



Toxicity Characteristic Leachate Procedure Analyses

Parameter	Unit	Dir No. 019*	Average Grade Comp	Average Grade Comp DUP1	Average Grade Comp DUP2	Average Grade +270	Average Grade +270 DUP1	Average Grade +270 DUP2	Average Grade -270	Average Grade -270 DUP1	Average Grade -270 DUP2
LIMS			10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08
Sample weight	g		100	100	100	100	100	100	100	100	100
Ext. Fluid	#1 or #2		2	2	2	1	1	1	2	2	2
Ext. Volume	mL		2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0
Initial pH	units		4.27	4.26	4.24	5.08	5.08	5.08	4.12	3.89	3.98
Final pH	units		4.50	4.50	4.50	5.43	5.43	5.42	4.47	4.47	4.47
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		2.31	2.33	2.26	0.0812	0.0736	0.0566	2.68	2.49	2.51
As	mg/L	0.400	0.0051	0.0051	0.0050	0.0032	0.0032	0.0030	0.0050	0.0049	0.0049
Ag	mg/L		< 0.00001	< 0.00001	0.00006	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Ba	mg/L		1.87	1.83	1.94	1.79	1.86	1.79	2.08	2.31	2.10
Be	mg/L		0.00090	0.00085	0.00087	0.00012	0.00013	0.00012	0.00088	0.00096	0.00093
B	mg/L		0.953	0.951	1.01	0.757	0.753	0.676	0.940	0.989	0.992
Bi	mg/L		0.00008	0.00008	0.00008	0.00002	0.00001	0.00005	0.00011	0.00010	0.00011
Ca	mg/L		730	712	745	420	402	413	715	698	680
Cd	mg/L		0.00264	0.00260	0.00266	0.00128	0.00133	0.00133	0.00253	0.00263	0.00261
Co	mg/L		0.00696	0.00685	0.00721	0.00321	0.00318	0.00327	0.00967	0.0102	0.00994
Cr	mg/L		0.0158	0.0159	0.0162	0.0028	0.0027	0.0026	0.0312	0.0299	0.0288
Cu	mg/L	0.600	0.0125	0.0124	0.0129	0.0111	0.0106	0.0101	0.0469	0.0490	0.0474
Fe	mg/L	6.000	21.4	21.3	22.5	4.72	4.67	4.36	30.3	27.4	27.9
K	mg/L		27.0	26.5	28.5	31.7	31.6	33.7	30.2	30.9	30.0
Li	mg/L		0.003	0.006	0.008	0.005	0.003	0.004	0.004	0.005	0.008
Mg	mg/L		28.7	27.4	29.6	6.00	5.97	6.36	24.7	26.0	24.9
Mn	mg/L		11.4	11.3	12.8	6.56	6.29	6.38	10.9	11.0	11.1
Mo	mg/L		< 0.00001	< 0.00001	< 0.00001	0.00025	0.00025	0.00021	0.00006	0.00003	0.00003
Na	mg/L		11.4	11.9	12.0	1320	1260	1310	12.5	12.9	12.6
Ni	mg/L	1.000	0.0364	0.0363	0.0380	0.0142	0.0128	0.0127	0.0693	0.0637	0.0622
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.400	0.0164	0.0153	0.0167	0.00329	0.0033	0.00358	0.0162	0.0175	0.0153
Sb	mg/L		0.00048	0.00043	0.00043	0.00029	0.00025	0.00023	0.00058	0.00049	0.00044
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001
Si	mg/L		7.38	7.06	7.64	1.38	1.38	1.47	7.94	8.25	7.79
Sn	mg/L		0.00016	0.00019	0.00011	0.00013	0.00011	0.00005	0.00016	0.00016	0.00012
Sr	mg/L		5.51	5.39	5.73	2.49	2.48	2.52	5.07	5.15	5.06
Ti	mg/L		0.0005	0.0008	0.0006	0.0003	0.0002	0.0004	0.0004	0.0004	0.0004
Tl	mg/L		0.000098	0.000092	0.000099	0.000157	0.000154	0.000188	0.000118	0.000120	0.000111
U	mg/L		0.00535	0.00517	0.00558	0.00195	0.00199	0.00205	0.00615	0.00652	0.00638
V	mg/L		0.00369	0.00359	0.00375	0.00436	0.00430	0.00439	0.00348	0.00342	0.00340
W	mg/L		< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
Y	mg/L		0.0567	0.0559	0.0588	0.0261	0.0262	0.0265	0.0508	0.0523	0.0516
Zn	mg/L	1.000	1.72	1.72	1.85	1.31	1.31	1.17	1.81	1.91	1.80

* Acceptable maximum concentration of an instantaneous, non-dilute final effluent sample.



