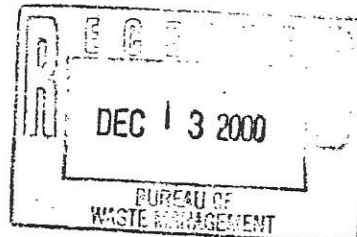


Flambeau Mining Company
N4100 Highway 27
Ladysmith, WI 54848
(715) 532-6690
FAX (715) 532-6885

**Kennecott
Minerals**

December 8, 2000

Mr. Larry Lynch
Bureau of Waste Management
Wisconsin Department of Natural Resources
P.O. Box 7021
Madison, WI 53707-7921



Dear Mr. Lynch:

Re: Groundwater Monitoring Well Nest Installation at Compliance Boundary

In support of the Long-Term Care and Maintenance Plan submitted as part of the Mine Permit Application for the Flambeau Project, Flambeau Mining Company (Flambeau) will install a groundwater monitoring well nest in the northwest corner of the mine project area near the compliance boundary. The purpose of the well nest is to provide data on groundwater levels and geochemistry near the compliance boundary northwest of the mine site property.

Two wells will comprise the MW-1015 well nest. One well (MW-1015A) will be installed within the glacial till overburden. The second well (MW-1015B) will be installed within the shallow bedrock. The proposed well nest location is shown on the attached Figure 1. Displayed in Figure 2 are the general well construction details for the well nest. MW-1015 well nest construction will proceed with the completion of two 8-in diameter boreholes drilled to elevations of approximately 983-ft and 1037-ft msl. The screened interval of the deep well will monitor hydrogeologic conditions within the shallow bedrock. The screened interval of the shallow well will monitor hydrogeologic conditions within the glacial water table aquifer.

The monitoring wells will be installed near approximate elevations described in this memorandum. Actual installation elevations will be determined in the field by a Foth & Van Dyke hydrogeologist.

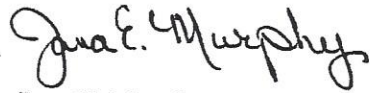
In accordance with monitoring well installation practice at the Flambeau Mine, MW-1015A and MW-1015B will be constructed with 5-ft screens. During construction of the wells, the PVC casing will be hung from the drill rig to maintain straightness. Annular space sealant will be placed in accordance with NR 141 Wis. Admin. Code. Well development will be completed after installation. The wells will be purged until stabilized field readings are achieved.

Mr. Larry Lynch
Wisconsin Department of Natural Resources
December 8, 2000
Page 2

The construction of the well nest is anticipated to occur during mid-late December 2000. This timing should allow wells intercepting groundwater to be developed prior to the January 2001 quarterly monitoring.

Should you have any questions concerning the proposed activities, please contact me at (715) 532-6690 Ext. 2.

