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**Kennecott
Minerals**

March 13, 1996

Mr. Lawrence J. Lynch
Mine Reclamation Unit
Bureau of Solid and Hazardous Waste Management
101 S. Webster Street, GEF II
PO Box 7921
Madison, WI 53707

Dear Mr. Lynch:

RE: Flambeau Mining Company - Type I Stockpile Evaluation

During late January 1996 Flambeau Mining Company (Flambeau) initiated an evaluation of the Type I stockpile due to the appearance of a water seep located on the southeast section of the Type I waste rock stockpile. On February 16, 1996 the Department was notified of initial findings related to the seep's quality and Flambeau's intent to perform further evaluations related to characteristics of stockpiled Type I waste rock. Throughout the evaluation Flambeau has taken measures to maintain Type I stockpile drainage such that any snowmelt or storm runoff and seepage is contained within the Type I stockpile area.

Type I Seepage Quality

Upon discovery of the Type I seep, Flambeau initiated routine monitoring for quality. The seep elevation (1141.95 ft.) shows the seep originating at an approximate elevation comparable to the top of till blanket. Seep water collected at this elevation would be expected to contain greater concentrations of constituents which would otherwise be attenuated if the water migrated downward through the till blanket. Figure 1 shows the seep location (T1-1). The seep water was analyzed for Dissolved Copper, Conductivity, pH, Sulfate, and Iron. A review of the Wet/Dry Leaching Study discussed in the Kennecott Environmental Impact Report (KEIR, Section 3.5.6.3.3.1) indicates that the seep water quality is as predicted by the KEIR. Table 1 contains a summary of the W/D Leaching Study findings and Table 2 summarizes the Type I seep quality. Copper and sulfate concentrations and pH of the Type I seep water are within the ranges predicted for Type I waste rock leachate.

