	No WQG	No WQG	34	35	31	32	34	35	31	32
Alkalinity, total	mg-CaCO ₃ /L			27	35	No WQG	No WQG	33	34	30	31	33	34	30	31
Chloride	mg/L		150	0.25	0.86	No	No	0.28	0.29	0.26	0.27	0.27	0.30	0.26	0.27
Fluoride	mg/L		0.12	0.023	0.035	No	No	0.027	0.028	0.025	0.026	0.027	0.028	0.025	0.025
Ammonia, total	mg-N/L		1.7	0.0050	0.017	No	No	0.0054	0.0055	0.0047	0.0049	0.0051	0.0056	0.0047	0.0049
Nitrate	mg/L		3	0.013	0.041	No	No	0.017	0.016	0.014	0.014	0.015	0.018	0.014	0.015
Nitrite	mg/L	0.0524	0.02	0.0020	0.0050	No	No	0.0020	0.0021	0.0018	0.0019	0.0020	0.0021	0.0018	0.0018
Sulfate	mg/L		128	4.0	5.0	No	No	5.3	5.2	4.6	4.7	4.9	5.5	4.6	4.9
Aluminum, total	mg/L	0.236	0.1	0.13	1.3	Yes	Yes	0.15	0.16	0.14	0.14	0.15	0.16	0.14	0.14
Aluminum, dissolved	mg/L		0.05	0.017	0.13	No	Yes	0.021	0.022	0.019	0.020	0.021	0.022	0.019	0.020
Antimony, total	mg/L			0.000050	0.00011	No WQG	No WQG	0.000055	0.000059	0.000052	0.000053	0.000055	0.000059	0.000052	0.000053
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	No	No	0.000055	0.000059	0.000052	0.000053	0.000055	0.000059	0.000052	0.000054
Arsenic, total	mg/L		0.005	0.00024	0.00070	No	No	0.00026	0.00028	0.00025	0.00026	0.00026	0.00028	0.00025	0.00025
Arsenic, dissolved	mg/L			0.00016	0.00033	No WQG	No WQG	0.00018	0.00019	0.00017	0.00017	0.00018	0.00019	0.00017	0.00017
Barium, total	mg/L		1	0.026	0.038	No	No	0.032	0.033	0.029	0.030	0.032	0.033	0.030	0.030
Barium, dissolved	mg/L			0.023	0.032	No WQG	No WQG	0.028	0.029	0.026	0.027	0.028	0.029	0.026	0.027
Beryllium, total	mg/L		0.00013	0.000050	0.00010	No	No	0.000055	0.000059	0.000051	0.000053	0.000055	0.000059	0.000052	0.000053
Beryllium, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000055	0.000059	0.000051	0.000053	0.000055	0.000059	0.000052	0.000053
Boron, total	mg/L		1.2	0.0050	0.010	No	No	0.0056	0.0059	0.0052	0.0053	0.0055	0.0060	0.0052	0.0054
Boron, dissolved	mg/L			0.0050	0.010	No WQG	No WQG	0.0056	0.0059	0.0052	0.0053	0.0055	0.0060	0.0052	0.0054
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	No	No	0.0000093	0.0000098	0.0000087	0.0000089	0.0000093	0.000010	0.0000088	0.0000090
Cadmium, dissolved	mg/L	0.00009	0.00008	0.0000025	0.0000065	No	No	0.0000040	0.0000037	0.0000033	0.0000034	0.0000037	0.0000039	0.0000033	0.0000035
Calcium, total	mg/L			8.8	11	No WQG	No WQG	11	11	9.7	10	11	11	9.8	10
Calcium, dissolved	mg/L			8.8	12	No WQG	No WQG	11	11	9.7	10	11	11	9.8	10
Chromium, total	mg/L		0.0089	0.00025	0.0012	No	No	0.00027	0.00029	0.00025	0.00026	0.00026	0.00028	0.00025	0.00026
Chromium, dissolved	mg/L			0.000050	0.00023	No WQG	No WQG	0.000056	0.000060	0.000053	0.000054	0.000056	0.000061	0.000053	0.000055
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00068	No	No	0.000055	0.000059	0.000052	0.000053	0.000055	0.000059	0.000052	0.000053
Cobalt, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000055	0.000059	0.000052	0.000053	0.000055	0.000059	0.000052	0.000053
Copper, total	mg/L		0.002	0.00090	0.0029	No	Yes	0.0010	0.0011	0.00096	0.00100	0.0010	0.0011	0.00097	0.00099

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		Baseline Exceeding		WQS12							
								Operations				Post-Closure			
								Project Case				Project Case			
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Copper, dissolved	mg/L			0.00067	0.0020	No WQG	No WQG	0.00074	0.00079	0.00070	0.00072	0.00074	0.00079	0.00070	0.00072
Iron, total	mg/L		0.3	0.18	1.3	No	Yes	0.22	0.23	0.21	0.21	0.22	0.23	0.21	0.21
Iron, dissolved	mg/L		0.30	0.024	0.16	No	No	0.038	0.038	0.034	0.034	0.039	0.038	0.034	0.034
Lead, total	mg/L		0.004	0.000095	0.00051	No	No	0.00011	0.00012	0.00010	0.00011	0.00011	0.00012	0.00011	0.00011
Lead, dissolved	mg/L			0.000025	0.000050	No WQG	No WQG	0.000027	0.000029	0.000026	0.000027	0.000027	0.000030	0.000026	0.000027
Lithium, total	mg/L			0.00050	0.0010	No WQG	No WQG	0.00069	0.00060	0.00054	0.00053	0.00057	0.00070	0.00053	0.00060
Lithium, dissolved	mg/L			0.00050	0.0010	No WQG	No WQG	0.00069	0.00060	0.00054	0.00053	0.00057	0.00070	0.00053	0.00060
Magnesium, total	mg/L			1.4	2.5	No WQG	No WQG	1.7	1.8	1.6	1.6	1.7	1.8	1.6	1.6
Magnesium, dissolved	mg/L			1.3	2.7	No WQG	No WQG	1.6	1.7	1.5	1.5	1.6	1.7	1.5	1.5
Manganese, total	mg/L		0.12	0.016	0.059	No	No	0.018	0.019	0.017	0.018	0.018	0.019	0.017	0.017
Manganese, dissolved	mg/L			0.0052	0.020	No WQG	No WQG	0.0061	0.0064	0.0057	0.0059	0.0061	0.0065	0.0057	0.0059
Mercury, total	mg/L		0.00001	0.0000025	0.0000055	No	No	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	No WQG	No WQG	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00037	0.00055	No	No	0.00044	0.00046	0.00041	0.00042	0.00044	0.00047	0.00041	0.00042
Molybdenum, dissolved	mg-N/L			0.00037	0.00045	No WQG	No WQG	0.0063	0.0067	0.0059	0.0061	0.0063	0.0067	0.0059	0.0060
Nickel, total	mg/L		0.025	0.00025	0.0014	No	No	0.00027	0.00029	0.00026	0.00027	0.00027	0.00030	0.00026	0.00027
Nickel, dissolved	mg/L			0.00025	0.0013	No WQG	No WQG	0.00027	0.00029	0.00026	0.00027	0.00027	0.00030	0.00026	0.00027
Phosphorus, total	mg/L			0.0057	0.043	No WQG	No WQG	0.0063	0.0067	0.0059	0.0061	0.0063	0.0067	0.0059	0.0060
Orthophosphate, dissolved	mg/L			0.0013	0.0040	No WQG	No WQG	0.0015	0.0016	0.0014	0.0014	0.0015	0.0016	0.0014	0.0014
Potassium, total	mg/L			0.33	0.68	No WQG	No WQG	0.37	0.39	0.34	0.35	0.36	0.39	0.34	0.35
Potassium, dissolved	mg/L			0.32	0.52	No WQG	No WQG	0.35	0.37	0.32	0.33	0.34	0.38	0.33	0.34
Selenium, total	mg/L	0.008	0.002	0.000025	0.00020	No	No	0.000048	0.000040	0.000037	0.000037	0.000042	0.000046	0.000037	0.000040
Selenium, dissolved	mg/L			0.000025	0.000050	No WQG	No WQG	0.000046	0.000038	0.000035	0.000035	0.000039	0.000044	0.000035	0.000038
Silica, dissolved	mg/L			no data	no data	No WQG	No WQG	1.8	1.4	1.2	1.2	1.9	1.4	1.3	1.3
Sodium, total	mg/L			1.0	2.5	No WQG	No WQG	1.5	1.2	1.1	1.1	1.2	1.5	1.1	1.3
Sodium, dissolved	mg/L			1.0	2.5	No WQG	No WQG	1.5	1.2	1.1	1.1	1.2	1.5	1.1	1.3
Strontium, total	mg/L		7.0	0.040	0.061	No	No	0.049	0.051	0.046	0.047	0.049	0.052	0.046	0.047
Strontium, dissolved	mg/L			0.040	0.055	No WQG	No WQG	0.048	0.050	0.044	0.046	0.048	0.051	0.045	0.046
Silver, total	mg/L		0.00005	0.0000050	0.000020	No	No	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	No WQG	No WQG	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	No WQG	No WQG	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\11CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		Baseline Exceeding		WQS12							
								Operations				Post-Closure			
								Project Case				Project Case			
				P50	P95	P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.00010	No WQG	No WQG	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000014	No	No	0.0000058	0.0000059	0.0000052	0.0000053	0.0000055	0.0000060	0.0000052	0.0000054
Thallium, dissolved	mg/L			0.0000050	0.000010	No WQG	No WQG	0.0000058	0.0000059	0.0000052	0.0000053	0.0000055	0.0000061	0.0000052	0.0000054
Uranium, total	mg/L		0.0085	0.000036	0.000094	No	No	0.000046	0.000046	0.000041	0.000042	0.000044	0.000048	0.000042	0.000043
Uranium, dissolved	mg/L			0.000028	0.000052	No WQG	No WQG	0.000036	0.000036	0.000032	0.000033	0.000035	0.000038	0.000032	0.000034
Vanadium, total	mg/L			0.00057	0.0050	No WQG	No WQG	0.00064	0.00068	0.00060	0.00061	0.00064	0.00068	0.00060	0.00061
Vanadium, dissolved	mg/L			0.00025	0.00060	No WQG	No WQG	0.00028	0.00030	0.00026	0.00027	0.00028	0.00030	0.00026	0.00027
Zinc, total	mg/L		0.0075	0.0015	0.0055	No	No	0.0016	0.0018	0.0015	0.0016	0.0016	0.0018	0.0016	0.0016
Zinc, dissolved	mg/L			0.0013	0.0045	No WQG	No WQG	0.0015	0.0016	0.0014	0.0014	0.0015	0.0016	0.0014	0.0014

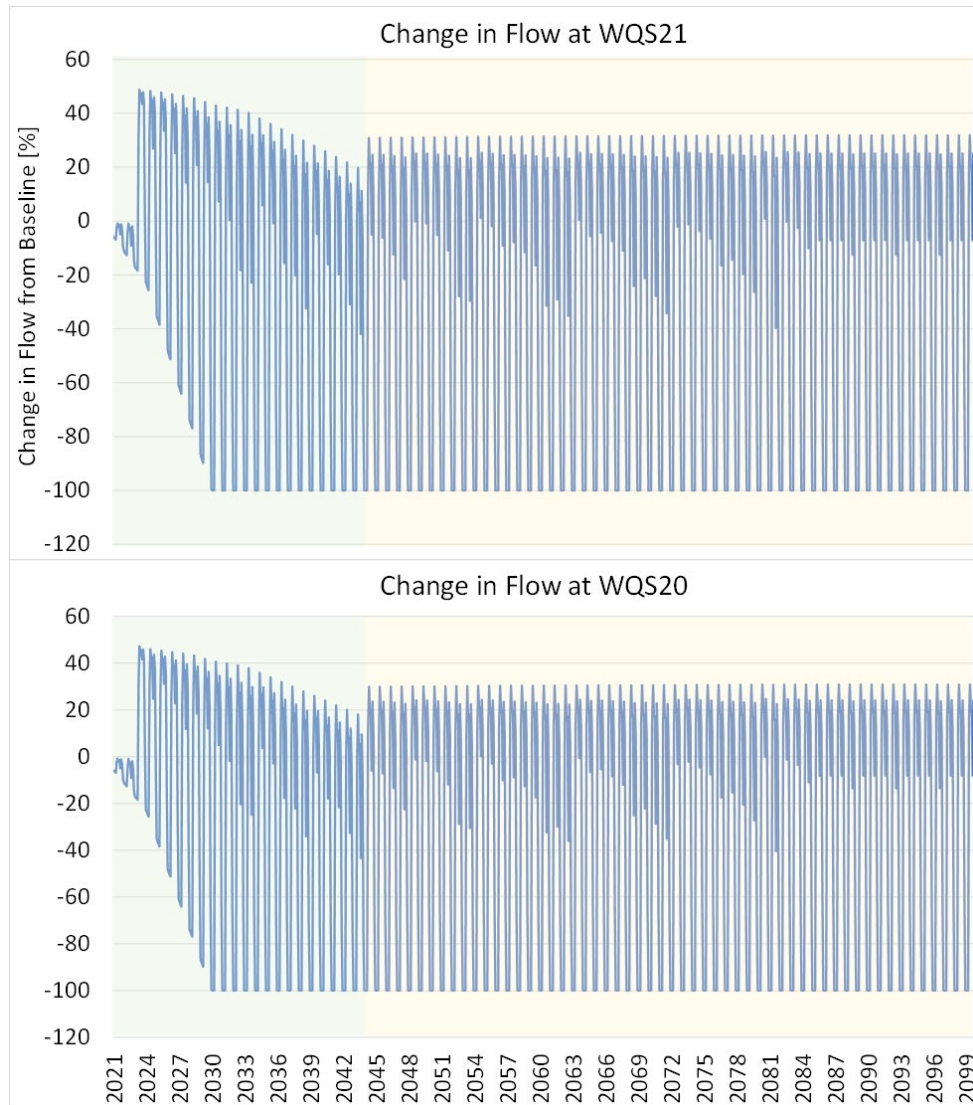
Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

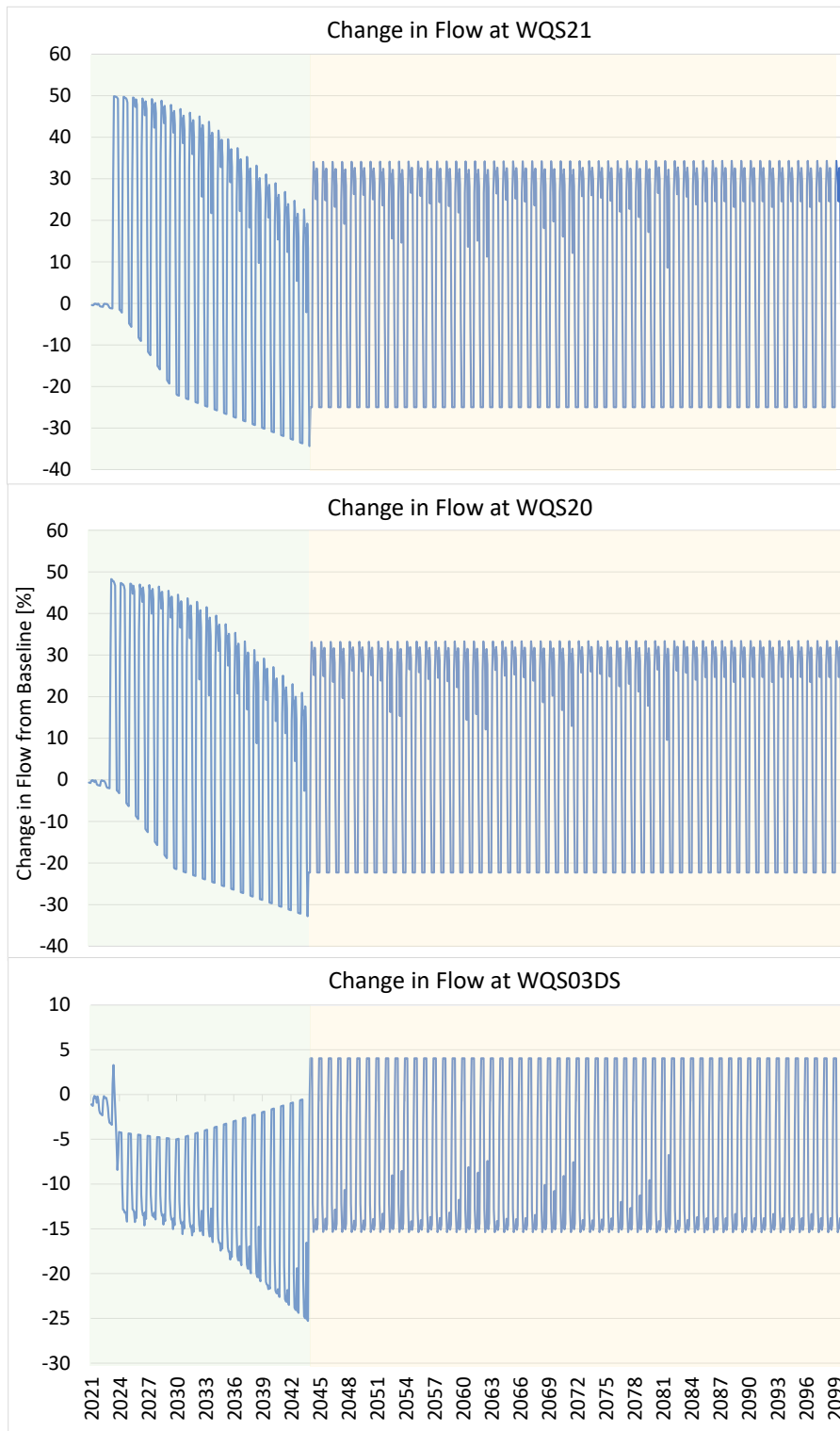
Appendix G Alternative Assessment Cases Results

Figure G-1. Streamflow Effect to Monthly Average Discharge relative to Base Case Conditions in Alternative Case 1



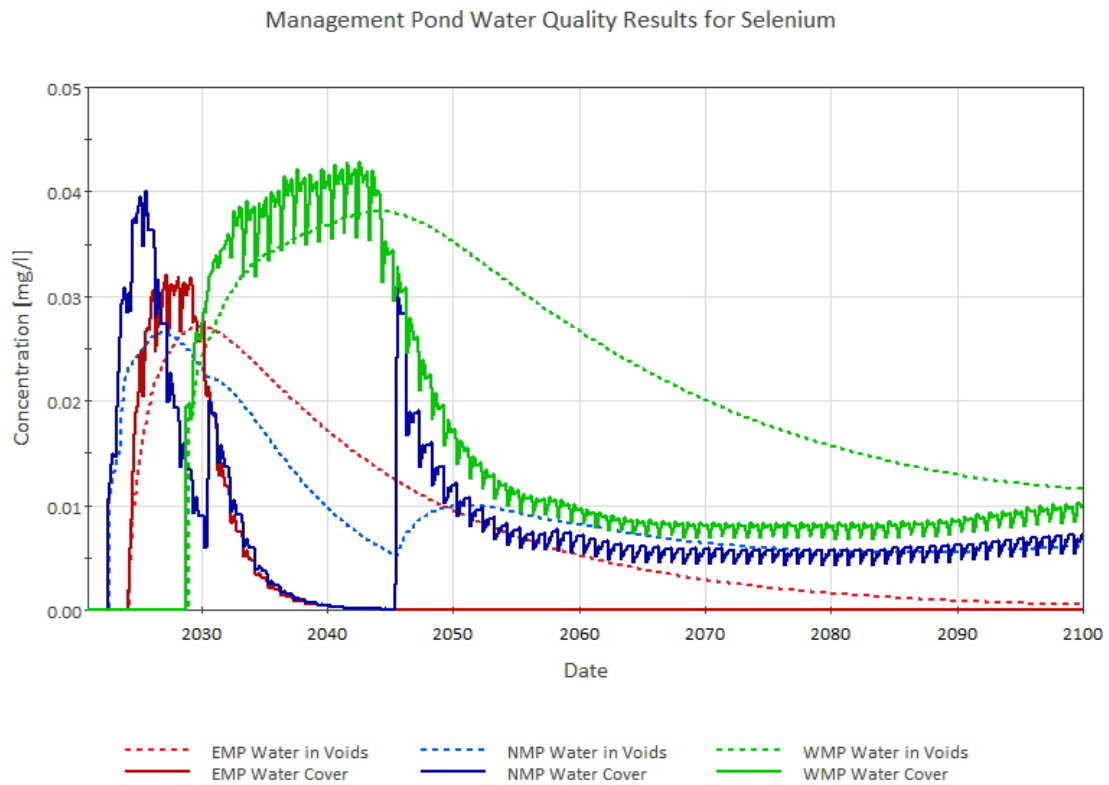
Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water
Management\500_Water_Balance\Results\WaterQuantity_Results_Rev01.xlsm

Figure G-2. Streamflow Effect to Monthly Average Discharge relative to Base Case Conditions in Alternative Case 4



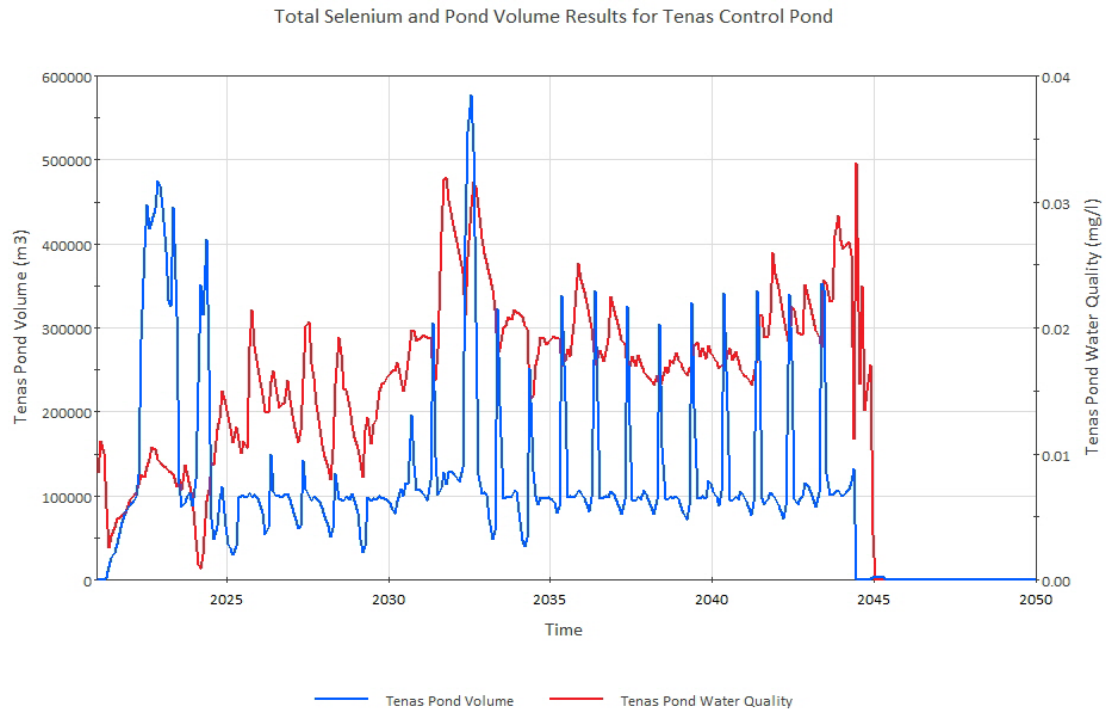
Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\WaterQuantity_Results_Rev01.xlsm

Figure G-3. Management Pond Water Quality Results for Total Selenium with Alternative Assessment Case 2: High Geochemical Source Terms



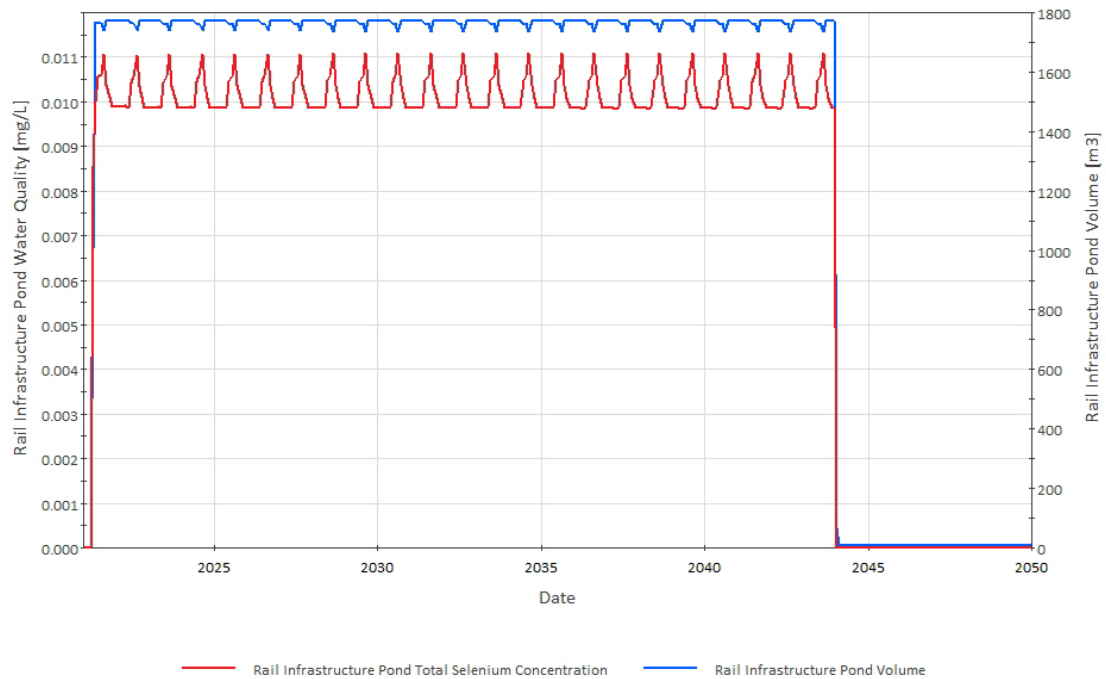
Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\080_Deliverables\WaterBalanceReport\030_Appendices\AppG_AltCaseResults\Feb2022_NewSourceTermSubmission\AppendixG-Figures\Plot_MP Se Water Quality_SA2.jpg

Figure G-4. Tenas Control Pond Water Quality Results for Total Selenium with Alternative Assessment Case 2: High Geochemical Source Terms



Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\080_Deliverables\WaterBalanceReport\030_Appendices\AppG_AltCaseResults\Feb2022_NewSourceTermSubmission\AppendixG-Figures\Plot_TCP Se Water Quality_SA2.jpg

Figure G-5. Rail Infrastructure Sedimentation Pond Water Quality Results for Total Selenium with Alternative Assessment Case 2: High Geochemical Source Terms



Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\080_Deliverables\WaterBalanceReport\030_Appendices\AppG_AltCaseResults\Feb2022_NewSource TermSubmission\AppendixG-Figures\Plot_RLO Se Water Quality_SA2.jpg

Table G-1

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	West Management Pond									
				Goathorn Baseline		Operations				Closure			
				P50	P95	Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	623	574	310	295	177	193	92	96
Alkalinity, total	mg CaCO ₃ /L			52	87	3300	3300	1600	1700	1900	2100	840	880
Chloride	mg/L		150	0.25	0.50	90	90	43	46	54	59	22	23
Fluoride	mg/L		0.12	0.032	0.041	0.035	0.034	0.014	0.015	0.13	0.14	0.11	0.12
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	1.2	1.4	0.55	0.61	0.13	0.18	0.051	0.055
Nitrate	mg/L	18.8	3	0.041	0.076	9.1	11	4.3	4.8	0.79	1.2	0.042	0.052
Nitrite	mg/L		0.02	0.00050	0.0020	0.21	0.26	0.099	0.11	0.019	0.028	0.0019	0.0021
Sulfate	mg/L		218	24	37	2600	2600	1400	1500	1300	1400	520	540
Aluminum, total	mg/L		0.1	0.092	0.75	0.43	0.52	0.16	0.18	0.41	0.43	0.38	0.38
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.40	0.48	0.13	0.15	0.039	0.061	0.0066	0.0071
Antimony, total	mg/L			0.000073	0.00014	0.013	0.012	0.0062	0.0059	0.0031	0.0035	0.0012	0.0012
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.013	0.012	0.0062	0.0059	0.0031	0.0035	0.0012	0.0013
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.012	0.011	0.0057	0.0053	0.0024	0.0027	0.0013	0.0013
Arsenic, dissolved	mg/L			0.00017	0.00035	0.012	0.011	0.0055	0.0052	0.0019	0.0022	0.00078	0.00081
Barium, total	mg/L		1	0.058	0.072	0.10	0.17	0.057	0.063	0.056	0.065	0.049	0.051
Barium, dissolved	mg/L			0.059	0.073	0.10	0.17	0.056	0.062	0.050	0.059	0.043	0.044
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000023	0.000038	0.000010	0.000011	0.000039	0.000039	0.000034	0.000035
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000023	0.000038	0.000010	0.000011	0.000039	0.000039	0.000034	0.000035
Boron, total	mg/L		1.2	0.0050	0.050	1.3	1.3	0.70	0.74	0.77	0.84	0.32	0.34
Boron, dissolved	mg/L			0.0050	0.050	1.3	1.3	0.70	0.74	0.77	0.84	0.32	0.34
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.011	0.0098	0.0046	0.0042	0.00052	0.00068	0.00014	0.00015
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.011	0.0098	0.0046	0.0042	0.00051	0.00068	0.00014	0.00014
Calcium, total	mg/L			21	30	35	32	17	16	13	13	12	12
Calcium, dissolved	mg/L			22	32	35	32	17	16	12	12	11	11
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.018	0.017	0.010	0.010	0.0087	0.0095	0.0043	0.0045
Chromium, dissolved	mg/L			0.00010	0.00027	0.018	0.017	0.0100	0.0099	0.0076	0.0083	0.0032	0.0033
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.019	0.018	0.0093	0.0089	0.0035	0.0041	0.0016	0.0017
Cobalt, dissolved	mg/L			0.000050	0.00011	0.019	0.017	0.0091	0.0088	0.0029	0.0034	0.00098	0.0010
Copper, total	mg/L		0.0028	0.0015	0.0054	0.022	0.021	0.012	0.012	0.011	0.011	0.0053	0.0054
Copper, dissolved	mg/L			0.0014	0.0039	0.022	0.021	0.012	0.012	0.0092	0.010	0.0039	0.0041
Iron, total	mg/L		0.3	0.085	0.78	0.46	0.52	0.35	0.36	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.21	0.27	0.099	0.11	0.027	0.036	0.014	0.015
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0065	0.0060	0.0030	0.0029	0.0014	0.0015	0.00082	0.00084
Lead, dissolved	mg/L			0.000025	0.000050	0.0064	0.0059	0.0030	0.0028	0.00097	0.0011	0.00043	0.00045
Lithium, total	mg/L			0.00050	0.0011	0.88	0.88	0.45	0.47	0.52	0.56	0.21	0.22
Lithium, dissolved	mg/L			0.00050	0.0010	0.88	0.88	0.45	0.47	0.52	0.56	0.21	0.22

