

**Resolution Copper Project and Land Exchange
Environmental Impact Statement**

USDA Forest Service
Tonto National Forest
Arizona

December 11, 2018

Process Memorandum to File

Screening of Geochemistry Predictions for Effects on Wildlife

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Purpose of Process Memorandum

The purpose of this process memorandum is to provide a summary of applicable Surface Water Quality Standards and a comparison with predicted annual concentrations of constituents for each alternative that is being considered for the Resolution Copper Project. This comparison is meant to be used as a preliminary screening tool to estimate potential effects on biological resources from tailings storage facility (TSF) reclaim ponds or seepage collection ponds. This process memorandum covers four basic topics:

- Constituents with aquatic and wildlife (warm water) (A&Ww) standards
- Water hardness for each alternative, which is necessary to derive some surface water quality standards
- Water quality standards for constituents that vary based on hardness
- Comparison of water quality standards with predicted constituent concentrations

Key Process Steps

This process memorandum is based on a series of technical memoranda provided by Enchemica, LLC, on July 17, 2018. Each memorandum discusses one of the TSF location alternatives and provides predictions for average annual concentrations of constituents for various water types. Water types generally are broken out by pyrite and scavenger tailings, if applicable, and include the following:

- Water standing in the reclaim pond on the surface of the TSF, during operations;
- Water in contact with and contained in the embankment;
- Seepage as collected in downstream seepage ponds; and
- Lost seepage, which is what escapes collection in the seepage ponds. Lost seepage is subject to further fate and transport modeling, beyond the memoranda reviewed.

With respect to wildlife, the water quality in the reclaim ponds and seepage ponds are considered the sole points of potential exposure.

Water quality standards were determined in accordance with the Arizona Department of Environmental Quality (ADEQ) Water Quality Standards for Surface Waters (Arizona Administrative Code Title 18, Chapter 11).

For this process memorandum, the A&Ww standards were used as the basis for comparison. Both acute and chronic standards were analyzed.

Table 1. Aquatic and Wildlife (Warm Water) Standards

Constituent	Acute	Chronic
Chlorine (Cl)	0.019 mg/L	0.011 mg/L
Antimony (Sb)	0.088 mg/L D	0.030 mg/L D
Cadmium (Cd)	Variable, depending on water hardness (see Appendix A, table series 3)	
Chromium (Cr)	Variable, depending on water hardness (see Appendix A, table series 4)	
Copper (Cu)	Variable, depending on water hardness (see Appendix A, table series 5)	
Iron (Fe)	—	1.00 mg/L D
Lead (Pb)	Variable, depending on water hardness (see Appendix A, table series 6)	
Nickel (Ni)	Variable, depending on water hardness (see Appendix A, table series 7)	
Selenium (Se)	—	0.002 mg/L T
Zinc (Zn)	Variable, depending on water hardness (see Appendix A, table series 8)	
Silver (Ag)	Variable, depending on water hardness (see Appendix A, table series 9)	
pH		6.5 – 9.0
Total dissolved solids (TDS)		

Note: mg/L = milligram(s) per liter; mg/L D = milligram(s) per liter, dissolved; mg/L T = milligram(s) per liter, total recoverable

Some A&Ww standards are dependent on water hardness. Thus, for each alternative and prediction, calcium and magnesium concentrations from the first 5 years of mine operations were used to calculate water hardness (Tables 2–6). Water quality standards are more stringent for the lower levels of water hardness. Because for most predictions the water hardness increases over time for the mine, water hardness was only determined for the first few years of mine operations.

Table 2. Alternative 2 Water Hardness (in mg/L), Years 1–5

Water Balance	Year 1	Year 2	Year 3	Year 4	Year 5
Pyrite pond	901.8	1,094.1	1,251.1	1,238.8	1,029.1
Seepage collection ponds	1,007.9	1,103.2	1,237.8	1,117.7	985.2
Embankment	919.1	996.3	1,058.7	1,085.4	954.5
Lost seepage	0	1,138.1	1,549.6	1,011.5	902.2

Table 3. Alternative 3 Water Hardness (in mg/L), Years 1–5

Water Balance	Year 1	Year 2	Year 3	Year 4	Year 5
Pyrite pond and lost seepage	768.2	641.1	795.7	778.5	709.7
Seepage collection ponds	721.6	677.0	786.7	688.1	628.4
Embankment	800.4	752.4	859.7	749.5	664.1

Table 4. Alternative 4 Water Hardness (in mg/L), Years 1–5

Water Balance	Year 1	Year 2	Year 3	Year 4	Year 5
Pyrite pond	131.4	330.4	531.8	737.3	947.0
Lost seepage (pyrite pond and pyrite tailings)	471.0	728.9	831.9	900.9	899.4
Lost seepage (scavenger pond and scavenger tailings)	700.0	799.7	862.1	918.8	899.1
Surplus water	773.8	840.4	999.3	961.4	780.5

Table 5. Alternative 5 Water Hardness (in mg/L), Years 1–5

Water Balance	Year 1	Year 2	Year 3	Year 4	Year 5
Lost seepage	392.2	414.7	506.1	536.9	507.9
Embankment	610.3	652.7	750.9	754.4	730.4

Table 6. Alternative 6 Water Hardness (in mg/L), Years 1–5

Water Balance	Year 1	Year 2	Year 3	Year 4	Year 5
Pyrite pond and lost seepage	282.0	380.7	434.8	505.5	553.8
Seepage collection ponds	622.9	670.3	758.6	728.9	671.7
Embankment	777.2	792.3	883.9	795.3	709.9

ADEQ surface water quality standards only cover values for standards with water hardness up to 400 milligrams per liter (mg/L). For years when water hardness is above 400 mg/L, the water quality standard for 400 mg/L was used to calculate the standard. Water quality standards for constituents based on water hardness can be found in Appendix A.

When determining whether a predicted concentration was above standard, the following color scheme was used:

- Concentrations highlighted in red indicate predicted average annual concentrations above both Acute and Chronic A&Ww standards.
- Concentrations highlighted in orange indicate predicted average annual concentrations above Acute A&Ww standards only.
- Concentrations highlighted in yellow indicate predicted average annual concentrations above Chronic A&Ww standards only.

Analysis of Water Quality Standards

Tables 7–26 below provide summaries of predicted water quality conditions for each alternative (Alternative 2–Alternative 6) and detailed predicted annual concentrations of constituents for each alternative.

Table 7. Alternative 2 Summary

	Pyrite Pond	Seepage Collection Ponds	Embankment	Lost Seepage
C	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards years 2–41 of mine operations

	Pyrite Pond	Seepage Collection Ponds	Embankment	Lost Seepage
<i>Sb</i>	Within standards for duration of mine operations			
<i>Cd</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards years 2–41 of mine operations	Above Chronic standards years 2–41 of mine operations	Above Chronic standards years 3–41 of mine operations
<i>Cr</i>	Within standards for duration of mine operations			
<i>Cu</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Fe</i>	Within standards for duration of mine operations			
<i>Pb</i>	Within standards for duration of mine operations			
<i>Ni</i>	Above Chronic standards years 33–35 and 39–41 of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations	Above Chronic standards year 10, years 33–35 and 39–41 of mine operations
<i>Se</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards years 2–41 of mine operations
<i>Zn</i>	Above Chronic and Acute standards years 2–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Ag</i>	Above Acute standards years 8–41 of mine operations	Above Acute standards years 8–9 and 11–31 of mine operations	Above Acute standards years 10–41 of mine operations	Above Acute standards years 10–41 of mine operations
<i>pH</i>	Within normal pH range			

Table 8. Alternative 2 – Predictions of Average Annual Concentrations for the Pyrite Pond

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	59	0.0020	0.002	0.012	0.195	0.001718	0.0005	0.025	0.049	0.24	0.010	7.90	1,803
2	83	0.0023	0.002	0.012	0.195	0.001719	0.0006	0.022	0.052	0.41	0.010	7.87	2,203
3	108	0.0030	0.003	0.021	0.196	0.001720	0.0008	0.040	0.079	0.80	0.017	7.85	2,498
4	119	0.0039	0.005	0.030	0.196	0.001720	0.0010	0.062	0.104	1.18	0.025	7.85	2,461
5	109	0.0053	0.006	0.034	0.195	0.001718	0.0012	0.072	0.115	1.34	0.029	7.86	2,063
6	111	0.0065	0.007	0.038	0.195	0.001718	0.0013	0.083	0.130	1.52	0.033	7.87	1,987
7	119	0.0063	0.007	0.040	0.195	0.001718	0.0013	0.088	0.136	1.60	0.034	7.87	1,929
8	127	0.0062	0.007	0.042	0.195	0.001718	0.0013	0.092	0.143	1.67	0.036	7.87	1,923
9	138	0.0062	0.008	0.044	0.195	0.001718	0.0014	0.098	0.152	1.77	0.038	7.87	1,980
10	167	0.0071	0.009	0.052	0.196	0.001720	0.0016	0.117	0.182	2.11	0.045	7.85	2,306
11	189	0.0075	0.010	0.057	0.196	0.001720	0.0018	0.127	0.199	2.29	0.049	7.84	2,485
12	202	0.0075	0.011	0.059	0.196	0.001721	0.0018	0.132	0.209	2.36	0.051	7.83	2,570
13	213	0.0076	0.011	0.060	0.196	0.001721	0.0018	0.135	0.216	2.40	0.052	7.83	2,637
14	223	0.0077	0.011	0.062	0.197	0.001721	0.0019	0.139	0.224	2.45	0.054	7.83	2,713
15	232	0.0079	0.011	0.064	0.197	0.001722	0.0019	0.144	0.234	2.52	0.055	7.83	2,792
16	235	0.0078	0.011	0.064	0.197	0.001722	0.0019	0.145	0.237	2.53	0.056	7.83	2,800
17	232	0.0075	0.011	0.063	0.196	0.001721	0.0019	0.141	0.232	2.46	0.054	7.83	2,723
18	237	0.0076	0.011	0.064	0.197	0.001722	0.0019	0.145	0.237	2.52	0.055	7.83	2,762
19	241	0.0076	0.012	0.064	0.197	0.001722	0.0019	0.146	0.238	2.55	0.056	7.83	2,774
20	247	0.0076	0.012	0.065	0.197	0.001722	0.0020	0.147	0.239	2.59	0.056	7.83	2,805
21	253	0.0077	0.012	0.067	0.197	0.001722	0.0021	0.150	0.242	2.64	0.057	7.83	2,854
22	258	0.0077	0.012	0.068	0.197	0.001722	0.0021	0.152	0.244	2.68	0.058	7.82	2,894
23	263	0.0078	0.012	0.069	0.197	0.001722	0.0022	0.154	0.246	2.72	0.059	7.82	2,936
24	263	0.0077	0.012	0.069	0.197	0.001722	0.0022	0.154	0.244	2.71	0.058	7.82	2,930
25	261	0.0075	0.012	0.068	0.197	0.001722	0.0022	0.152	0.240	2.68	0.058	7.82	2,897
26	258	0.0074	0.012	0.068	0.197	0.001722	0.0021	0.151	0.236	2.65	0.057	7.83	2,862
27	260	0.0075	0.012	0.069	0.197	0.001722	0.0022	0.153	0.238	2.68	0.058	7.82	2,892
28	269	0.0078	0.012	0.071	0.197	0.001722	0.0022	0.158	0.245	2.75	0.060	7.82	2,981
29	275	0.0079	0.013	0.072	0.197	0.001723	0.0022	0.161	0.252	2.79	0.061	7.82	3,041
30	279	0.0081	0.013	0.073	0.197	0.001723	0.0022	0.164	0.259	2.80	0.062	7.82	3,085
31	285	0.0082	0.013	0.074	0.197	0.001723	0.0022	0.168	0.266	2.82	0.063	7.81	3,145
32	287	0.0082	0.013	0.074	0.197	0.001723	0.0022	0.167	0.267	2.77	0.062	7.81	3,151
33	290	0.0084	0.013	0.075	0.197	0.001724	0.0022	0.171	0.273	2.79	0.063	7.81	3,209
34	295	0.0087	0.013	0.076	0.197	0.001724	0.0022	0.176	0.282	2.83	0.064	7.81	3,294
35	289	0.0088	0.013	0.075	0.198	0.001724	0.0021	0.178	0.285	2.82	0.065	7.80	3,305
36	258	0.0083	0.012	0.068	0.197	0.001723	0.0018	0.166	0.264	2.58	0.060	7.81	3,052
37	241	0.0081	0.012	0.064	0.197	0.001723	0.0017	0.161	0.252	2.46	0.057	7.82	2,952
38	243	0.0081	0.012	0.065	0.197	0.001723	0.0018	0.164	0.250	2.48	0.057	7.82	2,991
39	255	0.0084	0.012	0.067	0.197	0.001724	0.0020	0.175	0.257	2.59	0.059	7.81	3,122
40	295	0.0097	0.014	0.078	0.198	0.001726	0.0024	0.209	0.294	3.00	0.067	7.79	3,589
41	347	0.0114	0.016	0.091	0.199	0.001727	0.0028	0.255	0.345	3.54	0.079	7.78	4,064

Table 9. Alternative 2 – Predictions of Average Annual Concentrations for the Seepage Collection Ponds