Toxicity Characteristic Leachate

Parameter	Unit	Dir No. 019*	Average Grade Ore Overall Comp	Average Grade Ore Overall Comp Dup 1	Average Grade Ore Overall Comp Dup 2	Average Waste Overall Comp	Average Waste Overall Comp Dup 1	Average Waste Overall Comp Dup 2	Average Waste GR Comp	Average Waste GR Comp Dup 1	Average Waste GR Comp Dup 2
LIMS			10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08
Sample weight	g		50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Ext. Fluid	#1 or #2		2	2	2	1	1	1	1	1	1
Ext. Volume	mL		1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
Initial pH	units		4.39	4.42	4.45	5.55	5.42	5.49	5.56	5.46	5.43
Final pH	units		4.57	4.57	4.64	5.82	5.88	5.85	5.77	5.87	5.79
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		6.00	6.03	6.14	0.02	0.02	0.02	0.04	0.05	0.05
As	mg/L	0.400	0.0050	0.0051	0.0054	0.0042	0.0041	0.0039	0.0036	0.0037	0.0034
Ag	mg/L		0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Ba	mg/L		2.96	3.01	3.08	2.40	2.50	2.60	2.30	2.11	2.12
Be	mg/L		0.00129	0.00162	0.00170	0.00013	0.00012	0.00015	0.00017	0.00015	0.00017
B	mg/L		0.424	0.636	0.697	0.325	0.348	0.379	0.324	0.358	0.361
Bi	mg/L		0.00058	0.00041	0.00041	0.00008	0.00002	0.00002	0.00011	0.00004	0.00002
Ca	mg/L		971	974	1020	667	677	716	634	683	580
Cd	mg/L		0.00237	0.00234	0.00242	0.00174	0.00181	0.00181	0.00174	0.00172	0.00169
Co	mg/L		0.122	0.125	0.132	0.00480	0.00503	0.00517	0.00421	0.00446	0.00460
Cr	mg/L		0.0399	0.0390	0.0388	0.0021	0.0022	0.0021	0.0038	0.0038	0.0036
Cu	mg/L	0.600	0.146	0.153	0.162	0.266	0.265	0.263	0.257	0.263	0.253
Fe	mg/L	6.000	24.5	25.2	25.0	4.05	2.95	3.47	1.11	0.99	0.90
K	mg/L		40.0	39.6	42.9	53.8	54.9	53.6	56.5	56.6	55.1
Li	mg/L		0.012	0.013	0.014	0.010	0.011	0.011	0.014	0.014	0.014
Mg	mg/L		30.9	31.3	31.9	8.49	8.78	8.47	11.4	11.5	11.3
Mn	mg/L		12.5	12.7	12.9	7.43	7.50	7.40	7.96	8.07	7.89
Mo	mg/L		0.00025	0.00033	0.00033	0.00189	0.00181	0.00197	0.0057	0.00602	0.00569
Na	mg/L		14.9	16.5	16.7	1480	1520	1580	1460	1570	1320
Ni	mg/L	1.000	0.199	0.203	0.217	0.0271	0.0287	0.0297	0.0395	0.0420	0.0455
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.400	0.0392	0.0383	0.0407	0.00883	0.00883	0.00904	0.0108	0.0108	0.0115
Sb	mg/L		0.00099	0.00084	0.00077	0.00006	0.00002	< 0.00002	0.00025	0.00017	0.00013
Se	mg/L		0.001	< 0.001	0.004	< 0.001	0.004	0.002	0.002	0.002	0.002
Si	mg/L		10.5	10.7	10.8	3.60	3.87	3.64	4.85	4.96	4.99
Sn	mg/L		0.00013	0.00012	0.00015	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Sr	mg/L		6.18	6.22	6.38	3.73	3.75	3.73	2.28	2.31	2.25
Ti	mg/L		0.0013	0.0013	0.0013	0.0003	0.0004	0.0004	0.0003	0.0004	0.0005
Tl	mg/L		0.00013	0.00007	0.00008	0.00008	0.00008	0.00007	0.00008	0.00008	0.00008
U	mg/L		0.0109	0.0108	0.0116	0.00112	0.00113	0.00116	0.00120	0.00120	0.00127
V	mg/L		0.00240	0.00335	0.00324	0.00434	0.00469	0.00446	0.00457	0.00492	0.00446
W	mg/L		< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
Y	mg/L		0.0647	0.0647	0.0643	0.0304	0.0295	0.0297	0.0310	0.0305	0.0301
Zn	mg/L	1.000	0.898	1.06	1.11	0.649	0.670	0.671	0.674	0.659	0.660