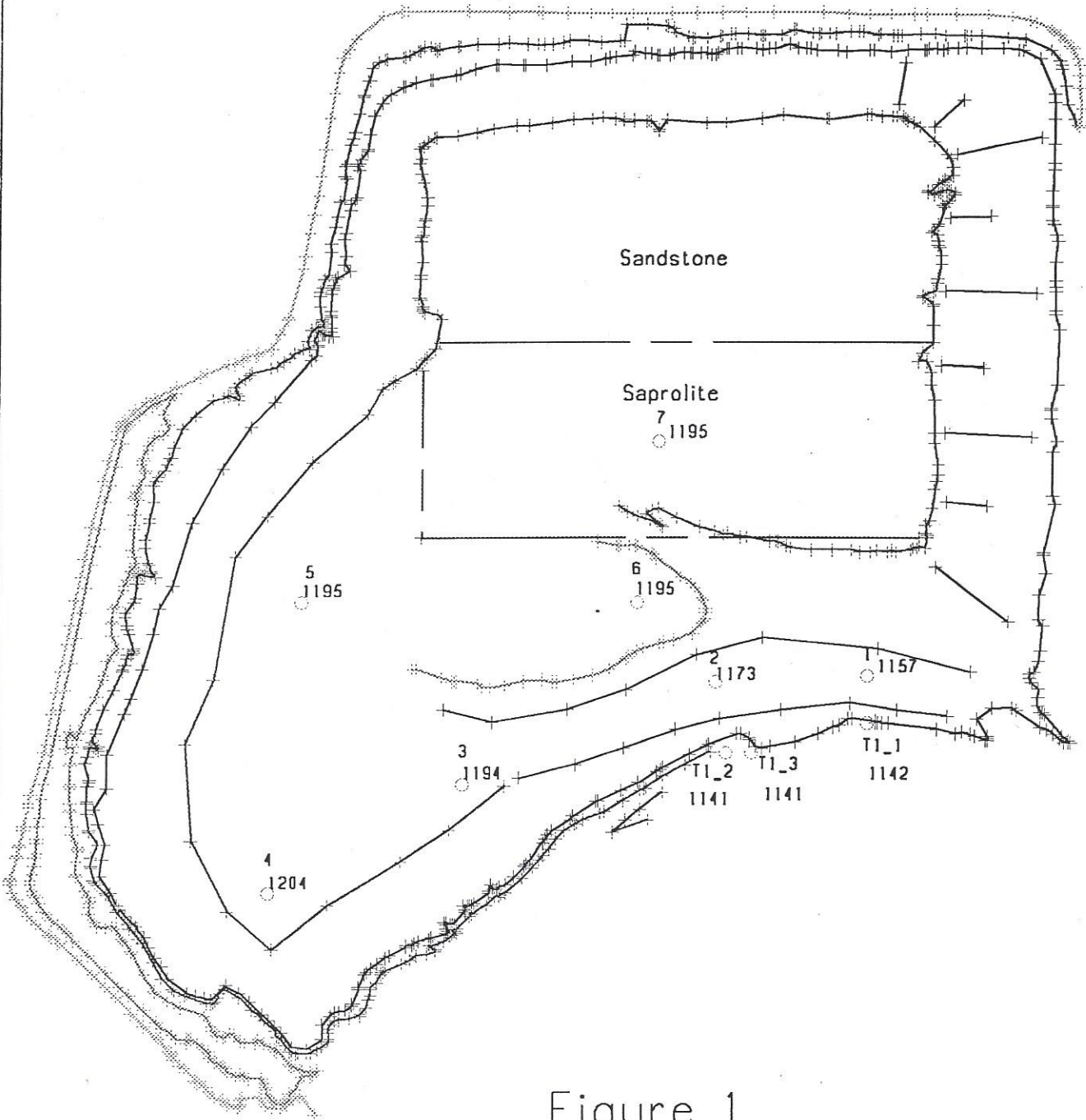


Figure 1

Type 1 Stockpile: Drill Hole & Seep Locations

**Table 1. Wet/Dry Leaching Study - Type I Wasterock
 Kennecott Environmental Impact Report - April 1989
 (Section 3.5.6.3.3.1; Table 3.5-19)**

Wet/Dry Leachate Concentrations

Wet/Dry Cycle	WR-1 (<0.10% Sulfur)		WR-2 (0.49% Sulfur)		WR-3 (0.70% Sulfur)	
	Copper (mg/l)	Sulfate (mg/l)	Copper (mg/l)	Sulfate (mg/l)	Copper (mg/l)	Sulfate (mg/l)
1	0.66	400	29	240	240	930
2	0.20	150	34	270	180	790
4	0.02	100	9.1	150	56	380
8	<0.010	11	0.67	20	7.3	74
16	<0.010	5	0.15	7	1.7	26
pH Range*	5.40 - 7.46		4.45 - 5.94		4.20 - 5.87	

* KEIR, Table 3.5-18

Table 2. Type I (T1-1) Seep Quality

Collection DATE	Cu (mg/l)	pH	Conductivity (uS)	Sulfate (mg/l)	Iron (mg/l)	Alkalinity (mg/l)
1/25/96	33.9	6.0	1122			
1/25/96	30.4	5.7	1141			
1/26/96	-----	5.9	1131	390	0.020	54
1/31/96	17.2	6.0	1060			
2/2/96	16.8	5.7	1115			
2/5/96	16.2	5.8	1077			
2/7/96	17.3	5.8	1059			
2/9/96	22.0	5.6	1154			
2/12/96	13.6	5.7	1081			
2/14/96	16.1	5.8	1173			
2/16/96	13.9	5.5	1068			
2/19/96	12.6	5.9	990			
2/19/96	13.6	6.1	1008	290	<0.0017	74
2/20/96	21.3	5.9	1039			
2/21/96	41.2	5.2	892			
2/22/96	28.8	5.7	1012			
2/23/96	20.4	5.8	506			
2/26/96	48.4	5.5	964			
2/28/96	20.9	6.0	1038			
3/6/96	15.4	5.8	1047			
3/8/96	10.2	6.0	1038			
3/11/96	13.7	5.7	1074			

Two additional seeps (T1-2 and T1-3) were also monitored. Analyses show the quality of the water from these seeps to have copper concentrations averaging 0.83 and 0.23 mg/l, respectively and neutral pH for both. The quality of T1-2 and T1-3 also falls within the ranges predicted for Type I waste rock. Since their discovery, these seeps have substantially decreased in flow to an indiscernible rate.

Stockpiled Type I Wasterock/Saprolite Characterization

Flambeau initiated a drilling program on the Type I stockpile. Six holes were drilled in the Type I waste rock and one hole (#7) drilled in the saprolite. For each drill hole, waste rock samples were collected every five feet and the last sample was collected within the top two feet of till. Figure 1 displays the drill hole locations on the Type I stockpile. Table 3 summarizes analyses performed upon the Type I waste rock samples. Sulfur concentrations for all samples were less than one percent as required by the Mine Permit and Mine Plan. Soil pH values show that the Type I waste rock is relatively neutral.

The results of the Type I stockpile drilling confirm that the seep water quality has not been impacted by significant oxidation of sulfide minerals within the waste rock. The seep water quality is well within the range predicted by the Wet/Dry Leaching Study.

Table 3. Type I Stockpile - Drill Hole Analyses

Hole ID	Sample Elevation	Sulfur (%)	Moisture (%)	Soil pH
1-1	1157-1152	0.24	7.1	6.4
1-2	1152-1148	0.22	7.4	6.1
2-1	1173-1168	0.11	7.1	6.6
2-2	1168-1163	0.08	8.4	6.8
2-3	1163-1158	0.11	9.3	6.7
2-4	1158-1153	0.34	9.1	6.9
2-5	1153-1151	0.36	7.6	6.8
2-6	1151-1150	0.37	4.7	6.7
3-1	1194-1189	0.15	15.8	7.3
3-2	1189-1184	0.09	9.7	6.8
3-3	1184-1179	0.12	8.2	7.2
3-4	1179-1174	0.27	8.7	7.2

Table 3. Type I Stockpile - Drill Hole Analyses (cont.)