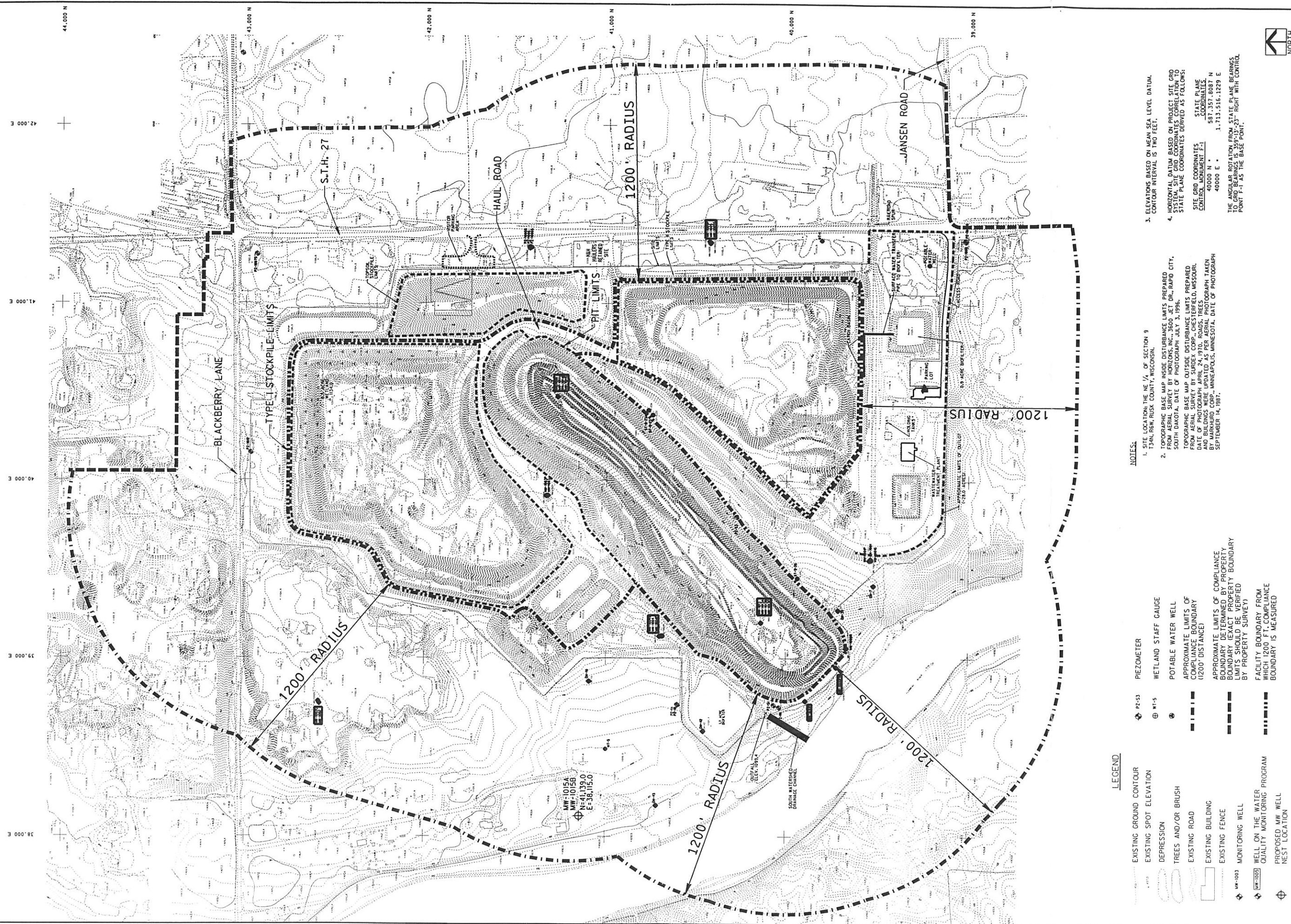
Sincerely,



Jana E. Murphy
Environmental & Reclamation Manager

Attachments

cc: Mr. Al Christianson, City of Ladysmith
Mr. Steve Donohue, Foth & Van Dyke
Mr. Jim Hutchison, Foth & Van Dyke
Mr. Ken Markart, WDNR
Mr. Thure Osuldsen, Rusk County Chairman
Mr. Tom Reigel, Town of Grant
Ms. CeCe Tesky, Rusk County Zoning



- LEGEND**
- EXISTING GROUND CONTOUR
 - EXISTING SPOT ELEVATION
 - DEPRESSION
 - TREES AND/OR BRUSH
 - EXISTING ROAD
 - EXISTING BUILDING
 - EXISTING FENCE
 - MONITORING WELL
 - WELL ON THE WATER QUALITY MONITORING PROGRAM
 - PROPOSED MW WELL NEST LOCATION
 - PIEZOMETER
 - WETLAND STAFF GAUGE
 - POTABLE WATER WELL
 - APPROXIMATE LIMITS OF COMPLIANCE BOUNDARY (1200' DISTANCE)
 - APPROXIMATE LIMITS OF COMPLIANCE BOUNDARY DETERMINED BY PROPERTY BOUNDARY (EXACT PROPERTY BOUNDARY LIMITS SHOULD BE VERIFIED BY PROPERTY SURVEY)
 - FACILITY BOUNDARY FROM WHICH 1200 FT. COMPLIANCE BOUNDARY IS MEASURED