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	70	0.0021	0.001	0.010	0.195	0.001714	0.0006	0.021	0.047	0.30	0.009	7.87	2,031
2	86	0.0023	0.002	0.012	0.195	0.001719	0.0006	0.023	0.053	0.44	0.010	7.87	2,214
3	108	0.0030	0.003	0.022	0.196	0.001720	0.0008	0.044	0.082	0.87	0.018	7.85	2,457
4	110	0.0038	0.005	0.029	0.196	0.001719	0.0010	0.061	0.100	1.16	0.024	7.86	2,215
5	104	0.0055	0.006	0.034	0.195	0.001718	0.0012	0.072	0.114	1.33	0.028	7.87	1,977
6	107	0.0063	0.007	0.037	0.195	0.001718	0.0012	0.081	0.126	1.48	0.032	7.87	1,895
7	116	0.0062	0.007	0.039	0.195	0.001718	0.0013	0.087	0.134	1.57	0.034	7.87	1,881
8	126	0.0062	0.007	0.041	0.195	0.001718	0.0013	0.092	0.142	1.67	0.036	7.87	1,910
9	137	0.0062	0.008	0.044	0.195	0.001718	0.0014	0.097	0.151	1.76	0.038	7.87	1,969
10	125	0.0054	0.007	0.039	0.195	0.001717	0.0012	0.088	0.138	1.60	0.034	7.86	1,752
11	137	0.0055	0.007	0.042	0.196	0.001718	0.0013	0.093	0.146	1.68	0.036	7.86	1,831
12	145	0.0055	0.008	0.042	0.196	0.001718	0.0013	0.095	0.150	1.70	0.037	7.86	1,865
13	148	0.0053	0.008	0.042	0.195	0.001718	0.0013	0.095	0.151	1.69	0.037	7.86	1,860
14	152	0.0053	0.008	0.042	0.195	0.001718	0.0013	0.095	0.153	1.68	0.037	7.86	1,864
15	156	0.0053	0.008	0.043	0.196	0.001718	0.0013	0.097	0.157	1.70	0.037	7.86	1,893
16	158	0.0053	0.008	0.043	0.196	0.001718	0.0013	0.098	0.160	1.70	0.037	7.86	1,901
17	160	0.0052	0.008	0.043	0.196	0.001718	0.0013	0.098	0.160	1.70	0.037	7.86	1,892
18	163	0.0052	0.008	0.044	0.196	0.001718	0.0013	0.099	0.163	1.73	0.038	7.85	1,914
19	165	0.0052	0.008	0.044	0.196	0.001718	0.0013	0.100	0.163	1.75	0.038	7.85	1,921
20	164	0.0051	0.008	0.044	0.196	0.001718	0.0013	0.099	0.161	1.73	0.038	7.85	1,895
21	165	0.0051	0.008	0.044	0.196	0.001718	0.0013	0.099	0.159	1.72	0.037	7.86	1,884
22	165	0.0050	0.008	0.043	0.196	0.001718	0.0014	0.098	0.158	1.72	0.037	7.86	1,876
23	165	0.0049	0.008	0.043	0.196	0.001718	0.0014	0.098	0.156	1.71	0.037	7.86	1,869
24	166	0.0049	0.008	0.044	0.196	0.001718	0.0014	0.098	0.155	1.72	0.037	7.85	1,871
25	166	0.0049	0.008	0.044	0.196	0.001718	0.0014	0.098	0.155	1.72	0.037	7.85	1,872
26	166	0.0048	0.008	0.044	0.196	0.001718	0.0014	0.097	0.153	1.71	0.037	7.85	1,862
27	169	0.0049	0.008	0.044	0.196	0.001718	0.0014	0.100	0.156	1.74	0.038	7.85	1,898
28	173	0.0050	0.008	0.045	0.196	0.001719	0.0014	0.102	0.158	1.78	0.038	7.85	1,935
29	174	0.0050	0.008	0.046	0.196	0.001719	0.0014	0.103	0.160	1.78	0.039	7.84	1,947
30	172	0.0050	0.008	0.045	0.196	0.001719	0.0014	0.102	0.158	1.75	0.038	7.84	1,924
31	169	0.0049	0.008	0.044	0.196	0.001719	0.0014	0.101	0.156	1.71	0.037	7.84	1,890
32	155	0.0045	0.007	0.040	0.196	0.001718	0.0012	0.093	0.144	1.55	0.034	7.85	1,737
33	144	0.0042	0.007	0.038	0.195	0.001717	0.0011	0.086	0.134	1.44	0.032	7.86	1,623
34	139	0.0041	0.006	0.036	0.195	0.001717	0.0011	0.083	0.130	1.38	0.031	7.86	1,564
35	134	0.0040	0.006	0.035	0.195	0.001717	0.0010	0.080	0.127	1.33	0.030	7.86	1,520
36	131	0.0039	0.006	0.034	0.195	0.001717	0.0010	0.079	0.125	1.30	0.029	7.85	1,495
37	125	0.0038	0.006	0.033	0.196	0.001717	0.0010	0.076	0.121	1.25	0.028	7.85	1,447
38	121	0.0037	0.006	0.032	0.196	0.001717	0.0009	0.074	0.117	1.21	0.027	7.84	1,402
39	117	0.0036	0.005	0.031	0.196	0.001717	0.0009	0.073	0.113	1.17	0.026	7.83	1,362
40	113	0.0035	0.005	0.030	0.196	0.001718	0.0009	0.073	0.110	1.14	0.026	7.82	1,330
41	111	0.0034	0.005	0.029	0.196	0.001718	0.00086	0.073	0.108	1.12	0.025	7.82	1,308

Table 10. Alternative 2 – Predictions of Average Annual Concentrations for the Embankment

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	63	0.0019	0.001	0.009	0.194	0.001711	0.0005	0.018	0.043	0.26	0.008	7.87	1,850
2	79	0.0021	0.001	0.011	0.195	0.001718	0.0006	0.020	0.049	0.41	0.009	7.86	2,007
3	93	0.0027	0.003	0.021	0.196	0.001719	0.0007	0.039	0.074	0.80	0.017	7.85	2,102
4	108	0.0037	0.005	0.029	0.196	0.001719	0.0010	0.059	0.099	1.15	0.024	7.84	2,154
5	101	0.0054	0.006	0.033	0.195	0.001718	0.0011	0.070	0.112	1.30	0.028	7.86	1,913
6	103	0.0061	0.006	0.036	0.195	0.001718	0.0012	0.078	0.122	1.43	0.031	7.86	1,822
7	110	0.0058	0.007	0.037	0.195	0.001717	0.0012	0.081	0.126	1.48	0.032	7.87	1,756
8	116	0.0056	0.007	0.038	0.195	0.001717	0.0012	0.083	0.130	1.52	0.033	7.87	1,735
9	122	0.0054	0.007	0.039	0.195	0.001717	0.0012	0.085	0.134	1.56	0.034	7.87	1,737
10	132	0.0056	0.007	0.041	0.195	0.001718	0.0013	0.091	0.144	1.67	0.036	7.87	1,821
11	145	0.0057	0.008	0.044	0.195	0.001718	0.0013	0.097	0.154	1.76	0.038	7.87	1,916
12	155	0.0058	0.008	0.045	0.195	0.001718	0.0014	0.100	0.160	1.81	0.039	7.87	1,974
13	161	0.0057	0.008	0.046	0.195	0.001718	0.0014	0.101	0.163	1.81	0.039	7.87	1,992
14	166	0.0057	0.008	0.046	0.195	0.001718	0.0014	0.102	0.166	1.81	0.040	7.87	2,011
15	172	0.0058	0.008	0.047	0.195	0.001718	0.0014	0.105	0.173	1.86	0.041	7.87	2,066
16	177	0.0058	0.009	0.048	0.195	0.001718	0.0014	0.107	0.178	1.89	0.042	7.86	2,101
17	177	0.0057	0.008	0.048	0.195	0.001718	0.0014	0.106	0.177	1.87	0.041	7.87	2,077
18	179	0.0057	0.009	0.048	0.195	0.001718	0.0014	0.107	0.178	1.89	0.042	7.87	2,088
19	180	0.0056	0.009	0.048	0.195	0.001718	0.0014	0.107	0.178	1.90	0.042	7.87	2,082
20	182	0.0056	0.009	0.048	0.195	0.001718	0.0015	0.107	0.177	1.90	0.041	7.87	2,074
21	184	0.0056	0.009	0.048	0.195	0.001718	0.0015	0.108	0.177	1.92	0.042	7.87	2,084
22	187	0.0056	0.009	0.049	0.195	0.001718	0.0015	0.109	0.177	1.93	0.042	7.87	2,101
23	189	0.0056	0.009	0.050	0.195	0.001719	0.0016	0.110	0.178	1.96	0.042	7.86	2,121
24	192	0.0056	0.009	0.050	0.195	0.001719	0.0016	0.111	0.179	1.97	0.043	7.86	2,142
25	194	0.0056	0.009	0.051	0.195	0.001719	0.0016	0.112	0.179	1.99	0.043	7.86	2,158
26	195	0.0056	0.009	0.051	0.195	0.001719	0.0016	0.112	0.179	2.00	0.043	7.86	2,166
27	196	0.0056	0.009	0.051	0.195	0.001719	0.0016	0.113	0.179	2.01	0.043	7.86	2,173
28	197	0.0056	0.009	0.052	0.195	0.001719	0.0016	0.113	0.179	2.02	0.044	7.86	2,184
29	198	0.0057	0.009	0.052	0.195	0.001719	0.0016	0.114	0.181	2.02	0.044	7.86	2,198
30	200	0.0057	0.009	0.052	0.195	0.001719	0.0016	0.115	0.183	2.02	0.044	7.86	2,211
31	200	0.0058	0.009	0.052	0.195	0.001719	0.0016	0.115	0.184	2.01	0.044	7.86	2,217
32	201	0.0058	0.009	0.052	0.195	0.001719	0.0016	0.115	0.185	2.00	0.044	7.86	2,217
33	201	0.0058	0.009	0.052	0.195	0.001719	0.0016	0.115	0.186	1.99	0.044	7.86	2,221
34	202	0.0058	0.009	0.052	0.196	0.001719	0.0016	0.116	0.187	1.99	0.044	7.86	2,230
35	202	0.0059	0.009	0.053	0.196	0.001719	0.0016	0.117	0.189	2.00	0.045	7.86	2,248
36	203	0.0059	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,266
37	203	0.0059	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,273
38	203	0.0060	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,274
39	202	0.0060	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,273
40	202	0.0060	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,273
41	202	0.0060	0.009	0.053	0.196	0.001719	0.0016	0.118	0.191	2.01	0.045	7.86	2,273

Table 11. Alternative 2 – Predictions of Average Annual Concentrations for Lost Seepage

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	85	0.0023	0.001	0.011	0.314	0.001717	0.0006	0.022	0.051	0.43	0.009	7.91	2,288
3	133	0.0035	0.003	0.023	0.285	0.001727	0.0010	0.048	0.091	0.89	0.019	7.81	3,101
4	96	0.0032	0.004	0.025	0.325	0.001721	0.0008	0.052	0.085	0.98	0.021	7.93	2,000
5	94	0.0045	0.005	0.029	0.325	0.001721	0.0010	0.064	0.100	1.17	0.025	7.95	1,805
6	98	0.0057	0.006	0.033	0.321	0.001720	0.0011	0.074	0.114	1.34	0.028	7.96	1,771
7	101	0.0055	0.006	0.034	0.323	0.001720	0.0011	0.077	0.118	1.38	0.029	7.96	1,701
8	106	0.0054	0.006	0.035	0.324	0.001720	0.0011	0.079	0.121	1.42	0.030	7.97	1,666
9	109	0.0051	0.006	0.035	0.324	0.001720	0.0011	0.080	0.122	1.42	0.030	7.98	1,618
10	297	0.0135	0.017	0.095	0.256	0.001735	0.0030	0.214	0.330	3.85	0.083	7.72	4,108
11	189	0.0075	0.010	0.057	0.197	0.001720	0.0018	0.127	0.200	2.30	0.049	7.89	2,494
12	202	0.0076	0.011	0.059	0.197	0.001720	0.0018	0.132	0.209	2.37	0.051	7.89	2,577
13	213	0.0076	0.011	0.061	0.197	0.001720	0.0018	0.136	0.216	2.41	0.052	7.88	2,644
14	223	0.0077	0.011	0.062	0.197	0.001720	0.0019	0.139	0.225	2.46	0.054	7.88	2,720
15	232	0.0079	0.011	0.064	0.197	0.001720	0.0019	0.144	0.235	2.53	0.055	7.88	2,800
16	236	0.0078	0.011	0.064	0.197	0.001720	0.0019	0.145	0.238	2.54	0.056	7.88	2,808
17	233	0.0075	0.011	0.063	0.197	0.001720	0.0019	0.142	0.233	2.47	0.054	7.88	2,731
18	238	0.0076	0.011	0.064	0.197	0.001720	0.0019	0.145	0.237	2.53	0.055	7.88	2,770
19	242	0.0076	0.012	0.064	0.197	0.001720	0.0019	0.146	0.238	2.56	0.056	7.88	2,782
20	247	0.0076	0.012	0.065	0.197	0.001720	0.0020	0.148	0.240	2.59	0.056	7.88	2,813
21	253	0.0077	0.012	0.067	0.197	0.001720	0.0021	0.150	0.243	2.64	0.057	7.88	2,862
22	258	0.0078	0.012	0.068	0.197	0.001720	0.0021	0.152	0.245	2.68	0.058	7.87	2,903
23	263	0.0078	0.012	0.069	0.197	0.001720	0.0022	0.155	0.247	2.72	0.059	7.87	2,945
24	264	0.0077	0.012	0.069	0.197	0.001720	0.0022	0.154	0.245	2.72	0.059	7.87	2,939
25	262	0.0076	0.012	0.069	0.197	0.001720	0.0022	0.153	0.241	2.69	0.058	7.87	2,906
26	258	0.0075	0.012	0.068	0.197	0.001720	0.0022	0.151	0.237	2.66	0.057	7.88	2,871
27	261	0.0076	0.012	0.069	0.197	0.001720	0.0022	0.153	0.238	2.69	0.058	7.87	2,901
28	269	0.0078	0.012	0.071	0.197	0.001720	0.0022	0.158	0.246	2.76	0.060	7.87	2,990
29	275	0.0080	0.013	0.072	0.198	0.001721	0.0022	0.162	0.253	2.80	0.061	7.86	3,051
30	280	0.0081	0.013	0.073	0.198	0.001721	0.0022	0.165	0.260	2.81	0.062	7.86	3,095
31	286	0.0083	0.013	0.074	0.198	0.001721	0.0022	0.168	0.267	2.82	0.063	7.85	3,156
32	288	0.0083	0.013	0.074	0.198	0.001721	0.0022	0.168	0.268	2.78	0.063	7.85	3,161
33	291	0.0085	0.013	0.075	0.198	0.001721	0.0022	0.171	0.274	2.80	0.063	7.84	3,220
34	296	0.0087	0.013	0.076	0.198	0.001722	0.0022	0.176	0.283	2.84	0.065	7.83	3,305
35	290	0.0089	0.013	0.075	0.198	0.001723	0.0021	0.178	0.286	2.83	0.065	7.82	3,317
36	259	0.0083	0.012	0.068	0.198	0.001720	0.0018	0.167	0.265	2.59	0.060	7.85	3,063
37	241	0.0081	0.012	0.065	0.198	0.001721	0.0017	0.162	0.253	2.47	0.057	7.86	2,961
38	243	0.0082	0.012	0.065	0.198	0.001721	0.0018	0.164	0.251	2.49	0.057	7.86	3,000
39	256	0.0085	0.012	0.068	0.198	0.001723	0.0020	0.175	0.258	2.60	0.059	7.83	3,132
40	296	0.0097	0.014	0.078	0.199	0.001729	0.0024	0.209	0.295	3.01	0.067	7.77	3,601
41	349	0.0114	0.016	0.092	0.199	0.001734	0.0028	0.255	0.346	3.56	0.079	7.73	4,075