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	West Management Pond										
			Goathorn WQG	Goathorn Baseline		Operations				Closure			
						Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	130	120	65	62	35	39	15	16
Magnesium, dissolved	mg/L			3.8	7.4	130	120	65	62	35	39	15	16
Manganese, total	mg/L		0.12	0.0059	0.033	0.68	0.71	0.33	0.33	0.14	0.15	0.070	0.072
Manganese, dissolved	mg/L			0.0026	0.0084	0.68	0.71	0.32	0.33	0.11	0.13	0.045	0.047
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.023	0.022	0.013	0.013	0.012	0.014	0.0055	0.0056
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.023	0.022	0.013	0.013	0.012	0.014	0.0054	0.0056
Nickel, total	mg/L		0.080	0.00025	0.0011	0.043	0.042	0.022	0.022	0.013	0.014	0.0060	0.0062
Nickel, dissolved	mg/L			0.00025	0.00060	0.043	0.042	0.022	0.022	0.011	0.012	0.0042	0.0044
Phosphorus, total	mg/L			0.0045	0.019	0.0012	0.0012	0.0012	0.0012	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00019	0.00038	0.000084	0.000089	0.00015	0.00014	0.00013	0.00013
Potassium, total	mg/L			0.39	1.0	96	95	48	50	58	63	24	25
Potassium, dissolved	mg/L			0.36	0.48	96	95	48	50	58	63	24	25
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.043	0.042	0.024	0.025	0.024	0.026	0.0095	0.0098
Selenium, dissolved	mg/L			0.000076	0.00012	0.043	0.042	0.024	0.025	0.024	0.026	0.0095	0.0098
Silica, dissolved	mg/L			5.6	6.2	48	48	24	25	29	32	13	13
Sodium, total	mg/L			2.3	4.8	2300	2300	1100	1200	1400	1600	610	640
Sodium, dissolved	mg/L			2.4	4.8	2300	2300	1100	1200	1400	1600	610	640
Strontium, total	mg/L		7.0	0.076	0.11	4.9	4.9	2.8	2.9	2.5	2.7	0.97	1.0
Strontium, dissolved	mg/L			0.077	0.12	4.9	4.9	2.8	2.9	2.5	2.7	0.97	1.0
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.011	0.0099	0.0047	0.0042	0.00060	0.00081	0.00017	0.00018
Thallium, dissolved	mg/L			0.0000050	0.000010	0.011	0.0099	0.0047	0.0042	0.00060	0.00081	0.00017	0.00018
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.020	0.018	0.011	0.011	0.0087	0.0096	0.0036	0.0037
Uranium, dissolved	mg/L			0.000051	0.00014	0.020	0.018	0.011	0.011	0.0087	0.0095	0.0036	0.0037
Vanadium, total	mg/L			0.00025	0.0020	0.041	0.041	0.023	0.023	0.025	0.027	0.011	0.011
Vanadium, dissolved	mg/L			0.00025	0.00052	0.041	0.041	0.023	0.023	0.023	0.025	0.0095	0.0099
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.060	0.058	0.032	0.032	0.021	0.023	0.011	0.011
Zinc, dissolved	mg/L			0.0015	0.0021	0.059	0.057	0.032	0.031	0.017	0.019	0.0076	0.0079

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Table G-2

Parameter	Units	West Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		72	103	22	23	11	11	37	37	32	32
Alkalinity, total	mg CaCO ₃ /L		83	110	2700	2700	1500	1500	2600	2700	1600	1600
Chloride	mg/L	150	0.25	0.50	71	71	38	37	71	71	42	42
Fluoride	mg/L	0.12	0.031	0.045	0.025	0.025	0.010	0.010	0.11	0.11	0.083	0.082
Ammonia, total	mg-N/L	1.2	0.0025	0.0074	0.98	0.98	0.52	0.51	0.83	0.84	0.36	0.36
Nitrate	mg/L	3	0.0050	0.060	7.7	7.7	4.1	4.0	6.5	6.6	2.6	2.6
Nitrite	mg/L	0.02	0.00050	0.0020	0.18	0.18	0.093	0.092	0.15	0.15	0.060	0.060
Sulfate	mg/L	218	2.6	7.4	2300	2300	1300	1300	2200	2200	1200	1200
Aluminum, total	mg/L	0.1	0.056	1.8	0.024	0.024	0.011	0.011	0.077	0.077	0.060	0.060
Aluminum, dissolved	mg/L	0.05	0.016	0.14	0.30	0.29	0.13	0.13	0.21	0.21	0.086	0.087
Antimony, total	mg/L		0.00013	0.00024	0.010	0.010	0.0060	0.0060	0.0084	0.0085	0.0041	0.0041
Antimony, dissolved	mg/L	0.009	0.00011	0.00023	0.000038	0.000039	0.000018	0.000017	0.00012	0.00012	0.000097	0.000096
Arsenic, total	mg/L	0.005	0.00048	0.00090	0.00013	0.00013	0.000064	0.000063	0.00030	0.00030	0.00025	0.00025
Arsenic, dissolved	mg/L		0.00041	0.00054	0.0094	0.0094	0.0055	0.0055	0.0072	0.0073	0.0033	0.0033
Barium, total	mg/L	1	0.034	0.047	0.020	0.020	0.0095	0.0093	0.061	0.061	0.048	0.048
Barium, dissolved	mg/L		0.033	0.043	0.12	0.12	0.062	0.061	0.087	0.088	0.061	0.061
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000016	0.000016	0.0000080	0.0000079	0.000033	0.000033	0.000028	0.000028
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000016	0.000016	0.0000080	0.0000079	0.000033	0.000033	0.000028	0.000028
Boron, total	mg/L	1.2	0.015	0.050	0.0064	0.0065	0.0026	0.0025	0.028	0.028	0.021	0.021
Boron, dissolved	mg/L		0.013	0.050	1.1	1.1	0.64	0.63	1.1	1.1	0.64	0.64
Cadmium, total	mg/L	0.00009	0.0000050	0.000021	0.0000037	0.0000037	0.0000017	0.0000016	0.000012	0.000012	0.0000095	0.0000095
Cadmium, dissolved	mg/L	0.00017	0.0000025	0.0000058	0.0082	0.0082	0.0047	0.0047	0.0057	0.0057	0.0023	0.0023
Calcium, total	mg/L		22	31	6.8	6.9	3.4	3.4	11	11	9.7	9.7
Calcium, dissolved	mg/L		21	31	28	28	17	16	23	23	16	16
Chromium, total	mg/L	0.0089	0.00032	0.0018	0.000096	0.000096	0.000046	0.000045	0.00027	0.00027	0.00021	0.00021
Chromium, dissolved	mg/L		0.00025	0.00041	0.016	0.016	0.0093	0.0093	0.015	0.015	0.0077	0.0077
Cobalt, total	mg/L	0.004	0.000050	0.00099	0.000029	0.000029	0.000012	0.000012	0.00011	0.00011	0.000084	0.000084
Cobalt, dissolved	mg/L		0.000050	0.00011	0.015	0.015	0.0090	0.0090	0.012	0.012	0.0054	0.0054
Copper, total	mg/L	0.003	0.0011	0.0050	0.00037	0.00037	0.00019	0.00018	0.00068	0.00068	0.00058	0.00058
Copper, dissolved	mg/L		0.0011	0.0030	0.019	0.019	0.012	0.011	0.018	0.018	0.0095	0.0095
Iron, total	mg/L	0.3	0.048	1.2	0.029	0.029	0.012	0.012	0.11	0.11	0.088	0.088
Iron, dissolved	mg/L	0.30	0.015	0.14	0.20	0.19	0.10	0.10	0.15	0.15	0.067	0.068
Lead, total	mg/L	0.0050	0.000025	0.00039	0.000031	0.000032	0.000012	0.000012	0.00015	0.00015	0.00012	0.00012
Lead, dissolved	mg/L		0.000025	0.000050	0.0050	0.0050	0.0029	0.0029	0.0038	0.0039	0.0018	0.0018
Lithium, total	mg/L		0.00050	0.0012	0.00013	0.00013	0.000068	0.000068	0.00013	0.00013	0.00013	0.00013
Lithium, dissolved	mg/L		0.00050	0.0010	0.73	0.73	0.40	0.40	0.72	0.72	0.42	0.42

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	West Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		4.2	6.3	1.3	1.3	0.65	0.64	2.3	2.3	2.0	2.0
Magnesium, dissolved	mg/L		4.1	6.3	100	100	62	62	89	89	44	44
Manganese, total	mg/L	0.12	0.0050	0.058	0.0030	0.0030	0.0012	0.0012	0.013	0.013	0.0097	0.0097
Manganese, dissolved	mg/L		0.0020	0.0062	0.55	0.55	0.31	0.31	0.45	0.46	0.20	0.21
Mercury, total	mg/L	0.00001	0.0000025	0.0000089	0.00000090	0.00000090	0.00000044	0.00000043	0.0000023	0.0000023	0.0000018	0.0000018
Mercury, dissolved	mg/L		0.0000025	0.0000055	0.0076	0.0076	0.0043	0.0043	0.0052	0.0053	0.0021	0.0021
Molybdenum, total	mg-N/L	0.073	0.00012	0.00019	0.00010	0.00010	0.000049	0.000048	0.00027	0.00027	0.00022	0.00022
Molybdenum, dissolved	mg-N/L		0.00010	0.00019	0.021	0.021	0.012	0.012	0.020	0.020	0.011	0.011
Nickel, total	mg/L	0.080	0.00025	0.0017	0.000099	0.000099	0.000047	0.000046	0.00029	0.00029	0.00023	0.00023
Nickel, dissolved	mg/L		0.00025	0.00054	0.036	0.036	0.021	0.021	0.031	0.031	0.015	0.015
Phosphorus, total	mg/L		0.0042	0.046	0.0023	0.0024	0.0010	0.00099	0.0090	0.0090	0.0070	0.0069
Orthophosphate, dissolved	mg/L		0.0010	0.0040	0.00013	0.00013	0.000068	0.000068	0.00013	0.00013	0.00013	0.00013
Potassium, total	mg/L		0.23	1.0	0.16	0.16	0.072	0.071	0.49	0.49	0.39	0.39
Potassium, dissolved	mg/L		0.19	0.30	78	78	42	42	77	78	45	46
Selenium, total	mg/L	0.002	0.000051	0.00020	0.000022	0.000022	0.000011	0.000011	0.000042	0.000042	0.000035	0.000035
Selenium, dissolved	mg/L		0.000040	0.000073	0.038	0.038	0.022	0.022	0.037	0.037	0.021	0.021
Silica, dissolved	mg/L		7.0	8.0	39	39	21	20	38	39	23	23
Sodium, total	mg/L		3.5	4.8	7.2	7.3	2.6	2.5	39	39	29	29
Sodium, dissolved	mg/L		3.5	4.8	1800	1800	960	950	1800	1800	1100	1100
Strontium, total	mg/L	7.0	0.11	0.13	0.024	0.024	0.012	0.012	0.024	0.024	0.023	0.023
Strontium, dissolved	mg/L		0.10	0.14	4.4	4.4	2.6	2.6	4.2	4.2	2.3	2.3
Silver, total	mg/L	0.00005	0.0000050	0.000020	0.0000019	0.0000019	0.00000092	0.00000090	0.0000053	0.0000053	0.0000043	0.0000043
Silver, dissolved	mg/L		0.0000050	0.000010	0.0075	0.0075	0.0043	0.0043	0.0051	0.0051	0.0020	0.0020
Tin, total	mg/L		0.000050	0.00010	0.000029	0.000030	0.000013	0.000012	0.00011	0.00011	0.000087	0.000087
Tin, dissolved	mg/L		0.000050	0.00010	0.051	0.051	0.029	0.029	0.049	0.049	0.027	0.027
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000013	0.0000013	0.00000068	0.00000068	0.0000013	0.0000013	0.0000013	0.0000013
Thallium, dissolved	mg/L		0.0000050	0.000010	0.0082	0.0082	0.0047	0.0047	0.0057	0.0058	0.0023	0.0024
Uranium, total	mg/L	0.0085	0.00011	0.00025	0.000051	0.000051	0.000021	0.000020	0.00022	0.00022	0.00017	0.00017
Uranium, dissolved	mg/L		0.00011	0.00024	0.017	0.017	0.010	0.010	0.016	0.016	0.0085	0.0086
Vanadium, total	mg/L		0.00094	0.0037	0.00021	0.00022	0.00010	0.00010	0.00050	0.00050	0.00041	0.00041
Vanadium, dissolved	mg/L		0.00072	0.0010	0.036	0.036	0.020	0.020	0.035	0.035	0.020	0.020
Zinc, total	mg/L	0.0075	0.0015	0.0060	0.00057	0.00058	0.00027	0.00027	0.0016	0.0016	0.0013	0.0013
Zinc, dissolved	mg/L		0.0015	0.0015	0.051	0.051	0.030	0.030	0.045	0.045	0.022	0.022

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Table G-3

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	East Management Pond									
				Goathorn Baseline		Operations				Closure			
						Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	443	456	125	126	11	10	10	10
Alkalinity, total	mg CaCO ₃ /L			52	87	2100	2400	600	660	8.5	8.3	7.1	7.1
Chloride	mg/L		150	0.25	0.50	56	62	16	17	0.053	0.059	0.026	0.026
Fluoride	mg/L		0.12	0.032	0.041	0.034	0.089	0.0059	0.0068	0.0036	0.0034	0.0032	0.0032
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.46	0.55	0.16	0.19	0.0011	0.0013	0.00029	0.00030
Nitrate	mg/L	18.8	3	0.041	0.076	3.6	4.3	1.3	1.5	0.0094	0.011	0.0030	0.0031
Nitrite	mg/L		0.02	0.00050	0.0020	0.083	0.100	0.030	0.034	0.00020	0.00024	0.000057	0.000059
Sulfate	mg/L		218	24	37	1800	1900	510	550	1.5	1.7	0.64	0.65
Aluminum, total	mg/L		0.1	0.092	0.75	0.66	0.71	0.35	0.36	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.63	0.68	0.11	0.12	0.0017	0.0016	0.0015	0.0015
Antimony, total	mg/L			0.000073	0.00014	0.0091	0.0088	0.0025	0.0025	0.0000099	0.000011	0.0000051	0.0000052
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0091	0.0088	0.0025	0.0025	0.000012	0.000013	0.0000071	0.0000071
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0085	0.0082	0.0027	0.0026	0.00055	0.00054	0.00054	0.00054
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0084	0.0080	0.0023	0.0023	0.000036	0.000035	0.000030	0.000031
Barium, total	mg/L		1	0.058	0.072	0.12	0.13	0.040	0.043	0.012	0.011	0.011	0.011
Barium, dissolved	mg/L			0.059	0.073	0.12	0.13	0.036	0.039	0.0051	0.0047	0.0045	0.0045
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000034	0.000083	0.0000074	0.0000085	0.0000055	0.0000051	0.0000049	0.0000049
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000034	0.000083	0.0000074	0.0000085	0.0000055	0.0000051	0.0000049	0.0000049
Boron, total	mg/L		1.2	0.0050	0.050	0.91	0.98	0.26	0.28	0.0013	0.0014	0.00086	0.00087
Boron, dissolved	mg/L			0.0050	0.050	0.91	0.98	0.26	0.28	0.00095	0.0010	0.00051	0.00052
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.0073	0.0070	0.0019	0.0018	0.0000062	0.0000070	0.0000031	0.0000032
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.0073	0.0070	0.0019	0.0018	0.0000037	0.0000045	0.00000065	0.00000069
Calcium, total	mg/L			21	30	24	36	8.9	9.2	3.1	2.9	2.8	2.9
Calcium, dissolved	mg/L			22	32	24	36	8.5	8.8	2.5	2.4	2.2	2.3
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.014	0.013	0.0045	0.0047	0.0012	0.0012	0.0012	0.0012
Chromium, dissolved	mg/L			0.00010	0.00027	0.014	0.013	0.0038	0.0039	0.000023	0.000024	0.000016	0.000016
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.013	0.013	0.0040	0.0040	0.00065	0.00066	0.00065	0.00065
Cobalt, dissolved	mg/L			0.000050	0.00011	0.013	0.013	0.0036	0.0036	0.000012	0.000013	0.0000052	0.0000053
Copper, total	mg/L		0.0028	0.0015	0.0054	0.017	0.017	0.0056	0.0058	0.0014	0.0014	0.0014	0.0014
Copper, dissolved	mg/L			0.0014	0.0039	0.017	0.016	0.0047	0.0049	0.00012	0.00012	0.00011	0.00011
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.0	1.0	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.27	0.32	0.054	0.059	0.0017	0.0015	0.0015	0.0015
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0046	0.0044	0.0014	0.0014	0.00040	0.00040	0.00040	0.00040
Lead, dissolved	mg/L			0.000025	0.000050	0.0045	0.0043	0.0012	0.0011	0.0000046	0.0000049	0.0000025	0.0000026
Lithium, total	mg/L			0.00050	0.0011	0.58	0.64	0.16	0.18	0.00033	0.00040	0.000063	0.000067
Lithium, dissolved	mg/L			0.00050	0.0010	0.58	0.64	0.16	0.18	0.00033	0.00040	0.000063	0.000067

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	East Management Pond										
			Goathorn WQG	Goathorn Baseline		Operations				Closure			
						Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	93	89	25	25	0.81	0.79	0.74	0.75
Magnesium, dissolved	mg/L			3.8	7.4	93	89	25	25	0.49	0.47	0.42	0.43
Manganese, total	mg/L		0.12	0.0059	0.033	0.42	0.40	0.12	0.13	0.026	0.026	0.026	0.026
Manganese, dissolved	mg/L			0.0026	0.0084	0.41	0.40	0.11	0.11	0.00037	0.00040	0.00020	0.00021
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.017	0.017	0.0055	0.0059	0.00047	0.00044	0.00042	0.00042
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.017	0.017	0.0055	0.0058	0.00044	0.00041	0.00039	0.00039
Nickel, total	mg/L		0.080	0.00025	0.0011	0.029	0.028	0.0091	0.0093	0.0019	0.0019	0.0018	0.0018
Nickel, dissolved	mg/L			0.00025	0.00060	0.029	0.028	0.0079	0.0081	0.000040	0.000042	0.000025	0.000025
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.0097	0.0097	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00032	0.00075	0.000072	0.000083	0.000055	0.000051	0.000049	0.000049
Potassium, total	mg/L			0.39	1.0	61	66	17	19	0.13	0.13	0.096	0.097
Potassium, dissolved	mg/L			0.36	0.48	61	66	17	19	0.061	0.067	0.032	0.032
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.031	0.032	0.0090	0.0096	0.000027	0.000031	0.000012	0.000012
Selenium, dissolved	mg/L			0.000076	0.00012	0.031	0.032	0.0090	0.0096	0.000022	0.000026	0.0000063	0.0000065
Silica, dissolved	mg/L			5.6	6.2	30	33	8.9	9.8	0.69	0.64	0.62	0.62
Sodium, total	mg/L			2.3	4.8	1400	1500	390	430	1.0	1.2	0.40	0.41
Sodium, dissolved	mg/L			2.4	4.8	1400	1500	390	430	0.97	1.1	0.33	0.34
Strontium, total	mg/L		7.0	0.076	0.11	3.6	3.7	1.0	1.1	0.015	0.015	0.013	0.013
Strontium, dissolved	mg/L			0.077	0.12	3.6	3.7	1.0	1.1	0.012	0.011	0.0093	0.0094
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.0074	0.0070	0.0019	0.0018	0.0000040	0.0000049	0.0000067	0.0000071
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0074	0.0070	0.0019	0.0018	0.0000040	0.0000049	0.0000067	0.0000071
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.015	0.015	0.0041	0.0043	0.000026	0.000028	0.000019	0.000019
Uranium, dissolved	mg/L			0.000051	0.00014	0.015	0.015	0.0041	0.0043	0.000014	0.000015	0.0000067	0.0000068
Vanadium, total	mg/L			0.00025	0.0020	0.030	0.031	0.0093	0.0099	0.0015	0.0015	0.0015	0.0015
Vanadium, dissolved	mg/L			0.00025	0.00052	0.029	0.030	0.0083	0.0089	0.000040	0.000042	0.000025	0.000025
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.044	0.042	0.014	0.015	0.0038	0.0038	0.0038	0.0038
Zinc, dissolved	mg/L			0.0015	0.0021	0.043	0.041	0.012	0.012	0.00017	0.00017	0.00015	0.00015

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table G-4

Parameter	Units	East Management Pond Void Space and Seepage Water Quality										
		WQG in Four Creek	Four Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		118	163	42	42	17	16	11	11	8	8
Alkalinity, total	mg CaCO ₃ /L		130	190	1900	1900	1300	1200	770	780	240	240
Chloride	mg/L	150	0.25	0.50	49	49	32	32	20	20	6.1	6.2
Fluoride	mg/L	0.12	0.059	0.068	0.028	0.028	0.010	0.0099	0.0062	0.0063	0.0041	0.0041
Ammonia, total	mg-N/L	0.95	0.0025	0.0092	0.35	0.35	0.26	0.25	0.17	0.18	0.053	0.054
Nitrate	mg/L	3	0.013	0.058	2.8	2.8	2.0	2.0	1.4	1.4	0.42	0.43
Nitrite	mg/L	0.02	0.00050	0.0010	0.064	0.064	0.047	0.046	0.031	0.032	0.0097	0.0098
Sulfate	mg/L	309	1.9	28	1600	1600	1000	1000	640	650	200	200
Aluminum, total	mg/L	0.1	0.099	1.2	0.037	0.037	0.014	0.013	0.0090	0.0090	0.0065	0.0065
Aluminum, dissolved	mg/L	0.05	0.032	0.49	0.53	0.53	0.31	0.30	0.16	0.17	0.051	0.052
Antimony, total	mg/L		0.000050	0.00012	0.0070	0.0070	0.0046	0.0046	0.0029	0.0030	0.00090	0.00091
Antimony, dissolved	mg/L	0.009	0.000050	0.00010	0.000058	0.000057	0.000022	0.000021	0.000014	0.000014	0.000010	0.000010
Arsenic, total	mg/L	0.005	0.00074	0.0011	0.00023	0.00023	0.000088	0.000083	0.000058	0.000058	0.000043	0.000043
Arsenic, dissolved	mg/L		0.00064	0.00086	0.0062	0.0062	0.0042	0.0041	0.0026	0.0027	0.00083	0.00084
Barium, total	mg/L	1	0.071	0.13	0.032	0.031	0.012	0.011	0.0077	0.0078	0.0057	0.0057
Barium, dissolved	mg/L		0.075	0.13	0.10	0.10	0.065	0.063	0.040	0.040	0.015	0.015
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000030	0.000029	0.000011	0.000011	0.0000075	0.0000075	0.0000057	0.0000057
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000030	0.000029	0.000011	0.000011	0.0000075	0.0000075	0.0000057	0.0000057
Boron, total	mg/L	1.2	0.012	0.020	0.0069	0.0069	0.0026	0.0025	0.0015	0.0015	0.0010	0.0010
Boron, dissolved	mg/L		0.011	0.019	0.80	0.80	0.53	0.52	0.33	0.33	0.10	0.10
Cadmium, total	mg/L	0.00009	0.0000063	0.000019	0.0000054	0.0000053	0.0000020	0.0000019	0.0000013	0.0000013	0.00000094	0.00000094
Cadmium, dissolved	mg/L	0.00024	0.0000052	0.000012	0.0052	0.0052	0.0034	0.0034	0.0021	0.0022	0.00066	0.00066
Calcium, total	mg/L		24	34	13	13	5.1	4.8	3.4	3.4	2.6	2.6
Calcium, dissolved	mg/L		23	36	21	21	15	14	9.3	9.5	4.4	4.4
Chromium, total	mg/L	0.0089	0.00026	0.0016	0.00016	0.00016	0.000060	0.000057	0.000039	0.000039	0.000029	0.000029
Chromium, dissolved	mg/L		0.00015	0.00079	0.011	0.011	0.0074	0.0073	0.0046	0.0047	0.0014	0.0014
Cobalt, total	mg/L	0.004	0.000050	0.00047	0.000037	0.000037	0.000014	0.000013	0.0000086	0.0000087	0.0000060	0.0000060
Cobalt, dissolved	mg/L		0.000050	0.00015	0.010	0.010	0.0067	0.0066	0.0042	0.0043	0.0013	0.0013
Copper, total	mg/L	0.0047	0.0014	0.0044	0.00070	0.00069	0.00027	0.00025	0.00018	0.00018	0.00014	0.00014
Copper, dissolved	mg/L		0.0014	0.0034	0.014	0.014	0.0093	0.0091	0.0057	0.0058	0.0018	0.0019
Iron, total	mg/L	0.3	0.095	1.1	0.036	0.036	0.014	0.013	0.0084	0.0085	0.0058	0.0058
Iron, dissolved	mg/L	0.30	0.015	0.41	0.25	0.25	0.14	0.14	0.076	0.078	0.024	0.025
Lead, total	mg/L	0.0050	0.000025	0.00028	0.000028	0.000029	0.000010	0.0000099	0.0000057	0.0000058	0.0000035	0.0000035
Lead, dissolved	mg/L		0.000025	0.000091	0.0033	0.0033	0.0022	0.0022	0.0014	0.0014	0.00042	0.00043
Lithium, total	mg/L		0.0015	0.0019	0.00028	0.00027	0.00011	0.00010	0.000072	0.000072	0.000056	0.000056
Lithium, dissolved	mg/L		0.0014	0.0019	0.51	0.51	0.34	0.33	0.21	0.21	0.064	0.064