- NOTES:**
1. SITE LOCATION: THE NE 1/4 OF SECTION 9 T34N, R6W, RUSK COUNTY, WISCONSIN.
 2. TOPOGRAPHIC BASE MAP INSIDE DISTURBANCE LIMITS PREPARED BY SURVEYORS, INC., 3600 JET DR., RAPID CITY, SOUTH DAKOTA. DATE OF PHOTOGRAPH: JULY 3, 1996. TOPOGRAPHIC BASE MAP OUTSIDE DISTURBANCE LIMITS PREPARED BY SURVEYORS, INC., 3600 JET DR., RAPID CITY, SOUTH DAKOTA. DATE OF PHOTOGRAPH: APRIL 29, 1970. ROAD, FENCES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORP., MINNEAPOLIS, MINNESOTA. DATE OF PHOTOGRAPH: SEPTEMBER 14, 1987.
 3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS TWO FEET.
 4. HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATE TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:
 STATE PLANE COORDINATES
 40000 N
 587,357.8087 E
 1,713,516.1229 E
 THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO GRID BEARINGS IS 359°13'23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.

FLAMBEAU MINING COMPANY
 LADYSMITH, WISCONSIN
 PROPOSED WELL NEST LOCATION
 COMPLIANCE BOUNDARY MAP
 FIGURE 1
 OCTOBER, 1990

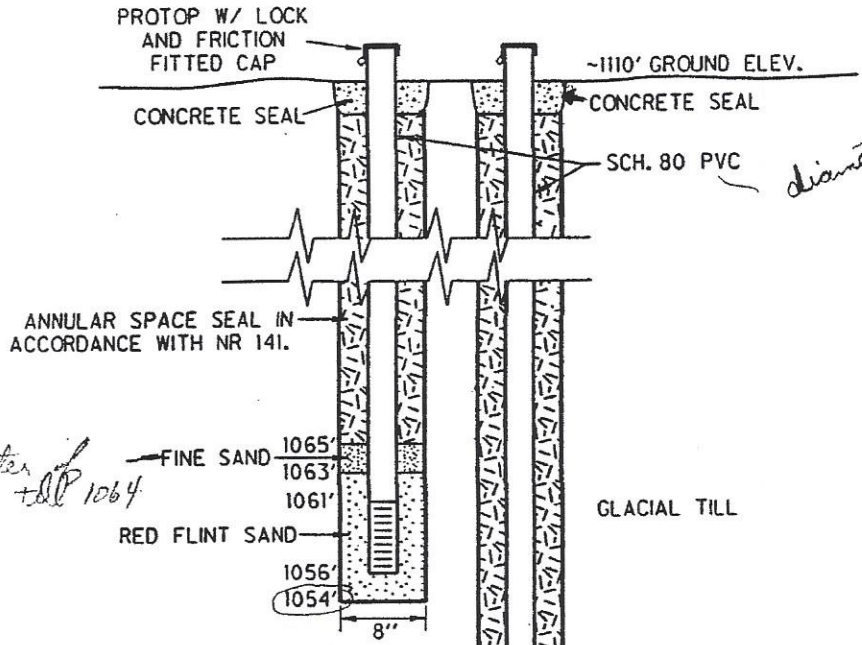
0 250' 500'

Foth & Van Dyke
 CONSULTANTS • ENGINEERS • SURVEYORS

MW-1015 WELL NEST

SHALLOW WELL MW-1015A DEEP WELL MW-1015B

75' bottom of screen
1110



diameter?

center of well 1064

54' - bot screen

bottom - 1037' per letter

61'
92' to 65'

115'

3/8" CHIPPED BENTONITE HYDRATED IN 5' LIFTS

1018' pE SCHIST

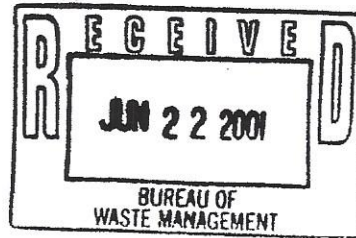
FINE SAND

RED FLINT SAND

bottom @ 983' per letter

FLAMBEAU MINING COMPANY			
FIGURE 2			
PROPOSED WELL NEST FOR COMPLIANCE BOUNDARY MONITORING			
Scale:	NOT TO SCALE	Date:	NOVEMBER, 2000
Prepared By:	Foth & Van Dyke	By:	DAT 00F004