Table 11. Alternative 3 Summary

	Pyrite Pond and Lost Seepage	Seepage Collection Ponds	Embankment
<i>Cl</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Sb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cd</i>	Above Chronic standards years 3–41 of mine operations	Above Chronic standards years 2–41 of mine operations	Above Chronic standards years 3–41 of mine operations
<i>Cr</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cu</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Fe</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Pb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Ni</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Above Chronic standards years 39–41 of mine operations
<i>Se</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations
<i>Zn</i>	Above Chronic and Acute standards years 3–41 of mine operations	Above Chronic and Acute standards years 3–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Ag</i>	Above Acute standards years 12–41 of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>pH</i>	Within normal pH range	Within normal pH range	Within normal pH range

Table 12. Alternative 3 – Predictions of Average Annual Concentrations for the Pyrite Pond and Lost Seepage

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	46	0.0017	0.001	0.010	0.194	0.001718	0.0004	0.023	0.042	0.20	0.009	7.92	1,559
2	62	0.0013	0.001	0.007	0.193	0.001720	0.0007	0.015	0.031	0.27	0.006	7.96	1,329
3	64	0.0020	0.002	0.016	0.194	0.001718	0.0006	0.035	0.058	0.64	0.013	7.91	1,603
4	72	0.0030	0.004	0.024	0.194	0.001717	0.0008	0.054	0.081	0.97	0.020	7.91	1,563
5	76	0.0048	0.005	0.028	0.194	0.001717	0.0011	0.064	0.095	1.13	0.024	7.91	1,456
6	83	0.0058	0.006	0.032	0.194	0.001717	0.0012	0.073	0.109	1.28	0.028	7.91	1,471
7	95	0.0052	0.006	0.033	0.194	0.001717	0.0012	0.075	0.114	1.33	0.029	7.91	1,469
8	103	0.0048	0.006	0.034	0.194	0.001717	0.0012	0.077	0.116	1.36	0.029	7.91	1,469
9	110	0.0046	0.006	0.035	0.194	0.001717	0.0012	0.080	0.122	1.42	0.030	7.91	1,503
10	115	0.0047	0.007	0.037	0.194	0.001717	0.0012	0.085	0.132	1.52	0.033	7.90	1,572
11	118	0.0047	0.007	0.038	0.195	0.001717	0.0012	0.089	0.139	1.57	0.034	7.90	1,613
12	120	0.0047	0.007	0.039	0.195	0.001717	0.0011	0.091	0.144	1.60	0.035	7.89	1,637
13	122	0.0047	0.007	0.039	0.195	0.001717	0.0011	0.093	0.149	1.60	0.035	7.89	1,654
14	122	0.0047	0.007	0.038	0.195	0.001717	0.0011	0.094	0.152	1.59	0.035	7.89	1,662
15	122	0.0047	0.007	0.038	0.195	0.001717	0.0010	0.094	0.155	1.58	0.036	7.89	1,661
16	122	0.0045	0.007	0.037	0.195	0.001717	0.0010	0.093	0.154	1.55	0.035	7.89	1,635
17	121	0.0045	0.007	0.037	0.195	0.001717	0.0010	0.093	0.154	1.54	0.035	7.90	1,618
18	122	0.0045	0.007	0.038	0.195	0.001717	0.0010	0.095	0.156	1.59	0.036	7.89	1,634
19	122	0.0046	0.008	0.038	0.195	0.001717	0.0011	0.096	0.157	1.63	0.036	7.89	1,644
20	123	0.0046	0.008	0.039	0.195	0.001717	0.0011	0.097	0.157	1.66	0.036	7.89	1,651
21	123	0.0046	0.008	0.039	0.195	0.001717	0.0011	0.098	0.155	1.67	0.037	7.89	1,656
22	124	0.0046	0.008	0.039	0.195	0.001717	0.0012	0.098	0.153	1.68	0.037	7.89	1,662
23	125	0.0045	0.008	0.039	0.195	0.001717	0.0012	0.098	0.151	1.68	0.036	7.89	1,667
24	125	0.0045	0.008	0.040	0.195	0.001717	0.0012	0.098	0.149	1.68	0.036	7.89	1,665
25	124	0.0044	0.008	0.040	0.195	0.001717	0.0012	0.098	0.147	1.67	0.036	7.89	1,660
26	123	0.0044	0.007	0.040	0.195	0.001717	0.0012	0.097	0.145	1.66	0.036	7.89	1,651
27	122	0.0044	0.007	0.040	0.195	0.001717	0.0012	0.097	0.143	1.65	0.036	7.89	1,644
28	122	0.0044	0.007	0.040	0.195	0.001717	0.0012	0.097	0.143	1.63	0.036	7.89	1,646
29	123	0.0045	0.007	0.040	0.195	0.001717	0.0012	0.098	0.146	1.61	0.036	7.89	1,654
30	125	0.0046	0.007	0.040	0.195	0.001717	0.0011	0.099	0.151	1.59	0.036	7.89	1,673
31	126	0.0047	0.007	0.040	0.195	0.001717	0.0010	0.100	0.157	1.56	0.037	7.89	1,692
32	128	0.0048	0.007	0.040	0.195	0.001717	0.0010	0.102	0.162	1.54	0.037	7.89	1,728
33	131	0.0051	0.007	0.040	0.195	0.001717	0.0010	0.106	0.170	1.54	0.038	7.88	1,801
34	135	0.0053	0.008	0.041	0.195	0.001718	0.0010	0.111	0.179	1.57	0.039	7.88	1,894
35	139	0.0057	0.008	0.043	0.195	0.001718	0.0010	0.119	0.190	1.62	0.040	7.87	2,014
36	144	0.0062	0.008	0.045	0.196	0.001719	0.0010	0.129	0.202	1.69	0.042	7.86	2,163
37	151	0.0068	0.009	0.048	0.196	0.001720	0.0011	0.143	0.218	1.82	0.045	7.84	2,366
38	162	0.0076	0.010	0.052	0.197	0.001721	0.0012	0.160	0.234	1.97	0.049	7.83	2,615
39	179	0.0085	0.011	0.057	0.197	0.001723	0.0014	0.184	0.257	2.19	0.054	7.81	2,942
40	207	0.0100	0.013	0.066	0.198	0.001726	0.0017	0.222	0.297	2.56	0.062	7.79	3,444
41	247	0.0118	0.015	0.078	0.199	0.001727	0.0021	0.272	0.349	3.03	0.073	7.78	3,952

Table 13. Predictions of Average Annual Concentrations for the Seepage Collection Ponds

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	44	0.0014	0.001	0.006	0.194	0.001715	0.00038	0.012	0.030	0.22	0.006	7.87	1,488
2	58	0.0014	0.001	0.009	0.195	0.001716	0.00043	0.015	0.037	0.35	0.007	7.89	1,404
3	59	0.0022	0.003	0.020	0.196	0.001717	0.00058	0.041	0.069	0.81	0.017	7.85	1,561
4	68	0.0031	0.004	0.025	0.195	0.001716	0.00079	0.052	0.082	0.99	0.021	7.88	1,393
5	68	0.0051	0.005	0.027	0.195	0.001715	0.00104	0.060	0.092	1.09	0.023	7.89	1,304
6	77	0.0051	0.005	0.029	0.195	0.001715	0.00107	0.065	0.099	1.16	0.025	7.89	1,298
7	86	0.0044	0.005	0.030	0.195	0.001715	0.00103	0.065	0.101	1.18	0.025	7.89	1,281
8	91	0.0040	0.005	0.030	0.195	0.001715	0.00101	0.065	0.102	1.19	0.026	7.89	1,270
9	93	0.0037	0.005	0.030	0.195	0.001715	0.00098	0.066	0.103	1.19	0.026	7.89	1,260
10	95	0.0038	0.006	0.031	0.195	0.001715	0.00097	0.070	0.110	1.26	0.027	7.87	1,304
11	97	0.0039	0.006	0.032	0.195	0.001715	0.00096	0.073	0.116	1.31	0.028	7.87	1,338
12	99	0.0039	0.006	0.032	0.195	0.001715	0.00093	0.074	0.119	1.32	0.029	7.87	1,352
13	99	0.0038	0.006	0.031	0.195	0.001715	0.00089	0.074	0.121	1.30	0.029	7.87	1,348
14	99	0.0038	0.006	0.031	0.195	0.001715	0.00085	0.074	0.123	1.28	0.029	7.86	1,343
15	99	0.0038	0.006	0.031	0.195	0.001715	0.00082	0.074	0.125	1.27	0.029	7.86	1,338
16	98	0.0036	0.006	0.030	0.195	0.001715	0.00079	0.073	0.124	1.24	0.028	7.86	1,312
17	97	0.0036	0.006	0.030	0.195	0.001715	0.00080	0.073	0.123	1.23	0.028	7.86	1,296
18	98	0.0036	0.006	0.030	0.195	0.001715	0.00082	0.075	0.125	1.27	0.029	7.86	1,313
19	99	0.0037	0.006	0.031	0.195	0.001715	0.00086	0.076	0.127	1.31	0.029	7.86	1,328
20	100	0.0037	0.006	0.031	0.195	0.001715	0.00089	0.077	0.127	1.34	0.029	7.86	1,338
21	100	0.0037	0.006	0.031	0.195	0.001716	0.00091	0.078	0.126	1.35	0.030	7.86	1,340
22	99	0.0037	0.006	0.031	0.195	0.001716	0.00092	0.077	0.124	1.35	0.029	7.85	1,334
23	99	0.0036	0.006	0.031	0.196	0.001716	0.00093	0.077	0.121	1.33	0.029	7.85	1,322
24	98	0.0035	0.006	0.031	0.196	0.001716	0.00093	0.076	0.119	1.32	0.029	7.84	1,314
25	98	0.0035	0.006	0.031	0.196	0.001716	0.00094	0.076	0.117	1.32	0.029	7.84	1,308
26	97	0.0035	0.006	0.031	0.196	0.001716	0.00094	0.076	0.115	1.31	0.028	7.84	1,301
27	96	0.0035	0.006	0.031	0.196	0.001716	0.00094	0.075	0.113	1.30	0.028	7.84	1,295
28	96	0.0035	0.006	0.031	0.196	0.001716	0.00094	0.075	0.113	1.29	0.028	7.84	1,296
29	96	0.0035	0.006	0.031	0.196	0.001716	0.00092	0.076	0.114	1.28	0.028	7.84	1,297
30	96	0.0035	0.006	0.031	0.196	0.001716	0.00088	0.076	0.114	1.24	0.028	7.84	1,287
31	94	0.0035	0.006	0.030	0.196	0.001717	0.00084	0.076	0.114	1.20	0.027	7.83	1,266
32	91	0.0034	0.005	0.029	0.196	0.001718	0.00080	0.076	0.112	1.15	0.026	7.82	1,238
33	89	0.0033	0.005	0.028	0.197	0.001719	0.00076	0.075	0.110	1.11	0.026	7.80	1,216
34	87	0.0033	0.005	0.027	0.197	0.001720	0.00073	0.074	0.109	1.08	0.025	7.79	1,199
35	84	0.0033	0.005	0.026	0.198	0.001722	0.00071	0.074	0.107	1.04	0.024	7.78	1,180
36	82	0.0032	0.005	0.026	0.198	0.001725	0.00068	0.074	0.106	1.02	0.024	7.76	1,170
37	80	0.0033	0.005	0.025	0.199	0.001729	0.00067	0.075	0.105	1.00	0.024	7.74	1,169
38	79	0.0033	0.005	0.025	0.200	0.001733	0.00066	0.076	0.105	0.99	0.023	7.72	1,176
39	73	0.0031	0.004	0.023	0.202	0.001748	0.00064	0.078	0.097	0.92	0.021	7.67	1,117
40	70	0.0031	0.004	0.022	0.205	0.001766	0.00063	0.081	0.093	0.89	0.020	7.62	1,098
41	70	0.0031	0.004	0.022	0.206	0.001776	0.00280	0.086	0.095	0.90	0.021	7.60	1,113