Hole ID	Sample Elevation	Sulfur (%)	Moisture (%)	Soil pH
3-5	1174-1169	0.16	7.2	7.3
3-6	1169-1164	0.09	9.3	7.4
3-7	1164-1159	0.31	9.1	7.3
3-8	1159-1156	0.85	6.9	6.9
3-9	1156-1154	0.71	6.5	7.0
4-1	1204-1199	0.08	19.9	7.8
4-2	1199-1194	0.08	11.4	7.6
4-3	1194-1189	0.09	4.1	7.6
4-4	1189-1184	0.04	2.4	7.7
4-5	1184-1179	0.06	4.7	7.8
4-6	1179-1174	0.09	5.9	7.8
4-7	1174-1169	0.08	4.2	8.0
4-8	1169-1164	0.12	5.6	7.8
4-9	1164-1159	0.24	7.0	7.7
4-10	1159-1154	0.16	6.7	7.7
4-11	1154-1149	0.08	7.6	7.5
4-12	1149-1146	0.12	8.4	7.4
4-13	1146-1144	0.48	8.9	7.6
5-1	1195-1190	0.25	10.7	7.7
5-2	1190-1185	0.09	8.2	7.4
5-3	1185-1180	0.10	8.4	7.3
5-4	1180-1175	0.59	7.3	7.4
5-5	1175-1170	0.17	6.2	7.5
5-6	1170-1165	0.16	6.3	7.4
5-7	1165-1160	0.12	5.9	7.4
5-8	1160-1155	0.10	8.6	7.3
5-9	1155-1152	0.09	6.7	7.4
5-10	1152-1150	0.09	7.0	7.8
6-1	1198-1193	0.09	8.4	7.3
6-2	1193-1188	0.09	6.3	7.1
6-3	1188-1183	0.29	5.8	7.6
6-4	1183-1178	0.09	5.6	7.6
6-5	1178-1173	0.33	5.5	7.6

Table 3. Type I Stockpile - Drill Hole Analyses (cont.)

Hole ID	Sample Elevation	Sulfur (%)	Moisture (%)	Soil pH
6-6	1173-1168	0.10	6.3	7.8
6-7	1168-1163	0.14	7.2	7.6
6-8	1163-1158	0.89	9.4	6.8
6-9	1158-1153	0.13	7.5	7.2
6-10	1153-1151	0.11	4.2	7.2
7-1	1195-1190	0.08	5.2	7.1
7-2	1190-1185	0.07	6.0	7.2
7-3	1185-1180	0.10	5.1	7.2
7-4	1180-1175	0.07	5.3	7.2
7-5	1175-1170	0.06	6.3	7.0
7-6	1170-1165	0.06	6.1	7.2
7-7	1165-1160	0.08	6.8	7.3
7-8	1160-1155	0.08	6.1	7.1
7-9	1155-1150	0.08	5.3	7.1
7-10	1150-1148	0.06	6.1	7.3

Seep Management

The approved design of the Type I stockpile is such that waste rock leachate is to permeate through the nine foot till blanket and *in situ* till resulting in adsorption of dissolved constituents. It is apparent that a portion of the percolate is flowing laterally towards the Type I stockpile exterior along localized sections of the waste rock/till contact.

The Type I seep, T1-1, which is apparently flowing over the till blanket at an approximate rate of one gpm will be collected via a french drain and routed through piping to the pit. The seep water will ultimately be treated within the wastewater treatment plant.

Flambeau will continue routine monitoring of the T1-1 seep. The Type I stockpile will be periodically inspected to determine if additional seeps occur. If noted, tests of the quality of the seeping water will be performed. If warranted, Flambeau will take appropriate measures to manage the seep water such that adverse impacts do not develop.

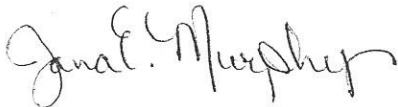
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Summary

The original Wet/Dry Leaching Study correctly predicted the current characteristics of the Type I waste rock leachate. The Type I seep, T1-1, water quality is not associated with sulfur oxidation as was confirmed with the Type I stockpile drilling. The seepage from the T1-1 seep will be collected and treated at the project's wastewater treatment plant. Additional noted seeps will also be tested for water quality and similar actions taken if necessary.

If you should have any questions, please contact me at 715-532-6690.

Sincerely,



Jana E. Murphy
Supervisor of Environmental Affairs

cc: Tom Myatt, Flambeau
Jeane Hull, KMC
Ken Markart, WDNR
Bernice Dukerschein, Rusk County
Al Christianson, City of Ladysmith
Tom Riegel, Town of Grant
Melvin Spencer, Rusk Co. Zoning
Paul Kent, DeWitt, Ross & Stevens
Jim Hutchison, Foth & Van Dyke