Flambeau Mining Company
N4100 Highway 27
Ladysmith, WI 54848
(715) 532-6690
FAX (715) 532-6885

Kennecott Minerals

October 24, 1996

Mr. Larry Lynch
Mine Reclamation Section
Bureau of Solid Waste Management
Wisconsin Department of Natural Resources
101 S. Webster Street, GEF II
Madison, WI 53707

RE: Flambeau Mining Company
October 1996 Test Pits in Stockpiled Type II Material

Dear Mr. Lynch:

In the report titled Fall 1996 Backfilling Plan for Stockpiled Type II Material (Fall 1996 Plan) and dated October 8, 1996, Flambeau Mining Company (Flambeau) identified a conservative application rate of 17.2 pounds limestone per ton of stockpiled Type II waste rock which is proposed to be backfilled during Fall 1996. The 17.2 lb/ton application rate includes the limestone requirement for stored acidity (16.1 lb/ton) and acidity generated during backfilling and prior to groundwater recovery (1.1 lb/ton). This application rate is based upon previous sampling of the entire Type II stockpile which more adequately represents the surface oxidized layer of the stockpile. Therefore, the proposed limestone application rate for Fall 1996 conservatively represents alkali demand of the 1996 stockpile backfill area.

On October 22 and 23, 1996 Flambeau collected samples from 38 excavations in the stockpiled Type II material proposed to be backfilled during Fall 1996. Evaluation of test pit samples further confirmed that the proposed application rate for the Fall 1996 backfilling of stockpiled Type II material is conservative.

Sample Collection

The Type II stockpile samples were collected from 38 locations. Sample numbers 146 to 171 were collected from test pits excavated by back hoe to a depth of approximately 15 feet which is equal to the Fall 1996 relocation lift height. A representative sample was collected from each test pit by scraping one side of the test pit evenly from bottom to top providing a representative bulk sample. Sample numbers 172 to 183 were collected on the slope of the stockpile. The outer three feet of the slope was removed and a representative sample was collected by scraping the new exposed face

providing a bulk sample. A representative sub-sample, < 1/4" size fraction, was obtained from each bulk sample and retained for future laboratory analysis. A duplicate sample was collected on a frequency of approximately one for every ten sample collection locations. Sample collection locations are shown on Figure 1.

Sub-samples, <1/4" size fraction, representing each quarter of the bulk sample were also collected. The samples were collected in the field and placed in sealed plastic containers for transfer to an on-site laboratory for paste pH and conductivity measurements. Duplicate samples were collected on a frequency of one for every ten sample collection locations. Laboratory results are summarized in the Table 1.

Summary

The additional sampling of 38 locations within the area to backfilled during Fall 1996 has further confirmed that the application rate of 17.2 lb limestone per ton stockpiled Type II material is conservative. Paste pH is an indicator parameter which can be correlated to alkali demand and used to determine limestone application rates. The 17.2 lb/ton application rate is based upon the average alkali demand for all samples collected in the Type II stockpile as presented in the report, Fall 1996 Plan. Table 1 of this document shows that the field pH of the sampled Type II material is similar to that of previous samples collected within the 1996 relocation area. The field pHs indicate that the material is relatively homogeneous and will have a below average alkali demand which will be more than met with the 17.2 lb limestone per ton stockpiled Type II material.

If you have any questions, I can be contacted at 715-532-6690.

Sincerely,

Jana E. Murphy
Supervisor of Environmental Affairs

cc: Al Christianson, City of Ladysmith
Jeff Earnshaw, Flambeau
Jeane Hull, Kennecott Corp.
Jim Hutchison, Foth & Van Dyke
Ken Markart, WDNR
Tom Myatt, Flambeau
Thure Osuldsen, Rusk Co. Chair
Tom Riegel, Town of Grant
Melvin Spencer, Rusk Co. Zoning