Table 14. Alternative 3 – Predictions of Average Annual Concentrations for the Embankment

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	49	0.0015	0.001	0.006	0.181	0.001600	0.0004	0.012	0.034	0.24	0.006	7.86	1,649
2	65	0.0015	0.001	0.010	0.185	0.001638	0.0005	0.016	0.041	0.39	0.008	7.88	1,555
3	64	0.0024	0.004	0.022	0.185	0.001630	0.0006	0.044	0.076	0.90	0.019	7.85	1,711
4	75	0.0034	0.005	0.027	0.188	0.001659	0.0009	0.056	0.090	1.09	0.023	7.88	1,519
5	72	0.0054	0.005	0.029	0.190	0.001677	0.0011	0.063	0.099	1.16	0.025	7.90	1,384
6	81	0.0053	0.006	0.031	0.190	0.001683	0.0011	0.067	0.104	1.22	0.026	7.90	1,356
7	89	0.0045	0.005	0.031	0.189	0.001675	0.0011	0.067	0.105	1.23	0.026	7.91	1,327
8	94	0.0041	0.005	0.031	0.187	0.001659	0.0010	0.067	0.105	1.23	0.026	7.90	1,308
9	96	0.0038	0.005	0.031	0.185	0.001637	0.0010	0.067	0.106	1.23	0.027	7.90	1,295
10	99	0.0040	0.006	0.032	0.185	0.001634	0.0010	0.072	0.114	1.31	0.028	7.89	1,347
11	101	0.0040	0.006	0.033	0.186	0.001646	0.0010	0.075	0.120	1.36	0.030	7.89	1,383
12	103	0.0040	0.006	0.033	0.186	0.001647	0.0010	0.076	0.124	1.36	0.030	7.89	1,395
13	103	0.0039	0.006	0.033	0.185	0.001635	0.0009	0.076	0.126	1.34	0.030	7.88	1,391
14	102	0.0039	0.006	0.032	0.184	0.001622	0.0009	0.075	0.127	1.32	0.030	7.88	1,383
15	102	0.0039	0.006	0.032	0.182	0.001611	0.0008	0.075	0.129	1.31	0.030	7.88	1,377
16	101	0.0037	0.006	0.031	0.181	0.001600	0.0008	0.074	0.128	1.28	0.029	7.88	1,350
17	101	0.0037	0.006	0.031	0.181	0.001599	0.0008	0.073	0.127	1.27	0.029	7.88	1,336
18	102	0.0038	0.006	0.031	0.182	0.001608	0.0008	0.076	0.130	1.32	0.030	7.88	1,356
19	103	0.0038	0.006	0.032	0.183	0.001619	0.0009	0.077	0.132	1.36	0.030	7.88	1,373
20	103	0.0039	0.006	0.032	0.184	0.001622	0.0009	0.078	0.132	1.39	0.031	7.88	1,381
21	103	0.0039	0.006	0.033	0.183	0.001616	0.0009	0.078	0.130	1.39	0.031	7.88	1,380
22	103	0.0038	0.006	0.033	0.182	0.001606	0.0009	0.078	0.128	1.39	0.030	7.87	1,374
23	102	0.0037	0.006	0.032	0.180	0.001593	0.0010	0.077	0.125	1.38	0.030	7.87	1,364
24	102	0.0037	0.006	0.032	0.179	0.001581	0.0010	0.076	0.123	1.37	0.030	7.87	1,355
25	101	0.0036	0.006	0.032	0.178	0.001569	0.0010	0.076	0.121	1.36	0.030	7.87	1,348
26	101	0.0036	0.006	0.032	0.176	0.001559	0.0010	0.075	0.119	1.35	0.030	7.86	1,340
27	100	0.0036	0.006	0.032	0.176	0.001556	0.0010	0.075	0.118	1.35	0.029	7.86	1,336
28	100	0.0036	0.006	0.032	0.177	0.001565	0.0010	0.075	0.118	1.34	0.030	7.87	1,340
29	101	0.0036	0.006	0.032	0.178	0.001576	0.0010	0.075	0.119	1.33	0.030	7.87	1,344
30	101	0.0037	0.006	0.032	0.179	0.001583	0.0009	0.075	0.121	1.31	0.030	7.87	1,344
31	101	0.0037	0.006	0.032	0.179	0.001583	0.0009	0.075	0.122	1.28	0.029	7.87	1,339
32	100	0.0036	0.006	0.032	0.178	0.001572	0.0009	0.074	0.121	1.25	0.029	7.87	1,327
33	98	0.0036	0.006	0.031	0.175	0.001544	0.0008	0.072	0.120	1.22	0.028	7.86	1,303
34	95	0.0035	0.005	0.030	0.170	0.001506	0.0008	0.070	0.117	1.18	0.028	7.85	1,273
35	92	0.0034	0.005	0.029	0.165	0.001463	0.0008	0.068	0.115	1.13	0.027	7.84	1,239
36	88	0.0033	0.005	0.028	0.160	0.001415	0.0007	0.066	0.111	1.09	0.026	7.83	1,203
37	85	0.0032	0.005	0.027	0.154	0.001364	0.0007	0.063	0.108	1.04	0.025	7.82	1,164
38	81	0.0031	0.0047	0.0256	0.148	0.001310	0.0007	0.061	0.103	1.00	0.024	7.80	1,120
39	78	0.0030	0.0045	0.0247	0.143	0.001266	0.00063	0.058	0.099	0.96	0.023	7.79	1,082
40	76	0.0029	4.4E-03	2.4E-02	1.4E-01	1.2E-03	6.2E-04	5.7E-02	9.7E-02	9.4E-01	2.2E-02	7.78	1,056
41	74.6	0.0029	4.3E-03	2.4E-02	1.4E-01	1.2E-03	6.1E-04	5.6E-02	9.5E-02	9.2E-01	2.2E-02	7.77	1,036

Table 15. Alternative 4 Summary

	Pyrite Pond	Lost Seepage (Pyrite Pond and Pyrite Tailings)	Lost Seepage (Scavenger Pond and Scavenger Tailings)	Surplus Water
<i>Cl</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Sb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cd</i>	Above Chronic standards years 1–11 and above Chronic and Acute standards years 12–41 of mine operations	Above Chronic standards years 2–41 of mine operations	Above Chronic standards years 3–41 of mine operations	Above Chronic standards years 2–41 of mine operations
<i>Cr</i>	Above Chronic standards years 1–6 and above Chronic and Acute standards years 7–41 of mine operations	Above Chronic standards years 23–41 of mine operations	Within standards for duration of mine operations	Above Chronic standards years 9–41 of mine operations
<i>Cu</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Fe</i>	Above Chronic standards for the duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations	Above Chronic standards years 11–36 of mine operations
<i>Pb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Ni</i>	Above Chronic standards years 1–2 and above Chronic and Acute standards years 3–41 of mine operations	Above Chronic standards years 2–41 of mine operations	Within standards for duration of mine operations	Above Chronic standards years 3–20 and 31–41 and above Chronic and Acute standards years 21–30 of mine operations
<i>Se</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations
<i>Zn</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards years 2–41 of mine operations	Above Chronic and Acute standards years 3–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Ag</i>	Above Acute standards for the duration of mine operations	Above Acute standards years 4–41 of mine operations	Above Acute standards years 7–41 of mine operations	Above Acute standards years 4–41 of mine operations
<i>pH</i>	Below normal pH range for duration of mine operations	Below normal pH range for duration of mine operations	Within normal pH range	Below pH range years 3–41 of mine operations

Table 16. Alternative 4 – Predictions of Average Annual Concentrations for the Pyrite Pond

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	3	0.0003	0.002	0.129	46.220	43.019	0.000	0.372	0.005	0.24	0.025	3.68	584
2	3	0.0003	0.005	0.412	148.590	170.28	0.001	1.191	0.015	0.78	0.080	3.06	1,815
3	4	0.0003	0.008	0.701	253.330	304.11	0.001	2.030	0.025	1.33	0.136	3.02	3,078
4	5	0.0003	0.012	0.996	359.840	441.11	0.001	2.883	0.035	1.89	0.193	2.99	4,364
5	5	0.0003	0.015	1.295	468.010	581.07	0.001	3.749	0.046	2.46	0.251	2.98	5,671
6	6	0.0003	0.019	1.599	578.080	724.23	0.002	4.631	0.057	3.04	0.310	2.97	7,002
7	6	0.0004	0.021	1.833	662.780	834.81	0.002	5.309	0.065	3.48	0.356	2.96	8,026
8	7	0.0004	0.023	1.979	715.570	903.93	0.002	5.732	0.070	3.76	0.384	2.95	8,663
9	7	0.0004	0.025	2.126	768.520	973.38	0.002	6.156	0.075	4.04	0.412	2.95	9,303
10	7	0.0004	0.026	2.274	822.130	1,043.8	0.002	6.585	0.081	4.32	0.441	2.95	9,951
11	7	0.0004	0.028	2.445	884.150	1,125.4	0.003	7.082	0.087	4.64	0.474	2.94	10,700
12	8	0.0004	0.031	2.645	956.260	1,220.4	0.003	7.659	0.094	5.02	0.513	2.94	11,572
13	8	0.0004	0.033	2.845	1,028.700	1316	0.003	8.239	0.101	5.40	0.552	2.94	12,447
14	9	0.0004	0.035	3.047	1,101.900	1,412.7	0.003	8.826	0.108	5.79	0.591	2.93	13,332
15	9	0.0004	0.038	3.251	1,175.500	1,510.1	0.003	9.415	0.115	6.17	0.631	2.93	14,223
16	10	0.0004	0.040	3.456	1,249.700	1,608.3	0.004	10.009	0.122	6.56	0.671	2.93	15,120
17	10	0.0004	0.043	3.662	1,324.200	1,706.8	0.004	10.606	0.130	6.95	0.711	2.92	16,020
18	10	0.0004	0.045	3.870	1,399.500	1,806.6	0.004	11.209	0.137	7.35	0.751	2.92	16,931
19	11	0.0004	0.047	4.080	1,475.300	1,906.9	0.004	11.816	0.144	7.75	0.792	2.92	17,848
20	11	0.0005	0.050	4.291	1,551.700	2,008.0	0.005	12.428	0.152	8.15	0.833	2.91	18,772
21	12	0.0005	0.052	4.440	1,605.800	2,079.6	0.005	12.861	0.157	8.43	0.862	2.91	19,426
22	12	0.0005	0.053	4.518	1,634.000	2,116.9	0.005	13.087	0.160	8.58	0.877	2.91	19,767
23	12	0.0005	0.053	4.596	1,662.000	2,153.9	0.005	13.311	0.163	8.73	0.892	2.91	20,105
24	12	0.0005	0.054	4.673	1,690.000	2,190.9	0.005	13.535	0.165	8.87	0.907	2.91	20,444
25	12	0.0005	0.055	4.749	1,717.600	2,227.4	0.005	13.757	0.168	9.02	0.922	2.91	20,778
26	12	0.0005	0.056	4.827	1,745.800	2,264.6	0.005	13.982	0.171	9.16	0.937	2.91	21,118
27	12	0.0005	0.057	4.904	1,773.700	2,301.5	0.005	14.206	0.173	9.31	0.952	2.91	21,456
28	13	0.0005	0.058	4.982	1,801.600	2,338.4	0.005	14.429	0.176	9.46	0.967	2.91	21,794
29	13	0.0005	0.059	5.058	1,829.200	2,374.8	0.005	14.650	0.179	9.60	0.982	2.91	22,127
30	13	0.0005	0.060	5.136	1,857.300	2,411.9	0.005	14.875	0.182	9.75	0.997	2.90	22,467
31	13	0.0005	0.061	5.213	1,885.200	2,448.7	0.005	15.098	0.184	9.90	1.012	2.90	22,804
32	13	0.0005	0.062	5.290	1,913.100	2,485.4	0.006	15.322	0.187	10.04	1.027	2.90	23,141
33	13	0.0005	0.062	5.366	1,940.600	2,521.7	0.006	15.542	0.190	10.19	1.041	2.90	23,473
34	14	0.0005	0.063	5.443	1,968.700	2,558.7	0.006	15.767	0.192	10.34	1.057	2.90	23,813
35	14	0.0005	0.064	5.520	1,996.600	2,595.4	0.006	15.990	0.195	10.48	1.072	2.90	24,150
36	14	0.0005	0.065	5.598	2,024.400	2,632.1	0.006	16.213	0.198	10.63	1.086	2.90	24,487
37	14	0.0005	0.066	5.673	2,051.800	2,668.2	0.006	16.433	0.201	10.77	1.101	2.90	24,818
38	14	0.0005	0.067	5.751	2,079.900	2,705.1	0.006	16.658	0.203	10.92	1.116	2.90	25,157
39	14	0.0005	0.068	5.828	2,107.700	2,741.6	0.006	16.880	0.206	11.06	1.131	2.90	25,492
40	15	0.0005	0.069	5.905	2,135.500	2.78E+03	0.006	17.103	0.209	11.21	1.146	2.90	25,827
41	15	0.0005	0.070	5.980	2,162.900	2.81E+03	0.006	17.322	0.211	11.35	1.161	2.89	26,156

Table 17. Alternative 4 – Predictions of Average Annual Concentrations for Lost Seepage Combined from the Pyrite Pond and Pyrite Tailings