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	East Management Pond Void Space and Seepage Water Quality										
		WQG in Four Creek	Four Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		14	19	2.4	2.4	0.94	0.88	0.62	0.63	0.47	0.48
Magnesium, dissolved	mg/L		13	20	72	72	47	47	30	30	9.4	9.5
Manganese, total	mg/L	0.12	0.0025	0.024	0.0034	0.0034	0.0013	0.0012	0.00077	0.00078	0.00052	0.00052
Manganese, dissolved	mg/L		0.00067	0.0074	0.33	0.33	0.21	0.21	0.13	0.13	0.041	0.041
Mercury, total	mg/L	0.00001	0.0000025	0.000013	0.0000015	0.0000015	0.00000059	0.00000056	0.00000038	0.00000039	0.00000029	0.00000029
Mercury, dissolved	mg/L		0.0000025	0.0000093	0.0048	0.0048	0.0031	0.0031	0.0020	0.0020	0.00060	0.00061
Molybdenum, total	mg-N/L	0.073	0.00023	0.00038	0.00017	0.00017	0.000064	0.000061	0.000042	0.000042	0.000031	0.000031
Molybdenum, dissolved	mg-N/L		0.00019	0.00036	0.015	0.015	0.010	0.010	0.0065	0.0066	0.0023	0.0023
Nickel, total	mg/L	0.080	0.00025	0.0018	0.00016	0.00016	0.000061	0.000057	0.000039	0.000039	0.000029	0.000029
Nickel, dissolved	mg/L		0.00025	0.0011	0.023	0.023	0.015	0.015	0.0096	0.0098	0.0030	0.0030
Phosphorus, total	mg/L		0.0041	0.044	0.0030	0.0030	0.0011	0.0011	0.00069	0.00070	0.00048	0.00048
Orthophosphate, dissolved	mg/L		0.00050	0.0012	0.00028	0.00027	0.00011	0.00010	0.000072	0.000072	0.000056	0.000056
Potassium, total	mg/L		0.36	0.77	0.24	0.24	0.090	0.085	0.058	0.058	0.042	0.042
Potassium, dissolved	mg/L		0.35	0.84	52	52	34	34	21	22	6.6	6.6
Selenium, total	mg/L	0.002	0.000025	0.000095	0.000040	0.000039	0.000015	0.000014	0.000010	0.000010	0.0000077	0.0000077
Selenium, dissolved	mg/L		0.000025	0.00011	0.027	0.027	0.018	0.018	0.011	0.011	0.0034	0.0035
Silica, dissolved	mg/L				26	26	18	17	11	11	3.8	3.8
Sodium, total	mg/L		7.0	13	5.4	5.5	1.9	1.8	0.97	0.98	0.49	0.50
Sodium, dissolved	mg/L		7.4	13	1200	1200	790	780	490	500	150	150
Strontium, total	mg/L	7.0	0.17	0.24	0.050	0.049	0.019	0.018	0.013	0.013	0.010	0.010
Strontium, dissolved	mg/L		0.16	0.24	3.1	3.1	2.1	2.1	1.3	1.3	0.40	0.41
Silver, total	mg/L	0.0015	0.0000050	0.000022	0.0000031	0.0000031	0.0000012	0.0000011	0.00000078	0.00000078	0.00000058	0.00000058
Silver, dissolved	mg/L		0.0000050	0.000012	0.0047	0.0047	0.0031	0.0030	0.0019	0.0020	0.00060	0.00060
Tin, total	mg/L		0.000050	0.00010	0.000037	0.000037	0.000014	0.000013	0.0000086	0.0000087	0.0000060	0.0000060
Tin, dissolved	mg/L		0.000050	0.00010	0.036	0.036	0.024	0.024	0.015	0.015	0.0046	0.0046
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000028	0.0000027	0.0000011	0.0000010	0.00000072	0.00000072	0.00000056	0.00000056
Thallium, dissolved	mg/L		0.0000050	0.000010	0.0052	0.0052	0.0035	0.0034	0.0022	0.0022	0.00067	0.00068
Uranium, total	mg/L	0.0085	0.000078	0.00025	0.000056	0.000056	0.000021	0.000020	0.000013	0.000013	0.0000084	0.0000084
Uranium, dissolved	mg/L		0.000075	0.00025	0.012	0.012	0.0081	0.0080	0.0050	0.0051	0.0015	0.0016
Vanadium, total	mg/L		0.00061	0.0027	0.00037	0.00037	0.00014	0.00014	0.000094	0.000095	0.000071	0.000071
Vanadium, dissolved	mg/L		0.00025	0.0013	0.025	0.025	0.017	0.017	0.010	0.011	0.0032	0.0032
Zinc, total	mg/L	0.029	0.0015	0.0059	0.00094	0.00093	0.00036	0.00034	0.00023	0.00024	0.00017	0.00017
Zinc, dissolved	mg/L		0.0015	0.0025	0.035	0.035	0.023	0.023	0.014	0.015	0.0045	0.0045

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Table G-5

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	North Management Pond									
				Baseline in Goathorn Creek		Operations				Closure			
				P50	P95	Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	592	540	144	143	122	144	62	72
Alkalinity, total	mg CaCO ₃ /L			52	87	2500	2500	640	680	1300	1500	550	630
Chloride	mg/L		150	0.25	0.50	71	71	17	19	35	42	14	17
Fluoride	mg/L		0.12	0.032	0.041	0.046	0.038	0.0054	0.0055	0.090	0.098	0.075	0.085
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.65	0.65	0.20	0.21	0.10	0.16	0.034	0.039
Nitrate	mg/L	18.8	3	0.041	0.076	5.2	5.1	1.6	1.7	0.65	1.1	0.032	0.046
Nitrite	mg/L		0.02	0.00050	0.0020	0.12	0.12	0.036	0.039	0.015	0.026	0.0013	0.0017
Sulfate	mg/L		218	24	37	2100	2100	540	570	850	1000	330	390
Aluminum, total	mg/L		0.1	0.092	0.75	0.66	0.73	0.39	0.40	0.40	0.43	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.63	0.70	0.077	0.091	0.033	0.059	0.0048	0.0058
Antimony, total	mg/L			0.000073	0.00014	0.011	0.011	0.0030	0.0030	0.0021	0.0026	0.00078	0.00090
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.011	0.011	0.0030	0.0030	0.0021	0.0026	0.00078	0.00090
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.010	0.0097	0.0032	0.0031	0.0018	0.0022	0.0010	0.0011
Arsenic, dissolved	mg/L			0.00017	0.00035	0.010	0.0096	0.0027	0.0027	0.0013	0.0017	0.00051	0.00059
Barium, total	mg/L		1	0.058	0.072	0.16	0.14	0.046	0.048	0.042	0.055	0.035	0.039
Barium, dissolved	mg/L			0.059	0.073	0.15	0.13	0.040	0.043	0.036	0.048	0.029	0.032
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000063	0.000046	0.0000070	0.0000069	0.000027	0.000028	0.000023	0.000026
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000063	0.000046	0.0000070	0.0000069	0.000027	0.000028	0.000023	0.000026
Boron, total	mg/L		1.2	0.0050	0.050	1.1	1.1	0.28	0.30	0.50	0.60	0.21	0.24
Boron, dissolved	mg/L			0.0050	0.050	1.1	1.1	0.28	0.30	0.50	0.60	0.21	0.24
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.0091	0.0084	0.0021	0.0021	0.00039	0.00060	0.000094	0.00011
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.0091	0.0084	0.0021	0.0021	0.00039	0.00060	0.000091	0.00011
Calcium, total	mg/L			21	30	39	35	9.7	9.4	9.3	9.7	8.3	9.1
Calcium, dissolved	mg/L			22	32	39	35	9.2	8.9	8.8	9.1	7.7	8.5
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.017	0.017	0.0052	0.0053	0.0062	0.0072	0.0032	0.0035
Chromium, dissolved	mg/L			0.00010	0.00027	0.017	0.016	0.0042	0.0043	0.0050	0.0060	0.0020	0.0024
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.016	0.015	0.0047	0.0047	0.0026	0.0034	0.0013	0.0014
Cobalt, dissolved	mg/L			0.000050	0.00011	0.016	0.015	0.0042	0.0041	0.0020	0.0027	0.00064	0.00075
Copper, total	mg/L		0.0028	0.0015	0.0054	0.021	0.021	0.0064	0.0065	0.0074	0.0087	0.0039	0.0043
Copper, dissolved	mg/L			0.0014	0.0039	0.020	0.020	0.0052	0.0054	0.0061	0.0073	0.0026	0.0030
Iron, total	mg/L		0.3	0.085	0.78	1.6	1.6	1.3	1.3	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.31	0.37	0.041	0.048	0.021	0.033	0.0095	0.011
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0056	0.0052	0.0017	0.0017	0.0010	0.0012	0.00067	0.00072
Lead, dissolved	mg/L			0.000025	0.000050	0.0055	0.0051	0.0013	0.0013	0.00066	0.00083	0.00028	0.00032
Lithium, total	mg/L			0.00050	0.0011	0.72	0.72	0.18	0.19	0.34	0.40	0.13	0.16
Lithium, dissolved	mg/L			0.00050	0.0010	0.72	0.72	0.18	0.19	0.34	0.40	0.13	0.16

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	End-of-Pipe Limit	North Management Pond										
			Goathorn WQG	Baseline in Goathorn Creek		Operations				Closure			
						Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	120	110	29	29	24	29	10	12
Magnesium, dissolved	mg/L			3.8	7.4	120	110	29	28	23	28	9.8	11
Manganese, total	mg/L		0.12	0.0059	0.033	0.44	0.42	0.13	0.13	0.10	0.12	0.054	0.059
Manganese, dissolved	mg/L			0.0026	0.0084	0.43	0.42	0.11	0.11	0.076	0.097	0.029	0.034
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.024	0.022	0.0064	0.0066	0.0083	0.010	0.0036	0.0041
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.024	0.022	0.0063	0.0065	0.0083	0.010	0.0036	0.0041
Nickel, total	mg/L		0.080	0.00025	0.0011	0.033	0.032	0.010	0.010	0.0092	0.011	0.0045	0.0050
Nickel, dissolved	mg/L			0.00025	0.00060	0.033	0.031	0.0087	0.0088	0.0073	0.0093	0.0027	0.0032
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.013	0.013	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00062	0.00044	0.000068	0.000067	0.00011	0.00011	0.000094	0.00010
Potassium, total	mg/L			0.39	1.0	76	78	19	20	38	45	15	18
Potassium, dissolved	mg/L			0.36	0.48	76	78	19	20	38	45	15	18
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.040	0.039	0.010	0.011	0.016	0.019	0.0061	0.0071
Selenium, dissolved	mg/L			0.000076	0.00012	0.040	0.039	0.010	0.011	0.016	0.019	0.0061	0.0071
Silica, dissolved	mg/L			5.6	6.2	38	39	9.8	10	19	23	8.4	9.7
Sodium, total	mg/L			2.3	4.8	1800	1800	430	460	940	1100	390	460
Sodium, dissolved	mg/L			2.4	4.8	1800	1800	430	460	940	1100	390	460
Strontium, total	mg/L		7.0	0.076	0.11	4.4	4.2	1.1	1.2	1.6	2.0	0.63	0.73
Strontium, dissolved	mg/L			0.077	0.12	4.4	4.2	1.1	1.2	1.6	2.0	0.63	0.73
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.0092	0.0085	0.0023	0.0022	0.00046	0.00072	0.00011	0.00014
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0092	0.0085	0.0023	0.0022	0.00046	0.00072	0.00011	0.00014
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.018	0.018	0.0046	0.0047	0.0057	0.0069	0.0023	0.0027
Uranium, dissolved	mg/L			0.000051	0.00014	0.018	0.018	0.0046	0.0047	0.0057	0.0069	0.0023	0.0027
Vanadium, total	mg/L			0.00025	0.0020	0.038	0.038	0.010	0.011	0.017	0.020	0.0076	0.0086
Vanadium, dissolved	mg/L			0.00025	0.00052	0.036	0.037	0.0092	0.0097	0.015	0.018	0.0061	0.0071
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.051	0.049	0.016	0.016	0.015	0.018	0.0085	0.0093
Zinc, dissolved	mg/L			0.0015	0.0021	0.050	0.047	0.013	0.013	0.012	0.014	0.0049	0.0057

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table G-6

Parameter	Units	North Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		72	103	78	75	25	26	29	29	25	25
Alkalinity, total	mg CaCO ₃ /L		83	110	1700	1700	1000	1000	770	770	590	590
Chloride	mg/L	150	0.25	0.50	44	45	27	27	21	21	16	16
Fluoride	mg/L	0.12	0.031	0.045	0.039	0.038	0.014	0.014	0.082	0.082	0.069	0.069
Ammonia, total	mg-N/L	1.2	0.0025	0.0074	0.34	0.34	0.23	0.23	0.13	0.13	0.051	0.051
Nitrate	mg/L	3	0.0050	0.060	2.6	2.6	1.8	1.8	0.99	0.99	0.19	0.19
Nitrite	mg/L	0.02	0.00050	0.0020	0.061	0.061	0.042	0.042	0.023	0.023	0.0049	0.0050
Sulfate	mg/L	218	2.6	7.4	1500	1500	890	890	540	540	380	380
Aluminum, total	mg/L	0.1	0.056	1.8	0.061	0.058	0.021	0.021	0.058	0.058	0.049	0.049
Aluminum, dissolved	mg/L	0.05	0.016	0.14	0.54	0.54	0.24	0.25	0.065	0.066	0.015	0.015
Antimony, total	mg/L		0.00013	0.00024	0.0079	0.0079	0.0048	0.0048	0.0019	0.0019	0.0010	0.0010
Antimony, dissolved	mg/L	0.009	0.00011	0.00023	0.000094	0.000091	0.000032	0.000033	0.000093	0.000093	0.000079	0.000079
Arsenic, total	mg/L	0.005	0.00048	0.00090	0.00040	0.00038	0.00013	0.00013	0.00023	0.00023	0.00020	0.00020
Arsenic, dissolved	mg/L		0.00041	0.00054	0.0073	0.0073	0.0044	0.0044	0.0016	0.0016	0.00071	0.00071
Barium, total	mg/L	1	0.034	0.047	0.053	0.051	0.018	0.018	0.046	0.046	0.039	0.039
Barium, dissolved	mg/L		0.033	0.043	0.10	0.10	0.067	0.068	0.032	0.032	0.031	0.031
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000052	0.000050	0.000017	0.000018	0.000025	0.000025	0.000022	0.000022
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000052	0.000050	0.000017	0.000018	0.000025	0.000025	0.000022	0.000022
Boron, total	mg/L	1.2	0.015	0.050	0.0096	0.0092	0.0035	0.0035	0.021	0.021	0.018	0.018
Boron, dissolved	mg/L		0.013	0.050	0.74	0.74	0.45	0.45	0.31	0.31	0.23	0.23
Cadmium, total	mg/L	0.00009	0.0000050	0.000021	0.0000087	0.0000084	0.0000030	0.0000030	0.0000091	0.0000092	0.0000077	0.0000077
Cadmium, dissolved	mg/L	0.00017	0.0000025	0.0000058	0.0062	0.0062	0.0036	0.0036	0.0010	0.0011	0.00025	0.00025
Calcium, total	mg/L		22	31	24	23	7.8	7.9	8.5	8.5	7.4	7.4
Calcium, dissolved	mg/L		21	31	33	33	18	18	8.3	8.3	7.8	7.8
Chromium, total	mg/L	0.0089	0.00032	0.0018	0.00027	0.00026	0.000089	0.000091	0.00020	0.00020	0.00017	0.00017
Chromium, dissolved	mg/L		0.00025	0.00041	0.012	0.012	0.0069	0.0070	0.0035	0.0035	0.0023	0.0024
Cobalt, total	mg/L	0.004	0.000050	0.00099	0.000056	0.000054	0.000020	0.000020	0.000082	0.000082	0.000069	0.000069
Cobalt, dissolved	mg/L		0.000050	0.00011	0.011	0.011	0.0068	0.0069	0.0024	0.0024	0.00097	0.00098
Copper, total	mg/L	0.003	0.0011	0.0050	0.0013	0.0012	0.00041	0.00042	0.00052	0.00052	0.00045	0.00045
Copper, dissolved	mg/L		0.0011	0.0030	0.015	0.015	0.0087	0.0088	0.0043	0.0043	0.0029	0.0029
Iron, total	mg/L	0.3	0.048	1.2	0.055	0.052	0.019	0.019	0.086	0.086	0.073	0.073
Iron, dissolved	mg/L	0.30	0.015	0.14	0.27	0.27	0.12	0.12	0.034	0.034	0.014	0.014
Lead, total	mg/L	0.0050	0.000025	0.00039	0.000033	0.000032	0.000013	0.000013	0.00012	0.00012	0.000097	0.000097
Lead, dissolved	mg/L		0.000025	0.000050	0.0038	0.0038	0.0022	0.0023	0.00076	0.00076	0.00037	0.00038
Lithium, total	mg/L		0.00050	0.0012	0.00051	0.00049	0.00017	0.00017	0.00010	0.00010	0.000092	0.000092
Lithium, dissolved	mg/L		0.00050	0.0010	0.47	0.47	0.28	0.29	0.21	0.21	0.15	0.15

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsx

Parameter	Units	North Management Pond Void Space and Seepage Water Quality										
		WQG in Tenas Creek	Tenas Creek Baseline Water Quality		Operations				Closure			
					Alternative Case 2: High Source Terms				Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		4.2	6.3	4.4	4.2	1.4	1.5	1.8	1.8	1.5	1.5
Magnesium, dissolved	mg/L		4.1	6.3	80	80	47	48	19	19	12	12
Manganese, total	mg/L	0.12	0.0050	0.058	0.0049	0.0047	0.0018	0.0018	0.0096	0.0096	0.0081	0.0080
Manganese, dissolved	mg/L		0.0020	0.0062	0.32	0.32	0.19	0.19	0.070	0.070	0.037	0.037
Mercury, total	mg/L	0.00001	0.0000025	0.0000089	0.0000026	0.0000025	0.00000088	0.00000090	0.0000017	0.0000017	0.0000015	0.0000015
Mercury, dissolved	mg/L		0.0000025	0.0000055	0.0058	0.0058	0.0034	0.0034	0.00096	0.00098	0.00021	0.00021
Molybdenum, total	mg-N/L	0.073	0.00012	0.00019	0.00029	0.00028	0.000096	0.000098	0.00021	0.00021	0.00018	0.00017
Molybdenum, dissolved	mg-N/L		0.00010	0.00019	0.017	0.017	0.010	0.010	0.0057	0.0057	0.0040	0.0041
Nickel, total	mg/L	0.080	0.00025	0.0017	0.00027	0.00026	0.000090	0.000091	0.00022	0.00022	0.00018	0.00018
Nickel, dissolved	mg/L		0.00025	0.00054	0.024	0.024	0.014	0.014	0.0061	0.0061	0.0034	0.0034
Phosphorus, total	mg/L		0.0042	0.046	0.0045	0.0043	0.0016	0.0016	0.0068	0.0068	0.0058	0.0057
Orthophosphate, dissolved	mg/L		0.0010	0.0040	0.00051	0.00049	0.00017	0.00017	0.00010	0.00010	0.000092	0.000092
Potassium, total	mg/L		0.23	1.0	0.39	0.37	0.13	0.13	0.37	0.37	0.32	0.32
Potassium, dissolved	mg/L		0.19	0.30	48	48	29	29	23	23	17	17
Selenium, total	mg/L	0.002	0.000051	0.00020	0.000071	0.000068	0.000023	0.000024	0.000032	0.000032	0.000028	0.000028
Selenium, dissolved	mg/L		0.000040	0.000073	0.026	0.027	0.016	0.016	0.010	0.010	0.0069	0.0069
Silica, dissolved	mg/L		7.0	8.0	26	26	16	16	12	12	9.1	9.1
Sodium, total	mg/L		3.5	4.8	5.1	5.1	2.2	2.2	29	29	24	24
Sodium, dissolved	mg/L		3.5	4.8	1100	1100	660	660	550	550	420	420
Strontium, total	mg/L	7.0	0.11	0.13	0.092	0.089	0.030	0.030	0.018	0.018	0.017	0.017
Strontium, dissolved	mg/L		0.10	0.14	3.0	3.0	1.8	1.8	1.1	1.1	0.72	0.72
Silver, total	mg/L	0.00005	0.0000050	0.000020	0.0000053	0.0000051	0.0000018	0.0000018	0.0000040	0.0000040	0.0000034	0.0000034
Silver, dissolved	mg/L		0.0000050	0.000010	0.0057	0.0057	0.0033	0.0033	0.00093	0.00095	0.00019	0.00020
Tin, total	mg/L		0.000050	0.00010	0.000057	0.000054	0.000020	0.000020	0.000085	0.000085	0.000072	0.000072
Tin, dissolved	mg/L		0.000050	0.00010	0.035	0.035	0.021	0.021	0.013	0.013	0.0088	0.0088
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000051	0.0000049	0.0000017	0.0000017	0.0000010	0.0000010	0.00000092	0.00000092
Thallium, dissolved	mg/L		0.0000050	0.000010	0.0064	0.0064	0.0038	0.0038	0.0011	0.0012	0.00029	0.00029
Uranium, total	mg/L	0.0085	0.00011	0.00025	0.000079	0.000076	0.000029	0.000029	0.00016	0.00016	0.00014	0.00014
Uranium, dissolved	mg/L		0.00011	0.00024	0.013	0.013	0.0075	0.0075	0.0039	0.0039	0.0026	0.0026
Vanadium, total	mg/L		0.00094	0.0037	0.00065	0.00063	0.00022	0.00022	0.00038	0.00038	0.00033	0.00033
Vanadium, dissolved	mg/L		0.00072	0.0010	0.024	0.024	0.015	0.015	0.0096	0.0096	0.0068	0.0068
Zinc, total	mg/L	0.0075	0.0015	0.0060	0.0016	0.0015	0.00054	0.00054	0.0012	0.0012	0.0010	0.0010
Zinc, dissolved	mg/L		0.0015	0.0015	0.037	0.037	0.022	0.022	0.0092	0.0092	0.0059	0.0059

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Table G-7

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Tenas Control Pond									
				Baseline in Goathorn Creek		Operations							
						Project Case				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	154	154	103	110	468	428	201	193
Alkalinity, total	mg CaCO ₃ /L			52	87	1100	1200	650	700	2200	2300	1300	1300
Chloride	mg/L		150	0.25	0.50	30	31	16	17	60	63	34	35
Fluoride	mg/L		0.12	0.032	0.041	0.076	0.16	0.049	0.085	0.076	0.16	0.049	0.085
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.91	2.7	0.31	0.49	0.91	2.7	0.31	0.49
Nitrate	mg/L	18.8	3	0.041	0.076	7.0	21	2.4	3.7	7.0	21	2.4	3.7
Nitrite	mg/L		0.02	0.00050	0.0020	0.16	0.48	0.055	0.085	0.16	0.48	0.055	0.085
Sulfate	mg/L		218	24	37	730	770	410	420	1800	1700	930	910
Aluminum, total	mg/L		0.1	0.092	0.75	0.50	0.46	0.41	0.40	0.63	0.55	0.43	0.42
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.13	0.095	0.036	0.029	0.26	0.18	0.062	0.046
Antimony, total	mg/L			0.000073	0.00014	0.0016	0.0016	0.00094	0.00098	0.0093	0.0083	0.0031	0.0028
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0016	0.0016	0.00094	0.00098	0.0093	0.0083	0.0031	0.0028
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0017	0.0016	0.0013	0.0013	0.0091	0.0081	0.0031	0.0027
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0012	0.0011	0.00075	0.00078	0.0086	0.0076	0.0026	0.0022
Barium, total	mg/L		1	0.058	0.072	0.072	0.079	0.055	0.063	0.099	0.089	0.061	0.067
Barium, dissolved	mg/L			0.059	0.073	0.065	0.072	0.048	0.056	0.092	0.082	0.055	0.061
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000058	0.000061	0.000038	0.000046	0.000058	0.000061	0.000038	0.000046
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000058	0.000061	0.000038	0.000046	0.000058	0.000061	0.000038	0.000046
Boron, total	mg/L		1.2	0.0050	0.050	0.43	0.45	0.24	0.26	0.92	0.92	0.51	0.52
Boron, dissolved	mg/L			0.0050	0.050	0.43	0.45	0.24	0.26	0.92	0.91	0.51	0.52
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00057	0.00051	0.00018	0.00015	0.0074	0.0064	0.0017	0.0012
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00057	0.00051	0.00018	0.00015	0.0074	0.0064	0.0017	0.0012
Calcium, total	mg/L			21	30	27	27	20	21	29	28	21	23
Calcium, dissolved	mg/L			22	32	26	26	19	21	28	27	21	22
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0054	0.0056	0.0036	0.0037	0.015	0.014	0.0073	0.0070
Chromium, dissolved	mg/L			0.00010	0.00027	0.0042	0.0044	0.0024	0.0025	0.014	0.013	0.0061	0.0059
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0027	0.0025	0.0016	0.0016	0.014	0.012	0.0045	0.0038
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0021	0.0019	0.00100	0.00095	0.013	0.012	0.0039	0.0032
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0068	0.0070	0.0048	0.0049	0.019	0.017	0.0092	0.0089
Copper, dissolved	mg/L			0.0014	0.0039	0.0055	0.0057	0.0035	0.0036	0.017	0.016	0.0079	0.0076
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.065	0.056	0.029	0.027	0.12	0.10	0.044	0.038
Lead, total	mg/L		0.0050	0.000025	0.00023	0.0012	0.0011	0.00076	0.00077	0.0050	0.0044	0.0017	0.0015
Lead, dissolved	mg/L			0.000025	0.000050	0.00079	0.00073	0.00036	0.00038	0.0046	0.0040	0.0013	0.0011
Lithium, total	mg/L			0.00050	0.0011	0.29	0.30	0.16	0.16	0.58	0.61	0.34	0.34
Lithium, dissolved	mg/L			0.00050	0.0010	0.29	0.30	0.16	0.16	0.58	0.61	0.34	0.34

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Tenas Control Pond									
				Baseline in Goathorn Creek		Operations							
						Project Case				Alternative Case 2: High Source Terms			
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	21	21	13	14	96	87	36	33
Magnesium, dissolved	mg/L			3.8	7.4	20	21	13	14	96	87	36	33
Manganese, total	mg/L		0.12	0.0059	0.033	0.12	0.13	0.073	0.071	0.42	0.38	0.16	0.14
Manganese, dissolved	mg/L			0.0026	0.0084	0.096	0.10	0.048	0.045	0.40	0.35	0.14	0.12
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0084	0.0086	0.0060	0.0063	0.018	0.017	0.011	0.011
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0084	0.0085	0.0060	0.0062	0.018	0.017	0.011	0.011
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0087	0.0084	0.0057	0.0056	0.031	0.028	0.013	0.011
Nickel, dissolved	mg/L			0.00025	0.00060	0.0069	0.0066	0.0039	0.0038	0.029	0.026	0.011	0.0096
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00056	0.00056	0.00032	0.00034	0.00056	0.00056	0.00032	0.00034
Potassium, total	mg/L			0.39	1.0	32	33	18	19	64	68	37	38
Potassium, dissolved	mg/L			0.36	0.48	32	33	18	18	64	68	37	38
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.013	0.014	0.0072	0.0075	0.032	0.030	0.017	0.016
Selenium, dissolved	mg/L			0.000076	0.00012	0.013	0.014	0.0072	0.0075	0.032	0.030	0.017	0.016
Silica, dissolved	mg/L			5.6	6.2	19	19	12	13	34	36	22	22
Sodium, total	mg/L			2.3	4.8	790	830	440	470	1600	1700	890	930
Sodium, dissolved	mg/L			2.4	4.8	790	830	440	470	1600	1700	890	930
Strontium, total	mg/L		7.0	0.076	0.11	1.4	1.5	0.83	0.85	3.6	3.4	1.8	1.8
Strontium, dissolved	mg/L			0.077	0.12	1.4	1.5	0.83	0.84	3.6	3.4	1.8	1.8
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.00058	0.00052	0.00019	0.00018	0.0075	0.0065	0.0017	0.0013
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00058	0.00052	0.00019	0.00018	0.0075	0.0065	0.0017	0.0013
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0048	0.0050	0.0027	0.0028	0.015	0.014	0.0068	0.0065
Uranium, dissolved	mg/L			0.000051	0.00014	0.0048	0.0050	0.0027	0.0028	0.015	0.014	0.0068	0.0065
Vanadium, total	mg/L			0.00025	0.0020	0.014	0.015	0.0086	0.0090	0.031	0.030	0.017	0.017
Vanadium, dissolved	mg/L			0.00025	0.00052	0.013	0.014	0.0072	0.0075	0.030	0.028	0.016	0.016
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.014	0.015	0.010	0.011	0.047	0.043	0.020	0.019
Zinc, dissolved	mg/L			0.0015	0.0021	0.011	0.011	0.0067	0.0070	0.043	0.039	0.017	0.016

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table G-8

Parameter	Units	End-of-Pipe Limit	Rail Infrastructure Sedimentation Pond						
			Bulkley WQG	Baseline in Bulkley River		Operations			
				P50	P95	Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			28	38	2189	1957	2048	1866
Alkalinity, total	mg CaCO ₃ /L			27	35	34	30	32	29
Chloride	mg/L		150	0.25	0.86	2.7	2.4	2.5	2.3
Fluoride	mg/L		0.12	0.023	0.035	0	0	0	0
Ammonia, total	mg-N/L		1.7	0.0050	0.017	0	0	0	0
Nitrate	mg/L	18.8	3	0.013	0.041	0	0	0	0
Nitrite	mg/L		0.02	0.0020	0.0050	0	0	0	0
Sulfate	mg/L		128	4.0	5.0	2300	2100	2200	2000
Aluminum, total	mg/L		0.1	0.13	1.3	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.017	0.13	0.0029	0.0026	0.0027	0.0025
Antimony, total	mg/L			0.000050	0.00011	0.00011	0.000095	0.00010	0.000093
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00011	0.000097	0.00010	0.000095
Arsenic, total	mg/L		0.005	0.00024	0.00070	0.00062	0.00060	0.00061	0.00060
Arsenic, dissolved	mg/L			0.00016	0.00033	0.00011	0.000095	0.00010	0.000093
Barium, total	mg/L		1	0.026	0.038	0.010	0.0097	0.0098	0.0096
Barium, dissolved	mg/L			0.023	0.032	0.0034	0.0031	0.0032	0.0030
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0	0	0	0
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000050	0.00010	0.000050	0.00010
Boron, total	mg/L		1.2	0.0050	0.010	0.27	0.24	0.25	0.23
Boron, dissolved	mg/L			0.0050	0.010	0.27	0.24	0.25	0.23
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	0.0031	0.0027	0.0029	0.0026
Cadmium, dissolved	mg/L		0.00008	0.0000025	0.0000065	0.0030	0.0027	0.0029	0.0026
Calcium, total	mg/L			8.8	11	580	520	540	500
Calcium, dissolved	mg/L			8.8	12	580	520	540	500
Chromium, total	mg/L		0.0089	0.00025	0.0012	0.0017	0.0017	0.0017	0.0016
Chromium, dissolved	mg/L			0.000050	0.00023	0.00053	0.00048	0.00050	0.00046
Cobalt, total	mg/L		0.004	0.000050	0.00068	0.030	0.027	0.028	0.026
Cobalt, dissolved	mg/L			0.000050	0.00010	0.029	0.026	0.027	0.025
Copper, total	mg/L		0.002	0.00090	0.0029	0.010	0.0092	0.0096	0.0090
Copper, dissolved	mg/L			0.00067	0.0020	0.0089	0.0079	0.0083	0.0077
Iron, total	mg/L		0.3	0.18	1.3	1.6	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.024	0.16	0.099	0.089	0.093	0.086
Lead, total	mg/L		0.004	0.000095	0.00051	0.0019	0.0018	0.0018	0.0017
Lead, dissolved	mg/L			0.000025	0.000050	0.0016	0.0014	0.0015	0.0013
Lithium, total	mg/L			0.00050	0.0010	0.075	0.067	0.071	0.065
Lithium, dissolved	mg/L			0.00050	0.0010	0.075	0.067	0.071	0.065