* Acceptable maximum concentration of an instan



Toxicity Characteristic Leachate

Parameter	Unit	Dir No. 019*	Low Grade Residue Comp	Low Grade Residue Comp DUP1	Low Grade Residue Comp DUP2	Low Grade Residue Comp +270	Low Grade Residue Comp +270 DUP1	Low Grade Residue Comp +270 DUP2	Low Grade Residue Comp -270	Low Grade Residue Comp -270 DUP1	Low Grade Residue Comp -270 DUP2	Low Grade Ore Overall Comp	Low Grade Ore Overall Comp Dup 1	Low Grade Ore Overall Comp Dup 2
LIMS			10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10310-AUG08	10474-AUG08	10474-AUG08	10474-AUG08
Sample weight	g		100	100	100	100	100	100	100	100	100	50.0	50.0	50.0
Ext. Fluid	#1 or #2		2	2	2	1	1	1	2	2	2	1	1	1
Ext. Volume	mL		2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	1000.0	1000.0	1000.0
Initial pH	units		4.43	4.42	4.34	5.08	5.08	5.08	3.85	3.87	3.88	5.42	5.52	5.39
Final pH	units		4.65	4.65	4.65	5.55	5.55	5.55	4.56	4.56	4.57	5.78	5.83	5.81
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		1.55	1.51	1.32	0.0306	0.0278	0.0261	1.73	1.62	1.63	0.03	0.02	0.03
As	mg/L	0.400	0.0139	0.0184	0.0143	0.0036	0.0036	0.0035	0.0123	0.0128	0.0123	0.0040	0.0038	0.0036
Ag	mg/L		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00002	< 0.00001	< 0.00001
Ba	mg/L		1.76	1.76	1.97	1.84	1.78	1.75	2.29	2.33	2.49	2.92	2.54	2.83
Be	mg/L		0.00079	0.00078	0.00075	0.00010	0.00010	0.00010	0.00083	0.00081	0.00085	0.00011	0.00011	0.00012
B	mg/L		0.967	0.960	1.15	0.664	0.654	0.630	0.923	0.969	0.984	0.273	0.328	0.391
Bi	mg/L		0.00012	0.00012	0.00010	< 0.00001	< 0.00001	< 0.00001	0.00017	0.00014	0.00016	0.00016	0.00007	0.00003
Ca	mg/L		953	969	994	499	519	470	785	789	815	641	670	662
Cd	mg/L		0.00248	0.00247	0.00241	0.00122	0.00121	0.00120	0.00230	0.00225	0.00232	0.00144	0.00133	0.00131
Co	mg/L		0.0108	0.0117	0.0111	0.00414	0.00407	0.00396	0.0159	0.0157	0.0159	0.00713	0.00737	0.00777
Cr	mg/L		0.0151	0.0159	0.0160	0.0023	0.0022	0.0023	0.0423	0.0414	0.0424	0.0040	0.0031	0.0038