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	32	0.0009	0.001	0.043	4.936	0.01	0.000	0.121	0.016	0.21	0.010	6.45	1,007
2	49	0.0014	0.002	0.084	17.626	0.025226	0.000	0.236	0.032	0.42	0.020	5.73	1,613
3	54	0.0018	0.003	0.106	24.629	0.031270	0.001	0.295	0.051	0.68	0.029	5.62	1,844
4	59	0.0029	0.005	0.130	31.209	0.036572	0.001	0.361	0.079	1.07	0.040	5.54	2,005
5	62	0.0046	0.006	0.145	34.383	0.039122	0.001	0.402	0.101	1.35	0.047	5.50	2,040
6	66	0.0059	0.008	0.158	37.350	0.041428	0.001	0.440	0.124	1.61	0.055	5.48	2,104
7	72	0.0067	0.009	0.163	37.926	0.041729	0.001	0.457	0.149	1.90	0.061	5.47	2,223
8	78	0.0072	0.010	0.162	36.663	0.040627	0.001	0.456	0.171	2.14	0.066	5.49	2,326
9	84	0.0075	0.011	0.160	34.951	0.039226	0.001	0.451	0.191	2.34	0.070	5.50	2,417
10	88	0.0077	0.012	0.160	34.407	0.038709	0.001	0.453	0.205	2.48	0.073	5.51	2,487
11	90	0.0079	0.012	0.163	35.080	0.039253	0.001	0.463	0.217	2.58	0.076	5.50	2,547
12	92	0.0080	0.013	0.171	37.755	0.041281	0.001	0.488	0.226	2.67	0.079	5.48	2,616
13	94	0.0080	0.013	0.176	39.633	0.042714	0.001	0.505	0.233	2.72	0.081	5.46	2,665
14	95	0.0081	0.013	0.185	42.501	0.044822	0.001	0.530	0.239	2.75	0.083	5.44	2,714
15	96	0.0081	0.013	0.191	44.626	0.046378	0.001	0.549	0.244	2.78	0.085	5.42	2,753
16	97	0.0082	0.014	0.197	46.704	0.047862	0.001	0.569	0.250	2.82	0.087	5.41	2,796
17	98	0.0082	0.014	0.201	48.055	0.048843	0.001	0.581	0.255	2.86	0.089	5.40	2,828
18	98	0.0082	0.014	0.209	50.554	0.050582	0.001	0.605	0.259	2.91	0.091	5.38	2,872
19	99	0.0083	0.014	0.215	52.315	0.051805	0.001	0.622	0.262	2.95	0.093	5.37	2,906
20	100	0.0083	0.015	0.220	54.061	0.053001	0.001	0.640	0.265	3.00	0.094	5.36	2,938
21	100	0.0084	0.015	0.223	54.844	0.053551	0.001	0.647	0.267	3.03	0.095	5.35	2,958
22	101	0.0084	0.015	0.229	56.786	0.054837	0.001	0.667	0.268	3.06	0.097	5.34	2,993
23	101	0.0084	0.015	0.234	57.934	0.055596	0.001	0.679	0.269	3.09	0.098	5.34	3,018
24	102	0.0084	0.015	0.238	59.150	0.056393	0.001	0.691	0.270	3.12	0.099	5.33	3,044
25	102	0.0084	0.015	0.240	59.744	0.056796	0.001	0.697	0.271	3.14	0.100	5.33	3,062
26	103	0.0084	0.015	0.247	61.693	0.058060	0.001	0.718	0.271	3.17	0.102	5.32	3,094
27	103	0.0084	0.015	0.251	62.810	0.058790	0.001	0.730	0.271	3.19	0.103	5.31	3,113
28	103	0.0084	0.016	0.256	64.002	0.059564	0.001	0.742	0.271	3.20	0.104	5.31	3,132
29	103	0.0084	0.016	0.257	64.549	0.059937	0.001	0.747	0.272	3.20	0.104	5.30	3,141
30	103	0.0084	0.016	0.265	66.491	0.061179	0.001	0.768	0.273	3.20	0.106	5.30	3,168
31	103	0.0084	0.016	0.269	67.587	0.061887	0.001	0.780	0.274	3.20	0.106	5.29	3,182
32	103	0.0084	0.016	0.273	68.762	0.062642	0.001	0.792	0.275	3.19	0.107	5.29	3,195
33	103	0.0084	0.016	0.274	69.280	0.062999	0.001	0.796	0.275	3.17	0.107	5.28	3,196
34	102	0.0084	0.016	0.282	71.232	0.064234	0.001	0.818	0.274	3.16	0.108	5.27	3,217
35	102	0.0083	0.016	0.286	72.334	0.064941	0.001	0.829	0.274	3.15	0.109	5.27	3,225
36	102	0.0083	0.016	0.290	73.520	0.065696	0.001	0.842	0.273	3.15	0.109	5.26	3,236
37	101	0.0083	0.016	0.291	74.008	0.066025	0.001	0.846	0.272	3.14	0.109	5.26	3,237
38	101	0.0083	0.016	0.300	75.976	0.067243	0.001	0.870	0.272	3.14	0.111	5.25	3,263
39	101	0.0083	0.016	0.304	77.091	0.067940	0.001	0.882	0.271	3.15	0.112	5.25	3,277
40	101	0.0083	0.016	0.309	78.290	6.87E-02	0.001	0.896	0.271	3.15	0.112	5.25	3,294
41	101	0.0083	0.016	0.310	78.745	6.90E-02	0.001	0.900	0.271	3.15	0.113	5.24	3,299

Table 18. Alternative 4 – Predictions of Average Annual Concentrations for Lost Seepage Combined from the Scavenger Pond and Scavenger Tailings

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	51	0.0013	0.000	0.004	0.171	0.001703	0.0004	0.006	0.024	0.22	0.004	7.79	1,410
2	58	0.0016	0.001	0.007	0.196	0.001722	0.0005	0.011	0.035	0.33	0.006	7.79	1,598
3	61	0.0021	0.002	0.014	0.198	0.001724	0.0005	0.026	0.055	0.59	0.012	7.78	1,696
4	65	0.0032	0.004	0.023	0.199	0.001727	0.0007	0.049	0.086	0.99	0.021	7.76	1,788
5	68	0.0050	0.005	0.029	0.199	0.001727	0.0009	0.065	0.108	1.26	0.027	7.76	1,765
6	70	0.0064	0.007	0.034	0.199	0.001728	0.0010	0.079	0.129	1.49	0.032	7.76	1,774
7	76	0.0070	0.008	0.039	0.199	0.001731	0.0011	0.095	0.153	1.76	0.039	7.75	1,873
8	82	0.0075	0.009	0.042	0.200	0.001733	0.0011	0.108	0.174	1.98	0.044	7.73	1,975
9	86	0.0078	0.010	0.045	0.201	0.001736	0.0011	0.118	0.191	2.17	0.048	7.73	2,066
10	89	0.0079	0.011	0.047	0.201	0.001737	0.0012	0.125	0.203	2.29	0.051	7.72	2,130
11	92	0.0081	0.011	0.049	0.201	0.001739	0.0012	0.131	0.213	2.39	0.054	7.71	2,176
12	94	0.0082	0.011	0.050	0.201	0.00174	0.0011	0.136	0.223	2.46	0.055	7.71	2,218
13	96	0.0082	0.012	0.050	0.202	0.001741	0.0011	0.139	0.231	2.51	0.057	7.71	2,252
14	97	0.0083	0.012	0.051	0.202	0.001742	0.0011	0.142	0.238	2.54	0.058	7.70	2,275
15	98	0.0083	0.012	0.051	0.202	0.001742	0.0011	0.144	0.244	2.57	0.059	7.70	2,295
16	99	0.0084	0.012	0.052	0.202	0.001743	0.0011	0.147	0.251	2.60	0.060	7.70	2,318
17	100	0.0084	0.012	0.052	0.202	0.001744	0.0011	0.149	0.256	2.63	0.061	7.70	2,337
18	101	0.0085	0.013	0.052	0.202	0.001744	0.0011	0.151	0.260	2.67	0.062	7.70	2,352
19	101	0.0085	0.013	0.053	0.202	0.001744	0.0011	0.153	0.263	2.70	0.062	7.70	2,365
20	102	0.0086	0.013	0.053	0.203	0.001745	0.0011	0.155	0.265	2.73	0.063	7.69	2,376
21	102	0.0086	0.013	0.053	0.203	0.001745	0.0011	0.156	0.267	2.76	0.064	7.69	2,387
22	103	0.0086	0.013	0.054	0.203	0.001746	0.0011	0.158	0.268	2.79	0.064	7.69	2,400
23	104	0.0086	0.013	0.054	0.203	0.001746	0.0011	0.159	0.270	2.82	0.065	7.69	2,413
24	104	0.0086	0.013	0.054	0.203	0.001746	0.0011	0.160	0.271	2.84	0.065	7.69	2,426
25	105	0.0086	0.013	0.055	0.203	0.001747	0.0011	0.161	0.271	2.86	0.066	7.69	2,437
26	105	0.0086	0.014	0.055	0.203	0.001747	0.0011	0.162	0.272	2.88	0.066	7.69	2,445
27	106	0.0086	0.014	0.055	0.203	0.001747	0.0011	0.163	0.272	2.89	0.066	7.69	2,451
28	106	0.0086	0.014	0.056	0.203	0.001747	0.0011	0.163	0.272	2.89	0.066	7.69	2,455
29	106	0.0087	0.014	0.056	0.203	0.001747	0.0011	0.164	0.273	2.89	0.067	7.69	2,459
30	106	0.0087	0.014	0.056	0.203	0.001747	0.0011	0.164	0.274	2.88	0.067	7.69	2,461
31	106	0.0087	0.014	0.056	0.203	0.001748	0.0011	0.164	0.276	2.87	0.067	7.69	2,461
32	106	0.0087	0.014	0.056	0.203	0.001747	0.0011	0.164	0.276	2.85	0.067	7.69	2,458
33	106	0.0087	0.013	0.055	0.203	0.001747	0.0011	0.163	0.276	2.83	0.066	7.69	2,452
34	105	0.0086	0.013	0.055	0.203	0.001747	0.0011	0.162	0.275	2.80	0.066	7.69	2,445
35	105	0.0086	0.013	0.055	0.203	0.001747	0.0011	0.162	0.275	2.79	0.066	7.69	2,438
36	104	0.0086	0.013	0.055	0.203	0.001747	0.0011	0.161	0.273	2.76	0.065	7.69	2,428
37	104	0.0086	0.013	0.055	0.203	0.001747	0.0011	0.161	0.273	2.76	0.065	7.69	2,429
38	104	0.0086	0.013	0.054	0.203	0.001746	0.0011	0.160	0.273	2.75	0.065	7.69	2,426
39	104	0.0085	0.013	0.054	0.203	0.001746	0.0011	0.160	0.272	2.75	0.065	7.69	2,421
40	104	0.0085	0.0131	0.0542	0.203	1.75E-03	0.0011	0.15962	0.27133	2.74	0.06461	7.69	2,417
41	104	0.008510	0.01303	0.0541	0.203	1.75E-03	1.1E-03	1.6E-01	2.7E-01	2.7E+00	6.4E-02	7.69	2,412

Table 19. Alternative 4 – Predictions of Average Annual Concentrations for Surplus Water

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	56	0.0014	0.001	0.012	0.208	0.001773	0.00048	0.029	0.026	0.25	0.006	7.62	1,561
2	60	0.0018	0.002	0.037	0.689	0.003497	0.00046	0.092	0.050	0.52	0.014	6.99	1,694
3	63	0.0033	0.006	0.070	6.357	0.013174	0.0008	0.179	0.102	1.32	0.034	6.17	1,953
4	73	0.0055	0.008	0.085	9.554	0.016861	0.0010	0.225	0.137	1.70	0.044	6.06	1,954
5	64	0.0086	0.008	0.077	5.848	0.01251	0.0013	0.205	0.133	1.59	0.041	6.21	1,636
6	81	0.0081	0.011	0.123	22.935	0.029104	0.0013	0.341	0.186	2.25	0.062	5.83	2,164
7	88	0.0082	0.012	0.153	35.161	0.047382	0.0013	0.430	0.210	2.54	0.072	5.60	2,403
8	94	0.0082	0.013	0.196	50.785	0.2396	0.0013	0.560	0.232	2.83	0.079	5.08	2,675
9	97	0.0080	0.014	0.237	65.754	0.66368	0.0013	0.682	0.246	3.01	0.082	4.80	2,872
10	96	0.0082	0.014	0.234	64.751	0.6238	0.0013	0.676	0.249	2.99	0.082	4.79	2,847
11	98	0.0081	0.015	0.293	86.677	1.5772	0.0013	0.849	0.263	3.14	0.083	4.58	3,082
12	99	0.0079	0.016	0.325	99.175	2.3314	0.0013	0.946	0.270	3.14	0.083	4.53	3,201
13	99	0.0078	0.016	0.346	107.110	2.848	0.0012	1.008	0.277	3.13	0.083	4.47	3,291
14	98	0.0082	0.015	0.316	96.098	2.1098	0.0012	0.921	0.279	3.02	0.083	4.51	3,152
15	100	0.0080	0.017	0.390	123.170	4.0911	0.0012	1.140	0.294	3.25	0.083	4.35	3,470
16	100	0.0080	0.017	0.424	135.260	5.1171	0.0013	1.239	0.297	3.38	0.084	4.30	3,595
17	100	0.0082	0.018	0.422	134.250	5.0236	0.0013	1.233	0.293	3.46	0.084	4.29	3,583
18	100	0.0083	0.018	0.451	144.740	5.9316	0.0014	1.319	0.292	3.62	0.084	4.20	3,687
19	100	0.0083	0.019	0.490	158.460	7.2994	0.0015	1.429	0.288	3.71	0.084	4.17	3,809
20	100	0.0083	0.019	0.501	162.350	7.6863	0.0015	1.458	0.280	3.70	0.084	4.17	3,842
21	101	0.0080	0.020	0.595	196.210	11.443	0.0016	1.728	0.278	3.88	0.084	4.04	4,187
22	101	0.0077	0.020	0.690	230.680	15.573	0.0017	2.003	0.275	4.04	0.085	3.90	4,514
23	101	0.0075	0.021	0.730	245.080	17.417	0.0018	2.116	0.272	4.07	0.085	3.89	4,648
24	101	0.0076	0.021	0.749	251.850	18.437	0.0018	2.172	0.272	4.12	0.085	3.91	4,720
25	101	0.0076	0.021	0.754	253.460	18.613	0.0018	2.186	0.271	4.14	0.085	3.90	4,738
26	101	0.0079	0.019	0.588	192.700	10.959	0.0017	1.699	0.262	3.82	0.084	4.00	4,175
27	101	0.0081	0.019	0.579	189.720	10.641	0.0017	1.675	0.261	3.76	0.084	4.03	4,120
28	101	0.0080	0.019	0.620	204.800	12.442	0.0016	1.795	0.274	3.71	0.084	4.01	4,261
29	101	0.0082	0.018	0.568	186.500	10.293	0.0014	1.650	0.292	3.50	0.084	4.06	4,086
30	100	0.0083	0.018	0.521	169.970	8.351	0.0013	1.517	0.303	3.30	0.084	4.06	3,917
31	98	0.0082	0.017	0.476	154.550	6.741	0.0012	1.386	0.296	3.09	0.084	4.14	3,743
32	93	0.0077	0.015	0.409	131.630	4.4631	0.0011	1.190	0.276	2.69	0.083	4.24	3,422
33	88	0.0073	0.013	0.365	116.890	3.0566	0.0010	1.060	0.254	2.34	0.082	4.30	3,155
34	78	0.0068	0.012	0.356	114.660	2.6622	0.0009	1.033	0.238	2.13	0.082	4.27	3,037
35	71	0.0062	0.010	0.330	106.840	1.8642	0.0008	0.957	0.209	1.82	0.082	4.34	2,828
36	60	0.0057	0.009	0.320	104.430	1.4662	0.0008	0.925	0.178	1.62	0.082	4.38	2,679
37	47	0.0047	0.007	0.296	99.629	0.90911	0.0007	0.858	0.113	1.23	0.072	4.52	2,362
38	40	0.0039	0.005	0.281	97.823	0.62833	0.0009	0.819	0.045	0.86	0.060	4.58	2,175
39	38	0.0037	0.004	0.292	103.730	0.73332	0.0014	0.857	0.027	0.77	0.060	4.55	2,132
40	36	0.0036	0.004	0.298	106.250	7.52E-01	0.0027	0.875	0.019	0.75	0.060	4.57	2,132
41	35	0.0036	0.004	0.302	107.970	7.05E-01	0.0040	0.889	0.016	0.75	0.061	4.58	2,141