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	End-of-Pipe Limit	Rail Infrastructure Sedimentation Pond						
			Bulkley WQG	Baseline in Bulkley River		Operations			
				P50	P95	Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			1.4	2.5	180	160	170	150
Magnesium, dissolved	mg/L			1.3	2.7	180	160	170	150
Manganese, total	mg/L		0.12	0.016	0.059	1.8	1.6	1.6	1.5
Manganese, dissolved	mg/L			0.0052	0.020	1.7	1.5	1.6	1.5
Mercury, total	mg/L		0.00002	0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00037	0.00055	0.0052	0.0047	0.0049	0.0045
Molybdenum, dissolved	mg-N/L			0.00037	0.00045	0.0052	0.0046	0.0049	0.0045
Nickel, total	mg/L		0.025	0.00025	0.0014	0.071	0.064	0.067	0.062
Nickel, dissolved	mg/L			0.00025	0.0013	0.069	0.062	0.065	0.060
Phosphorus, total	mg/L			0.0057	0.043	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.0013	0.0040	0	0	0	0
Potassium, total	mg/L			0.33	0.68	5.1	4.6	4.8	4.5
Potassium, dissolved	mg/L			0.32	0.52	5.1	4.5	4.7	4.4
Selenium, total	mg/L	0.050	0.002	0.000025	0.00020	0.011	0.0099	0.010	0.0096
Selenium, dissolved	mg/L			0.000025	0.000050	0.011	0.0099	0.010	0.0096
Silica, dissolved	mg/L					5.4	4.8	5.0	4.7
Sodium, total	mg/L			1.0	2.5	2.3	2.1	2.1	2.0
Sodium, dissolved	mg/L			1.0	2.5	2.2	2.0	2.1	1.9
Strontium, total	mg/L		7.0	0.040	0.061	2.2	1.9	2.0	1.9
Strontium, dissolved	mg/L			0.040	0.055	2.2	1.9	2.0	1.9
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000014	0.0037	0.0033	0.0034	0.0032
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0037	0.0033	0.0034	0.0032
Uranium, total	mg/L		0.0085	0.000036	0.000094	0.00064	0.00058	0.00060	0.00056
Uranium, dissolved	mg/L			0.000028	0.000052	0.00063	0.00056	0.00059	0.00055
Vanadium, total	mg/L			0.00057	0.0050	0.0025	0.0024	0.0024	0.0024
Vanadium, dissolved	mg/L			0.00025	0.00060	0.0011	0.00095	0.0010	0.00093
Zinc, total	mg/L		0.0075	0.0015	0.0055	0.14	0.12	0.13	0.12
Zinc, dissolved	mg/L			0.0013	0.0045	0.13	0.12	0.13	0.12

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table G-9

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Pit Lake					
				Goathorn Baseline		Closure			
				P50	P95	Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L			68	102	118	118	40	40
Alkalinity, total	mg CaCO ₃ /L			52	87	1500	1500	300	290
Chloride	mg/L		150	0.25	0.50	42	42	8.2	7.9
Fluoride	mg/L		0.12	0.032	0.041	0.0081	0.0081	0.0076	0.0076
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.0014	0.0014	0.00078	0.00078
Nitrate	mg/L	18.8	3	0.041	0.076	0.013	0.013	0.0079	0.0078
Nitrite	mg/L		0.02	0.00050	0.0020	0.00027	0.00027	0.00015	0.00015
Sulfate	mg/L		218	24	37	990	990	190	190
Aluminum, total	mg/L		0.1	0.092	0.75	0.37	0.37	0.37	0.37
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.0038	0.0038	0.0037	0.0037
Antimony, total	mg/L			0.000073	0.00014	0.0020	0.0020	0.00040	0.00039
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0020	0.0020	0.00041	0.00039
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0016	0.0016	0.00078	0.00077
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0011	0.0011	0.00027	0.00026
Barium, total	mg/L		1	0.058	0.072	0.018	0.018	0.017	0.017
Barium, dissolved	mg/L			0.059	0.073	0.011	0.011	0.011	0.011
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000012	0.000012	0.000012	0.000012
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000012	0.000012	0.000012	0.000012
Boron, total	mg/L		1.2	0.0050	0.050	0.58	0.58	0.11	0.11
Boron, dissolved	mg/L			0.0050	0.050	0.58	0.58	0.11	0.11
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.00019	0.00019	0.000040	0.000039
Cadmium, dissolved	mg/L		0.00016	0.0000081	0.000036	0.00019	0.00019	0.000037	0.000036
Calcium, total	mg/L			21	30	6.2	6.2	6.1	6.1
Calcium, dissolved	mg/L			22	32	5.6	5.6	5.5	5.5
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0068	0.0068	0.0023	0.0023
Chromium, dissolved	mg/L			0.00010	0.00027	0.0056	0.0056	0.0011	0.0011
Cobalt, total	mg/L		0.004	0.000050	0.00055	0.0023	0.0023	0.00097	0.00096
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0016	0.0016	0.00033	0.00032
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0081	0.0081	0.0028	0.0028
Copper, dissolved	mg/L			0.0014	0.0039	0.0068	0.0068	0.0015	0.0015
Iron, total	mg/L		0.3	0.085	0.78	1.5	1.5	1.5	1.5
Iron, dissolved	mg/L		0.30	0.015	0.13	0.0037	0.0037	0.0035	0.0035
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00098	0.00098	0.00051	0.00051
Lead, dissolved	mg/L			0.000025	0.000050	0.00058	0.00058	0.00012	0.00011
Lithium, total	mg/L			0.00050	0.0011	0.40	0.40	0.077	0.075
Lithium, dissolved	mg/L			0.00050	0.0010	0.40	0.40	0.077	0.075

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	End-of-Pipe Limit	Goathorn WQG	Pit Lake					
				Goathorn Baseline		Closure			
				P50	P95	Alternative Case 2: High Source Terms			
						Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L			3.9	6.5	25	25	6.0	5.9
Magnesium, dissolved	mg/L			3.8	7.4	25	25	5.7	5.5
Manganese, total	mg/L		0.12	0.0059	0.033	0.099	0.100	0.040	0.040
Manganese, dissolved	mg/L			0.0026	0.0084	0.074	0.074	0.015	0.014
Mercury, total	mg/L		0.00002	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.088	0.00047	0.00062	0.0092	0.0092	0.0026	0.0025
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0092	0.0092	0.0026	0.0025
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0093	0.0093	0.0033	0.0033
Nickel, dissolved	mg/L			0.00025	0.00060	0.0075	0.0075	0.0015	0.0014
Phosphorus, total	mg/L			0.0045	0.019	0.015	0.015	0.015	0.015
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00012	0.00012	0.00012	0.00012
Potassium, total	mg/L			0.39	1.0	45	45	8.9	8.6
Potassium, dissolved	mg/L			0.36	0.48	45	45	8.8	8.5
Selenium, total	mg/L	0.050	0.002	0.000086	0.00020	0.018	0.018	0.0035	0.0034
Selenium, dissolved	mg/L			0.000076	0.00012	0.018	0.018	0.0035	0.0034
Silica, dissolved	mg/L			5.6	6.2	23	23	5.7	5.5
Sodium, total	mg/L			2.3	4.8	1100	1100	220	210
Sodium, dissolved	mg/L			2.4	4.8	1100	1100	220	210
Strontium, total	mg/L		7.0	0.076	0.11	1.8	1.8	0.38	0.37
Strontium, dissolved	mg/L			0.077	0.12	1.8	1.8	0.37	0.36
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L		0.0008	0.0000050	0.000010	0.00018	0.00018	0.000035	
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00018	0.00018	0.000035	
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0065	0.0066	0.0013	0.0013
Uranium, dissolved	mg/L			0.000051	0.00014	0.0065	0.0065	0.0013	0.0012
Vanadium, total	mg/L			0.00025	0.0020	0.019	0.019	0.0050	0.0049
Vanadium, dissolved	mg/L			0.00025	0.00052	0.018	0.018	0.0035	0.0034
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.015	0.016	0.0062	0.0061
Zinc, dissolved	mg/L			0.0015	0.0021	0.012	0.012	0.0026	0.0025

Green highlight is a WQG exceedance

Red highlight is an end-of-pipe exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_MMPs_WaterQuality_EAModel_v29_20220207.xlsx

Table G-10

Parameter	Units	Pit Backfill and Seepage Water Quality						
		Four Creek WQG	Four Creek Baseline Water Quality		Closure			
					Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		118	163	58	58	51	51
Alkalinity, total	mg CaCO ₃ /L		130	190	3400	3500	1600	1600
Chloride	mg/L	150	0.25	0.50	95	100	43	42
Fluoride	mg/L	0.12	0.059	0.068	0.20	0.21	0.17	0.17
Ammonia, total	mg-N/L	0.95	0.0025	0.0092	0.085	0.088	0.070	0.073
Nitrate	mg/L	3	0.013	0.058	0.066	0.070	0.021	0.022
Nitrite	mg/L	0.02	0.00050	0.0010	0.0025	0.0026	0.0018	0.0019
Sulfate	mg/L	309	1.9	28	2300	2400	1000	990
Aluminum, total	mg/L	0.1	0.099	1.2	0.14	0.14	0.11	0.12
Aluminum, dissolved	mg/L	0.05	0.032	0.49	0.0080	0.0080	0.0073	0.0073
Antimony, total	mg/L		0.000050	0.00012	0.0047	0.0049	0.0022	0.0022
Antimony, dissolved	mg/L	0.009	0.000050	0.00010	0.00022	0.00022	0.00018	0.00019
Arsenic, total	mg/L	0.005	0.00074	0.0011	0.00050	0.00051	0.00043	0.00044
Arsenic, dissolved	mg/L		0.00064	0.00086	0.0025	0.0026	0.0013	0.0013
Barium, total	mg/L	1	0.071	0.13	0.11	0.11	0.090	0.093
Barium, dissolved	mg/L		0.075	0.13	0.069	0.071	0.059	0.060
Beryllium, total	mg/L	0.00013	0.000050	0.00010	0.000054	0.000055	0.000047	0.000048
Beryllium, dissolved	mg/L		0.000050	0.00010	0.000054	0.000055	0.000047	0.000048
Boron, total	mg/L	1.2	0.012	0.020	0.052	0.054	0.043	0.045
Boron, dissolved	mg/L		0.011	0.019	1.3	1.4	0.62	0.61
Cadmium, total	mg/L	0.00009	0.0000063	0.000019	0.000021	0.000022	0.000018	0.000019
Cadmium, dissolved	mg/L	0.00024	0.0000052	0.000012	0.00043	0.00045	0.00019	0.00019
Calcium, total	mg/L		24	34	17	17	15	15
Calcium, dissolved	mg/L		23	36	17	17	15	15
Chromium, total	mg/L	0.0089	0.00026	0.0016	0.00046	0.00047	0.00039	0.00040
Chromium, dissolved	mg/L		0.00015	0.00079	0.013	0.014	0.0059	0.0059
Cobalt, total	mg/L	0.004	0.000050	0.00047	0.00020	0.00020	0.00016	0.00017
Cobalt, dissolved	mg/L		0.000050	0.00015	0.0038	0.0040	0.0017	0.0017
Copper, total	mg/L	0.0047	0.0014	0.0044	0.0011	0.0011	0.00094	0.00095
Copper, dissolved	mg/L		0.0014	0.0034	0.015	0.016	0.0073	0.0072
Iron, total	mg/L	0.3	0.095	1.1	0.21	0.22	0.17	0.18
Iron, dissolved	mg/L	0.30	0.015	0.41	0.022	0.022	0.019	0.019
Lead, total	mg/L	0.0050	0.000025	0.00028	0.00029	0.00030	0.00024	0.00025
Lead, dissolved	mg/L		0.000025	0.000091	0.0014	0.0015	0.00074	0.00075
Lithium, total	mg/L		0.0015	0.0019	0.00017	0.00016	0.00016	0.00015
Lithium, dissolved	mg/L		0.0014	0.0019	0.91	0.95	0.40	0.40

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Parameter	Units	Pit Backfill and Seepage Water Quality						
		Four Creek WQG	Four Creek Baseline Water Quality		Closure			
					Alternative Case 2: High Source Terms			
			P50	P95	Max Summer	Max Winter	Average Summer	Average Winter
Magnesium, total	mg/L		14	19	3.7	3.7	3.2	3.3
Magnesium, dissolved	mg/L		13	20	57	60	27	27
Manganese, total	mg/L	0.12	0.0025	0.024	0.023	0.024	0.019	0.020
Manganese, dissolved	mg/L		0.00067	0.0074	0.17	0.18	0.081	0.081
Mercury, total	mg/L	0.00001	0.0000025	0.000013	0.0000039	0.0000040	0.0000033	0.0000034
Mercury, dissolved	mg/L		0.0000025	0.0000093	0.00026	0.00028	0.00012	0.00012
Molybdenum, total	mg-N/L	0.073	0.00023	0.00038	0.00047	0.00048	0.00040	0.00041
Molybdenum, dissolved	mg-N/L		0.00019	0.00036	0.020	0.021	0.0097	0.0096
Nickel, total	mg/L	0.080	0.00025	0.0018	0.00050	0.00051	0.00042	0.00043
Nickel, dissolved	mg/L		0.00025	0.0011	0.017	0.018	0.0078	0.0078
Phosphorus, total	mg/L		0.0041	0.044	0.016	0.017	0.014	0.014
Orthophosphate, dissolved	mg/L		0.00050	0.0012	0.00017	0.00016	0.00016	0.00015
Potassium, total	mg/L		0.36	0.77	0.87	0.90	0.73	0.76
Potassium, dissolved	mg/L		0.35	0.84	100	110	46	46
Selenium, total	mg/L	0.002	0.000025	0.000095	0.000067	0.000069	0.000059	0.000060
Selenium, dissolved	mg/L		0.000025	0.00011	0.041	0.043	0.018	0.018
Silica, dissolved	mg/L				51	53	24	24
Sodium, total	mg/L		7.0	13	73	76	60	63
Sodium, dissolved	mg/L		7.4	13	2600	2700	1200	1200
Strontium, total	mg/L	7.0	0.17	0.24	0.030	0.029	0.028	0.028
Strontium, dissolved	mg/L		0.16	0.24	4.1	4.4	1.9	1.8
Silver, total	mg/L	0.0015	0.0000050	0.000022	0.0000092	0.0000094	0.0000078	0.0000080
Silver, dissolved	mg/L		0.0000050	0.000012	0.00014	0.00014	0.000066	0.000066
Tin, total	mg/L		0.000050	0.00010	0.00020	0.00021	0.00017	0.00018
Tin, dissolved	mg/L		0.000050	0.00010	0.053	0.055	0.023	0.023
Thallium, total	mg/L	0.00088	0.0000050	0.000010	0.0000017	0.0000016	0.0000016	0.0000015
Thallium, dissolved	mg/L		0.0000050	0.000010	0.00044	0.00046	0.00024	0.00024
Uranium, total	mg/L	0.0085	0.000078	0.00025	0.00040	0.00041	0.00033	0.00034
Uranium, dissolved	mg/L		0.000075	0.00025	0.015	0.016	0.0068	0.0067
Vanadium, total	mg/L		0.00061	0.0027	0.00084	0.00086	0.00072	0.00074
Vanadium, dissolved	mg/L		0.00025	0.0013	0.041	0.043	0.018	0.018
Zinc, total	mg/L	0.029	0.0015	0.0059	0.0028	0.0028	0.0023	0.0024
Zinc, dissolved	mg/L		0.0015	0.0025	0.028	0.029	0.014	0.014

Green highlight is a WQG exceedance

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/Feb2022_NewSourceTerms/Results_MPSeepage_WaterQuality_EAModel_rev07_20220209.xlsm

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-11. Percent Change in Mean Annual Discharge for Alternative Assessment Case 1: High Groundwater Seepage Conditions Relative to Base Case Conditions, including Maximum Increase, Maximum Decrease and Average Change, over each Project Stage

% Change in Mean Annual Discharge relative to Base Case Conditions										
Stream	Node	Construction			Operation			Post-Closure		
		Maximum Increase	Average Change	Maximum Decrease	Maximum Increase	Average Change	Maximum Decrease	Maximum Increase	Average Change	Maximum Decrease
Tenas Creek	WQS01	n.a	0.0%	0.0%	n.a	0.0%	0.0%	n.a	0.0%	0.0%
	WQS02	n.a	0.0%	0.0%	n.a	-1.3%	-1.8%	n.a	-0.3%	-0.4%
	WQS22	n.a	0.0%	0.0%	n.a	-5.5%	-6.8%	n.a	-3.6%	-3.8%
	WQS04	n.a	0.0%	0.0%	n.a	-6.5%	-7.8%	n.a	-4.1%	-4.2%
Four Creek	WQS03	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%
	WQS21	n.a	-1.5%	-1.5%	44.8%	29.6%	-2.3%	28.1%	27.4%	n.a
	WQS20	n.a	-1.5%	-1.5%	43.2%	27.7%	-2.3%	27.1%	26.4%	n.a
	WQS03DS	n.a	-1.1%	-1.1%	n.a	-12.6%	-16.0%	n.a	-6.8%	-7.7%
Goathorn Creek	WQS13	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	n.a	-0.1%	-0.1%
	WQS06_US	n.a	0.0%	0.0%	n.a	0.0%	-0.1%	n.a	-0.1%	-0.1%
	WQS06	n.a	0.0%	0.0%	3.7%	0.9%	-0.2%	0.5%	0.4%	n.a
	WQS05	n.a	0.0%	0.0%	n.a	-1.4%	-2.8%	n.a	-0.5%	-0.6%
Telkwa River	WQS09	n.a	0.0%	0.0%	0.8%	0.1%	-0.4%	0.8%	0.7%	n.a
Bulkley River	WQS11	0.0%	0.0%	n.a	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	WQS12	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: : \\van-svr0.van.na.srk.ad\Projects\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_ChangeToMAD_07132021_sab.xlsx

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-12. Tenas Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions for Alternative Case 1: High Groundwater Seepage

Scenario		Tenas Creek Monthly % Change											
Period	Month	WQS01			WQS02			WQS22			WQS04		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January		-0.03			-0.43			-0.05			-0.01	
	February		-0.03			-0.46			-0.05			-0.01	
	March		-0.03			-0.49			-0.05			-0.01	
	April		-0.02			-0.38			-0.02			0.00	
	May		0.00			-0.01			0.00			0.00	
	June		0.00			-0.02			0.00			0.00	
	July		0.00			-0.06			-0.01			0.00	
	August		-0.02			-0.28			-0.03			-0.01	
	September		0.00			-0.05			-0.01			0.00	
	October		0.00			-0.06			-0.01			0.00	
	November		-0.02			-0.37			-0.03			-0.01	
	December		-0.05			-0.80			-0.08			-0.01	
Operations	January	0.0	-0.4	-0.5	9.7	-0.1	-6.5	33.1	5.0	-12.2	29.1	4.5	-10.5
	February	0.0	-0.4	-0.5	9.8	-0.1	-6.4	33.4	5.1	-11.9	29.3	4.6	-10.2
	March	0.0	-0.4	-0.5	9.9	0.0	-6.3	33.7	5.2	-11.7	29.6	4.7	-10.0
	April	0.0	-0.2	-0.3	3.9	-0.9	-4.5	4.9	-5.6	-13.3	3.1	-5.9	-12.7
	May	0.0	0.0	-	0.0	-1.4	-1.6	0.0	-6.2	-7.1	0.0	-7.1	-8.1
	June	0.0	0.0	-	0.0	-1.3	-1.6	0.0	-4.4	-5.4	0.0	-5.7	-6.7
	July	0.0	0.0	-	-	-1.3	-2.0	0.0	-4.5	-7.0	0.0	-5.7	-8.1
	August	0.0	-0.2	-0.3	3.1	-1.2	-4.5	9.5	-2.6	-12.2	6.4	-3.9	-12.5
	September	0.0	0.0	-	-	-1.3	-2.0	0.0	-4.9	-7.3	0.0	-6.0	-8.3
	October	0.0	0.0	-	-	-1.4	-1.9	0.0	-5.4	-7.7	0.0	-6.5	-8.6
	November	0.0	-0.1	-0.1	0.7	-1.4	-3.2	1.1	-4.7	-9.9	0.0	-5.8	-10.5
	December	-	-0.4	-0.5	10.3	0.2	-6.6	33.9	5.5	-12.8	29.5	4.8	-11.1
Post-Closure	January	-	-0.3	-0.3	11.6	11.6	-	35.1	35.1	-	30.8	30.8	-
	February	-	-0.3	-0.3	11.6	11.6	-	35.1	35.1	-	30.8	30.8	-
	March	-	-0.3	-0.3	11.6	11.6	-	35.1	35.1	-	30.8	30.8	-
	April	-	-0.1	-0.1	3.4	3.0	-	3.5	2.5	-	2.3	1.5	-
	May	0.0	0.0	-	-	-0.7	-0.7	-	-5.2	-5.2	-	-5.4	-5.5
	June	0.0	0.0	-	-	-0.6	-0.6	-	-3.1	-3.3	-	-3.6	-3.7
	July	0.0	0.0	-	0.5	0.3	-	-	-1.1	-1.5	-	-1.8	-2.2
	August	-	-0.1	-0.2	6.1	4.7	-	14.1	12.2	-	11.6	9.8	-
	September	0.0	0.0	-	0.1	0.0	-	-	-2.4	-2.7	-	-3.0	-3.3
	October	0.0	0.0	-	-	-0.3	-0.3	-	-3.3	-3.8	-	-3.8	-4.2
	November	0.0	-0.1	-0.1	1.4	1.3	-	1.9	1.3	-	0.7	0.3	-
	December	-	-0.3	-0.3	10.9	10.8	-	32.8	32.3	-	28.5	28.1	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-13. Four Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions for Alternative Case 1: High Groundwater Seepage

Scenario		Four Creek Monthly % Change											
Period	Month	WQS03			WQS21			WQS21			WQS03DS		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January	-	0.00	-	-	-5.99	-	-	-5.99	-	-	-4.39	-
	February	-	0.00	-	-	-6.45	-	-	-6.45	-	-	-4.73	-
	March	-	0.00	-	-	-6.91	-	-	-6.91	-	-	-5.07	-
	April	-	0.00	-	-	-2.23	-	-	-2.23	-	-	-1.64	-
	May	-	0.00	-	-	-0.80	-	-	-0.80	-	-	-0.59	-
	June	-	0.00	-	-	-2.22	-	-	-2.22	-	-	-1.63	-
	July	-	0.00	-	-	-1.45	-	-	-1.45	-	-	-1.06	-
	August	-	0.00	-	-	-5.01	-	-	-5.01	-	-	-3.67	-
	September	-	0.00	-	-	-1.18	-	-	-1.18	-	-	-0.86	-
	October	-	0.00	-	-	-3.38	-	-	-3.38	-	-	-2.48	-
	November	-	0.00	-	-	-9.53	-	-	-9.53	-	-	-6.99	-
	December	-	0.00	-	-	-11.23	-	-	-11.23	-	-	-8.24	-
Operations	January	0.0	0.0	0.0	-	-76.9	-100.0	-	-76.9	-100.0	85.0	16.8	-16.8
	February	0.0	0.0	0.0	-	-77.2	-100.0	-	-77.2	-100.0	85.6	17.1	-16.8
	March	0.0	0.0	0.0	-	-77.6	-100.0	-	-77.6	-100.0	86.2	17.4	-16.7
	April	0.0	0.0	0.0	31.3	12.9	-4.4	29.9	11.4	-4.4	-	-8.3	-14.1
	May	0.0	0.0	0.0	48.8	34.0	-0.9	47.2	32.1	-0.9	2.7	-13.7	-21.0
	June	0.0	0.0	0.0	46.9	23.3	-3.3	45.3	21.4	-3.3	-	-11.3	-16.3
	July	0.0	0.0	0.0	47.3	25.6	-2.5	45.5	23.7	-2.5	-	-11.8	-15.4
	August	0.0	0.0	0.0	43.4	-2.0	-41.9	41.6	-3.9	-43.4	37.6	-2.9	-19.3
	September	0.0	0.0	0.0	47.8	28.4	-2.0	45.8	26.5	-2.0	-	-12.8	-15.1
	October	0.0	0.0	0.0	44.0	15.3	-6.0	41.9	13.4	-7.7	1.3	-9.7	-17.6
	November	0.0	0.0	0.0	3.3	-50.6	-74.8	2.3	-51.6	-75.6	68.5	11.6	-18.3
	December	0.0	0.0	0.0	-	-80.7	-100.0	-	-80.7	-100.0	91.9	20.6	-16.6
Post-Closure	January	0.0	0.0	0.0	-	-100.0	-100.0	-	-100.0	-100.0	121.3	121.3	-
	February	0.0	0.0	0.0	-	-100.0	-100.0	-	-100.0	-100.0	121.3	121.3	-
	March	0.0	0.0	0.0	-	-100.0	-100.0	-	-100.0	-100.0	121.3	121.3	-
	April	0.0	0.0	0.0	18.6	16.7	-	17.7	15.8	-	4.7	3.8	-
	May	0.0	0.0	0.0	31.9	31.8	-	30.9	30.8	-	-	-11.5	-11.6
	June	0.0	0.0	0.0	22.3	20.5	-	21.3	19.5	-	6.4	2.2	-
	July	0.0	0.0	0.0	21.1	19.4	-	20.1	18.4	-	7.2	3.5	-
	August	0.0	0.0	0.0	0.9	-10.9	-39.6	-	-11.9	-40.4	68.6	40.0	-
	September	0.0	0.0	0.0	25.7	24.9	-	24.7	23.9	-	-	-3.1	-4.1
	October	0.0	0.0	0.0	14.1	11.7	-	13.1	10.7	-	18.1	12.9	-
	November	0.0	0.0	0.0	-	-62.8	-67.6	-	-63.3	-68.1	95.0	90.4	-
	December	0.0	0.0	0.0	-	-100.0	-100.0	-	-100.0	-100.0	121.3	121.3	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results.

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-14. Goathorn Creek Project Case Streamflow Effect as Monthly Change over Base Case Conditions for Alternative Case 1: High Groundwater Seepage

Scenario		Goathorn Creek Monthly % Change								
Period	Month	WQS06US			WQS06			WQS05		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January		-0.01			-2.57			-0.06	
	February		-0.01			-2.58			-0.06	
	March		-0.01			-2.58			-0.07	
	April		-0.01			-2.59			-0.07	
	May		0.00			-2.51			0.00	
	June		0.00			-2.51			-0.01	
	July		0.00			-2.51			-0.01	
	August		-0.01			-2.53			-0.04	
	September		0.00			-2.51			-0.01	
	October		-0.01			-2.52			-0.02	
	November		-0.02			-2.62			-0.10	
	December		-0.02			-2.63			-0.11	
Operations	January	0.0	-0.1	-0.2	-	-2.2	-2.8	6.4	1.0	-2.1
	February	0.0	-0.1	-0.2	-	-2.2	-2.8	6.5	1.1	-2.0
	March	0.0	-0.1	-0.2	-	-2.2	-2.8	6.5	1.1	-2.0
	April	0.0	-0.1	-0.2	-	-4.3	-5.0	-	-3.4	-5.8
	May	0.0	0.0	-	4.1	-0.2	-2.5	4.2	-1.9	-3.5
	June	0.0	0.0	-	1.0	-1.3	-2.7	0.2	-1.2	-2.6
	July	0.0	0.0	-	4.2	-1.5	-2.9	3.9	-0.1	-1.6
	August	0.0	-0.1	-0.1	18.8	-0.6	-2.8	12.4	1.4	-1.7
	September	0.0	0.0	-	3.9	-1.4	-2.9	3.2	-0.4	-2.0
	October	0.0	0.0	-	9.0	0.1	-2.5	4.4	-0.7	-3.3
	November	0.0	-0.1	-0.2	-	-2.4	-3.0	3.0	-0.7	-3.4
	December	0.0	-0.1	-0.2	-	-2.1	-2.8	7.0	1.3	-2.1
Post-Closure	January	-	-0.3	-0.3	-	-0.3	-0.3	7.1	7.1	-
	February	-	-0.3	-0.3	-	-0.3	-0.3	7.1	7.1	-
	March	-	-0.3	-0.3	-	-0.3	-0.3	7.1	7.1	-
	April	-	-0.1	-0.2	-	-3.2	-3.4	-	-0.4	-0.5
	May	0.0	0.0	-	-	-1.2	-1.5	-	-1.4	-1.6
	June	0.0	0.0	-	-	-2.4	-2.4	-	-0.9	-1.0
	July	0.0	-0.1	-0.1	-	-2.3	-2.4	0.6	0.5	-
	August	-	-0.1	-0.2	-	-1.7	-2.0	4.2	3.5	-
	September	0.0	0.0	-	-	-2.4	-2.5	-	-0.2	-0.2
	October	0.0	-0.1	-0.1	-	-2.2	-2.2	-	-0.5	-0.5
	November	-	-0.2	-0.2	-	-1.0	-1.0	3.5	3.3	-
	December	-	-0.3	-0.3	-	-0.3	-0.3	7.1	7.1	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results.