Cu	mg/L	0.600	0.0134	0.0139	0.0133	0.0161	0.0158	0.0150	0.0730	0.0709	0.0719	0.279	0.254	0.257
Fe	mg/L	6.000	16.5	16.8	15.9	3.29	3.08	2.97	31.0	29.1	30.1	3.58	2.28	3.22
K	mg/L		23.6	24.2	23.9	28.5	28.2	28.1	26.8	26.7	26.8	59.2	59.6	59.0
Li	mg/L		0.003	0.004	0.005	0.002	0.002	0.004	0.006	0.004	0.009	0.014	0.015	0.014
Mg	mg/L		16.1	16.5	16.3	4.58	4.51	4.47	13.2	13.0	13.2	12.5	12.5	12.5
Mn	mg/L		13.8	13.9	13.7	7.63	7.35	7.19	12.5	12.0	12.8	7.48	7.55	7.51
Mo	mg/L		0.00019	0.00023	0.00025	0.00115	0.00124	0.00095	0.00017	0.00010	0.00012	0.00314	0.00331	0.00324
Na	mg/L		11.9	11.9	13.3	1320	1380	1250	11.9	12.5	12.7	1510	1510	1510
Ni	mg/L	1.000	0.0383	0.0380	0.0379	0.0172	0.0162	0.0158	0.0745	0.0702	0.0710	0.0576	0.0606	0.0616
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.400	0.0133	0.0143	0.0141	0.0034	0.0033	0.00342	0.0226	0.0228	0.0227	0.00716	0.00610	0.00707
Sb	mg/L		0.00270	0.00282	0.00275	0.00231	0.00227	0.00227	0.00292	0.00283	0.00290	0.00027	0.00014	0.00011
Se	mg/L		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	0.002	0.002	0.002
Si	mg/L		5.48	5.69	5.73	1.02	1.02	1.04	5.89	5.92	6.06	5.40	5.46	5.52
Sn	mg/L		0.00018	0.00020	0.00011	0.00005	0.00030	0.00001	0.00056	0.00016	0.00008	0.00007	< 0.00001	< 0.00001
Sr	mg/L		4.71	4.79	4.69	2.16	2.13	2.10	4.13	4.08	4.15	1.90	1.91	1.91
Ti	mg/L		0.0005	0.0007	0.0006	0.0003	0.0003	0.0003	0.0006	0.0004	0.0004	0.0005	0.0003	0.0003
Tl	mg/L		0.000078	0.000085	0.000087	0.000180	0.000185	0.000187	0.000131	0.000132	0.000126	0.00008	0.00007	0.00007
U	mg/L		0.00652	0.00678	0.00684	0.00205	0.00201	0.00204	0.00789	0.00786	0.00819	0.000699	0.000658	0.000704
V	mg/L		0.00356	0.00366	0.00356	0.00449	0.00441	0.00445	0.00340	0.00305	0.00311	0.00427	0.00448	0.00438
W	mg/L		< 0.00003	0.00007	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.00015	0.00014	0.00011
Y	mg/L		0.0667	0.0682	0.0670	0.0284	0.0278	0.0271	0.0572	0.0558	0.0580	0.0283	0.0240	0.0267
Zn	mg/L	1.000	1.50	1.44	1.67	1.13	1.10	1.02	1.39	1.48	1.46	0.689	0.604	0.724