Table 20. Alternative 5 Summary

Lost Seepage		Embankment
<i>Cl</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Sb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cd</i>	Above Chronic standards year 4–41 of mine operations	Above Chronic standards years 3–41 of mine operations
<i>Cr</i>	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cu</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Fe</i>	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Pb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Ni</i>	Above Chronic standards years 35–41 of mine operations	Within standards for duration of mine operations
<i>Se</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations
<i>Zn</i>	Above Chronic and Acute standards years 4–41 of mine operations	Above Chronic and Acute standards years 3–41 of mine operations
<i>Ag</i>	Above Acute standards years 31–38 of mine operations	Within standards for duration of mine operations
<i>pH</i>	Within normal pH range	Within normal pH range

Table 21. Alternative 5 – Predictions of Average Annual Concentrations for Lost Seepage

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	52	0.0006	0.000	0.003	0.168	0.001719	0.0006	0.004	0.012	0.10	0.002	7.85	805
2	45	0.0008	0.001	0.005	0.166	0.001727	0.0004	0.008	0.018	0.17	0.003	7.77	838
3	52	0.0012	0.001	0.010	0.169	0.001728	0.0005	0.019	0.033	0.37	0.008	7.77	1,007
4	57	0.0019	0.002	0.015	0.171	0.001727	0.0006	0.031	0.050	0.59	0.012	7.77	1,064
5	57	0.0030	0.003	0.018	0.151	0.001635	0.0007	0.039	0.060	0.71	0.015	7.73	1,020
6	60	0.0034	0.003	0.020	0.137	0.001390	0.0007	0.044	0.067	0.79	0.017	7.71	1,011
7	64	0.0033	0.004	0.021	0.129	0.001247	0.0007	0.047	0.071	0.83	0.018	7.70	998
8	80	0.0038	0.005	0.026	0.136	0.001260	0.0009	0.061	0.087	1.03	0.022	7.72	1,180
9	90	0.0040	0.005	0.028	0.142	0.001295	0.0010	0.068	0.097	1.14	0.024	7.74	1,255
10	99	0.0042	0.006	0.031	0.147	0.001330	0.0010	0.075	0.107	1.24	0.026	7.76	1,318
11	113	0.0047	0.006	0.035	0.155	0.001387	0.0011	0.087	0.121	1.36	0.029	7.78	1,425
12	118	0.0047	0.006	0.036	0.156	0.001397	0.0011	0.090	0.126	1.38	0.029	7.79	1,440
13	124	0.0048	0.007	0.037	0.161	0.001437	0.0012	0.094	0.132	1.41	0.030	7.81	1,476
14	126	0.0048	0.007	0.037	0.162	0.001452	0.0012	0.095	0.135	1.40	0.030	7.81	1,473
15	128	0.0048	0.007	0.037	0.163	0.001463	0.0011	0.097	0.138	1.40	0.031	7.82	1,478
16	131	0.0048	0.007	0.038	0.165	0.001476	0.0011	0.100	0.142	1.42	0.031	7.83	1,491
17	135	0.0049	0.007	0.039	0.166	0.001492	0.0012	0.103	0.146	1.45	0.032	7.83	1,509
18	138	0.0049	0.007	0.040	0.168	0.001503	0.0012	0.107	0.150	1.47	0.032	7.84	1,527
19	141	0.0050	0.007	0.040	0.169	0.001512	0.0012	0.110	0.153	1.48	0.033	7.84	1,542
20	144	0.0051	0.008	0.041	0.170	0.001518	0.0013	0.112	0.155	1.48	0.033	7.85	1,553
21	146	0.0051	0.008	0.042	0.170	0.001524	0.0013	0.115	0.156	1.47	0.034	7.85	1,564
22	147	0.0051	0.008	0.042	0.171	0.001529	0.0013	0.115	0.156	1.46	0.034	7.85	1,563
23	149	0.0051	0.008	0.042	0.173	0.001546	0.0013	0.117	0.156	1.45	0.034	7.86	1,570
24	150	0.0050	0.008	0.042	0.173	0.001551	0.0014	0.118	0.156	1.44	0.034	7.86	1,572
25	151	0.0050	0.008	0.043	0.174	0.001556	0.0014	0.119	0.156	1.44	0.034	7.87	1,575
26	152	0.0050	0.008	0.043	0.174	0.001558	0.0014	0.120	0.156	1.43	0.034	7.87	1,577
27	153	0.0050	0.008	0.043	0.174	0.001558	0.0014	0.121	0.155	1.42	0.034	7.87	1,577
28	153	0.0050	0.008	0.043	0.174	0.001554	0.0014	0.120	0.155	1.41	0.034	7.87	1,572
29	153	0.0050	0.008	0.043	0.174	0.001557	0.0014	0.121	0.155	1.40	0.034	7.87	1,572
30	154	0.0050	0.008	0.043	0.175	0.001571	0.0014	0.122	0.156	1.39	0.034	7.87	1,576
31	155	0.0050	0.008	0.043	0.176	0.001578	0.0014	0.123	0.157	1.38	0.035	7.87	1,578
32	159	0.0052	0.008	0.044	0.180	0.001615	0.0014	0.131	0.163	1.39	0.035	7.89	1,619
33	168	0.0056	0.009	0.047	0.186	0.001663	0.0015	0.147	0.173	1.43	0.037	7.91	1,706
34	174	0.0058	0.009	0.048	0.191	0.001699	0.0016	0.163	0.181	1.46	0.038	7.92	1,766
35	184	0.0063	0.009	0.051	0.194	0.001720	0.0017	0.192	0.192	1.51	0.039	7.93	1,848
36	183	0.0064	0.010	0.050	0.194	0.001720	0.0017	0.213	0.192	1.70	0.039	7.93	1,857
37	192	0.0071	0.010	0.053	0.194	0.001719	0.0020	0.277	0.205	2.22	0.040	7.93	1,976
38	177	0.0069	0.0101	0.0483	0.203	0.001763	0.0020	0.318	0.192	2.12	0.037	7.77	1,945
39	154	0.0062	0.0091	0.0417	2.335	0.005454	0.00184	0.320	0.169	1.89	0.034	7.32	1,832
40	140	0.0058	0.0084	0.0377	4.551	0.008039	0.00177	0.319	0.154	1.75	0.032	7.18	1,768
41	137	0.0056	0.0082	0.0364	4.604	0.008108	0.00174	0.312	0.149	1.69	0.030	7.19	1,741

Table 22. Alternative 5 – Predictions of Average Annual Concentrations for the Embankment

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	75	0.0010	0.000	0.004	0.180	0.001715	0.0008	0.005	0.019	0.17	0.003	7.96	1,254
2	70	0.0013	0.001	0.008	0.194	0.001719	0.0006	0.013	0.031	0.29	0.006	7.95	1,317
3	76	0.0020	0.002	0.017	0.194	0.001717	0.0007	0.032	0.055	0.64	0.013	7.92	1,481
4	81	0.0030	0.004	0.024	0.194	0.001717	0.0008	0.049	0.077	0.92	0.019	7.91	1,488
5	82	0.0048	0.005	0.028	0.194	0.001717	0.0010	0.060	0.091	1.08	0.023	7.91	1,463
6	90	0.0052	0.005	0.030	0.194	0.001716	0.0011	0.069	0.102	1.20	0.025	7.90	1,476
7	100	0.0050	0.006	0.033	0.195	0.001717	0.0011	0.075	0.110	1.29	0.027	7.90	1,516
8	105	0.0048	0.006	0.033	0.195	0.001716	0.0011	0.077	0.113	1.33	0.028	7.89	1,509
9	107	0.0045	0.006	0.033	0.194	0.001716	0.0011	0.078	0.114	1.34	0.028	7.89	1,479
10	109	0.0044	0.006	0.033	0.193	0.001716	0.0011	0.078	0.115	1.34	0.029	7.89	1,460
11	110	0.0043	0.006	0.033	0.193	0.001716	0.0011	0.078	0.116	1.33	0.029	7.89	1,438
12	111	0.0041	0.006	0.033	0.192	0.001716	0.0010	0.078	0.116	1.31	0.028	7.90	1,416
13	111	0.0040	0.006	0.032	0.192	0.001716	0.0010	0.077	0.117	1.29	0.028	7.90	1,399
14	111	0.0039	0.006	0.032	0.191	0.001716	0.0010	0.077	0.117	1.27	0.028	7.90	1,383
15	111	0.0039	0.006	0.032	0.191	0.001716	0.0009	0.077	0.119	1.26	0.028	7.90	1,373
16	111	0.0038	0.006	0.031	0.191	0.001716	0.0009	0.077	0.120	1.25	0.028	7.90	1,364
17	111	0.0038	0.006	0.031	0.190	0.001716	0.0009	0.077	0.120	1.25	0.028	7.89	1,357
18	111	0.0038	0.006	0.031	0.190	0.001716	0.0009	0.078	0.120	1.26	0.028	7.90	1,350
19	111	0.0037	0.006	0.031	0.190	0.001716	0.0009	0.078	0.119	1.27	0.028	7.90	1,344
20	112	0.0037	0.006	0.031	0.191	0.001716	0.0009	0.078	0.119	1.27	0.028	7.90	1,339
21	112	0.0037	0.006	0.031	0.191	0.001716	0.0010	0.078	0.117	1.27	0.027	7.90	1,336
22	112	0.0036	0.006	0.031	0.191	0.001716	0.0010	0.077	0.116	1.27	0.027	7.90	1,328
23	112	0.0036	0.006	0.031	0.191	0.001716	0.0010	0.077	0.114	1.26	0.027	7.90	1,322
24	113	0.0035	0.006	0.031	0.191	0.001716	0.0010	0.077	0.113	1.26	0.027	7.90	1,321
25	113	0.0035	0.006	0.031	0.192	0.001716	0.0010	0.077	0.112	1.26	0.027	7.90	1,319
26	113	0.0035	0.006	0.031	0.192	0.001716	0.0010	0.077	0.111	1.25	0.027	7.90	1,319
27	113	0.0035	0.006	0.032	0.193	0.001716	0.0010	0.077	0.110	1.25	0.027	7.90	1,320
28	113	0.0035	0.006	0.032	0.193	0.001716	0.0010	0.077	0.110	1.25	0.027	7.91	1,318
29	113	0.0035	0.006	0.031	0.193	0.001716	0.0010	0.077	0.110	1.23	0.027	7.91	1,315
30	113	0.0035	0.005	0.031	0.193	0.001716	0.0010	0.077	0.111	1.22	0.027	7.91	1,312
31	113	0.0035	0.005	0.031	0.194	0.001716	0.0010	0.077	0.112	1.20	0.027	7.91	1,311
32	113	0.0035	0.005	0.031	0.194	0.001716	0.0009	0.076	0.113	1.18	0.026	7.91	1,306
33	112	0.0034	0.005	0.030	0.194	0.001716	0.0009	0.074	0.112	1.14	0.026	7.92	1,292
34	110	0.0034	0.005	0.029	0.194	0.001717	0.0009	0.072	0.110	1.10	0.025	7.93	1,271
35	109	0.0033	0.005	0.029	0.194	0.001717	0.0009	0.069	0.107	1.06	0.024	7.94	1,249
36	107	0.0032	0.005	0.028	0.194	0.001718	0.0009	0.067	0.105	1.02	0.024	7.94	1,228
37	107	0.0031	0.005	0.027	0.193	0.001718	0.0009	0.065	0.102	0.98	0.023	7.94	1,210
38	106	0.0031	0.005	0.026	0.192	0.001718	0.0009	0.063	0.100	0.96	0.022	7.94	1,196
39	105	0.0030	0.004	0.026	0.191	0.001718	0.0009	0.062	0.098	0.94	0.022	7.95	1,183
40	104	0.0030	0.004	0.026	0.189	0.001718	0.0009	0.061	0.097	0.93	0.022	7.95	1,170
41	103	0.0030	0.004	0.025	0.187	0.001718	0.0009	0.061	0.096	0.92	0.021	7.95	1,158