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-15. Bulkley and Telkwa River Project Case Streamflow Effect as Monthly Change over Base Case Conditions for Alternative Case 1: High Groundwater Seepage

Scenario		Telkwa River Monthly % Change			Bulkley River Monthly % Change					
Period	Month	WQS09			WQS11			WQS12		
		Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease	Maximum Increase	Average	Maximum Decrease
Construction	January		-0.04			0.00			0.00	
	February		-0.04			0.00			0.00	
	March		-0.05			0.00			0.00	
	April		-0.05			0.00			0.00	
	May		-0.01			0.00			0.00	
	June		-0.01			0.00			0.00	
	July		-0.01			0.00			0.00	
	August		-0.03			0.00			0.00	
	September		-0.01			0.00			0.00	
	October		-0.03			0.00			0.00	
	November		-0.07			0.00			0.00	
	December		-0.08			0.00			0.00	
Operations	January	4.8	0.8	-1.5	0.0	0.0	-	0.1	0.0	-
	February	4.8	0.8	-1.5	0.0	0.0	-	0.1	0.0	-
	March	4.9	0.8	-1.4	0.0	0.0	-	0.1	0.0	-
	April	3.5	0.5	-1.4	0.0	0.0	-	0.0	-0.1	-0.1
	May	0.2	-0.1	-0.4	0.0	0.0	-	0.1	0.0	-0.1
	June	0.2	0.0	-0.2	0.0	0.0	-	0.0	0.0	-
	July	0.8	0.1	-0.3	0.0	0.0	-	0.0	0.0	-
	August	2.6	0.5	-0.9	0.0	0.0	-	0.1	0.0	-
	September	0.7	0.1	-0.4	0.0	0.0	-	0.0	0.0	-
	October	0.9	0.1	-0.6	0.0	0.0	-	0.0	0.0	-
	November	3.1	0.5	-1.3	0.0	0.0	-	0.0	0.0	-
	December	5.2	1.0	-1.5	0.0	0.0	-	0.1	0.0	-
Post-Closure	January	5.3	5.3	-	0.0	0.0	-	0.1	0.1	-
	February	5.3	5.3	-	0.0	0.0	-	0.1	0.1	-
	March	5.3	5.3	-	0.0	0.0	-	0.1	0.1	-
	April	2.5	2.3	-	0.0	0.0	-	0.0	0.0	-
	May	0.1	0.1	-	0.0	0.0	-	0.0	0.0	-
	June	0.3	0.3	-	0.0	0.0	-	0.0	0.0	-
	July	1.2	1.1	-	0.0	0.0	-	0.0	0.0	-
	August	3.2	2.6	-	0.0	0.0	-	0.0	0.0	-
	September	0.8	0.7	-	0.0	0.0	-	0.0	0.0	-
	October	0.9	0.8	-	0.0	0.0	-	0.0	0.0	-
	November	2.9	2.8	-	0.0	0.0	-	0.0	0.0	-
	December	5.3	5.3	-	0.0	0.0	-	0.1	0.1	-

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results.

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-16. Goathorn Creek and Telkwa River Project Case Streamflow Effect as Monthly Change over Base Case Conditions for Alternative Case 4: 3 Consecutive Wet Years (2041,2042,2043)

Project Case		Goathorn Creek		Telkwa River
		WQS06	WQS05	WQS09
Period	Month	Maximum Percent Increase over Baseline Conditions [%]	Maximum Percent Increase over Baseline Conditions [%]	Maximum Percent Increase over Baseline Conditions [%]
Operations	January	-	0.6	0.6
	February	-	0.7	0.6
	March	-	0.7	0.6
	April	-	-	0.0
	May	4.0	0.0	0.0
	June	1.3	0.3	0.0
	July	4.1	3.7	0.3
	August	18.5	11.8	0.3
	September	3.8	3.0	0.1
	October	8.9	4.1	0.1
	November	-	-	0.3
	December	-	0.8	0.7

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Results_Streams_MonthlyChange_07132021_sab.xlsm

Note: Blank rows represent periods where an increase or decrease in flows is not expected based on model results.

Tenas Project Water and Load Balance Report
Appendix G: Alternative Cases

Table G-17. Effect to Low Flow Conditions with Alternative Assessment Case 5: 7Q10 Baseflow

Stream	Node	Baseline 7Q10 [m3/s]	Modelled 7Q10 with Ratio [m3/s]			% Change to 7Q10 over Baseline		
			Construction	Operation	Closure and Post- Closure	Construction	Operation	Closure and Post- Closure
Tenas Creek	WQS01	0.003	0.00	0.00	0.00	0%	0%	0%
	WQS02	0.004	0.00	0.00	0.00	0%	-4%	2%
	WQS22	0.006	0.01	0.01	0.01	0%	-6%	3%
	WQ04	0.006	0.01	0.01	0.01	0%	-5%	3%
Four Creek	WQS03	0.000	0.00	0.00	0.00	0%	-30%	-23%
	WQS21	0.000	0.00	0.00	0.00	0%	-34%	-25%
	WQS20	0.000	0.00	0.00	0.00	-1%	-32%	-22%
	WQS03_DS	0.001	0.00	0.00	0.00	-1%	-4%	5%
Goathorn Creek	WQS13	0.174	0.17	0.17	0.17	0%	0%	0%
	WQS06_US	0.191	0.19	0.19	0.19	0%	0%	0%
	WQS06	0.220	0.22	0.22	0.22	0%	0%	0%
	WQS05	0.348	0.35	0.34	0.35	0%	-2%	1%
Telkwa River	WQS09	4.216	4.21	4.15	4.26	0%	-2%	1%
Bulkley River	WQS11	16.503	16.50	16.50	16.50	0%	0%	0%
	WQS12	19.563	19.56	19.55	19.56	0%	0%	0%

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\ Streams_LowFlow_EA20_07122021.xlsm

Table G-18

Parameter	Units	SPO	WQG	Tenas Creek										
				Baseline	WQS02									
					Closure									
					Alternative Case 1: High groundwater					Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			72	103	115	150	81	101	132	186	81	116	213
Alkalinity, total	mg-CaCO ₃ /L			83	110	420	780	130	330	430	720	130	350	1400
Chloride	mg/L		150	0.25	0.50	9.1	19	1.3	6.5	9.2	17	1.4	7.3	34
Fluoride	mg/L		0.12	0.031	0.045	0.060	0.082	0.035	0.049	0.045	0.055	0.033	0.038	0.13
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.21	0.43	0.021	0.11	0.10	0.22	0.015	0.079	0.95
Nitrate	mg/L		3	0.0050	0.060	1.6	3.3	0.14	0.81	0.76	1.7	0.099	0.59	7.5
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.038	0.077	0.0036	0.019	0.018	0.039	0.0027	0.014	0.17
Sulfate	mg/L		218	2.6	7.4	230	500	30	170	270	530	37	220	960
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.087	0.12	0.061	0.072	0.088	0.11	0.061	0.076	0.18
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.042	0.075	0.019	0.031	0.043	0.068	0.020	0.035	0.14
Antimony, total	mg/L			0.00013	0.00024	0.00062	0.0011	0.00018	0.00047	0.0011	0.0022	0.00025	0.00094	0.0021
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00065	0.0012	0.00020	0.00049	0.0012	0.0023	0.00027	0.00096	0.0022
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00086	0.0012	0.00054	0.00074	0.0014	0.0023	0.00061	0.0012	0.0019
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00079	0.0011	0.00047	0.00067	0.0013	0.0023	0.00054	0.0011	0.0018
Barium, total	mg/L		1	0.034	0.047	0.052	0.065	0.038	0.048	0.049	0.058	0.037	0.044	0.097
Barium, dissolved	mg/L			0.033	0.043	0.051	0.064	0.037	0.047	0.048	0.057	0.036	0.043	0.096
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000064	0.000071	0.000053	0.000058	0.000059	0.000063	0.000053	0.000054	0.000082
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000064	0.000071	0.000053	0.000058	0.000059	0.000063	0.000053	0.000054	0.000082
Boron, total	mg/L		1.2	0.015	0.050	0.15	0.29	0.031	0.11	0.16	0.28	0.034	0.13	0.53
Boron, dissolved	mg/L			0.013	0.050	0.14	0.28	0.029	0.11	0.15	0.28	0.031	0.12	0.53
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.00014	0.00026	0.000018	0.000080	0.00075	0.0015	0.000092	0.00055	0.00059
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.00013	0.00026	0.000015	0.000077	0.00075	0.0015	0.000089	0.00055	0.00059
Calcium, total	mg/L			22	31	28	32	24	26	28	30	23	25	39
Calcium, dissolved	mg/L			21	31	27	31	22	25	26	29	22	24	38
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.0016	0.0029	0.00049	0.0012	0.0021	0.0039	0.00056	0.0018	0.0053
Chromium, dissolved	mg/L			0.00025	0.00041	0.0015	0.0029	0.00041	0.0012	0.0021	0.0038	0.00049	0.0017	0.0052
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00071	0.0014	0.00012	0.00048	0.0015	0.0032	0.00024	0.0012	0.0030
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00071	0.0014	0.00012	0.00048	0.0015	0.0032	0.00024	0.0012	0.0030
Copper, total	mg/L		0.003	0.0011	0.0050	0.0028	0.0045	0.0013	0.0023	0.0034	0.0055	0.0014	0.0029	0.0075

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS02								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0028	0.0045	0.0013	0.0023	0.0034	0.0055	0.0014	0.0029	0.0075
Iron, total	mg/L		0.3	0.048	1.2	0.070	0.093	0.052	0.061	0.072	0.090	0.052	0.063	0.14
Iron, dissolved	mg/L		0.30	0.015	0.14	0.033	0.056	0.018	0.027	0.035	0.053	0.018	0.029	0.10
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00023	0.00045	0.000051	0.00017	0.00050	0.0010	0.000086	0.00040	0.00093
Lead, dissolved	mg/L			0.000025	0.000050	0.00023	0.00045	0.000051	0.00017	0.00050	0.0010	0.000086	0.00040	0.00093
Lithium, total	mg/L			0.00050	0.0012	0.086	0.18	0.011	0.062	0.091	0.17	0.012	0.072	0.34
Lithium, dissolved	mg/L			0.00050	0.0010	0.086	0.18	0.011	0.062	0.091	0.17	0.012	0.072	0.34
Magnesium, total	mg/L			4.2	6.3	11	17	5.1	8.7	15	27	5.8	13	28
Magnesium, dissolved	mg/L			4.1	6.3	10	17	5.0	8.5	15	26	5.7	13	28
Manganese, total	mg/L		0.12	0.0050	0.058	0.045	0.086	0.0090	0.028	0.060	0.12	0.012	0.048	0.18
Manganese, dissolved	mg/L			0.0020	0.0062	0.042	0.083	0.0059	0.025	0.057	0.12	0.0090	0.045	0.17
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0023	0.0046	0.00040	0.0017	0.0026	0.0050	0.00045	0.0021	0.0087
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0069	0.0091	0.0047	0.0059	0.0072	0.0093	0.0047	0.0063	0.013
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0027	0.0055	0.00054	0.0019	0.0040	0.0080	0.00074	0.0032	0.011
Nickel, dissolved	mg/L			0.00025	0.00054	0.0027	0.0055	0.00054	0.0019	0.0040	0.0080	0.00074	0.0032	0.011
Phosphorus, total	mg/L			0.0042	0.046	0.0068	0.0086	0.0046	0.0058	0.0055	0.0064	0.0045	0.0049	0.012
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0012	0.0012	0.0010	0.0011	0.0012	0.0012	0.0010	0.0010	0.0013
Potassium, total	mg/L			0.23	1.0	9.6	20	1.4	6.9	10	19	1.5	8.0	36
Potassium, dissolved	mg/L			0.19	0.30	9.5	20	1.3	6.9	10.0	19	1.4	7.9	36
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0040	0.0083	0.00052	0.0028	0.0047	0.0090	0.00064	0.0037	0.016
Selenium, dissolved	mg/L			0.000040	0.000073	0.0040	0.0083	0.00051	0.0028	0.0047	0.0090	0.00063	0.0037	0.016
Silica, dissolved	mg/L			7.0	8.0	13	18	7.9	11	13	17	7.9	11	26
Sodium, total	mg/L			3.5	4.8	230	480	32	170	230	440	33	190	890
Sodium, dissolved	mg/L			3.5	4.8	230	480	32	170	230	440	33	190	890
Strontium, total	mg/L		7.0	0.11	0.13	0.57	1.1	0.17	0.43	0.64	1.1	0.18	0.53	2.0
Strontium, dissolved	mg/L			0.10	0.14	0.56	1.0	0.16	0.42	0.63	1.1	0.17	0.52	1.9
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS02								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00014	0.00027	0.000019	0.000087	0.00076	0.0015	0.000093	0.00056	0.00059
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00014	0.00027	0.000019	0.000087	0.00076	0.0015	0.000093	0.00056	0.00059
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.0016	0.0031	0.00029	0.0011	0.0021	0.0041	0.00037	0.0017	0.0058
Uranium, dissolved	mg/L			0.00011	0.00024	0.0016	0.0031	0.00029	0.0011	0.0021	0.0041	0.00037	0.0017	0.0058
Vanadium, total	mg/L			0.00094	0.0037	0.0049	0.0090	0.0014	0.0037	0.0054	0.0094	0.0015	0.0044	0.016
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0046	0.0087	0.0012	0.0035	0.0052	0.0092	0.0013	0.0042	0.016
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0051	0.0092	0.0020	0.0041	0.0071	0.013	0.0023	0.0059	0.017
Zinc, dissolved	mg/L			0.0015	0.0015	0.0051	0.0092	0.0020	0.0041	0.0071	0.013	0.0023	0.0059	0.017

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G19

Parameter	Units	SPO	WQG	Tenas Creek										
				Baseline	WQS22									
					Closure									
					Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow	
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			72	103	123	155	82	103	152	213	86	129	239
Alkalinity, total	mg-CaCO ₃ /L			83	110	460	780	140	330	500	820	150	410	1600
Chloride	mg/L		150	0.25	0.50	9.8	19	1.5	6.5	11	20	1.7	8.7	40
Fluoride	mg/L		0.12	0.031	0.045	0.067	0.085	0.037	0.050	0.053	0.064	0.035	0.041	0.15
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.21	0.41	0.023	0.11	0.12	0.25	0.018	0.093	1.1
Nitrate	mg/L		3	0.0050	0.060	1.7	3.2	0.16	0.79	0.91	2.0	0.12	0.69	8.7
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.038	0.075	0.0041	0.019	0.021	0.046	0.0033	0.016	0.20
Sulfate	mg/L		218	2.6	7.4	250	500	35	170	320	620	47	260	1100
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.096	0.12	0.063	0.074	0.10	0.13	0.065	0.083	0.20
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.048	0.075	0.020	0.031	0.050	0.080	0.021	0.040	0.16
Antimony, total	mg/L			0.00013	0.00024	0.00067	0.0011	0.00019	0.00047	0.0013	0.0026	0.00029	0.0011	0.0025
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00070	0.0012	0.00021	0.00049	0.0014	0.0026	0.00031	0.0011	0.0025
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00094	0.0012	0.00057	0.00075	0.0016	0.0027	0.00067	0.0014	0.0021
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00086	0.0011	0.00049	0.00068	0.0015	0.0026	0.00059	0.0013	0.0021
Barium, total	mg/L		1	0.034	0.047	0.057	0.067	0.039	0.049	0.056	0.066	0.039	0.048	0.11
Barium, dissolved	mg/L			0.033	0.043	0.055	0.066	0.038	0.048	0.055	0.064	0.038	0.047	0.11
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000070	0.000075	0.000055	0.000059	0.000068	0.000071	0.000055	0.000057	0.000091
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000070	0.000075	0.000055	0.000059	0.000068	0.000071	0.000055	0.000057	0.000091
Boron, total	mg/L		1.2	0.015	0.050	0.16	0.29	0.035	0.11	0.18	0.33	0.039	0.15	0.62
Boron, dissolved	mg/L			0.013	0.050	0.16	0.28	0.032	0.11	0.18	0.33	0.037	0.15	0.61
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.00014	0.00026	0.000020	0.000079	0.00087	0.0018	0.00012	0.00066	0.00069
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.00014	0.00025	0.000017	0.000077	0.00087	0.0018	0.00011	0.00066	0.00069
Calcium, total	mg/L			22	31	31	34	24	27	31	34	24	27	43
Calcium, dissolved	mg/L			21	31	30	33	23	26	30	33	23	25	41
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.0017	0.0029	0.00052	0.0012	0.0025	0.0045	0.00064	0.0021	0.0061
Chromium, dissolved	mg/L			0.00025	0.00041	0.0016	0.0029	0.00045	0.0012	0.0024	0.0045	0.00057	0.0020	0.0061
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00074	0.0014	0.00014	0.00048	0.0018	0.0037	0.00029	0.0015	0.0035
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00074	0.0014	0.00014	0.00048	0.0018	0.0037	0.00029	0.0015	0.0035
Copper, total	mg/L		0.003	0.0011	0.0050	0.0031	0.0045	0.0014	0.0023	0.0040	0.0064	0.0016	0.0033	0.0086

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS22								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0031	0.0045	0.0014	0.0023	0.0040	0.0064	0.0016	0.0033	0.0086
Iron, total	mg/L		0.3	0.048	1.2	0.078	0.096	0.054	0.062	0.082	0.10	0.055	0.068	0.15
Iron, dissolved	mg/L		0.30	0.015	0.14	0.038	0.057	0.018	0.027	0.040	0.062	0.019	0.033	0.12
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00024	0.00044	0.000056	0.00017	0.00058	0.0012	0.00010	0.00048	0.0011
Lead, dissolved	mg/L			0.000025	0.000050	0.00024	0.00044	0.000056	0.00017	0.00058	0.0012	0.00010	0.00048	0.0011
Lithium, total	mg/L			0.00050	0.0012	0.093	0.18	0.013	0.061	0.11	0.20	0.015	0.086	0.40
Lithium, dissolved	mg/L			0.00050	0.0010	0.093	0.18	0.013	0.061	0.11	0.20	0.015	0.086	0.40
Magnesium, total	mg/L			4.2	6.3	11	17	5.4	8.7	18	31	6.4	15	32
Magnesium, dissolved	mg/L			4.1	6.3	11	17	5.3	8.6	18	30	6.3	15	32
Manganese, total	mg/L		0.12	0.0050	0.058	0.046	0.083	0.0098	0.028	0.069	0.14	0.014	0.056	0.20
Manganese, dissolved	mg/L			0.0020	0.0062	0.043	0.080	0.0066	0.025	0.065	0.14	0.011	0.053	0.20
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0025	0.0046	0.00045	0.0017	0.0031	0.0058	0.00055	0.0025	0.010
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0075	0.0094	0.0049	0.0060	0.0083	0.011	0.0050	0.0069	0.014
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0029	0.0053	0.00059	0.0019	0.0046	0.0094	0.00088	0.0038	0.013
Nickel, dissolved	mg/L			0.00025	0.00054	0.0029	0.0053	0.00059	0.0019	0.0046	0.0094	0.00088	0.0038	0.013
Phosphorus, total	mg/L			0.0042	0.046	0.0075	0.0090	0.0048	0.0059	0.0065	0.0074	0.0047	0.0052	0.014
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0013	0.0013	0.0011	0.0011	0.0013	0.0013	0.0011	0.0011	0.0014
Potassium, total	mg/L			0.23	1.0	10	20	1.6	6.9	12	22	1.8	9.5	42
Potassium, dissolved	mg/L			0.19	0.30	10	20	1.5	6.8	12	22	1.8	9.4	42
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0043	0.0083	0.00060	0.0028	0.0055	0.011	0.00081	0.0045	0.018
Selenium, dissolved	mg/L			0.000040	0.000073	0.0043	0.0083	0.00059	0.0028	0.0055	0.011	0.00080	0.0044	0.018
Silica, dissolved	mg/L			7.0	8.0	14	18	8.3	11	15	19	8.4	12	30
Sodium, total	mg/L			3.5	4.8	250	480	37	170	280	510	42	220	1000
Sodium, dissolved	mg/L			3.5	4.8	250	480	37	170	280	510	42	220	1000
Strontium, total	mg/L		7.0	0.11	0.13	0.62	1.0	0.18	0.43	0.75	1.3	0.21	0.61	2.3
Strontium, dissolved	mg/L			0.10	0.14	0.60	1.0	0.17	0.42	0.74	1.3	0.19	0.60	2.3
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS22								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00014	0.00026	0.000022	0.000087	0.00088	0.0018	0.00012	0.00067	0.00070
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00014	0.00026	0.000022	0.000087	0.00088	0.0018	0.00012	0.00067	0.00070
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.0017	0.0031	0.00032	0.0011	0.0025	0.0047	0.00045	0.0020	0.0068
Uranium, dissolved	mg/L			0.00011	0.00024	0.0017	0.0031	0.00032	0.0011	0.0025	0.0047	0.00045	0.0020	0.0068
Vanadium, total	mg/L			0.00094	0.0037	0.0053	0.0089	0.0016	0.0037	0.0064	0.011	0.0017	0.0052	0.018
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0050	0.0087	0.0013	0.0035	0.0061	0.011	0.0015	0.0049	0.018
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0056	0.0092	0.0021	0.0041	0.0082	0.015	0.0025	0.0068	0.020
Zinc, dissolved	mg/L			0.0015	0.0015	0.0056	0.0092	0.0021	0.0041	0.0082	0.015	0.0025	0.0068	0.020

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-20

Parameter	Units	SPO	WQG	Tenas Creek										
				Baseline	WQS04									
					Closure									
					Alternative Case 1: High groundwater					Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			72	103	129	162	85	105	157	215	89	129	239
Alkalinity, total	mg-CaCO ₃ /L			83	110	480	840	140	350	500	830	150	410	1600
Chloride	mg/L		150	0.25	0.50	10	20	1.6	7.0	11	20	1.8	8.9	40
Fluoride	mg/L		0.12	0.031	0.045	0.070	0.090	0.038	0.053	0.054	0.066	0.036	0.042	0.15
Ammonia, total	mg-N/L		1.2	0.0025	0.0074	0.22	0.42	0.024	0.11	0.12	0.25	0.018	0.094	1.1
Nitrate	mg/L		3	0.0050	0.060	1.7	3.3	0.16	0.83	0.89	1.9	0.12	0.71	8.6
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.039	0.076	0.0042	0.020	0.021	0.045	0.0033	0.017	0.20
Sulfate	mg/L		218	2.6	7.4	270	540	37	180	320	630	48	260	1100
Aluminum, total	mg/L	0.236	0.1	0.056	1.8	0.099	0.13	0.065	0.075	0.10	0.14	0.066	0.085	0.20
Aluminum, dissolved	mg/L		0.05	0.016	0.14	0.049	0.078	0.021	0.033	0.051	0.083	0.022	0.042	0.16
Antimony, total	mg/L			0.00013	0.00024	0.00071	0.0012	0.00020	0.00050	0.0013	0.0026	0.00030	0.0011	0.0025
Antimony, dissolved	mg/L		0.009	0.00011	0.00023	0.00073	0.0013	0.00022	0.00052	0.0014	0.0026	0.00032	0.0012	0.0025
Arsenic, total	mg/L		0.005	0.00048	0.00090	0.00098	0.0013	0.00058	0.00078	0.0017	0.0027	0.00068	0.0014	0.0022
Arsenic, dissolved	mg/L			0.00041	0.00054	0.00089	0.0012	0.00050	0.00070	0.0016	0.0027	0.00060	0.0013	0.0021
Barium, total	mg/L		1	0.034	0.047	0.059	0.071	0.040	0.050	0.058	0.068	0.040	0.049	0.11
Barium, dissolved	mg/L			0.033	0.043	0.058	0.069	0.039	0.049	0.057	0.067	0.039	0.048	0.11
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000073	0.000079	0.000057	0.000061	0.000070	0.000074	0.000056	0.000058	0.000093
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000073	0.000079	0.000057	0.000061	0.000070	0.000074	0.000056	0.000058	0.000093
Boron, total	mg/L		1.2	0.015	0.050	0.17	0.31	0.036	0.12	0.18	0.33	0.040	0.15	0.62
Boron, dissolved	mg/L			0.013	0.050	0.16	0.31	0.034	0.11	0.18	0.33	0.038	0.15	0.61
Cadmium, total	mg/L		0.00009	0.0000050	0.000021	0.00014	0.00026	0.000021	0.000083	0.00089	0.0018	0.00012	0.00067	0.00070
Cadmium, dissolved	mg/L	0.00019	0.00017	0.0000025	0.0000058	0.00014	0.00026	0.000018	0.000081	0.00088	0.0018	0.00012	0.00067	0.00069
Calcium, total	mg/L			22	31	32	35	25	27	33	35	25	27	43
Calcium, dissolved	mg/L			21	31	31	34	24	26	31	34	24	26	42
Chromium, total	mg/L		0.0089	0.00032	0.0018	0.0018	0.0032	0.00054	0.0013	0.0025	0.0045	0.00066	0.0021	0.0062
Chromium, dissolved	mg/L			0.00025	0.00041	0.0017	0.0031	0.00046	0.0012	0.0024	0.0045	0.00058	0.0020	0.0061
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00099	0.00076	0.0015	0.00014	0.00050	0.0018	0.0037	0.00030	0.0015	0.0035
Cobalt, dissolved	mg/L			0.000050	0.00011	0.00076	0.0015	0.00014	0.00050	0.0018	0.0037	0.00030	0.0015	0.0035
Copper, total	mg/L		0.003	0.0011	0.0050	0.0032	0.0048	0.0015	0.0024	0.0040	0.0065	0.0016	0.0034	0.0087

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS04								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0011	0.0030	0.0032	0.0048	0.0015	0.0024	0.0040	0.0065	0.0016	0.0034	0.0087
Iron, total	mg/L		0.3	0.048	1.2	0.081	0.100	0.055	0.063	0.085	0.11	0.056	0.069	0.16
Iron, dissolved	mg/L		0.30	0.015	0.14	0.039	0.059	0.019	0.028	0.041	0.064	0.020	0.034	0.12
Lead, total	mg/L		0.0050	0.000025	0.00039	0.00025	0.00047	0.000058	0.00018	0.00059	0.0012	0.00011	0.00049	0.0011
Lead, dissolved	mg/L			0.000025	0.000050	0.00025	0.00047	0.000058	0.00018	0.00059	0.0012	0.00011	0.00049	0.0011
Lithium, total	mg/L			0.00050	0.0012	0.098	0.20	0.013	0.065	0.11	0.20	0.016	0.088	0.40
Lithium, dissolved	mg/L			0.00050	0.0010	0.098	0.20	0.013	0.065	0.11	0.20	0.016	0.088	0.40
Magnesium, total	mg/L			4.2	6.3	12	18	5.5	9.1	18	31	6.5	15	32
Magnesium, dissolved	mg/L			4.1	6.3	12	18	5.4	9.0	18	31	6.4	15	32
Manganese, total	mg/L		0.12	0.0050	0.058	0.047	0.084	0.010	0.029	0.070	0.14	0.014	0.057	0.20
Manganese, dissolved	mg/L			0.0020	0.0062	0.044	0.081	0.0068	0.026	0.066	0.14	0.011	0.054	0.20
Mercury, total	mg/L		0.00001	0.0000025	0.0000089	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00012	0.00019	0.0026	0.0050	0.00047	0.0019	0.0031	0.0059	0.00056	0.0026	0.010
Molybdenum, dissolved	mg-N/L			0.00010	0.00019	0.0078	0.0098	0.0050	0.0062	0.0085	0.011	0.0051	0.0070	0.015
Nickel, total	mg/L		0.080	0.00025	0.0017	0.0030	0.0057	0.00061	0.0020	0.0046	0.0094	0.00090	0.0039	0.013
Nickel, dissolved	mg/L			0.00025	0.00054	0.0030	0.0057	0.00061	0.0020	0.0046	0.0094	0.00090	0.0039	0.013
Phosphorus, total	mg/L			0.0042	0.046	0.0079	0.0095	0.0050	0.0061	0.0067	0.0076	0.0048	0.0053	0.014
Orthophosphate, dissolved	mg/L			0.0010	0.0040	0.0013	0.0014	0.0011	0.0011	0.0014	0.0014	0.0011	0.0011	0.0015
Potassium, total	mg/L			0.23	1.0	11	22	1.6	7.3	12	22	1.9	9.7	42
Potassium, dissolved	mg/L			0.19	0.30	11	22	1.6	7.3	12	22	1.8	9.6	42
Selenium, total	mg/L	0.008	0.002	0.000051	0.00020	0.0045	0.0091	0.00063	0.0030	0.0055	0.011	0.00083	0.0045	0.018
Selenium, dissolved	mg/L			0.000040	0.000073	0.0045	0.0091	0.00062	0.0030	0.0055	0.011	0.00082	0.0045	0.018
Silica, dissolved	mg/L			7.0	8.0	15	19	8.5	11	15	20	8.6	12	30
Sodium, total	mg/L			3.5	4.8	270	530	39	180	280	510	42	230	1000
Sodium, dissolved	mg/L			3.5	4.8	270	530	39	180	280	510	42	230	1000
Strontium, total	mg/L		7.0	0.11	0.13	0.65	1.1	0.19	0.45	0.76	1.3	0.21	0.63	2.3
Strontium, dissolved	mg/L			0.10	0.14	0.63	1.1	0.18	0.44	0.74	1.3	0.20	0.61	2.3
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Tenas Creek											
			WQG	Baseline		WQS04								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00014	0.00027	0.000022	0.000092	0.00089	0.0018	0.00012	0.00069	0.00070
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00014	0.00027	0.000022	0.000092	0.00089	0.0018	0.00012	0.00069	0.00070
Uranium, total	mg/L		0.0085	0.00011	0.00025	0.0018	0.0034	0.00033	0.0012	0.0025	0.0048	0.00046	0.0021	0.0068
Uranium, dissolved	mg/L			0.00011	0.00024	0.0018	0.0034	0.00033	0.0012	0.0025	0.0048	0.00046	0.0021	0.0068
Vanadium, total	mg/L			0.00094	0.0037	0.0055	0.0097	0.0016	0.0039	0.0064	0.011	0.0018	0.0053	0.018
Vanadium, dissolved	mg/L			0.00072	0.0010	0.0053	0.0095	0.0014	0.0037	0.0061	0.011	0.0015	0.0050	0.018
Zinc, total	mg/L		0.0075	0.0015	0.0060	0.0058	0.0096	0.0022	0.0043	0.0083	0.015	0.0026	0.0069	0.020
Zinc, dissolved	mg/L			0.0015	0.0015	0.0058	0.0096	0.0022	0.0043	0.0083	0.015	0.0026	0.0069	0.020