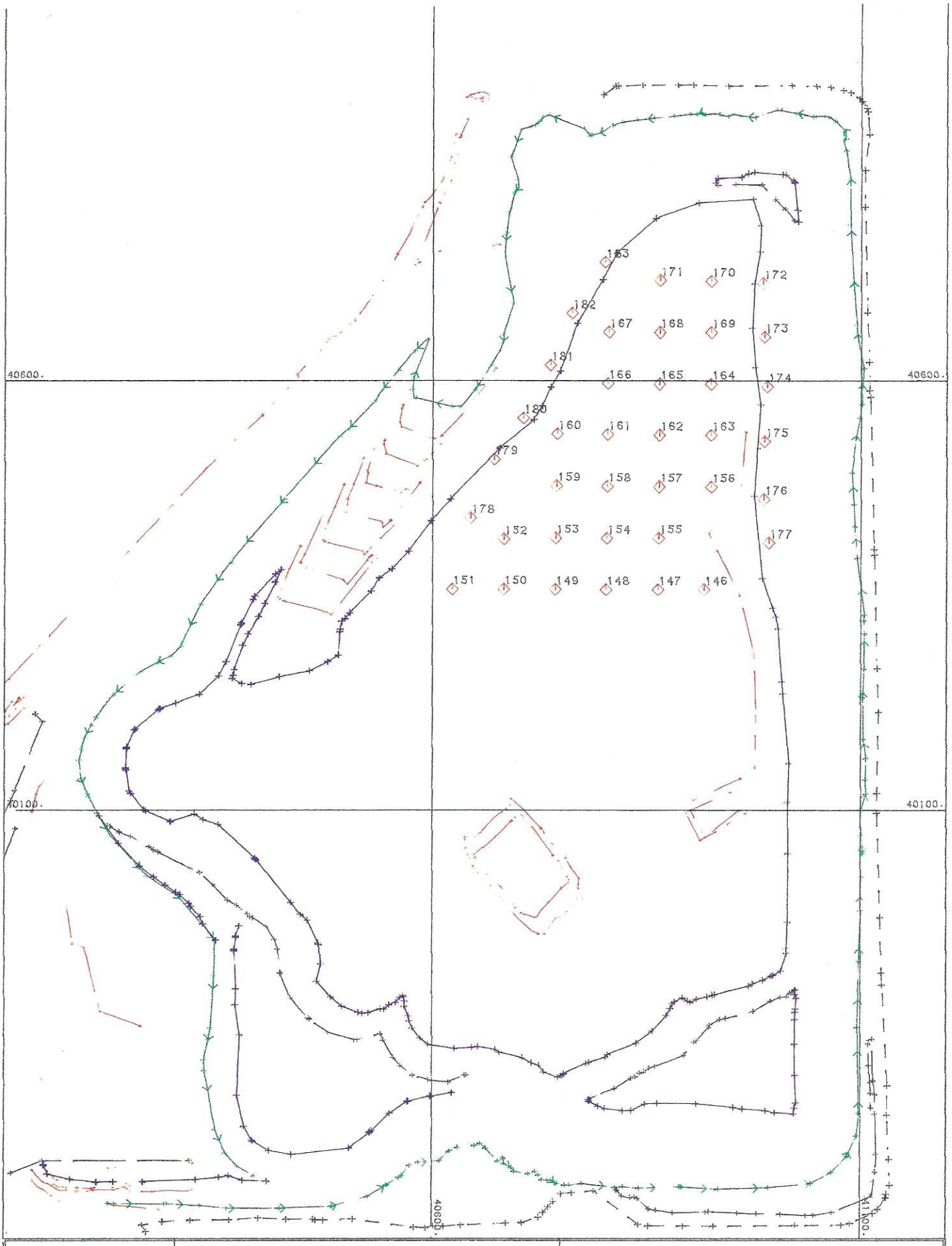

FIG 1 1996 RELOCATION
TYPE II TEST PITS

10-25-96

Table 1

Flambeau Mining Co.
Fall 1996 Relocation
Type II Stockpile Test Pit Summary Table

Test Pit ID	Date Collected	Sample Replicate	Field pH	Conductivity (uS)	Temperature (deg. C)
146	10/23/96	1	5.2	328	21
		2	5.0	344	22
		3	4.9	416	22
		4	5.0	414	23
147	10/23/96	1	6.8	153.8	22
		2	6.4	173.2	23
		3	5.9	220	23
		4	5.6	294	22
148	10/23/96	1	6.8	234	21
		2	6.4	202	22
		3	6.2	219	22
		4	5.4	315	22
149	10/23/96	1	5.3	448	22
		2	5.7	421	22
		3	6.0	351	22
		4	5.5	376	22
150A	10/23/96	1	6.2	365	21
		2	7.0	301	22
		3	6.8	267	22
		4	6.4	358	22
150B Duplicate	10/23/96	1	6.4	352	21
		2	6.6	292	22
		3	6.3	363	22
		4	6.7	234	22
151	10/23/96	1	6.2	180.8	21
		2	5.4	290	22
		3	6.2	145.4	22
		4	5.7	240	22
152	10/23/96	1	6.0	340	22
		2	5.2	503	22
		3	6.6	376	22
		4	5.4	367	22

Table 1 (cont.)