Table 23. Alternative 6 Summary

	Pyrite Pond and Lost Seepage	Seepage Collection Ponds	Embankment
<i>Cl</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Sb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cd</i>	Above Chronic standards years 4–41 of mine operations	Above Chronic standards years 3–41 of mine operations	Above Chronic standards years 3–41 of mine operations
<i>Cr</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Cu</i>	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations	Above Chronic and Acute standards for the duration of mine operations
<i>Fe</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Pb</i>	Within standards for duration of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Ni</i>	Above Chronic standards years 36–41 of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>Se</i>	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations	Above Chronic standards for the duration of mine operations
<i>Zn</i>	Above Chronic and Acute standards years 4–41 of mine operations	Above Chronic and Acute standards years 3–41 of mine operations	Above Chronic and Acute standards years 2–41 of mine operations
<i>Ag</i>	Above Acute standards years 30–41 of mine operations	Within standards for duration of mine operations	Within standards for duration of mine operations
<i>pH</i>	Within normal pH range	Within normal pH range	Within normal pH range

Table 24. Alternative 6 – Predictions of Average Annual Concentrations for the Pyrite Pond and Lost Seepage

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	20	0.0006	0.000	0.002	0.081	0.001697	0.0002	0.003	0.009	0.08	0.001	7.85	554
2	27	0.0008	0.000	0.004	0.136	0.001715	0.0003	0.006	0.016	0.15	0.003	7.95	744
3	30	0.0011	0.001	0.008	0.184	0.001716	0.0003	0.015	0.027	0.30	0.006	7.95	845
4	35	0.0019	0.002	0.014	0.194	0.001715	0.0005	0.030	0.047	0.56	0.012	7.93	968
5	42	0.0037	0.004	0.021	0.194	0.001715	0.0008	0.047	0.072	0.86	0.018	7.92	1,081
6	57	0.0047	0.005	0.026	0.194	0.001715	0.0009	0.059	0.089	1.05	0.022	7.91	1,135
7	73	0.0039	0.005	0.026	0.194	0.001715	0.0009	0.058	0.088	1.04	0.022	7.92	1,109
8	83	0.0035	0.005	0.027	0.194	0.001716	0.0010	0.058	0.089	1.04	0.022	7.92	1,110
9	90	0.0033	0.005	0.027	0.194	0.001716	0.0010	0.060	0.091	1.06	0.023	7.93	1,139
10	95	0.0034	0.005	0.028	0.194	0.001716	0.0010	0.063	0.097	1.12	0.024	7.93	1,183
11	98	0.0034	0.005	0.029	0.194	0.001717	0.0010	0.065	0.101	1.14	0.025	7.93	1,212
12	102	0.0034	0.005	0.029	0.194	0.001717	0.0010	0.066	0.104	1.15	0.025	7.93	1,232
13	105	0.0034	0.005	0.030	0.194	0.001717	0.0009	0.068	0.107	1.15	0.025	7.93	1,258
14	108	0.0034	0.005	0.030	0.194	0.001717	0.0009	0.069	0.111	1.16	0.026	7.93	1,283
15	110	0.0035	0.005	0.030	0.194	0.001717	0.0009	0.070	0.114	1.16	0.026	7.93	1,301
16	113	0.0035	0.005	0.031	0.194	0.001717	0.0009	0.072	0.118	1.18	0.026	7.92	1,324
17	118	0.0035	0.006	0.031	0.194	0.001717	0.0009	0.074	0.120	1.21	0.027	7.92	1,354
18	125	0.0036	0.006	0.032	0.194	0.001717	0.0010	0.076	0.121	1.24	0.027	7.92	1,394
19	131	0.0036	0.006	0.033	0.194	0.001717	0.0011	0.078	0.122	1.28	0.028	7.92	1,429
20	137	0.0037	0.006	0.034	0.194	0.001717	0.0012	0.080	0.122	1.31	0.028	7.92	1,465
21	143	0.0037	0.006	0.035	0.194	0.001717	0.0013	0.082	0.123	1.35	0.029	7.91	1,509
22	149	0.0038	0.006	0.036	0.194	0.001717	0.0013	0.084	0.125	1.38	0.029	7.91	1,554
23	154	0.0038	0.006	0.037	0.194	0.001717	0.0014	0.086	0.125	1.41	0.030	7.91	1,594
24	159	0.0038	0.006	0.038	0.194	0.001717	0.0014	0.087	0.125	1.43	0.030	7.91	1,624
25	162	0.0038	0.006	0.039	0.194	0.001717	0.0015	0.088	0.125	1.44	0.030	7.90	1,646
26	164	0.0039	0.006	0.039	0.194	0.001717	0.0015	0.089	0.125	1.46	0.031	7.90	1,668
27	168	0.0040	0.006	0.040	0.194	0.001718	0.0015	0.091	0.126	1.48	0.031	7.90	1,704
28	176	0.0041	0.007	0.042	0.194	0.001718	0.0016	0.095	0.130	1.52	0.032	7.90	1,771
29	185	0.0043	0.007	0.044	0.195	0.001718	0.0017	0.099	0.137	1.57	0.034	7.89	1,849
30	194	0.0045	0.007	0.046	0.195	0.001718	0.0017	0.104	0.145	1.61	0.035	7.89	1,932
31	202	0.0047	0.007	0.047	0.195	0.001718	0.0017	0.109	0.154	1.64	0.036	7.88	2,012
32	215	0.0051	0.008	0.050	0.195	0.001719	0.0018	0.116	0.165	1.71	0.038	7.87	2,134
33	235	0.0056	0.008	0.054	0.195	0.001719	0.0019	0.127	0.182	1.84	0.041	7.86	2,341
34	266	0.0064	0.010	0.061	0.196	0.001720	0.0021	0.146	0.209	2.06	0.047	7.84	2,669
35	300	0.0072	0.011	0.068	0.197	0.001722	0.0024	0.164	0.235	2.26	0.052	7.83	3,002
36	324	0.0076	0.011	0.070	0.197	0.001723	0.0028	0.172	0.245	2.31	0.053	7.82	3,194
37	350	0.0079	0.011	0.072	0.197	0.001723	0.0032	0.179	0.252	2.35	0.054	7.82	3,386
38	397	0.0087	0.012	0.078	0.198	0.001725	0.0039	0.199	0.274	2.54	0.059	7.80	3,792
39	458	0.0100	0.014	0.088	0.198	0.001727	0.0047	0.229	0.307	2.85	0.066	7.79	4,349
40	529	0.0114	0.015	0.100	0.199	0.001727	0.0055	0.267	0.348	3.24	0.074	7.78	4,809
41	612	0.0132	0.018	0.114	0.198	0.001725	0.0065	0.315	0.399	3.72	0.085	7.79	5,240

Table 25. Alternative 6 – Predictions of Average Annual Concentrations for the Seepage Collection Ponds

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	45	0.0012	0.000	0.004	0.192	0.001717	0.00041	0.006	0.021	0.19	0.003	7.90	1,249
2	48	0.0015	0.001	0.009	0.195	0.001716	0.00038	0.015	0.036	0.35	0.007	7.90	1,332
3	50	0.0023	0.003	0.020	0.195	0.001716	0.00057	0.040	0.067	0.81	0.017	7.86	1,453
4	53	0.0034	0.004	0.026	0.195	0.001716	0.00079	0.055	0.087	1.06	0.022	7.87	1,410
5	53	0.0056	0.005	0.029	0.195	0.001715	0.00106	0.064	0.099	1.17	0.025	7.88	1,325
6	68	0.0053	0.005	0.030	0.195	0.001715	0.00106	0.067	0.103	1.21	0.026	7.89	1,281
7	83	0.0042	0.005	0.029	0.194	0.001715	0.00103	0.063	0.098	1.15	0.025	7.90	1,218
8	90	0.0037	0.005	0.028	0.194	0.001715	0.00101	0.061	0.095	1.11	0.024	7.91	1,184
9	94	0.0034	0.005	0.028	0.194	0.001715	0.00099	0.060	0.095	1.10	0.024	7.91	1,174
10	96	0.0034	0.005	0.029	0.194	0.001715	0.00097	0.062	0.098	1.13	0.024	7.91	1,190
11	98	0.0033	0.005	0.029	0.194	0.001715	0.00095	0.063	0.100	1.13	0.025	7.91	1,197
12	99	0.0032	0.005	0.029	0.194	0.001715	0.00091	0.063	0.101	1.12	0.024	7.91	1,193
13	101	0.0032	0.005	0.028	0.194	0.001715	0.00087	0.062	0.102	1.09	0.024	7.91	1,190
14	102	0.0032	0.005	0.028	0.194	0.001715	0.00084	0.062	0.104	1.08	0.024	7.91	1,194
15	103	0.0032	0.005	0.028	0.194	0.001715	0.00082	0.062	0.106	1.07	0.024	7.91	1,199
16	103	0.0031	0.005	0.028	0.194	0.001715	0.00080	0.063	0.107	1.07	0.024	7.91	1,197
17	101	0.0030	0.005	0.027	0.194	0.001715	0.00079	0.061	0.103	1.03	0.023	7.91	1,158
18	99	0.0028	0.005	0.026	0.194	0.001715	0.00079	0.059	0.097	0.99	0.022	7.91	1,112
19	99	0.0028	0.004	0.025	0.194	0.001715	0.00081	0.058	0.095	0.98	0.021	7.92	1,096
20	99	0.0027	0.004	0.025	0.194	0.001715	0.00083	0.057	0.092	0.97	0.021	7.92	1,084
21	100	0.0027	0.004	0.025	0.194	0.001715	0.00085	0.056	0.089	0.96	0.021	7.92	1,075
22	101	0.0026	0.004	0.025	0.194	0.001715	0.00087	0.055	0.087	0.95	0.020	7.92	1,068
23	101	0.0025	0.004	0.025	0.194	0.001715	0.00088	0.054	0.085	0.93	0.020	7.92	1,062
24	102	0.0025	0.004	0.025	0.194	0.001715	0.00090	0.053	0.083	0.93	0.020	7.92	1,058
25	103	0.0024	0.004	0.025	0.194	0.001715	0.00091	0.053	0.081	0.92	0.020	7.93	1,057
26	103	0.0024	0.004	0.025	0.194	0.001715	0.00092	0.053	0.080	0.92	0.020	7.93	1,059
27	103	0.0024	0.004	0.025	0.194	0.001715	0.00093	0.053	0.078	0.91	0.019	7.92	1,052
28	102	0.0024	0.004	0.024	0.194	0.001715	0.00093	0.052	0.077	0.89	0.019	7.92	1,041
29	102	0.0024	0.004	0.024	0.194	0.001715	0.00091	0.051	0.077	0.87	0.019	7.92	1,035
30	103	0.0024	0.004	0.024	0.194	0.001715	0.00088	0.051	0.077	0.85	0.019	7.93	1,032
31	103	0.0024	0.004	0.024	0.194	0.001715	0.00085	0.051	0.078	0.83	0.018	7.93	1,028
32	102	0.0024	0.004	0.024	0.194	0.001715	0.00082	0.050	0.079	0.80	0.018	7.93	1,023
33	101	0.0024	0.004	0.023	0.194	0.001715	0.00079	0.050	0.079	0.78	0.018	7.92	1,022
34	102	0.0024	0.004	0.023	0.194	0.001715	0.00077	0.051	0.080	0.77	0.018	7.92	1,035
35	102	0.0025	0.004	0.023	0.194	0.001714	0.00077	0.053	0.082	0.77	0.018	7.91	1,054
36	102	0.0026	0.004	0.023	0.194	0.001714	0.00079	0.054	0.083	0.76	0.018	7.90	1,071
37	103	0.0026	0.004	0.023	0.194	0.001714	0.00082	0.056	0.083	0.75	0.018	7.89	1,092
38	108	0.0028	0.004	0.024	0.195	0.001714	0.00091	0.059	0.086	0.77	0.018	7.89	1,151
39	115	0.0029	0.004	0.025	0.195	0.001715	0.00100	0.062	0.089	0.80	0.019	7.88	1,219
40	123	0.0031	0.004	0.026	0.195	0.001715	0.00112	0.067	0.094	0.85	0.020	7.88	1,279
41	133	0.0033	0.004	0.028	0.195	0.001716	0.00124	0.073	0.100	0.90	0.021	7.88	1,330

Table 26. Alternative 6 – Predictions of Average Annual Concentrations for the Embankment