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



Kennecott
Minerals

June 20, 2001

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: Well Construction Documentation (MW-1015A/MW-1015B)
Flambeau Mining Company

Flambeau Mining Company (Flambeau) is submitting the attached reports documenting the construction of the monitoring wells MW-1015A and MW-1015B. These wells were constructed within Flambeau's 1200-foot compliance boundary approximately 1000 feet northwest of the backfilled pit. Flambeau constructed these wells on its own volition to obtain further documentation of continued compliance with Flambeau's groundwater permit standards and provide results of baseline water quality closer to the compliance boundary.

The wells will be monitored monthly for twelve months to compile baseline data. The parameters monitored during this twelve-month period will be the same as the extended parameter list monitored annually for the remainder of Flambeau's monitoring wells. Following the compilation and evaluation of the twelve months of baseline data, Flambeau will submit a proposal for the long-term monitoring of these wells.

If there are any questions regarding this submittal, please contact me at 715-532-6690 or murphyj@kennecott.com.

Sincerely,

Jana E. Murphy
Environmental & Reclamation Manager

Mr. Lawrence J. Lynch
June 20, 2001
Page 2

Attachments

Cc: Al Christianson, City of Ladysmith
Jim Hutchison, Foth & Van Dyke
Ken Markart, WDNR
Thure Osuldsen, Rusk Co.
Tom Riegel, Town of Grant
CeCe Tesky, Rusk Co. Zoning

Attachment 1

Groundwater Monitoring Well Information Form
MW-1015A & MW-1015B
Flambeau Mining Company

State of Wisconsin
Department of Natural Resources

GROUNDWATER MONITORING WELL INFORMATION FORM
Chapter 231 and 239, Wis. Stats.
Form 4400-99

Rev. 7-98

Facility Name
Flambeau Mining Co.

Facility ID Number
855034730

License, Permit or Monitoring No./Date
03180 6-20-01

Completed By (Name and Firm)
Jana E. Murphy, Flambeau Mining Co.

Well Unique No.	Well Name	DNR Well ID Number	Well Location	Dir. N/S/E/W	Date Established	Well Casing			Elevations			Reference			Screen Top	Well Depth	Screen Length	Well Type	Well Status	Enf. Stud.	Grad. Bent	Distance to Waste
						Diam.	Type	Top of Well Casing	Ground Surface	M.S.L. Datum (Y)	Site Datum (Y)											
JN 904	MW-1015A	869	41020.55	N	1/11/01	1.92	P	1103.10	1098.9	✓			62.20	15.61	5	12/ PE	A				S	1000
JN 905	MW-1015B	870	38130.36	E	1/10/01	1.92	P	1103.19	1098.9	✓			147.29	15.92	5	12/ PE	A				S	1000

Horizontal datum based on project site grid system. Site grid coordinates correlation to state plane coordinates derived as follows:

Site Grid Coordinates
Control Monument F-1
40,000 N = 587,357,8087 N
40,000 E = 1,713,516,1229 E

The angular rotation from state plane bearings to site grid bearings is 359°-13'-23" right with control point F-1 as the base point.

Source: Figure 1-2, Mine Permit Application (Revised December 1989)

Location Coordinates Are:
 State Plane Coordinates
 Local Grid System
 Northern
 Central
 Southern

Grid Origin Location: (Check if estimated:)
 Lat. See Above Long. See Above or
 N. See Above E. See Above
 S. See Above W. See Above

Remarks: MW-1015A and MW-1015B are within and adjacent to Flambeau's 1200 ft. compliance boundary.

Completion of this form is mandatory under s. NR 307.14 and NR 310.25 Wis. Admin. Code. Failure to file this form may result in forfeiture of not less than \$5,000 for each day of violation. Personally identifiable information provided is intended to be used by the Department for the purposes related to the waste management program.