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-21

Parameter	Units	SPO	WQG	Four Creek										
				Baseline		WQS20								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			118	163	251	170	152	39	152	176	133	124	192
Alkalinity, total	mg-CaCO ₃ /L			130	190	280	190	170	43	170	190	150	140	210
Chloride	mg/L		150	0.25	0.50	0.54	0.36	0.32	0.083	0.33	0.37	0.28	0.26	0.40
Fluoride	mg/L		0.12	0.059	0.068	0.13	0.086	0.076	0.020	0.077	0.087	0.067	0.062	0.095
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.0054	0.0036	0.0032	0.00083	0.0033	0.0037	0.0028	0.0026	0.0040
Nitrate	mg/L		3	0.013	0.058	0.028	0.019	0.017	0.0043	0.017	0.019	0.015	0.014	0.021
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.0011	0.00072	0.00065	0.00017	0.00065	0.00074	0.00057	0.00052	0.00081
Sulfate	mg/L		309	1.9	28	4.1	2.8	2.5	0.63	2.5	2.8	2.2	2.0	3.1
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.21	0.14	0.13	0.033	0.13	0.15	0.11	0.10	0.16
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.069	0.046	0.041	0.011	0.042	0.047	0.036	0.034	0.052
Antimony, total	mg/L			0.000050	0.00012	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.0016	0.0011	0.00096	0.00025	0.00097	0.0011	0.00084	0.00078	0.0012
Arsenic, dissolved	mg/L			0.00064	0.00086	0.0014	0.00093	0.00083	0.00021	0.00084	0.00095	0.00073	0.00067	0.0010
Barium, total	mg/L		1	0.071	0.13	0.15	0.10	0.092	0.024	0.093	0.11	0.081	0.074	0.11
Barium, dissolved	mg/L			0.075	0.13	0.16	0.11	0.097	0.025	0.098	0.11	0.085	0.079	0.12
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Beryllium, dissolved	mg/L			0.000050	0.00010	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Boron, total	mg/L		1.2	0.012	0.020	0.026	0.017	0.015	0.0040	0.016	0.018	0.014	0.013	0.019
Boron, dissolved	mg/L			0.011	0.019	0.024	0.016	0.014	0.0037	0.014	0.016	0.013	0.012	0.018
Cadmium, total	mg/L		0.00009	0.000063	0.000019	0.000014	0.000091	0.000081	0.000021	0.000082	0.000093	0.000072	0.000066	0.00010
Cadmium, dissolved	mg/L	0.00026	0.00024	0.000052	0.000012	0.000011	0.000075	0.000067	0.000017	0.000068	0.000077	0.000059	0.000055	0.000084
Calcium, total	mg/L			24	34	51	35	31	8.0	31	36	27	25	39
Calcium, dissolved	mg/L			23	36	49	33	30	7.6	30	34	26	24	37
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.00056	0.00038	0.00034	0.000086	0.00034	0.00038	0.00030	0.00027	0.00042
Chromium, dissolved	mg/L			0.00015	0.00079	0.00032	0.00022	0.00019	0.000050	0.00020	0.00022	0.00017	0.00016	0.00024
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Cobalt, dissolved	mg/L			0.000050	0.00015	0.00011	0.000072	0.000065	0.000017	0.000065	0.000074	0.000057	0.000052	0.000081
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0030	0.0020	0.0018	0.00046	0.0018	0.0021	0.0016	0.0015	0.0023

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS20								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0030	0.0020	0.0018	0.00046	0.0018	0.0021	0.0016	0.0015	0.0023
Iron, total	mg/L		0.3	0.095	1.1	0.20	0.14	0.12	0.032	0.12	0.14	0.11	0.100	0.15
Iron, dissolved	mg/L		0.30	0.015	0.41	0.032	0.022	0.019	0.0050	0.020	0.022	0.017	0.016	0.024
Lead, total	mg/L		0.0050	0.000025	0.00028	0.000054	0.000036	0.000032	0.0000083	0.000033	0.000037	0.000028	0.000026	0.000040
Lead, dissolved	mg/L			0.000025	0.000091	0.000054	0.000036	0.000032	0.0000083	0.000033	0.000037	0.000028	0.000026	0.000040
Lithium, total	mg/L			0.0015	0.0019	0.0032	0.0022	0.0019	0.00050	0.0020	0.0022	0.0017	0.0016	0.0024
Lithium, dissolved	mg/L			0.0014	0.0019	0.0030	0.0020	0.0018	0.00046	0.0018	0.0021	0.0016	0.0015	0.0023
Magnesium, total	mg/L			14	19	30	20	18	4.6	18	21	16	15	23
Magnesium, dissolved	mg/L			13	20	28	19	17	4.3	17	19	15	14	21
Manganese, total	mg/L		0.12	0.0025	0.024	0.0054	0.0036	0.0032	0.00083	0.0033	0.0037	0.0028	0.0026	0.0040
Manganese, dissolved	mg/L			0.00067	0.0074	0.0014	0.00097	0.00087	0.00022	0.00088	0.00099	0.00076	0.00070	0.0011
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00023	0.00038	0.00049	0.00033	0.00030	0.000076	0.00030	0.00034	0.00026	0.00024	0.00037
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0088	0.0059	0.0053	0.0014	0.0054	0.0061	0.0047	0.0043	0.0066
Nickel, total	mg/L		0.080	0.00025	0.0018	0.00054	0.00036	0.00032	0.000083	0.00033	0.00037	0.00028	0.00026	0.00040
Nickel, dissolved	mg/L			0.00025	0.0011	0.00054	0.00036	0.00032	0.000083	0.00033	0.00037	0.00028	0.00026	0.00040
Phosphorus, total	mg/L			0.0041	0.044	0.0088	0.0059	0.0053	0.0014	0.0054	0.0061	0.0047	0.0043	0.0066
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.0011	0.00072	0.00065	0.00017	0.00065	0.00074	0.00057	0.00052	0.00081
Potassium, total	mg/L			0.36	0.77	0.77	0.52	0.46	0.12	0.47	0.53	0.41	0.38	0.58
Potassium, dissolved	mg/L			0.35	0.84	0.75	0.51	0.45	0.12	0.46	0.52	0.40	0.37	0.56
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.000054	0.000036	0.000032	0.0000083	0.000033	0.000037	0.000028	0.000026	0.000040
Selenium, dissolved	mg/L			0.000025	0.00011	0.000054	0.000036	0.000032	0.0000083	0.000033	0.000037	0.000028	0.000026	0.000040
Silica, dissolved	mg/L													
Sodium, total	mg/L			7.0	13	15	10	9.0	2.3	9.2	10	8.0	7.3	11
Sodium, dissolved	mg/L			7.4	13	16	11	9.6	2.5	9.7	11	8.4	7.8	12
Strontium, total	mg/L		7.0	0.17	0.24	0.36	0.25	0.22	0.056	0.22	0.25	0.19	0.18	0.27
Strontium, dissolved	mg/L			0.16	0.24	0.34	0.23	0.21	0.053	0.21	0.24	0.18	0.17	0.26
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS20								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000011	0.0000072	0.0000065	0.0000017	0.0000065	0.0000074	0.0000057	0.0000052	0.0000081
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000011	0.0000072	0.0000065	0.0000017	0.0000065	0.0000074	0.0000057	0.0000052	0.0000081
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.00017	0.00011	0.00010	0.000026	0.00010	0.00012	0.000089	0.000082	0.00013
Uranium, dissolved	mg/L			0.000075	0.00025	0.00016	0.00011	0.000097	0.000025	0.000098	0.00011	0.000085	0.000079	0.00012
Vanadium, total	mg/L			0.00061	0.0027	0.0013	0.00088	0.00079	0.00020	0.00080	0.00090	0.00069	0.00064	0.00098
Vanadium, dissolved	mg/L			0.00025	0.0013	0.00054	0.00036	0.00032	0.000083	0.00033	0.00037	0.00028	0.00026	0.00040
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0032	0.0022	0.0019	0.00050	0.0020	0.0022	0.0017	0.0016	0.0024
Zinc, dissolved	mg/L			0.0015	0.0025	0.0032	0.0022	0.0019	0.00050	0.0020	0.0022	0.0017	0.0016	0.0024

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-22

Parameter	Units	SPO	WQG	Four Creek										
				Baseline		WQS21								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			118	163	242	1333	145	83	152	167	127	124	179
Alkalinity, total	mg-CaCO ₃ /L			130	190	270	1500	160	91	170	180	140	140	200
Chloride	mg/L		150	0.25	0.50	0.51	2.9	0.31	0.18	0.32	0.35	0.28	0.26	0.38
Fluoride	mg/L		0.12	0.059	0.068	0.12	0.68	0.074	0.041	0.076	0.083	0.065	0.062	0.090
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.0051	0.029	0.0031	0.0018	0.0032	0.0035	0.0028	0.0026	0.0038
Nitrate	mg/L		3	0.013	0.058	0.027	0.15	0.016	0.0091	0.017	0.018	0.014	0.014	0.020
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.0010	0.0057	0.00062	0.00035	0.00064	0.00070	0.00055	0.00052	0.00076
Sulfate	mg/L		309	1.9	28	3.9	22	2.4	1.3	2.4	2.7	2.1	2.0	2.9
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.20	1.1	0.12	0.070	0.13	0.14	0.11	0.10	0.15
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.066	0.37	0.040	0.023	0.041	0.045	0.035	0.034	0.049
Antimony, total	mg/L			0.000050	0.00012	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.0015	0.0085	0.00092	0.00052	0.00095	0.0010	0.00082	0.00078	0.0011
Arsenic, dissolved	mg/L			0.00064	0.00086	0.0013	0.0073	0.00080	0.00045	0.00082	0.00090	0.00071	0.00067	0.00097
Barium, total	mg/L		1	0.071	0.13	0.15	0.81	0.089	0.050	0.091	0.099	0.078	0.074	0.11
Barium, dissolved	mg/L			0.075	0.13	0.15	0.86	0.094	0.053	0.096	0.11	0.083	0.079	0.11
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Beryllium, dissolved	mg/L			0.000050	0.00010	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Boron, total	mg/L		1.2	0.012	0.020	0.025	0.14	0.015	0.0084	0.015	0.017	0.013	0.013	0.018
Boron, dissolved	mg/L			0.011	0.019	0.023	0.13	0.014	0.0077	0.014	0.015	0.012	0.012	0.017
Cadmium, total	mg/L		0.00009	0.000063	0.000019	0.000013	0.000072	0.0000079	0.0000044	0.0000081	0.0000088	0.0000069	0.0000066	0.0000096
Cadmium, dissolved	mg/L	0.00026	0.00024	0.000052	0.000012	0.000011	0.000060	0.0000065	0.0000037	0.0000067	0.0000073	0.0000057	0.0000054	0.0000079
Calcium, total	mg/L			24	34	49	270	30	17	31	34	26	25	37
Calcium, dissolved	mg/L			23	36	47	260	29	16	30	32	25	24	35
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.00053	0.0030	0.00032	0.00018	0.00033	0.00036	0.00029	0.00027	0.00040
Chromium, dissolved	mg/L			0.00015	0.00079	0.00031	0.0017	0.00019	0.00011	0.00019	0.00021	0.00017	0.00016	0.00023
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Cobalt, dissolved	mg/L			0.000050	0.00015	0.00010	0.00057	0.000062	0.000035	0.000064	0.000070	0.000055	0.000052	0.000076
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0029	0.016	0.0017	0.00098	0.0018	0.0020	0.0015	0.0015	0.0021

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS21								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0029	0.016	0.0017	0.00098	0.0018	0.0020	0.0015	0.0015	0.0021
Iron, total	mg/L		0.3	0.095	1.1	0.20	1.1	0.12	0.067	0.12	0.13	0.10	0.100	0.14
Iron, dissolved	mg/L		0.30	0.015	0.41	0.031	0.17	0.019	0.011	0.019	0.021	0.017	0.016	0.023
Lead, total	mg/L		0.0050	0.000025	0.00028	0.000051	0.00029	0.000031	0.000018	0.000032	0.000035	0.000028	0.000026	0.000038
Lead, dissolved	mg/L			0.000025	0.000091	0.000051	0.00029	0.000031	0.000018	0.000032	0.000035	0.000028	0.000026	0.000038
Lithium, total	mg/L			0.0015	0.0019	0.0031	0.017	0.0019	0.0011	0.0019	0.0021	0.0017	0.0016	0.0023
Lithium, dissolved	mg/L			0.0014	0.0019	0.0029	0.016	0.0017	0.00098	0.0018	0.0020	0.0015	0.0015	0.0021
Magnesium, total	mg/L			14	19	29	160	17	9.8	18	20	15	15	21
Magnesium, dissolved	mg/L			13	20	27	150	16	9.1	17	18	14	14	20
Manganese, total	mg/L		0.12	0.0025	0.024	0.0051	0.029	0.0031	0.0018	0.0032	0.0035	0.0028	0.0026	0.0038
Manganese, dissolved	mg/L			0.00067	0.0074	0.0014	0.0077	0.00084	0.00047	0.00086	0.00094	0.00074	0.00070	0.0010
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00023	0.00038	0.00047	0.0026	0.00029	0.00016	0.00030	0.00032	0.00025	0.00024	0.00035
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0084	0.047	0.0051	0.0029	0.0053	0.0057	0.0045	0.0043	0.0062
Nickel, total	mg/L		0.080	0.00025	0.0018	0.00051	0.0029	0.00031	0.00018	0.00032	0.00035	0.00028	0.00026	0.00038
Nickel, dissolved	mg/L			0.00025	0.0011	0.00051	0.0029	0.00031	0.00018	0.00032	0.00035	0.00028	0.00026	0.00038
Phosphorus, total	mg/L			0.0041	0.044	0.0084	0.047	0.0051	0.0029	0.0053	0.0057	0.0045	0.0043	0.0062
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.0010	0.0057	0.00062	0.00035	0.00064	0.00070	0.00055	0.00052	0.00076
Potassium, total	mg/L			0.36	0.77	0.74	4.1	0.45	0.25	0.46	0.50	0.40	0.38	0.55
Potassium, dissolved	mg/L			0.35	0.84	0.72	4.0	0.44	0.25	0.45	0.49	0.39	0.37	0.53
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.000051	0.00029	0.000031	0.000018	0.000032	0.000035	0.000028	0.000026	0.000038
Selenium, dissolved	mg/L			0.000025	0.00011	0.000051	0.00029	0.000031	0.000018	0.000032	0.000035	0.000028	0.000026	0.000038
Silica, dissolved	mg/L			no data	no data									
Sodium, total	mg/L			7.0	13	14	80	8.7	4.9	9.0	9.8	7.7	7.3	11
Sodium, dissolved	mg/L			7.4	13	15	85	9.2	5.2	9.5	10	8.2	7.8	11
Strontium, total	mg/L		7.0	0.17	0.24	0.35	1.9	0.21	0.12	0.22	0.24	0.19	0.18	0.26
Strontium, dissolved	mg/L			0.16	0.24	0.33	1.8	0.20	0.11	0.21	0.22	0.18	0.17	0.24
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS21								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.000010	0.000057	0.0000062	0.0000035	0.0000064	0.0000070	0.0000055	0.0000052	0.0000076
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000010	0.000057	0.0000062	0.0000035	0.0000064	0.0000070	0.0000055	0.0000052	0.0000076
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.00016	0.00089	0.000097	0.000055	0.00010	0.00011	0.000086	0.000082	0.00012
Uranium, dissolved	mg/L			0.000075	0.00025	0.00015	0.00086	0.000094	0.000053	0.000096	0.00011	0.000083	0.000079	0.00011
Vanadium, total	mg/L			0.00061	0.0027	0.0013	0.0070	0.00076	0.00043	0.00078	0.00085	0.00067	0.00064	0.00093
Vanadium, dissolved	mg/L			0.00025	0.0013	0.00051	0.0029	0.00031	0.00018	0.00032	0.00035	0.00028	0.00026	0.00038
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0031	0.017	0.0019	0.0011	0.0019	0.0021	0.0017	0.0016	0.0023
Zinc, dissolved	mg/L			0.0015	0.0025	0.0031	0.017	0.0019	0.0011	0.0019	0.0021	0.0017	0.0016	0.0023

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-23

Parameter	Units	SPO	WQG	Four Creek										
				Baseline		WQS03_DS								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			118	163	175	182	149	131	273	346	164	188	295
Alkalinity, total	mg-CaCO ₃ /L			130	190	360	430	200	240	760	1200	260	490	1700
Chloride	mg/L		150	0.25	0.50	5.1	7.7	1.4	2.8	15	29	2.8	9.3	38
Fluoride	mg/L		0.12	0.059	0.068	0.083	0.084	0.075	0.065	0.087	0.095	0.074	0.065	0.099
Ammonia, total	mg-N/L		0.95	0.0025	0.0092	0.079	0.11	0.019	0.040	0.13	0.21	0.023	0.077	0.62
Nitrate	mg/L		3	0.013	0.058	0.61	0.87	0.13	0.30	1.0	1.6	0.18	0.60	4.9
Nitrite	mg/L	0.0524	0.02	0.00050	0.0010	0.014	0.020	0.0034	0.0071	0.024	0.038	0.0043	0.014	0.11
Sulfate	mg/L		309	1.9	28	140	210	31	72	490	920	82	290	1100
Aluminum, total	mg/L	0.236	0.1	0.099	1.2	0.17	0.19	0.13	0.12	0.27	0.36	0.14	0.18	0.50
Aluminum, dissolved	mg/L		0.05	0.032	0.49	0.083	0.10	0.047	0.052	0.18	0.29	0.061	0.11	0.42
Antimony, total	mg/L			0.000050	0.00012	0.00036	0.00050	0.00013	0.00021	0.0023	0.0041	0.00042	0.0014	0.0024
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.00036	0.00050	0.00013	0.00021	0.0023	0.0041	0.00042	0.0014	0.0024
Arsenic, total	mg/L		0.005	0.00074	0.0011	0.0012	0.0013	0.00096	0.00087	0.0030	0.0044	0.0012	0.0020	0.0025
Arsenic, dissolved	mg/L			0.00064	0.00086	0.0010	0.0011	0.00084	0.00077	0.0029	0.0043	0.0011	0.0019	0.0024
Barium, total	mg/L		1	0.071	0.13	0.10	0.11	0.091	0.080	0.13	0.15	0.093	0.092	0.17
Barium, dissolved	mg/L			0.075	0.13	0.11	0.11	0.095	0.084	0.13	0.15	0.098	0.097	0.18
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000069	0.000070	0.000063	0.000054	0.000074	0.000081	0.000063	0.000056	0.000086
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000069	0.000070	0.000063	0.000054	0.000074	0.000081	0.000063	0.000056	0.000086
Boron, total	mg/L		1.2	0.012	0.020	0.089	0.13	0.031	0.051	0.26	0.48	0.056	0.16	0.59
Boron, dissolved	mg/L			0.011	0.019	0.087	0.12	0.030	0.050	0.26	0.48	0.055	0.16	0.59
Cadmium, total	mg/L		0.00009	0.000063	0.000019	0.000098	0.00015	0.000025	0.000049	0.0016	0.0030	0.00027	0.00097	0.00077
Cadmium, dissolved	mg/L	0.00026	0.00024	0.000052	0.000012	0.000096	0.00014	0.000024	0.000048	0.0016	0.0030	0.00027	0.00097	0.00077
Calcium, total	mg/L			24	34	34	35	30	26	40	46	31	29	49
Calcium, dissolved	mg/L			23	36	33	34	29	25	39	44	30	28	48
Chromium, total	mg/L		0.0089	0.00026	0.0016	0.0010	0.0014	0.00048	0.00065	0.0039	0.0068	0.00090	0.0024	0.0059
Chromium, dissolved	mg/L			0.00015	0.00079	0.00090	0.0013	0.00034	0.00053	0.0037	0.0067	0.00076	0.0022	0.0058
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00047	0.00046	0.00065	0.00014	0.00025	0.0032	0.0059	0.00058	0.0019	0.0033
Cobalt, dissolved	mg/L			0.000050	0.00015	0.00046	0.00065	0.00014	0.00025	0.0032	0.0059	0.00058	0.0019	0.0033
Copper, total	mg/L		0.0047	0.0014	0.0044	0.0027	0.0031	0.0019	0.0019	0.0063	0.0095	0.0025	0.0041	0.0089

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS03_DS								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0014	0.0034	0.0027	0.0031	0.0019	0.0019	0.0063	0.0095	0.0025	0.0041	0.0089
Iron, total	mg/L		0.3	0.095	1.1	0.14	0.15	0.12	0.11	0.19	0.24	0.13	0.14	0.29
Iron, dissolved	mg/L		0.30	0.015	0.41	0.039	0.047	0.022	0.025	0.081	0.13	0.029	0.052	0.20
Lead, total	mg/L		0.0050	0.000025	0.00028	0.00017	0.00023	0.000059	0.000094	0.0011	0.0020	0.00020	0.00064	0.0011
Lead, dissolved	mg/L			0.000025	0.000091	0.00017	0.00023	0.000059	0.000094	0.0011	0.0020	0.00020	0.00064	0.0011
Lithium, total	mg/L			0.0015	0.0019	0.050	0.076	0.012	0.027	0.16	0.30	0.028	0.096	0.38
Lithium, dissolved	mg/L			0.0014	0.0019	0.050	0.076	0.012	0.027	0.16	0.30	0.028	0.096	0.38
Magnesium, total	mg/L			14	19	22	23	18	16	42	56	21	28	42
Magnesium, dissolved	mg/L			13	20	20	22	17	15	41	55	20	27	41
Manganese, total	mg/L		0.12	0.0025	0.024	0.022	0.033	0.0070	0.012	0.10	0.19	0.020	0.063	0.17
Manganese, dissolved	mg/L			0.00067	0.0074	0.020	0.031	0.0047	0.010	0.10	0.19	0.017	0.061	0.17
Mercury, total	mg/L		0.00001	0.0000025	0.000013	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000093	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00023	0.00038	0.0016	0.0022	0.00060	0.00099	0.0051	0.0091	0.0011	0.0032	0.010
Molybdenum, dissolved	mg-N/L			0.00019	0.00036	0.0066	0.0071	0.0054	0.0049	0.011	0.013	0.0059	0.0072	0.015
Nickel, total	mg/L		0.080	0.00025	0.0018	0.0017	0.0024	0.00060	0.00096	0.0076	0.014	0.0015	0.0046	0.012
Nickel, dissolved	mg/L			0.00025	0.0011	0.0017	0.0024	0.00060	0.00096	0.0076	0.014	0.0015	0.0046	0.012
Phosphorus, total	mg/L			0.0041	0.044	0.0059	0.0060	0.0052	0.0046	0.0062	0.0068	0.0052	0.0046	0.0073
Orthophosphate, dissolved	mg/L			0.00050	0.0012	0.00068	0.00069	0.00063	0.00053	0.00074	0.00081	0.00063	0.00056	0.00086
Potassium, total	mg/L			0.36	0.77	5.4	8.0	1.5	3.0	17	31	3.1	10	39
Potassium, dissolved	mg/L			0.35	0.84	5.4	8.0	1.5	3.0	17	31	3.1	10	39
Selenium, total	mg/L	0.008	0.002	0.000025	0.000095	0.0022	0.0034	0.00051	0.0012	0.0085	0.016	0.0014	0.0051	0.017
Selenium, dissolved	mg/L			0.000025	0.00011	0.0022	0.0034	0.00051	0.0012	0.0085	0.016	0.0014	0.0051	0.017
Silica, dissolved	mg/L			no data	no data	2.7	4.2	0.65	1.6	8.2	15	1.4	5.0	21
Sodium, total	mg/L			7.0	13	130	190	36	73	380	710	70	230	950
Sodium, dissolved	mg/L			7.4	13	130	190	36	73	380	710	71	230	950
Strontium, total	mg/L		7.0	0.17	0.24	0.49	0.58	0.27	0.31	1.2	2.0	0.37	0.77	2.3
Strontium, dissolved	mg/L			0.16	0.24	0.47	0.57	0.26	0.30	1.2	2.0	0.36	0.76	2.3
Silver, total	mg/L		0.00005	0.0000050	0.000022	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000012	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Four Creek											
			WQG	Baseline		WQS03_DS								
						Closure								
						Alternative Case 1: High groundwater				Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.00010	0.00015	0.000025	0.000051	0.0017	0.0031	0.00027	0.00098	0.00079
Thallium, dissolved	mg/L			0.0000050	0.000010	0.00010	0.00015	0.000025	0.000051	0.0017	0.0031	0.00027	0.00098	0.00079
Uranium, total	mg/L		0.0085	0.000078	0.00025	0.00091	0.0013	0.00027	0.00051	0.0039	0.0073	0.00072	0.0024	0.0065
Uranium, dissolved	mg/L			0.000075	0.00025	0.00091	0.0013	0.00027	0.00051	0.0039	0.0073	0.00072	0.0024	0.0065
Vanadium, total	mg/L			0.00061	0.0027	0.0029	0.0039	0.0012	0.0018	0.0087	0.016	0.0021	0.0054	0.017
Vanadium, dissolved	mg/L			0.00025	0.0013	0.0024	0.0035	0.00078	0.0014	0.0082	0.015	0.0016	0.0050	0.017
Zinc, total	mg/L		0.023	0.0015	0.0059	0.0041	0.0048	0.0023	0.0027	0.013	0.022	0.0036	0.0081	0.019
Zinc, dissolved	mg/L			0.0015	0.0025	0.0041	0.0048	0.0023	0.0027	0.013	0.022	0.0036	0.0081	0.019