Test Pit ID	Date Collected	Sample Replicate	Field pH	Conductivity (uS)	Temperature (deg. C)
153	10/23/96	1	4.9	439	21
		2	5.3	279	22
		3	5.0	348	23
		4	5.1	375	23
154	10/23/96	1	6.1	134.9	22
		2	4.8	325	22
		3	4.9	289	23
		4	4.8	318	23
155	10/23/96	1	5.2	211	23
		2	5.3	197	23
		3	5.3	241	23
		4	5.3	199	23
156	10/22/96	1	4.7	338	18
		2	5.0	313	19
		3	5.0	246	19
		4	5.3	258	19
157	10/22/96	1	4.6	567	18
		2	4.9	410	18
		3	4.5	621	19
		4	5.0	294	19
158	10/22/96	1	5.5	214	18
		2	5.5	201	18
		3	6.0	119.8	18
		4	4.9	490	18
159	10/22/96	1	5.7	240	18
		2	5.2	386	19
		3	5.1	302	19
		4	5.1	409	19
160	10/22/96	1	5.8	172.3	19
		2	5.0	381.6	19
		3	5.1	472	19
		4	5.6	217	19
161	10/22/96	1	6.3	240	18
		2	5.6	310	19
		3	5.3	443	19
		4	5.6	263	19

Table 1 (cont.)

Test Pit ID	Date Collected	Sample Replicate	Field pH	Conductivity (uS)	Temperature (deg. C)
162	10/22/96	1	6.0	280	17
		2	5.3	465	18
		3	5.6	344	18
		4	6.0	251	18
163	10/22/96	1	6.7	143.8	17
		2	6.5	158.1	18
		3	5.8	314	18
		4	5.8	242	18
164	10/22/96	1	6.3	371	18
		2	6.4	232	18
		3	6.5	271	18
		4	6.7	248	18
165A 0'-9'	10/22/96	1	5.5	376	19
		2	5.3	476	18
		3	6.3	255	18
		4	5.3	415	18
165B 9'-15' pyrite	10/22/96	1	5.2	582	17
		2	5.7	483	17
		3	5.1	717	17
		4	5.0	769	18
166A	10/22/96	1	5.1	344	18
		2	5.8	231	19
		3	5.3	378	19
		4	5.6	415	18
166B Duplicate	10/22/96	1	5.6	281	18
		2	5.3	392	19
		3	5.9	208	19
		4	5.7	355	18
167	10/22/96	1	6.5	275	19
		2	6.1	268	17
		3	6.0	229	17
		4	6.2	213	17
168	10/22/96	1	6.8	244.5	8
		2	7.2	189.6	7
		3	7.4	203.2	7
		4	7.5	191.5	7

Table 1 (cont.)

Test Pit ID	Date Collected	Sample Replicate	Field pH	Conductivity (uS)	Temperature (deg. C)
169	10/22/96	1	6.3	198.2	17
		2	6.2	198	17
		3	6.2	210	17
		4	6.2	206	17
170	10/22/96	1	5.2	665	8
		2	5.2	607	10
		3	5.1	531	8
		4	5.3	569	8
171	10/22/96	1	6.6	261	7
		2	6.2	261	8
		3	6.6	255	8
		4	6.0	343	7
172	10/23/96	1	3.7	1686	22
		2	3.6	1776	22
		3	3.3	1830	22
		4	3.7	1634	22
173	10/23/96	1	4.9	782	21
		2	5.0	688	22
		3	4.8	1106	22
		4	5.1	644	22
174	10/23/96	1	7.2	320	20
		2	7.0	355	22
		3	6.4	354	22
		4	6.2	485	22
175	10/23/96	1	5.0	644	20
		2	4.6	1375	22
		3	4.7	1530	22
		4	4.5	1479	22
176	10/23/96	1	4.2	1472	21
		2	4.3	19.99mS	21
		3	4.3	21.1mS	21
		4	4.3	2.11mS	21
177	10/23/96	1	3.7	1335	20
		2	3.9	1578	21
		3	4.1	1232	21
		4	4.1	1179	22

Table 1 (cont.)

Test Pit ID	Date Collected	Sample Replicate	Field pH	Conductivity (uS)	Temperature (deg. C)
178	10/23/96	1	5.7	603	21
		2	6.9	787	22
		3	6.4	477	22
		4	6.8	784	22
179	10/23/96	1	4.3	1600	21
		2	3.5	2.21mS	22
		3	4.4	1616	22
		4	4.7	779	22
180	10/23/96	1	4.6	1536	20
		2	4.6	1191	21
		3	5.2	579	22
		4	4.5	1438	22
181	10/23/96	1	4.3	1668	22
		2	4.0	1640	22
		3	4.1	1857	22
		4	4.2	1520	22
182	10/23/96	1	4.8	877	21
		2	4.3	2.11mS	21
		3	4.2	1856	23
		4	4.6	1077	23
183	10/23/96	1	4.0	1576	22
		2	4.3	1270	23
		3	4.5	1209	23
		4	4.7	1100	23