Attachment 2

MW-1015A
Monitoring Well Construction/Soil Boring Log
Flambeau Mining Company

Facility/Project Name Flambeau Mining Co.	Local Grid Location of Well 41020.55 ft. <input checked="" type="checkbox"/> N. <input type="checkbox"/> S. 38136.03 ft. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-1015A
Facility (License) Permit or Monitoring No. 03180	Local Grid 40,000N 40,000E	Wis. Unique Well Number J N 9 0 4
Facility ID 8 5 5 0 3 4 7 3 0	St. Plane 587357 ft. N. 1713516 ft. E. S/CN	DNR Well ID No. 8 6 9
Type of Well Piezometer	Section Location of Waste/Source 1/4 of SE 1/4 of Sec. 9, T. 34 N, R. 6 <input type="checkbox"/> E. <input checked="" type="checkbox"/> W.	Date Well Installed 0 1 / 1 1 / 0 1 m m d d y y
Well Code /	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input checked="" type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Well Installed By: (Person's Name and Firm) Mark Bachhaus/Bob Issacson
Distance From Waste/Source 1000 ft. Apply <input type="checkbox"/>	Gov. Lot Number	Layne - Northwest

- A. Protective pipe, top elevation 1103.05 ft. MSL
- B. Well casing, top elevation 1103.10 ft. MSL
- C. Land surface elevation 1098.9 ft. MSL
- D. Surface seal, bottom 0000.0 ft. MSL or 00.0 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

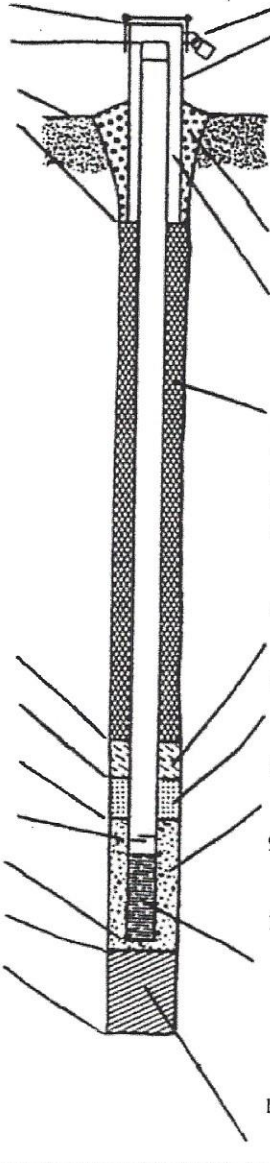
13. Sieve analysis attached? Yes No

14. Drilling method used: Rotary 50
 Hollow Stem Auger 41
 Other

15. Drilling fluid used: Water 02 Air 01
 Drilling Mud 03 None 99

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis):
 City of Ladysmith Shop Well - Potable



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 4.0 in.
 - b. Length: 100 ft.
 - c. Material: Steel 04
Other
 - d. Additional protection? Yes No
If yes, describe: _____
- 3. Surface seal: Bentonite 30
Concrete 01
Other
- 4. Material between well casing and protective pipe: Bentonite 30
Annular space seal
Sand
- 5. Annular space seal: a. Granular Bentonite 33
b. 10.1 Lbs/gal mud weight . Bentonite-sand slurry 35
c. 10.1 Lbs/gal mud weight Bentonite slurry 31
d. _____ % Bentonite Bentonite-cement grout 50
e. 4.5 Ft³ volume added for any of the above
- f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal: a. Bentonite granules 33
b. 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32
c. Hole Plug 3/8" Chipped Bentonite Other
- 7. Fine sand material: Manufacturer, product name & mesh size
a. Unimin 45/65
b. Volume added 0.25 ft³
- 8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint filter #30
b. Volume added 1.67 ft³
- 9. Well casing: Flush threaded PVC schedule 40 23
Flush threaded PVC schedule 80 24
Other
- 10. Screen material: PVC
a. Screen Type: Factory cut 11
Continuous slot 01
Other
- b. Manufacturer Johnson Screens
c. Slot size: 0.0010 in.
d. Slotted length: 0.50 ft.
- 11. Backfill material (below filter pack): None 14
Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Janis A. Koenig for Erik Silvola Firm Foth & Van Dyke