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-24

Parameter	Units	SPO	Goathorn Creek																
			WQG	Baseline		WQS05													
						Operations									Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L		68	102	155	110	82	76	94	108	81	76	109	101	119	83	82	113	
Alkalinity, total	mg-CaCO ₃ /L		52	87	380	110	89	65	160	100	92	65	100	120	150	83	110	120	
Chloride	mg/L		150	0.25	0.50	8.6	0.75	0.82	0.29	2.8	0.51	0.93	0.29	0.54	1.6	2.5	0.65	1.6	1.3
Fluoride	mg/L		0.12	0.032	0.041	0.043	0.049	0.037	0.036	0.042	0.049	0.037	0.035	0.050	0.044	0.051	0.037	0.036	0.052
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.085	0.0066	0.0079	0.0029	0.027	0.0052	0.010	0.0029	0.0067	0.018	0.028	0.0057	0.014	0.028
Nitrate	mg/L		3	0.041	0.076	0.69	0.066	0.077	0.039	0.23	0.053	0.094	0.039	0.068	0.16	0.24	0.057	0.12	0.24
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.015	0.0013	0.0014	0.00057	0.0048	0.00100	0.0018	0.00058	0.0013	0.0033	0.0051	0.0011	0.0025	0.0051
Sulfate	mg/L		218	24	37	300	38	36	22	85	28	37	22	31	67	92	31	60	53
Aluminum, total	mg/L	0.236	0.1	0.092	0.75	0.18	0.12	0.100	0.095	0.14	0.12	0.10	0.094	0.13	0.12	0.13	0.098	0.099	0.13
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.034	0.023	0.018	0.016	0.025	0.023	0.018	0.016	0.023	0.024	0.028	0.018	0.020	0.026
Antimony, total	mg/L			0.000073	0.00014	0.0015	0.00017	0.00014	0.000067	0.00020	0.00012	0.00011	0.000067	0.00012	0.00024	0.00034	0.00011	0.00021	0.00015
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0015	0.00020	0.00016	0.000091	0.00023	0.00015	0.00013	0.000091	0.00015	0.00027	0.00036	0.00014	0.00023	0.00018
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0017	0.00054	0.00040	0.00031	0.00047	0.00050	0.00037	0.00031	0.00049	0.00050	0.00065	0.00038	0.00042	0.00052
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0016	0.00044	0.00032	0.00024	0.00034	0.00040	0.00028	0.00024	0.00039	0.00042	0.00055	0.00030	0.00035	0.00042
Barium, total	mg/L		1	0.058	0.072	0.077	0.077	0.060	0.060	0.070	0.076	0.059	0.059	0.079	0.074	0.080	0.060	0.060	0.081
Barium, dissolved	mg/L			0.059	0.073	0.077	0.078	0.060	0.061	0.071	0.076	0.059	0.060	0.079	0.075	0.081	0.061	0.060	0.082
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000067	0.000077	0.000057	0.000055	0.000065	0.000076	0.000056	0.000055	0.000078	0.000069	0.000079	0.000058	0.000054	0.000080
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000067	0.000077	0.000057	0.000055	0.000065	0.000076	0.000056	0.000055	0.000078	0.000069	0.000079	0.000058	0.000054	0.000080
Boron, total	mg/L		1.2	0.0050	0.050	0.15	0.019	0.017	0.0077	0.045	0.015	0.018	0.0078	0.015	0.028	0.041	0.014	0.027	0.022
Boron, dissolved	mg/L			0.0050	0.050	0.15	0.018	0.016	0.0073	0.044	0.014	0.017	0.0074	0.014	0.028	0.042	0.014	0.027	0.022
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.0012	0.000061	0.000051	0.000011	0.000031	0.000013	0.000015	0.000010	0.000017	0.00013	0.00020	0.000032	0.00010	0.000027
Cadmium, dissolved	mg/L	0.00019	0.00016	0.0000081	0.000036	0.0012	0.000058	0.000049	0.0000087	0.000028	0.000010	0.000013	0.0000079	0.000014	0.00013	0.00020	0.000030	0.000098	0.000026
Calcium, total	mg/L			21	30	29	33	24	23	27	33	24	23	33	29	34	25	23	34
Calcium, dissolved	mg/L			22	32	30	33	25	24	28	33	24	24	34	30	34	25	24	35
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0026	0.00046	0.00039	0.00025	0.00074	0.00039	0.00038	0.00025	0.00040	0.00055	0.00068	0.00034	0.00049	0.00047
Chromium, dissolved	mg/L			0.00010	0.00027	0.0023	0.00032	0.00027	0.00014	0.00051	0.00025	0.00024	0.00014	0.00025	0.00043	0.00060	0.00023	0.00039	0.00033
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00055	0.0022	0.00017	0.00015	0.000057	0.00026	0.000085	0.00011	0.000056	0.000095	0.00030	0.00045	0.00011	0.00025	0.00014
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0021	0.00016	0.00014	0.000057	0.00019	0.000082	0.000091	0.000056	0.000091	0.00030	0.00045	0.00011	0.00025	0.00014
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0046	0.0022	0.0017	0.0016	0.0022	0.0021	0.0017	0.0016	0.0022	0.0022	0.0025	0.0017	0.0018	0.0023

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	WQG	Goathorn Creek																	
				Baseline	WQS05													Post-Closure			
					Operations								Alternative Case 5: Low flow								
					Alternative Case 2: High source terms				Alternative Case 4: 3 wet years												
					P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer
Copper, dissolved	mg/L			0.0014	0.0039	0.0043	0.0021	0.0016	0.0015	0.0020	0.0020	0.0016	0.0015	0.0021	0.0021	0.0024	0.0016	0.0018	0.0022		
Iron, total	mg/L		0.3	0.085	0.78	0.34	0.12	0.11	0.088	0.25	0.12	0.13	0.087	0.12	0.11	0.14	0.094	0.099	0.14		
Iron, dissolved	mg/L		0.30	0.015	0.13	0.035	0.023	0.018	0.017	0.022	0.023	0.018	0.016	0.024	0.023	0.027	0.018	0.019	0.025		
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00080	0.000070	0.000062	0.000028	0.00012	0.000042	0.000051	0.000028	0.000046	0.00011	0.00015	0.000047	0.000094	0.000059		
Lead, dissolved	mg/L			0.000025	0.000050	0.00074	0.000068	0.000057	0.000028	0.000076	0.000040	0.000040	0.000028	0.000044	0.00011	0.00016	0.000045	0.000091	0.000057		
Lithium, total	mg/L			0.00050	0.0011	0.089	0.0047	0.0060	0.00071	0.025	0.0020	0.0068	0.00075	0.0024	0.013	0.022	0.0039	0.013	0.010		
Lithium, dissolved	mg/L			0.00050	0.0010	0.089	0.0047	0.0060	0.00071	0.025	0.0020	0.0068	0.00075	0.0024	0.014	0.024	0.0042	0.014	0.011		
Magnesium, total	mg/L			3.9	6.5	20	6.8	5.3	4.6	6.4	6.3	5.0	4.5	6.5	7.0	8.2	5.1	5.9	6.8		
Magnesium, dissolved	mg/L			3.8	7.4	19	6.6	5.2	4.5	6.3	6.1	4.8	4.4	6.3	6.9	8.1	5.0	5.8	6.7		
Manganese, total	mg/L		0.12	0.0059	0.033	0.073	0.011	0.0094	0.0063	0.015	0.0088	0.0087	0.0063	0.0094	0.016	0.020	0.0083	0.013	0.012		
Manganese, dissolved	mg/L			0.0026	0.0084	0.065	0.0062	0.0055	0.0028	0.0090	0.0039	0.0044	0.0027	0.0043	0.012	0.017	0.0046	0.0097	0.0075		
Mercury, total	mg/L		0.00001	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025		
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025		
Molybdenum, total	mg-N/L		0.073	0.00047	0.00062	0.0033	0.00065	0.00060	0.00045	0.0012	0.00056	0.00061	0.00045	0.00060	0.00091	0.0011	0.00053	0.00079	0.00074		
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0080	0.0068	0.0052	0.0049	0.0058	0.0067	0.0051	0.0048	0.0069	0.0062	0.0073	0.0052	0.0051	0.0071		
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0051	0.00058	0.00052	0.00028	0.0010	0.00041	0.00047	0.00028	0.00044	0.00090	0.0012	0.00042	0.00077	0.00060		
Nickel, dissolved	mg/L			0.00025	0.00060	0.0048	0.00057	0.00049	0.00028	0.00082	0.00041	0.00042	0.00028	0.00043	0.00092	0.0013	0.00042	0.00077	0.00060		
Phosphorus, total	mg/L			0.0045	0.019	0.0075	0.0068	0.0052	0.0049	0.0067	0.0067	0.0053	0.0049	0.0069	0.0060	0.0070	0.0052	0.0049	0.0071		
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00092	0.0010	0.00071	0.00064	0.00084	0.0010	0.00070	0.00064	0.0010	0.00094	0.0010	0.00072	0.00062	0.0011		
Potassium, total	mg/L			0.39	1.0	9.8	0.93	0.99	0.41	3.1	0.64	1.1	0.41	0.69	1.8	2.7	0.76	1.7	1.4		
Potassium, dissolved	mg/L			0.36	0.48	9.8	0.88	0.95	0.38	3.1	0.59	1.0	0.38	0.64	1.8	2.8	0.75	1.8	1.5		
Selenium, total	mg/L	0.008	0.002	0.000086	0.00020	0.0050	0.00033	0.00037	0.000094	0.0012	0.00017	0.00037	0.000094	0.00019	0.00075	0.0012	0.00026	0.00072	0.00053		
Selenium, dissolved	mg/L			0.000076	0.00012	0.0050	0.00031	0.00035	0.000083	0.0012	0.00015	0.00036	0.000083	0.00017	0.00077	0.0013	0.00026	0.00074	0.00055		
Silica, dissolved	mg/L			5.6	6.2	11	9.4	7.0	6.3	8.3	9.3	6.9	6.3	9.5	8.4	10	7.0	6.8	9.8		
Sodium, total	mg/L			2.3	4.8	210	14	17	3.2	70	7.6	20	3.3	8.3	33	57	12	35	28		
Sodium, dissolved	mg/L			2.4	4.8	210	14	17	3.3	70	7.7	20	3.4	8.4	36	60	12	37	29		
Strontium, total	mg/L		7.0	0.076	0.11	0.66	0.16	0.13	0.093	0.22	0.14	0.13	0.092	0.14	0.18	0.22	0.12	0.16	0.17		
Strontium, dissolved	mg/L			0.077	0.12	0.66	0.15	0.13	0.092	0.22	0.14	0.12	0.091	0.14	0.18	0.22	0.12	0.16	0.17		
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050		
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050		
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050		

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	WQG	Goathorn Creek																
				Baseline		WQS05														
						Operations										Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow	
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.0012	0.000056	0.000048	0.0000064	0.000027	0.0000086	0.000011	0.0000056	0.000012	0.00012	0.00020	0.000029	0.000097	0.000023	
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0012	0.000056	0.000048	0.0000064	0.000027	0.0000086	0.000011	0.0000056	0.000012	0.00012	0.00020	0.000029	0.000098	0.000023	
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0024	0.00021	0.00020	0.000073	0.00048	0.00013	0.00018	0.000073	0.00014	0.00037	0.00057	0.00015	0.00034	0.00023	
Uranium, dissolved	mg/L			0.000051	0.00014	0.0024	0.00021	0.00020	0.000070	0.00048	0.00013	0.00018	0.000070	0.00013	0.00038	0.00058	0.00015	0.00035	0.00023	
Vanadium, total	mg/L			0.00025	0.0020	0.0052	0.00094	0.00077	0.00041	0.0017	0.00082	0.00080	0.00042	0.00081	0.0011	0.0014	0.00066	0.0010	0.0010	
Vanadium, dissolved	mg/L			0.00025	0.00052	0.0049	0.00081	0.00068	0.00037	0.0015	0.00069	0.00069	0.00037	0.00069	0.0011	0.0014	0.00060	0.00098	0.00091	
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.0090	0.0026	0.0021	0.0017	0.0030	0.0023	0.0020	0.0016	0.0024	0.0028	0.0033	0.0019	0.0024	0.0027	
Zinc, dissolved	mg/L			0.0015	0.0021	0.0085	0.0026	0.0020	0.0017	0.0026	0.0023	0.0019	0.0016	0.0024	0.0028	0.0033	0.0019	0.0024	0.0027	

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-25

Parameter	Units	SPO	WQG	Goathorn Creek															
				Baseline	WQS06														
					Operations										Post-Closure				
					Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow	
					P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter		Average Summer	Average Winter	Max Summer	Max Winter		Average Summer
Total Hardness	mg-CaCO ₃ /L		68	102	151	103	79	74	89	93	75	74	103	87	101	76	76	95	
Alkalinity, total	mg-CaCO ₃ /L		52	87	410	91	84	60	180	73	87	59	91	110	200	65	86	130	
Chloride	mg/L		150	0.25	0.50	9.5	0.69	1.0	0.28	3.7	0.46	1.1	0.28	0.47	1.8	4.3	0.48	1.1	2.3
Fluoride	mg/L		0.12	0.032	0.041	0.039	0.050	0.035	0.035	0.038	0.042	0.035	0.035	0.050	0.040	0.042	0.035	0.035	0.042
Ammonia, total	mg-N/L		1.5	0.0025	0.0070	0.094	0.0060	0.0098	0.0027	0.035	0.0048	0.012	0.0029	0.0060	0.0072	0.016	0.0036	0.0067	0.016
Nitrate	mg/L		3	0.041	0.076	0.77	0.073	0.10	0.043	0.29	0.064	0.12	0.044	0.073	0.079	0.13	0.049	0.069	0.13
Nitrite	mg/L	0.0524	0.02	0.00050	0.0020	0.017	0.0011	0.0018	0.00055	0.0061	0.00091	0.0022	0.00056	0.0011	0.0013	0.0027	0.00067	0.0012	0.0027
Sulfate	mg/L		218	24	37	340	42	47	25	110	34	46	25	34	59	120	31	46	67
Aluminum, total	mg/L	0.236	0.1	0.092	0.75	0.17	0.12	0.11	0.098	0.16	0.12	0.11	0.097	0.12	0.11	0.13	0.10	0.10	0.12
Aluminum, dissolved	mg/L		0.05	0.014	0.13	0.032	0.024	0.017	0.016	0.026	0.019	0.017	0.016	0.024	0.021	0.024	0.016	0.018	0.021
Antimony, total	mg/L			0.000073	0.00014	0.0017	0.00012	0.00014	0.000054	0.00023	0.000071	0.000097	0.000054	0.000073	0.00014	0.00029	0.000072	0.00013	0.00016
Antimony, dissolved	mg/L		0.009	0.000050	0.00011	0.0017	0.00015	0.00016	0.000077	0.00025	0.00010	0.00012	0.000077	0.00010	0.00016	0.00031	0.000094	0.00015	0.00017
Arsenic, total	mg/L		0.005	0.00023	0.00068	0.0018	0.00045	0.00034	0.00027	0.00043	0.00035	0.00029	0.00027	0.00045	0.00034	0.00048	0.00027	0.00032	0.00039
Arsenic, dissolved	mg/L			0.00017	0.00035	0.0017	0.00036	0.00026	0.00021	0.00030	0.00028	0.00021	0.00020	0.00036	0.00027	0.00038	0.00021	0.00025	0.00029
Barium, total	mg/L		1	0.058	0.072	0.071	0.079	0.062	0.062	0.068	0.075	0.061	0.062	0.079	0.072	0.077	0.063	0.061	0.076
Barium, dissolved	mg/L			0.059	0.073	0.072	0.081	0.063	0.063	0.069	0.076	0.062	0.063	0.081	0.073	0.078	0.064	0.062	0.078
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000061	0.000065	0.000053	0.000053	0.000058	0.000064	0.000052	0.000053	0.000065	0.000062	0.000066	0.000054	0.000052	0.000065
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000061	0.000065	0.000053	0.000053	0.000058	0.000064	0.000052	0.000053	0.000065	0.000062	0.000066	0.000054	0.000052	0.000065
Boron, total	mg/L		1.2	0.0050	0.050	0.16	0.013	0.017	0.0058	0.054	0.0085	0.018	0.0059	0.0088	0.028	0.063	0.0082	0.016	0.034
Boron, dissolved	mg/L			0.0050	0.050	0.16	0.013	0.017	0.0058	0.054	0.0085	0.018	0.0058	0.0088	0.028	0.063	0.0087	0.018	0.035
Cadmium, total	mg/L		0.00009	0.000010	0.000049	0.0013	0.000061	0.000066	0.000011	0.000038	0.000014	0.000018	0.000011	0.000016	0.000067	0.00012	0.000019	0.000052	0.000020
Cadmium, dissolved	mg/L	0.00019	0.00016	0.0000081	0.000036	0.0013	0.000059	0.000064	0.0000091	0.000035	0.000011	0.000016	0.0000086	0.000014	0.000065	0.00012	0.000017	0.000051	0.000019
Calcium, total	mg/L			21	30	26	28	23	22	25	27	22	22	28	26	28	23	22	28
Calcium, dissolved	mg/L			22	32	27	29	24	23	26	28	23	23	29	27	29	24	23	29
Chromium, total	mg/L		0.0089	0.00020	0.00091	0.0028	0.00035	0.00039	0.00022	0.00084	0.00028	0.00037	0.00022	0.00028	0.00046	0.00087	0.00026	0.00036	0.00057
Chromium, dissolved	mg/L			0.00010	0.00027	0.0025	0.00022	0.00026	0.00011	0.00058	0.00015	0.00022	0.00011	0.00015	0.00032	0.00067	0.00015	0.00025	0.00038
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00055	0.0025	0.00016	0.00018	0.000055	0.00032	0.000074	0.00012	0.000054	0.000081	0.00017	0.00036	0.000078	0.00015	0.00021
Cobalt, dissolved	mg/L			0.000050	0.00011	0.0024	0.00015	0.00017	0.000055	0.00023	0.000071	0.000098	0.000054	0.000076	0.00017	0.00030	0.000075	0.00015	0.00015
Copper, total	mg/L		0.0028	0.0015	0.0054	0.0046	0.0020	0.0018	0.0016	0.0023	0.0019	0.0017	0.0016	0.0019	0.0019	0.0021	0.0017	0.0017	0.0020

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1C1027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	WQG	Goathorn Creek																
				Baseline	WQS06															
					Operations										Post-Closure					
					Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms			Alternative Case 5: Low flow			
					P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.0014	0.0039	0.0043	0.0019	0.0017	0.0015	0.0020	0.0018	0.0016	0.0015	0.0018	0.0018	0.0020	0.0015	0.0016	0.0019	
Iron, total	mg/L		0.3	0.085	0.78	0.35	0.12	0.12	0.091	0.29	0.12	0.14	0.091	0.12	0.14	0.22	0.10	0.11	0.22	
Iron, dissolved	mg/L		0.30	0.015	0.13	0.034	0.019	0.017	0.016	0.021	0.019	0.017	0.016	0.019	0.019	0.022	0.016	0.017	0.021	
Lead, total	mg/L		0.0050	0.000025	0.00023	0.00089	0.000064	0.000073	0.000027	0.00014	0.000036	0.000057	0.000027	0.000039	0.000070	0.00014	0.000037	0.000064	0.000094	
Lead, dissolved	mg/L			0.000025	0.000050	0.00082	0.000062	0.000065	0.000027	0.000088	0.000034	0.000042	0.000027	0.000036	0.000066	0.00010	0.000034	0.000059	0.000057	
Lithium, total	mg/L			0.00050	0.0011	0.099	0.0046	0.0081	0.00069	0.033	0.0020	0.0088	0.00077	0.0022	0.016	0.039	0.0023	0.0074	0.020	
Lithium, dissolved	mg/L			0.00050	0.0010	0.099	0.0046	0.0081	0.00069	0.033	0.0020	0.0088	0.00077	0.0022	0.016	0.039	0.0027	0.0086	0.020	
Magnesium, total	mg/L			3.9	6.5	21	8.1	5.3	4.7	6.4	6.3	4.8	4.6	8.1	5.4	7.6	4.6	5.1	6.1	
Magnesium, dissolved	mg/L			3.8	7.4	20	7.7	5.1	4.5	6.3	6.0	4.6	4.4	7.7	5.4	7.4	4.5	5.0	5.9	
Manganese, total	mg/L		0.12	0.0059	0.033	0.079	0.010	0.010	0.0061	0.018	0.0079	0.0093	0.0061	0.0081	0.010	0.016	0.0071	0.0095	0.011	
Manganese, dissolved	mg/L			0.0026	0.0084	0.072	0.0058	0.0064	0.0027	0.011	0.0036	0.0049	0.0027	0.0039	0.0066	0.011	0.0035	0.0060	0.0063	
Mercury, total	mg/L		0.00001	0.0000025	0.0000064	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Molybdenum, total	mg-N/L		0.073	0.00047	0.00062	0.0036	0.00070	0.00073	0.00049	0.0014	0.00063	0.00072	0.00049	0.00064	0.00078	0.0013	0.00055	0.00067	0.00088	
Molybdenum, dissolved	mg-N/L			0.00046	0.00062	0.0074	0.0058	0.0050	0.0048	0.0055	0.0058	0.0048	0.0047	0.0058	0.0056	0.0061	0.0049	0.0048	0.0059	
Nickel, total	mg/L		0.080	0.00025	0.0011	0.0056	0.00052	0.00058	0.00027	0.0012	0.00036	0.00052	0.00027	0.00037	0.00064	0.0013	0.00034	0.00053	0.00080	
Nickel, dissolved	mg/L			0.00025	0.00060	0.0053	0.00050	0.00055	0.00027	0.00097	0.00035	0.00045	0.00027	0.00036	0.00056	0.0011	0.00033	0.00052	0.00064	
Phosphorus, total	mg/L			0.0045	0.019	0.0069	0.0058	0.0050	0.0048	0.0067	0.0058	0.0052	0.0047	0.0058	0.0056	0.0059	0.0049	0.0048	0.0059	
Orthophosphate, dissolved	mg/L			0.00050	0.0040	0.00061	0.00065	0.00053	0.00053	0.00058	0.00064	0.00052	0.00053	0.00065	0.00062	0.00065	0.00054	0.00051	0.00065	
Potassium, total	mg/L			0.39	1.0	11	0.91	1.2	0.42	4.0	0.64	1.3	0.43	0.66	2.1	4.6	0.61	1.1	2.5	
Potassium, dissolved	mg/L			0.36	0.48	11	0.87	1.2	0.39	4.0	0.61	1.3	0.40	0.62	2.0	4.6	0.62	1.2	2.5	
Selenium, total	mg/L	0.008	0.002	0.000086	0.00020	0.0056	0.00032	0.00048	0.000094	0.0016	0.00017	0.00047	0.000097	0.00018	0.00079	0.0019	0.00018	0.00043	0.00095	
Selenium, dissolved	mg/L			0.000076	0.00012	0.0056	0.00031	0.00047	0.000084	0.0016	0.00016	0.00046	0.000087	0.00017	0.00079	0.0019	0.00018	0.00047	0.00096	
Silica, dissolved	mg/L			5.6	6.2	10	7.2	6.2	5.7	7.7	7.1	6.2	5.7	7.1	6.9	7.6	6.0	6.0	7.4	
Sodium, total	mg/L			2.3	4.8	240	13	22	3.0	92	6.7	25	3.2	7.1	45	110	7.3	20	56	
Sodium, dissolved	mg/L			2.4	4.8	240	13	22	3.1	92	6.8	25	3.3	7.2	45	110	8.3	24	57	
Strontium, total	mg/L		7.0	0.076	0.11	0.70	0.13	0.13	0.086	0.24	0.11	0.12	0.085	0.13	0.15	0.27	0.093	0.12	0.17	
Strontium, dissolved	mg/L			0.077	0.12	0.70	0.12	0.13	0.086	0.24	0.11	0.12	0.086	0.12	0.15	0.27	0.095	0.12	0.17	
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	
Tin, total	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	WQG	Goathorn Creek																
				Baseline		WQS06											Post-Closure			
						Operations														
						Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms					
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000010	0.0013	0.000056	0.000062	0.0000060	0.000033	0.0000075	0.000013	0.0000054	0.000010	0.000062	0.00011	0.000014	0.000049	0.000022	
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0013	0.000056	0.000062	0.0000060	0.000033	0.0000075	0.000013	0.0000054	0.000010	0.000063	0.00011	0.000014	0.000049	0.000022	
Uranium, total	mg/L		0.0085	0.000054	0.00014	0.0027	0.00017	0.00022	0.000061	0.00060	0.000092	0.00020	0.000061	0.000095	0.00031	0.00071	0.000094	0.00020	0.00037	
Uranium, dissolved	mg/L			0.000051	0.00014	0.0027	0.00017	0.00022	0.000058	0.00060	0.000088	0.00019	0.000058	0.000092	0.00031	0.00071	0.000096	0.00022	0.00037	
Vanadium, total	mg/L			0.00025	0.0020	0.0056	0.00053	0.00067	0.00029	0.0019	0.00039	0.00069	0.00029	0.00043	0.00100	0.0021	0.00037	0.00062	0.0013	
Vanadium, dissolved	mg/L			0.00025	0.00052	0.0054	0.00052	0.00063	0.00027	0.0017	0.00038	0.00063	0.00027	0.00038	0.00092	0.0020	0.00037	0.00064	0.0011	
Zinc, total	mg/L		0.0075	0.0015	0.0061	0.0096	0.0022	0.0021	0.0016	0.0032	0.0020	0.0020	0.0016	0.0020	0.0021	0.0030	0.0017	0.0020	0.0023	
Zinc, dissolved	mg/L			0.0015	0.0021	0.0090	0.0022	0.0020	0.0016	0.0027	0.0020	0.0019	0.0016	0.0020	0.0021	0.0027	0.0017	0.0019	0.0021	

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-26

Parameter	Units	SPO	WQG	Telkwa River															
				Baseline	WQS09														
					Operations										Post-Closure				
					Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow	
					P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter
Total Hardness	mg-CaCO ₃ /L		39	64	68	68	49	46	55	65	48	48	68	65	65	49	46	64	
Alkalinity, total	mg-CaCO ₃ /L		38	62	84	67	48	45	60	64	48	46	66	65	66	48	49	63	
Chloride	mg/L		150	0.25	0.50	1.0	0.45	0.33	0.29	0.52	0.41	0.34	0.29	0.43	0.48	0.55	0.32	0.39	0.43
Fluoride	mg/L		0.12	0.029	0.038	0.045	0.048	0.035	0.033	0.040	0.047	0.034	0.034	0.048	0.046	0.047	0.035	0.034	0.046
Ammonia, total	mg-N/L		1.7	0.0025	0.0095	0.010	0.0044	0.0033	0.0029	0.0051	0.0042	0.0034	0.0029	0.0044	0.0049	0.0050	0.0032	0.0037	0.0053
Nitrate	mg/L		3	0.013	0.076	0.072	0.025	0.020	0.017	0.032	0.024	0.020	0.017	0.026	0.031	0.032	0.018	0.023	0.035
Nitrite	mg/L	0.0524	0.02	0.00050	0.0050	0.0019	0.00087	0.00066	0.00057	0.00097	0.00083	0.00067	0.00058	0.00087	0.00096	0.00097	0.00063	0.00071	0.0010
Sulfate	mg/L		218	5.6	9.0	31	12	8.7	7.6	13	10	8.5	7.6	11	14	14	8.4	10	11
Aluminum, total	mg/L	0.236	0.1	0.17	1.7	0.26	0.27	0.20	0.19	0.23	0.26	0.19	0.19	0.27	0.26	0.26	0.20	0.19	0.26
Aluminum, dissolved	mg/L		0.05	0.027	0.088	0.041	0.043	0.031	0.030	0.036	0.042	0.031	0.030	0.043	0.041	0.042	0.031	0.030	0.041
Antimony, total	mg/L			0.000050	0.000050	0.00019	0.000091	0.000065	0.000058	0.000079	0.000083	0.000062	0.000058	0.000085	0.000089	0.000092	0.000063	0.000069	0.000082
Antimony, dissolved	mg/L		0.009	0.000050	0.000050	0.00019	0.000093	0.000067	0.000060	0.000080	0.000086	0.000064	0.000060	0.000088	0.000092	0.000094	0.000065	0.000070	0.000084
Arsenic, total	mg/L		0.005	0.00024	0.00055	0.00048	0.00041	0.00029	0.00028	0.00034	0.00040	0.00029	0.00028	0.00040	0.00038	0.00040	0.00029	0.00029	0.00039
Arsenic, dissolved	mg/L			0.00016	0.00025	0.00035	0.00028	0.00020	0.00019	0.00023	0.00027	0.00019	0.00019	0.00027	0.00026	0.00027	0.00020	0.00020	0.00026
Barium, total	mg/L		1	0.040	0.049	0.063	0.067	0.049	0.047	0.056	0.065	0.048	0.047	0.067	0.065	0.065	0.049	0.047	0.064
Barium, dissolved	mg/L			0.034	0.048	0.055	0.058	0.042	0.040	0.048	0.056	0.041	0.041	0.058	0.056	0.056	0.042	0.041	0.055
Beryllium, total	mg/L		0.00013	0.000050	0.000050	0.000077	0.000082	0.000059	0.000057	0.000068	0.000080	0.000059	0.000057	0.000082	0.000078	0.000080	0.000060	0.000057	0.000079
Beryllium, dissolved	mg/L			0.000050	0.000050	0.000077	0.000082	0.000059	0.000057	0.000068	0.000080	0.000059	0.000057	0.000082	0.000078	0.000080	0.000060	0.000057	0.000079
Boron, total	mg/L		1.2	0.0050	0.050	0.018	0.0092	0.0067	0.0059	0.0095	0.0086	0.0067	0.0059	0.0088	0.0093	0.0097	0.0065	0.0073	0.0087
Boron, dissolved	mg/L			0.0050	0.050	0.018	0.0092	0.0067	0.0059	0.0095	0.0085	0.0066	0.0059	0.0087	0.0093	0.0097	0.0065	0.0074	0.0087
Cadmium, total	mg/L		0.00009	0.000011	0.000036	0.00011	0.000023	0.000016	0.000012	0.000016	0.000017	0.000013	0.000012	0.000018	0.000024	0.000027	0.000014	0.000019	0.000018
Cadmium, dissolved	mg/L	0.00012	0.00011	0.0000063	0.0000099	0.000099	0.000015	0.000010	0.0000073	0.000010	0.000010	0.0000078	0.0000073	0.000011	0.000018	0.000022	0.0000090	0.000014	0.000011
Calcium, total	mg/L			12	20	20	21	15	14	17	20	15	15	21	20	20	15	14	20
Calcium, dissolved	mg/L			12	21	20	21	15	14	17	20	15	15	21	20	20	15	14	20
Chromium, total	mg/L		0.0089	0.00020	0.0010	0.00049	0.00034	0.00025	0.00023	0.00031	0.00033	0.00025	0.00023	0.00034	0.00033	0.00034	0.00025	0.00025	0.00032
Chromium, dissolved	mg/L			0.000050	0.00021	0.00025	0.00010	0.000074	0.000064	0.000100	0.000093	0.000071	0.000064	0.000096	0.00011	0.00011	0.000071	0.000082	0.000094
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00088	0.00024	0.000092	0.000066	0.000057	0.000082	0.000081	0.000062	0.000057	0.000084	0.000093	0.000095	0.000063	0.000072	0.000082
Cobalt, dissolved	mg/L			0.000050	0.00010	0.00024	0.000091	0.000065	0.000057	0.000077	0.000081	0.000061	0.000057	0.000083	0.000094	0.000095	0.000063	0.000072	0.000082
Copper, total	mg/L		0.002	0.0011	0.0042	0.0019	0.0018	0.0013	0.0013	0.0016	0.0018	0.0013	0.0013	0.0018	0.0018	0.0018	0.0013	0.0013	0.0018