	Cl	Sb	Cd	Cr	Cu	Fe	Pb	Ni	Se	Zn	Ag	pH	TDS
Year	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	s.u.	mg/L
1	57	0.0014	0.001	0.004	0.191	0.001692	0.0005	0.006	0.027	0.24	0.004	7.88	1,566
2	57	0.0017	0.001	0.010	0.195	0.001717	0.0004	0.016	0.043	0.41	0.008	7.89	1,576
3	59	0.0027	0.004	0.024	0.195	0.001717	0.0007	0.046	0.080	0.96	0.020	7.86	1,700
4	58	0.0038	0.005	0.029	0.195	0.001716	0.0009	0.059	0.096	1.16	0.024	7.88	1,537
5	56	0.0060	0.006	0.031	0.195	0.001716	0.0011	0.068	0.106	1.25	0.027	7.89	1,406
6	72	0.0055	0.006	0.031	0.194	0.001716	0.0011	0.069	0.108	1.27	0.027	7.90	1,339
7	86	0.0044	0.005	0.030	0.194	0.001716	0.0011	0.065	0.102	1.20	0.026	7.92	1,264
8	93	0.0038	0.005	0.030	0.194	0.001716	0.0010	0.062	0.099	1.15	0.025	7.92	1,224
9	97	0.0035	0.005	0.029	0.194	0.001716	0.0010	0.062	0.098	1.15	0.025	7.93	1,214
10	99	0.0035	0.005	0.030	0.194	0.001716	0.0010	0.064	0.102	1.17	0.025	7.93	1,230
11	101	0.0034	0.005	0.030	0.194	0.001716	0.0010	0.064	0.104	1.18	0.025	7.93	1,236
12	103	0.0033	0.005	0.030	0.194	0.001717	0.0009	0.064	0.105	1.15	0.025	7.93	1,231
13	104	0.0033	0.005	0.029	0.194	0.001717	0.0009	0.063	0.106	1.13	0.025	7.93	1,228
14	105	0.0033	0.005	0.029	0.194	0.001717	0.0009	0.063	0.108	1.11	0.025	7.93	1,229
15	106	0.0033	0.005	0.029	0.194	0.001717	0.0008	0.063	0.110	1.11	0.025	7.93	1,233
16	107	0.0032	0.005	0.029	0.194	0.001717	0.0008	0.064	0.111	1.11	0.025	7.93	1,236
17	107	0.0031	0.005	0.028	0.194	0.001717	0.0008	0.063	0.109	1.09	0.024	7.93	1,219
18	107	0.0030	0.005	0.028	0.194	0.001717	0.0008	0.061	0.106	1.07	0.024	7.94	1,195
19	107	0.0030	0.005	0.027	0.194	0.001717	0.0009	0.059	0.102	1.06	0.023	7.94	1,176
20	107	0.0029	0.005	0.027	0.194	0.001718	0.0009	0.058	0.099	1.04	0.023	7.94	1,159
21	108	0.0028	0.005	0.027	0.194	0.001718	0.0009	0.057	0.096	1.03	0.022	7.95	1,146
22	108	0.0028	0.005	0.027	0.194	0.001718	0.0009	0.056	0.093	1.01	0.022	7.95	1,135
23	109	0.0027	0.004	0.026	0.193	0.001718	0.0009	0.055	0.091	1.00	0.021	7.95	1,127
24	109	0.0026	0.004	0.026	0.193	0.001718	0.0009	0.054	0.088	0.99	0.021	7.95	1,121
25	110	0.0026	0.004	0.026	0.193	0.001718	0.0010	0.054	0.087	0.98	0.021	7.95	1,119
26	110	0.0026	0.004	0.027	0.193	0.001718	0.0010	0.053	0.085	0.98	0.021	7.95	1,119
27	110	0.0026	0.004	0.027	0.193	0.001718	0.0010	0.053	0.084	0.97	0.021	7.95	1,117
28	110	0.0025	0.004	0.026	0.193	0.001718	0.0010	0.052	0.083	0.95	0.020	7.95	1,107
29	110	0.0025	0.004	0.026	0.193	0.001718	0.0010	0.051	0.082	0.93	0.020	7.95	1,095
30	109	0.0025	0.004	0.026	0.193	0.001718	0.0009	0.050	0.082	0.90	0.020	7.96	1,084
31	108	0.0025	0.004	0.025	0.193	0.001719	0.0009	0.050	0.083	0.87	0.020	7.96	1,075
32	108	0.0025	0.004	0.025	0.193	0.001719	0.0008	0.049	0.083	0.84	0.019	7.96	1,069
33	107	0.0025	0.004	0.024	0.193	0.001719	0.0008	0.048	0.083	0.81	0.019	7.96	1,062
34	106	0.0025	0.004	0.024	0.193	0.001719	0.0008	0.047	0.084	0.79	0.019	7.96	1,060
35	105	0.0025	0.004	0.024	0.193	0.001719	0.0007	0.047	0.085	0.78	0.018	7.96	1,065
36	104	0.0026	0.004	0.024	0.193	0.001719	0.0007	0.046	0.086	0.77	0.018	7.96	1,075
37	102	0.0026	0.004	0.024	0.193	0.001718	0.0007	0.046	0.087	0.76	0.018	7.96	1,090
38	101	0.0027	0.0036	0.0234	0.193	0.001718	0.0007	0.046	0.087	0.76	0.018	7.95	1,105
39	100	0.0027	0.0036	0.0232	0.193	0.001718	0.00071	0.046	0.086	0.75	0.018	7.95	1,111
40	100	2.8E-03	3.6E-03	2.3E-02	1.9E-01	1.7E-03	7.2E-04	4.6E-02	8.6E-02	7.5E-01	1.8E-02	7.95	1,114
41	99.9	2.8E-03	3.6E-03	2.3E-02	1.9E-01	1.7E-03	7.2E-04	4.6E-02	8.6E-02	7.5E-01	1.8E-02	7.95	1,115

Appendix A

Standards Based on Water Hardness

Cadmium

Table A-1. Dissolved Cadmium Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Seepage collection pond	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Embankment	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Lost seepage	Year 1	0, no data	-	-
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L

Table A-2. Dissolved Cadmium Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Seepage collection pond	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Embankment	Year 1	> 400	0.03023 mg/L	0.00147 mg/L

	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L

Table A-3. Dissolved Cadmium Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.01023 mg/L	0.00068 mg/L
	Year 2	330	0.02509 mg/L	0.00128 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Surplus water	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L

Table A-4. Dissolved Cadmium Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	0.02957 mg/L	0.00144 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Embankment	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L

Year 5	> 400	0.03023 mg/L	0.00147 mg/L
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Table A-5. Dissolved Cadmium Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	0.02154 mg/L	0.00115 mg/L
	Year 2	381	0.02884 mg/L	0.00142 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Seepage collection pond	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L
Embankment	Year 1	> 400	0.03023 mg/L	0.00147 mg/L
	Year 2	> 400	0.03023 mg/L	0.00147 mg/L
	Year 3	> 400	0.03023 mg/L	0.00147 mg/L
	Year 4	> 400	0.03023 mg/L	0.00147 mg/L
	Year 5	> 400	0.03023 mg/L	0.00147 mg/L

Chromium

Table A-6. Dissolved Chromium III Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Seepage collection pond	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Embankment	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Lost seepage	Year 1	0, no data	-	-
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Table A-7. Dissolved Chromium III Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Seepage collection pond	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Embankment	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Table A-8. Dissolved Chromium III Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.711 mg/L	0.09246 mg/L
	Year 2	330	1.515 mg/L	0.19705 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L

	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Surplus water	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Table A-9. Dissolved Chromium III Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	1.744 mg/L	0.22641 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Embankment	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Table A-10. Dissolved Chromium III Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	1.332 mg/L	0.17324 mg/L
	Year 2	381	1.704 mg/L	0.22166 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Seepage collection pond	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L
Embankment	Year 1	> 400	1.773 mg/L	0.23067 mg/L
	Year 2	> 400	1.773 mg/L	0.23067 mg/L
	Year 3	> 400	1.773 mg/L	0.23067 mg/L
	Year 4	> 400	1.773 mg/L	0.23067 mg/L
	Year 5	> 400	1.773 mg/L	0.23067 mg/L

Copper

Table A-11. Dissolved Copper Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Seepage collection pond	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Embankment	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Lost seepage	Year 1	0, no data	-	-
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L

Table A-12. Dissolved Copper Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Seepage collection pond	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Embankment	Year 1	> 400	0.04962 mg/L	0.02928 mg/L

	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L

Table A-13. Dissolved Copper Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.01733 mg/L	0.01128 mg/L
	Year 2	330	0.04139 mg/L	0.02484 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Surplus water	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L

Table A-14. Dissolved Copper Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	0.04868 mg/L	0.02878 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Embankment	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L

Year 5	> 400	0.04962 mg/L	0.02928 mg/L
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Table A-15. Dissolved Copper Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	0.03569 mg/L	0.02172 mg/L
	Year 2	381	0.04739 mg/L	0.02809 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Seepage collection pond	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L
Embankment	Year 1	> 400	0.04962 mg/L	0.02928 mg/L
	Year 2	> 400	0.04962 mg/L	0.02928 mg/L
	Year 3	> 400	0.04962 mg/L	0.02928 mg/L
	Year 4	> 400	0.04962 mg/L	0.02928 mg/L
	Year 5	> 400	0.04962 mg/L	0.02928 mg/L

Lead

Table A-16. Dissolved Lead Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Seepage collection pond	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Embankment	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Lost seepage	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

	Year 1	0, no data	-	-
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

Table A-17. Dissolved Lead Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Seepage collection pond	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Embankment	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

Table A-18. Dissolved Lead Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.08654 mg/L	0.00137 mg/L
	Year 2	330	0.23031 mg/L	0.00897 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L

	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Surplus water	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

Table A-19. Dissolved Lead Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	0.27508 mg/L	0.01072 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Embankment	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

Table A-20. Dissolved Lead Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	0.19554 mg/L	0.00762 mg/L
	Year 2	381	0.26715 mg/L	0.01041 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Seepage collection pond	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L
Embankment	Year 1	> 400	0.28085 mg/L	0.01094 mg/L
	Year 2	> 400	0.28085 mg/L	0.01094 mg/L
	Year 3	> 400	0.28085 mg/L	0.01094 mg/L
	Year 4	> 400	0.28085 mg/L	0.01094 mg/L
	Year 5	> 400	0.28085 mg/L	0.01094 mg/L

Nickel

Table A-21. Dissolved Nickel Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Seepage collection pond	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Embankment	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Lost seepage	Year 1	0, no data	-	-
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L

Table A-22. Dissolved Nickel Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Seepage collection pond	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Embankment	Year 1	> 400	1.513 mg/L	0.16804 mg/L

	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L

Table A-23. Dissolved Nickel Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.588 mg/L	0.06535 mg/L
	Year 2	330	1.286 mg/L	0.14280 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Surplus water	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L

Table A-24. Dissolved Nickel Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	1.487 mg/L	0.16519 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Embankment	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L

Year 5	> 400	1.513 mg/L	0.16804 mg/L
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Table A-25. Dissolved Nickel Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	1.126 mg/L	0.12502 mg/L
	Year 2	381	1.452 mg/L	0.16126 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Seepage collection pond	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L
Embankment	Year 1	> 400	1.513 mg/L	0.16804 mg/L
	Year 2	> 400	1.513 mg/L	0.16804 mg/L
	Year 3	> 400	1.513 mg/L	0.16804 mg/L
	Year 4	> 400	1.513 mg/L	0.16804 mg/L
	Year 5	> 400	1.513 mg/L	0.16804 mg/L

Silver

Table A-26. Dissolved Silver Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)
Pyrite pond	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Seepage collection pond	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Embankment	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Lost seepage	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

	Year 1	0, no data	-
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

Table A-27. Dissolved Silver Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Seepage collection pond	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Embankment	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

Table A-28. Dissolved Silver Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)
Pyrite pond	Year 1	131	0.00512 mg/L
	Year 2	330	0.02508 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L

	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Surplus water			
	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

Table A-29. Dissolved Silver Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)
Lost seepage			
	Year 1	392	0.03372 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Embankment			
	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

Table A-30. Dissolved Silver Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)
Pyrite pond and lost seepage			
	Year 1	282	0.01914 mg/L
	Year 2	381	0.03211 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Seepage collection pond			
	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L
Embankment			
	Year 1	> 400	0.03491 mg/L
	Year 2	> 400	0.03491 mg/L
	Year 3	> 400	0.03491 mg/L
	Year 4	> 400	0.03491 mg/L
	Year 5	> 400	0.03491 mg/L

Zinc

Table A-31. Dissolved Zinc Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 2

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Seepage collection pond	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Embankment	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Lost seepage	Year 1	0, no data	-	-
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L

Table A-32. Dissolved Zinc Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 3

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Seepage collection pond	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Embankment	Year 1	> 400	0.3793 mg/L	0.3793 mg/L

	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L

Table A-33. Dissolved Zinc Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 4

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond	Year 1	131	0.588 mg/L	0.06535 mg/L
	Year 2	330	1.286 mg/L	0.14280 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Lost seepage (pyrite pond and pyrite tailings)	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Lost seepage (scavenger pond and scavenger tailings)	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Surplus water	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L

Table A-34. Dissolved Zinc Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 5

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Lost seepage	Year 1	392	1.487 mg/L	0.16519 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Embankment	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L

Year 5	> 400	0.3793 mg/L	0.3793 mg/L
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Table A-35. Dissolved Zinc Aquatic & Wildlife Warm Water Standards based on Water Hardness, Alternative 6

Prediction	Year	Water Hardness	Acute (mg/L)	Chronic (mg/L)
Pyrite pond and lost seepage	Year 1	282	1.126 mg/L	0.12502 mg/L
	Year 2	381	1.452 mg/L	0.16126 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Seepage collection pond	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L
Embankment	Year 1	> 400	0.3793 mg/L	0.3793 mg/L
	Year 2	> 400	0.3793 mg/L	0.3793 mg/L
	Year 3	> 400	0.3793 mg/L	0.3793 mg/L
	Year 4	> 400	0.3793 mg/L	0.3793 mg/L
	Year 5	> 400	0.3793 mg/L	0.3793 mg/L