* Acceptable maximum concentration of an instan



Toxicity Characteristic Leachate

Parameter	Unit	Dir No. 019*	High Sulphide Waste Overall Comp	High Sulphide Waste Overall Comp Dup 1	High Sulphide Waste Overall Comp Dup 2	High Sulphide Ore Overall Comp	High Sulphide Ore Overall Comp Dup 1	High Sulphide Ore Overall Comp Dup 2	C2 Comp	C2 Comp Dup 1	C2 Comp Dup 2
LIMS			10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10474-AUG08	10584-AUG08	10584-AUG08	10584-AUG08
Sample weight	g		50.0	50.0	50.0	50.0	50.0	50.0	100	100	100
Ext. Fluid	#1 or #2		2	2	2	2	2	2	1	1	1
Ext. Volume	mL		1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	2000.0	2000.0	2000.0
Initial pH	units		4.50	4.46	4.41	4.40	4.41	4.40	5.17	5.15	5.16
Final pH	units		4.63	4.67	4.62	4.64	4.69	4.62	5.80	5.81	5.79
Hg	mg/L		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Al	mg/L		5.29	5.57	5.56	4.72	4.87	4.66	0.0244	0.0192	0.0159
As	mg/L	0.400	0.0055	0.0056	0.0051	0.0055	0.0056	0.0051	0.0010	0.0058	0.0012
Ag	mg/L		0.00001	< 0.00001	< 0.00001	0.00002	< 0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001
Ba	mg/L		2.34	2.23	2.13	2.54	2.60	2.54	2.18	2.18	2.21
Be	mg/L		0.00127	0.00123	0.00130	0.00111	0.00122	0.00123	0.00012	0.00012	0.00013
B	mg/L		0.619	0.622	0.609	0.581	0.674	0.731	0.538	0.548	0.567
Bi	mg/L		0.00054	0.00060	0.00061	0.00042	0.00035	0.00033	0.00038	0.00024	0.00015
Ca	mg/L		959	923	903	944	893	938	620	542	637
Cd	mg/L		0.00289	0.00291	0.00294	0.00319	0.00326	0.00316	0.00130	0.00136	0.00131
Co	mg/L		0.00568	0.00606	0.00617	0.0234	0.0250	0.0251	0.00197	0.00217	0.00206
Cr	mg/L		0.0441	0.0440	0.0442	0.0469	0.0461	0.0445	0.0025	0.0028	0.0028
Cu	mg/L	0.600	0.0380	0.0410	0.0426	0.111	0.118	0.118	0.0020	0.0013	0.0012
Fe	mg/L	6.000	19.2	19.6	19.4	24.5	24.6	24.1	4.56	4.65	4.81
K	mg/L		43.4	43.6	45.5	49.9	47.1	44.4	36.9	36.9	37.2
Li	mg/L		0.014	0.014	0.014	0.013	0.014	0.013	0.010	0.010	0.012
Mg	mg/L		33.2	33.6	33.4	60.0	60.6	58.4	6.85	6.84	6.98
Mn	mg/L		12.8	12.8	12.8	14.6	14.7	14.2	8.99	9.07	9.26
Mo	mg/L		0.00049	0.00048	0.00055	0.00032	0.00031	0.00032	0.00068	0.00071	0.00060
Na	mg/L		17.0	16.9	15.9	16.4	16.6	16.9	1340	1180	1390
Ni	mg/L	1.000	0.0498	0.0530	0.0533	0.122	0.130	0.131	0.0139	0.0151	0.0144
P	mg/L		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.400	0.0556	0.0610	0.0612	0.0586	0.0617	0.0599	0.0134	0.0146	0.0137
Sb	mg/L		0.00022	0.00023	0.00018	0.00034	0.00023	0.00017	0.00050	0.00056	0.00042
Se	mg/L		< 0.001	0.004	0.004	0.004	< 0.001	0.005	< 0.001	0.003	< 0.001
Si	mg/L		10.0	10.2	10.0	9.45	9.64	9.36	1.46	1.45	1.48
Sn	mg/L		0.00014	0.00012	0.00012	0.00014	0.00011	0.00015	0.00004	0.00029	0.00001
Sr	mg/L		4.18	4.20	4.15	4.88	4.90	4.74	2.49	2.51	2.50
Ti	mg/L		0.0013	0.0012	0.0014	0.0016	0.0015	0.0014	0.0013	0.0011	0.0005
Tl	mg/L		0.00008	0.00008	0.00008	0.00011	0.00009	0.00008	0.000086	0.000093	0.000087
U	mg/L		0.00718	0.00741	0.00749	0.00665	0.00687	0.00675	0.00194	0.00202	0.00196
V	mg/L		0.00322	0.00347	0.00343	0.00320	0.00324	0.00326	0.00415	0.00500	0.00471
W	mg/L		< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.00020	0.00019	0.00013
Y	mg/L		0.0713	0.0720	0.0681	0.0733	0.0730	0.0685	0.0326	0.0358	0.0335
Zn	mg/L	1.000	1.02	1.02	0.935	1.10	1.11	1.18	0.868	0.856	0.874

* Acceptable maximum concentration of an instan