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	WQG	Telkwa River																
				WQS09																
				Baseline		Operations										Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow	
P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter					
Copper, dissolved	mg/L			0.00067	0.0017	0.0013	0.0012	0.00086	0.00082	0.0010	0.0011	0.00084	0.00083	0.0012	0.0012	0.0011	0.00085	0.00084	0.0011	
Iron, total	mg/L		0.3	0.31	1.5	0.47	0.48	0.35	0.33	0.42	0.47	0.35	0.34	0.48	0.46	0.47	0.35	0.34	0.46	
Iron, dissolved	mg/L		0.30	0.076	0.27	0.11	0.12	0.086	0.082	0.099	0.12	0.085	0.082	0.12	0.11	0.12	0.086	0.082	0.11	
Lead, total	mg/L		0.0044	0.00014	0.0014	0.00026	0.00022	0.00016	0.00015	0.00019	0.00021	0.00016	0.00015	0.00022	0.00021	0.00022	0.00016	0.00016	0.00021	
Lead, dissolved	mg/L			0.000025	0.00010	0.000093	0.000044	0.000032	0.000029	0.000037	0.000040	0.000030	0.000029	0.000042	0.000044	0.000045	0.000031	0.000033	0.000040	
Lithium, total	mg/L			0.00050	0.0010	0.0075	0.0012	0.00097	0.00059	0.0024	0.00093	0.00100	0.00059	0.00099	0.0017	0.0033	0.00083	0.0015	0.0020	
Lithium, dissolved	mg/L			0.00050	0.00050	0.0075	0.0012	0.00097	0.00059	0.0024	0.00093	0.00100	0.00059	0.00099	0.0017	0.0033	0.00085	0.0016	0.0020	
Magnesium, total	mg/L			2.1	3.5	4.5	3.7	2.7	2.6	3.1	3.6	2.6	2.6	3.7	3.6	3.6	2.7	2.7	3.5	
Magnesium, dissolved	mg/L			2.0	3.8	4.4	3.6	2.6	2.5	3.0	3.4	2.5	2.5	3.5	3.5	3.5	2.6	2.6	3.4	
Manganese, total	mg/L		0.12	0.020	0.078	0.034	0.032	0.023	0.022	0.027	0.031	0.023	0.022	0.031	0.030	0.031	0.023	0.022	0.030	
Manganese, dissolved	mg/L			0.0074	0.021	0.016	0.012	0.0086	0.0080	0.010	0.011	0.0084	0.0081	0.012	0.011	0.012	0.0086	0.0086	0.011	
Mercury, total	mg/L		0.00001	0.0000025	0.0000070	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Molybdenum, total	mg-N/L		0.073	0.00053	0.00073	0.0010	0.00086	0.00063	0.00059	0.00076	0.00083	0.00062	0.00060	0.00085	0.00083	0.00085	0.00063	0.00062	0.00082	
Molybdenum, dissolved	mg-N/L			0.00052	0.00068	0.0092	0.0097	0.0070	0.0067	0.0081	0.0095	0.0069	0.0067	0.0097	0.0092	0.0094	0.0070	0.0068	0.0093	
Nickel, total	mg/L		0.025	0.00025	0.0011	0.00075	0.00043	0.00031	0.00029	0.00039	0.00040	0.00031	0.00029	0.00042	0.00043	0.00044	0.00031	0.00032	0.00040	
Nickel, dissolved	mg/L			0.00025	0.00025	0.00073	0.00043	0.00031	0.00029	0.00038	0.00040	0.00030	0.00029	0.00041	0.00043	0.00044	0.00031	0.00032	0.00040	
Phosphorus, total	mg/L			0.0060	0.050	0.0092	0.0097	0.0070	0.0067	0.0082	0.0095	0.0070	0.0067	0.0097	0.0092	0.0094	0.0070	0.0067	0.0093	
Orthophosphate, dissolved	mg/L			0.0017	0.0030	0.0025	0.0027	0.0019	0.0018	0.0022	0.0026	0.0019	0.0019	0.0027	0.0025	0.0026	0.0019	0.0019	0.0026	
Potassium, total	mg/L			0.31	1.0	1.2	0.56	0.41	0.36	0.62	0.51	0.41	0.36	0.53	0.58	0.64	0.40	0.46	0.53	
Potassium, dissolved	mg/L			0.28	0.35	1.2	0.51	0.38	0.32	0.57	0.46	0.38	0.33	0.48	0.54	0.61	0.36	0.43	0.49	
Selenium, total	mg/L	0.008	0.002	0.000080	0.00020	0.00050	0.00015	0.00011	0.000092	0.00019	0.00013	0.00011	0.000092	0.00014	0.00017	0.00021	0.00011	0.00014	0.00015	
Selenium, dissolved	mg/L			0.000070	0.000095	0.00048	0.00014	0.00010	0.000080	0.00017	0.00012	0.00010	0.000081	0.00012	0.00016	0.00020	0.000096	0.00013	0.00014	
Silica, dissolved	mg/L			6.7	8.6	10	11	7.9	7.5	9.2	11	7.8	7.6	11	10	11	7.9	7.6	11	
Sodium, total	mg/L			1.0	2.9	18	2.8	2.3	1.3	6.2	2.1	2.4	1.3	2.3	3.9	8.8	1.9	3.7	5.4	
Sodium, dissolved	mg/L			1.0	2.9	18	2.8	2.3	1.3	6.2	2.1	2.4	1.3	2.3	4.1	8.9	2.0	3.9	5.4	
Strontium, total	mg/L		7.0	0.062	0.087	0.14	0.11	0.078	0.073	0.095	0.10	0.076	0.073	0.11	0.10	0.11	0.077	0.078	0.10	
Strontium, dissolved	mg/L			0.056	0.091	0.13	0.098	0.071	0.066	0.087	0.094	0.070	0.067	0.096	0.095	0.097	0.070	0.072	0.093	
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	
Silver, dissolved	mg/L			0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	
Tin, total	mg/L			0.000050	0.000096	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	WQG	Telkwa River																
				Baseline		WQS09														
						Operations											Post-Closure			
						Alternative Case 2: High source terms				Alternative Case 4: 3 wet years				Alternative Case 5: Low flow	Alternative Case 2: High source terms			Alternative Case 5: Low flow		
						P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter
Tin, dissolved	mg/L			0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.0000050	0.000098	0.000013	0.0000089	0.0000058	0.0000083	0.0000081	0.0000062	0.0000057	0.0000086	0.000015	0.000020	0.0000075	0.000012	0.0000085	
Thallium, dissolved	mg/L			0.0000050	0.0000050	0.000098	0.000013	0.0000089	0.0000058	0.0000083	0.0000081	0.0000062	0.0000057	0.0000086	0.000015	0.000020	0.0000075	0.000012	0.0000085	
Uranium, total	mg/L		0.0085	0.000056	0.000092	0.00027	0.00010	0.000076	0.000065	0.00011	0.000094	0.000074	0.000065	0.000096	0.00011	0.00011	0.000073	0.000085	0.000096	
Uranium, dissolved	mg/L			0.000043	0.000083	0.00025	0.000084	0.000061	0.000051	0.000089	0.000074	0.000059	0.000051	0.000076	0.000090	0.000096	0.000058	0.000072	0.000077	
Vanadium, total	mg/L			0.00064	0.0036	0.0013	0.0011	0.00076	0.00071	0.00094	0.0010	0.00076	0.00071	0.0010	0.00099	0.0010	0.00076	0.00076	0.00100	
Vanadium, dissolved	mg/L			0.00025	0.00055	0.00074	0.00045	0.00032	0.00029	0.00043	0.00042	0.00032	0.00030	0.00043	0.00044	0.00046	0.00032	0.00034	0.00042	
Zinc, total	mg/L		0.0075	0.0015	0.0072	0.0028	0.0025	0.0018	0.0017	0.0021	0.0024	0.0018	0.0017	0.0025	0.0024	0.0024	0.0018	0.0018	0.0024	
Zinc, dissolved	mg/L			0.0015	0.0015	0.0028	0.0025	0.0018	0.0017	0.0021	0.0024	0.0018	0.0017	0.0025	0.0024	0.0024	0.0018	0.0018	0.0024	

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Table G-27

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS11									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			28	38	28	29	28	28	29	29	29	28	28	29
Alkalinity, total	mg-CaCO ₃ /L			27	35	28	28	27	27	28	28	28	27	27	28
Chloride	mg/L		150	0.25	0.86	0.26	0.26	0.25	0.25	0.26	0.26	0.26	0.25	0.25	0.26
Fluoride	mg/L		0.12	0.023	0.035	0.024	0.024	0.023	0.023	0.024	0.024	0.024	0.023	0.023	0.024
Ammonia, total	mg-N/L		1.7	0.0050	0.017	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0052	0.0050	0.0050	0.0052
Nitrate	mg/L		3	0.013	0.041	0.013	0.014	0.013	0.013	0.014	0.014	0.014	0.013	0.013	0.014
Nitrite	mg/L	0.0524	0.02	0.0020	0.0050	0.0021	0.0021	0.0020	0.0020	0.0021	0.0021	0.0021	0.0020	0.0020	0.0021
Sulfate	mg/L		128	4.0	5.0	4.1	4.2	4.0	4.0	4.2	4.2	4.2	4.0	4.0	4.2
Aluminum, total	mg/L	0.236	0.1	0.13	1.3	0.13	0.14	0.13	0.13	0.14	0.14	0.14	0.13	0.13	0.14
Aluminum, dissolved	mg/L		0.05	0.017	0.13	0.018	0.018	0.017	0.017	0.018	0.018	0.018	0.017	0.017	0.018
Antimony, total	mg/L			0.000050	0.00011	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Arsenic, total	mg/L		0.005	0.00024	0.00070	0.00025	0.00025	0.00024	0.00024	0.00025	0.00025	0.00025	0.00024	0.00024	0.00025
Arsenic, dissolved	mg/L			0.00016	0.00033	0.00017	0.00017	0.00016	0.00016	0.00017	0.00017	0.00017	0.00016	0.00016	0.00017
Barium, total	mg/L		1	0.026	0.038	0.027	0.027	0.026	0.026	0.027	0.027	0.027	0.026	0.026	0.027
Barium, dissolved	mg/L			0.023	0.032	0.024	0.024	0.023	0.023	0.024	0.024	0.024	0.023	0.023	0.024
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Boron, total	mg/L		1.2	0.0050	0.010	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0052	0.0050	0.0050	0.0052
Boron, dissolved	mg/L			0.0050	0.010	0.0052	0.0052	0.0050	0.0050	0.0052	0.0052	0.0052	0.0050	0.0050	0.0052
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	0.0000082	0.0000082	0.0000079	0.0000079	0.0000082	0.0000082	0.0000082	0.0000079	0.0000079	0.0000082
Cadmium, dissolved	mg/L	0.00009	0.00008	0.0000025	0.0000065	0.0000026	0.0000026	0.0000025	0.0000025	0.0000026	0.0000026	0.0000026	0.0000025	0.0000025	0.0000026
Calcium, total	mg/L			8.8	11	9.1	9.2	8.8	8.8	9.2	9.1	9.2	8.8	8.8	9.2
Calcium, dissolved	mg/L			8.8	12	9.1	9.2	8.8	8.8	9.2	9.1	9.2	8.8	8.8	9.2
Chromium, total	mg/L		0.0089	0.00025	0.0012	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00026	0.00025	0.00025	0.00026
Chromium, dissolved	mg/L			0.000050	0.00023	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00068	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Cobalt, dissolved	mg/L			0.000050	0.00010	0.000052	0.000052	0.000050	0.000050	0.000052	0.000052	0.000052	0.000050	0.000050	0.000052
Copper, total	mg/L		0.002	0.00090	0.0029	0.00093	0.00094	0.00090	0.00090	0.00094	0.00093	0.00094	0.00090	0.00090	0.00094

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS11									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L		0.00067	0.0020	0.00069	0.00070	0.00067	0.00067	0.00070	0.00070	0.00070	0.00067	0.00067	0.00070	
Iron, total	mg/L	0.3	0.18	1.3	0.19	0.19	0.18	0.18	0.19	0.19	0.19	0.18	0.18	0.19	
Iron, dissolved	mg/L	0.30	0.024	0.16	0.025	0.025	0.024	0.024	0.025	0.025	0.025	0.024	0.024	0.025	
Lead, total	mg/L	0.004	0.000095	0.00051	0.000098	0.000099	0.000095	0.000095	0.000099	0.000099	0.000099	0.000095	0.000095	0.000099	
Lead, dissolved	mg/L		0.000025	0.000050	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000026	0.000025	0.000025	0.000026	
Lithium, total	mg/L		0.00050	0.0010	0.00052	0.00052	0.00050	0.00050	0.00052	0.00052	0.00052	0.00050	0.00050	0.00052	
Lithium, dissolved	mg/L		0.00050	0.0010	0.00052	0.00052	0.00050	0.00050	0.00052	0.00052	0.00052	0.00050	0.00050	0.00052	
Magnesium, total	mg/L		1.4	2.5	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.4	1.5	
Magnesium, dissolved	mg/L		1.3	2.7	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.3	1.3	1.4	
Manganese, total	mg/L	0.12	0.016	0.059	0.017	0.017	0.016	0.016	0.017	0.017	0.017	0.016	0.016	0.017	
Manganese, dissolved	mg/L		0.0052	0.020	0.0054	0.0054	0.0052	0.0052	0.0054	0.0054	0.0054	0.0052	0.0052	0.0054	
Mercury, total	mg/L	0.00001	0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Mercury, dissolved	mg/L		0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	
Molybdenum, total	mg-N/L	0.073	0.00037	0.00055	0.00038	0.00039	0.00037	0.00037	0.00039	0.00038	0.00039	0.00037	0.00037	0.00039	
Molybdenum, dissolved	mg-N/L		0.00037	0.00045	0.0059	0.0059	0.0057	0.0057	0.0059	0.0059	0.0059	0.0057	0.0057	0.0059	
Nickel, total	mg/L	0.025	0.00025	0.0014	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00026	0.00025	0.00025	0.00026	
Nickel, dissolved	mg/L		0.00025	0.0013	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00026	0.00025	0.00025	0.00026	
Phosphorus, total	mg/L		0.0057	0.043	0.0059	0.0059	0.0057	0.0057	0.0059	0.0059	0.0059	0.0057	0.0057	0.0059	
Orthophosphate, dissolved	mg/L		0.0013	0.0040	0.0013	0.0014	0.0013	0.0013	0.0014	0.0014	0.0014	0.0013	0.0013	0.0014	
Potassium, total	mg/L		0.33	0.68	0.34	0.34	0.33	0.33	0.34	0.34	0.34	0.33	0.33	0.34	
Potassium, dissolved	mg/L		0.32	0.52	0.33	0.33	0.32	0.32	0.33	0.33	0.33	0.32	0.32	0.33	
Selenium, total	mg/L	0.008	0.002	0.000025	0.00020	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000026	0.000025	0.000025	0.000026
Selenium, dissolved	mg/L			0.000025	0.000050	0.000026	0.000026	0.000025	0.000025	0.000026	0.000026	0.000026	0.000025	0.000025	0.000026
Silica, dissolved	mg/L			no data	no data	0.000098	0.00024	0.000026	0.000036	0.00023					
Sodium, total	mg/L			1.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Sodium, dissolved	mg/L			1.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Strontium, total	mg/L		7.0	0.040	0.061	0.041	0.042	0.040	0.040	0.042	0.042	0.042	0.040	0.040	0.042
Strontium, dissolved	mg/L			0.040	0.055	0.041	0.042	0.040	0.040	0.042	0.042	0.042	0.040	0.040	0.042
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS11									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000014	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052
Thallium, dissolved	mg/L			0.0000050	0.000010	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052	0.0000052	0.0000052	0.0000050	0.0000050	0.0000052
Uranium, total	mg/L		0.0085	0.000036	0.000094	0.000037	0.000038	0.000036	0.000036	0.000038	0.000037	0.000038	0.000036	0.000036	0.000038
Uranium, dissolved	mg/L			0.000028	0.000052	0.000029	0.000029	0.000028	0.000028	0.000029	0.000029	0.000029	0.000028	0.000028	0.000029
Vanadium, total	mg/L			0.00057	0.0050	0.00059	0.00059	0.00057	0.00057	0.00059	0.00059	0.00059	0.00057	0.00057	0.00059
Vanadium, dissolved	mg/L			0.00025	0.00060	0.00026	0.00026	0.00025	0.00025	0.00026	0.00026	0.00026	0.00025	0.00025	0.00026
Zinc, total	mg/L		0.0075	0.0015	0.0055	0.0016	0.0016	0.0015	0.0015	0.0016	0.0016	0.0016	0.0015	0.0015	0.0016
Zinc, dissolved	mg/L			0.0013	0.0045	0.0013	0.0014	0.0013	0.0013	0.0014	0.0014	0.0014	0.0013	0.0013	0.0014

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Table G-28

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS12									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Total Hardness	mg-CaCO ₃ /L			28	38	34	35	31	32	34	34	35	31	32	35
Alkalinity, total	mg-CaCO ₃ /L			27	35	33	34	30	31	33	33	35	30	31	34
Chloride	mg/L		150	0.25	0.86	0.30	0.29	0.26	0.27	0.29	0.28	0.32	0.26	0.28	0.30
Fluoride	mg/L		0.12	0.023	0.035	0.027	0.028	0.025	0.026	0.028	0.027	0.028	0.025	0.025	0.028
Ammonia, total	mg-N/L		1.7	0.0050	0.017	0.0054	0.0055	0.0047	0.0049	0.0055	0.0051	0.0056	0.0047	0.0049	0.0056
Nitrate	mg/L		3	0.013	0.041	0.017	0.016	0.014	0.014	0.015	0.015	0.018	0.014	0.015	0.018
Nitrite	mg/L	0.0524	0.02	0.0020	0.0050	0.0020	0.0021	0.0018	0.0019	0.0021	0.0020	0.0021	0.0018	0.0018	0.0021
Sulfate	mg/L		128	4.0	5.0	6.1	5.2	4.7	4.8	5.1	4.9	6.0	4.7	5.2	5.4
Aluminum, total	mg/L	0.236	0.1	0.13	1.3	0.15	0.16	0.14	0.14	0.16	0.15	0.16	0.14	0.14	0.16
Aluminum, dissolved	mg/L		0.05	0.017	0.13	0.021	0.022	0.019	0.020	0.021	0.021	0.022	0.019	0.020	0.021
Antimony, total	mg/L			0.000050	0.00011	0.000060	0.000059	0.000052	0.000053	0.000058	0.000055	0.000062	0.000052	0.000055	0.000058
Antimony, dissolved	mg/L		0.009	0.000050	0.00010	0.000060	0.000059	0.000052	0.000054	0.000059	0.000056	0.000062	0.000053	0.000055	0.000058
Arsenic, total	mg/L		0.005	0.00024	0.00070	0.00026	0.00028	0.00025	0.00026	0.00028	0.00026	0.00028	0.00025	0.00026	0.00028
Arsenic, dissolved	mg/L			0.00016	0.00033	0.00018	0.00019	0.00017	0.00017	0.00019	0.00018	0.00019	0.00017	0.00017	0.00018
Barium, total	mg/L		1	0.026	0.038	0.032	0.033	0.029	0.030	0.032	0.032	0.033	0.030	0.030	0.033
Barium, dissolved	mg/L			0.023	0.032	0.028	0.029	0.026	0.027	0.028	0.028	0.029	0.026	0.027	0.029
Beryllium, total	mg/L		0.00013	0.000050	0.00010	0.000055	0.000059	0.000051	0.000053	0.000058	0.000055	0.000059	0.000052	0.000053	0.000057
Beryllium, dissolved	mg/L			0.000050	0.00010	0.000055	0.000059	0.000051	0.000053	0.000058	0.000055	0.000059	0.000052	0.000053	0.000057
Boron, total	mg/L		1.2	0.0050	0.010	0.0060	0.0059	0.0052	0.0053	0.0058	0.0056	0.0063	0.0053	0.0055	0.0059
Boron, dissolved	mg/L			0.0050	0.010	0.0060	0.0059	0.0052	0.0053	0.0058	0.0055	0.0063	0.0053	0.0055	0.0059
Cadmium, total	mg/L		0.00009	0.0000079	0.000021	0.000014	0.000010	0.0000091	0.0000090	0.0000096	0.0000096	0.000012	0.0000089	0.000010	0.0000098
Cadmium, dissolved	mg/L	0.00009	0.00008	0.0000025	0.0000065	0.0000085	0.0000043	0.0000037	0.0000034	0.0000035	0.0000041	0.0000061	0.0000035	0.0000045	0.0000038
Calcium, total	mg/L			8.8	11	11	11	9.7	10	11	11	11	9.8	10	11
Calcium, dissolved	mg/L			8.8	12	11	11	9.7	10	11	11	11	9.8	10	11
Chromium, total	mg/L		0.0089	0.00025	0.0012	0.00027	0.00029	0.00025	0.00026	0.00028	0.00026	0.00029	0.00025	0.00026	0.00028
Chromium, dissolved	mg/L			0.000050	0.00023	0.000063	0.000060	0.000053	0.000054	0.000059	0.000056	0.000065	0.000053	0.000057	0.000060
Cobalt, total	mg/L	0.0174	0.004	0.000050	0.00068	0.000063	0.000059	0.000052	0.000053	0.000058	0.000055	0.000063	0.000052	0.000055	0.000058
Cobalt, dissolved	mg/L			0.000050	0.00010	0.000063	0.000059	0.000052	0.000053	0.000058	0.000055	0.000063	0.000052	0.000055	0.000058
Copper, total	mg/L		0.002	0.00090	0.0029	0.0010	0.0011	0.00097	0.00100	0.0011	0.0010	0.0011	0.00097	0.00100	0.0011

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS12									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Copper, dissolved	mg/L			0.00067	0.0020	0.00074	0.00079	0.00070	0.00072	0.00079	0.00074	0.00080	0.00070	0.00072	0.00078
Iron, total	mg/L		0.3	0.18	1.3	0.22	0.23	0.21	0.21	0.23	0.22	0.23	0.21	0.21	0.23
Iron, dissolved	mg/L		0.30	0.024	0.16	0.038	0.038	0.034	0.034	0.036	0.039	0.038	0.034	0.034	0.037
Lead, total	mg/L		0.004	0.000095	0.00051	0.00011	0.00012	0.00010	0.00011	0.00012	0.00011	0.00012	0.00011	0.00011	0.00012
Lead, dissolved	mg/L			0.000025	0.000050	0.000030	0.000029	0.000026	0.000027	0.000029	0.000027	0.000031	0.000026	0.000027	0.000029
Lithium, total	mg/L			0.00050	0.0010	0.00094	0.00064	0.00057	0.00053	0.00060	0.00064	0.00085	0.00055	0.00069	0.00069
Lithium, dissolved	mg/L			0.00050	0.0010	0.00094	0.00064	0.00057	0.00053	0.00060	0.00064	0.00086	0.00055	0.00070	0.00069
Magnesium, total	mg/L			1.4	2.5	1.7	1.8	1.6	1.6	1.7	1.7	1.8	1.6	1.7	1.8
Magnesium, dissolved	mg/L			1.3	2.7	1.6	1.7	1.5	1.5	1.6	1.6	1.7	1.5	1.5	1.7
Manganese, total	mg/L		0.12	0.016	0.059	0.018	0.019	0.017	0.018	0.019	0.018	0.019	0.017	0.018	0.019
Manganese, dissolved	mg/L			0.0052	0.020	0.0061	0.0064	0.0057	0.0059	0.0063	0.0061	0.0066	0.0058	0.0059	0.0063
Mercury, total	mg/L		0.00001	0.0000025	0.0000055	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Mercury, dissolved	mg/L			0.0000025	0.0000050	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025	0.0000025
Molybdenum, total	mg-N/L		0.073	0.00037	0.00055	0.00044	0.00046	0.00041	0.00042	0.00045	0.00044	0.00047	0.00041	0.00042	0.00045
Molybdenum, dissolved	mg-N/L			0.00037	0.00045	0.0063	0.0067	0.0059	0.0061	0.0067	0.0063	0.0067	0.0059	0.0061	0.0066
Nickel, total	mg/L		0.025	0.00025	0.0014	0.00029	0.00029	0.00026	0.00027	0.00029	0.00027	0.00030	0.00026	0.00027	0.00029
Nickel, dissolved	mg/L			0.00025	0.0013	0.00029	0.00029	0.00026	0.00027	0.00029	0.00027	0.00030	0.00026	0.00027	0.00029
Phosphorus, total	mg/L			0.0057	0.043	0.0063	0.0067	0.0059	0.0061	0.0067	0.0063	0.0067	0.0059	0.0060	0.0066
Orthophosphate, dissolved	mg/L			0.0013	0.0040	0.0015	0.0016	0.0014	0.0014	0.0016	0.0015	0.0016	0.0014	0.0014	0.0016
Potassium, total	mg/L			0.33	0.68	0.39	0.39	0.34	0.35	0.38	0.36	0.41	0.34	0.36	0.39
Potassium, dissolved	mg/L			0.32	0.52	0.38	0.37	0.33	0.33	0.37	0.35	0.40	0.33	0.35	0.37
Selenium, total	mg/L	0.008	0.002	0.000025	0.00020	0.000064	0.000041	0.000039	0.000037	0.000039	0.000044	0.000054	0.000038	0.000045	0.000044
Selenium, dissolved	mg/L			0.000025	0.000050	0.000061	0.000040	0.000037	0.000035	0.000038	0.000041	0.000053	0.000036	0.000043	0.000042
Silica, dissolved	mg/L			no data	no data	1.8	1.4	1.2	1.2	1.2	1.9	1.4	1.3	1.3	1.4
Sodium, total	mg/L			1.0	2.5	2.1	1.3	1.2	1.1	1.2	1.4	1.8	1.1	1.5	1.5
Sodium, dissolved	mg/L			1.0	2.5	2.1	1.3	1.2	1.1	1.2	1.4	1.9	1.2	1.5	1.5
Strontium, total	mg/L		7.0	0.040	0.061	0.050	0.051	0.046	0.047	0.050	0.049	0.053	0.046	0.048	0.051
Strontium, dissolved	mg/L			0.040	0.055	0.049	0.050	0.045	0.046	0.049	0.048	0.052	0.045	0.046	0.050
Silver, total	mg/L		0.00005	0.0000050	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Silver, dissolved	mg/L			0.0000050	0.000010	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
Tin, total	mg/L			0.000050	0.00012	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsx

Parameter	Units	SPO	Bulkley River												
			WQG	Baseline		WQS12									
						Operations					Post-Closure				
						Alternative Case 2: High source terms				Alternative Case 5: Low flow	Alternative Case 2: High source terms				Alternative Case 5: Low flow
				P50	P95	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter	Max Summer	Max Winter	Average Summer	Average Winter	Max Winter
Tin, dissolved	mg/L			0.000050	0.00010	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Thallium, total	mg/L	0.0022	0.0008	0.0000050	0.000014	0.000010	0.0000066	0.0000055	0.0000053	0.0000058	0.0000060	0.0000082	0.0000054	0.0000064	0.0000059
Thallium, dissolved	mg/L			0.0000050	0.000010	0.000010	0.0000066	0.0000055	0.0000053	0.0000058	0.0000060	0.0000082	0.0000054	0.0000064	0.0000059
Uranium, total	mg/L		0.0085	0.000036	0.000094	0.000053	0.000047	0.000042	0.000042	0.000045	0.000045	0.000052	0.000042	0.000045	0.000047
Uranium, dissolved	mg/L			0.000028	0.000052	0.000044	0.000037	0.000033	0.000033	0.000035	0.000035	0.000042	0.000033	0.000036	0.000037
Vanadium, total	mg/L			0.00057	0.0050	0.00064	0.00068	0.00060	0.00061	0.00067	0.00064	0.00069	0.00060	0.00062	0.00067
Vanadium, dissolved	mg/L			0.00025	0.00060	0.00029	0.00030	0.00026	0.00027	0.00029	0.00028	0.00031	0.00026	0.00027	0.00029
Zinc, total	mg/L		0.0075	0.0015	0.0055	0.0016	0.0018	0.0015	0.0016	0.0017	0.0016	0.0018	0.0016	0.0016	0.0017
Zinc, dissolved	mg/L			0.0013	0.0045	0.0015	0.0016	0.0014	0.0014	0.0015	0.0015	0.0016	0.0014	0.0014	0.0015

Green highlight is a WQG exceedance

Red highlight is an SPO exceedance

Source: Z:\01_SITES\Telkwa Coal\1CT027.003_2020 EA Water Management\500_Water_Balance\Results\Feb2022_NewSourceTerms\Results_Streams_WaterQuality_EAModel_v29_20220207.xlsm