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stat., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stat., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name Flambeau Mining Co.		County Name Rusk		Well Name MW-1015A	
Facility License, Permit or Monitoring Number <u>03180</u>		County Code <u>55</u>	Wis. Unique Well Number <u>JN904</u>	DNR Well Number <u>869</u>	

<p>1. Can this well be purged dry? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>2. Well development method</p> <p>surged with bailer and bailed <input type="checkbox"/> 41</p> <p>surged with bailer and pumped <input type="checkbox"/> 61</p> <p>surged with block and bailed <input type="checkbox"/> 42</p> <p>surged with block and pumped <input type="checkbox"/> 62</p> <p>surged with block, bailed and pumped <input type="checkbox"/> 70</p> <p>compressed air <input type="checkbox"/> 20</p> <p>bailed only <input type="checkbox"/> 10</p> <p>pumped only <input type="checkbox"/> 51</p> <p>pumped slowly <input checked="" type="checkbox"/> 50</p> <p>Other _____ <input type="checkbox"/></p> <p>3. Time spent developing well <u>0045</u> min.</p> <p>4. Depth of well (from top of well casing) <u>067.2</u> ft.</p> <p>5. Inside diameter of well <u>1.92</u> in.</p> <p>6. Volume of water in filter pack and well casing <u>012.2</u> gal.</p> <p>7. Volume of water removed from well <u>170.0</u> gal.</p> <p>8. Volume of water added (if any) <u>000.0</u> gal.</p> <p>9. Source of water added _____</p> <p>10. Analysis performed on water added? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, attach results)</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Before Development</th> <th style="text-align: center;">After Development</th> </tr> </thead> <tbody> <tr> <td>11. Depth to Water (from top of well casing)</td> <td>a. <u>15.61</u> ft.</td> <td><u>11.01</u> ft.</td> </tr> <tr> <td>Date</td> <td>b. <u>03/15/01</u> m m d d y y</td> <td><u>03/15/01</u> m m d d y y</td> </tr> <tr> <td>Time</td> <td>c. <u>11:15</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.</td> <td><u>12:00</u> <input checked="" type="checkbox"/> p.m. <input type="checkbox"/> a.m.</td> </tr> <tr> <td>12. Sediment in well bottom</td> <td><u>0.0.0</u> inches</td> <td><u>0.0.0</u> inches</td> </tr> <tr> <td>13. Water clarity</td> <td>Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)</td> <td>Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)</td> </tr> </tbody> </table> <p>Fill in if drilling fluids were used and well is at solid waste facility:</p> <p>14. Total suspended solids <u>000.0</u> mg/l <u>000.0</u> mg/l</p> <p>15. COD <u>000.0</u> mg/l <u>000.0</u> mg/l</p> <p>16. Well developed by: Name (first, last) and Firm First Name: <u>Jack</u> Last Name: <u>Christman</u> Firm: <u>Independent Contractor representing Flambeau Mining Co.</u></p>		Before Development	After Development	11. Depth to Water (from top of well casing)	a. <u>15.61</u> ft.	<u>11.01</u> ft.	Date	b. <u>03/15/01</u> m m d d y y	<u>03/15/01</u> m m d d y y	Time	c. <u>11:15</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<u>12:00</u> <input checked="" type="checkbox"/> p.m. <input type="checkbox"/> a.m.	12. Sediment in well bottom	<u>0.0.0</u> inches	<u>0.0.0</u> inches	13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
		Before Development	After Development																
11. Depth to Water (from top of well casing)	a. <u>15.61</u> ft.	<u>11.01</u> ft.																	
Date	b. <u>03/15/01</u> m m d d y y	<u>03/15/01</u> m m d d y y																	
Time	c. <u>11:15</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<u>12:00</u> <input checked="" type="checkbox"/> p.m. <input type="checkbox"/> a.m.																	
12. Sediment in well bottom	<u>0.0.0</u> inches	<u>0.0.0</u> inches																	
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)																	

17. Additional comments on development:

<p>Name and Address of Facility Contact/Owner/Responsible Party</p> <p>First Name: <u>Jana</u> Last Name: <u>Murphy</u></p> <p>Facility/Firm: <u>Flambeau Mining Co.</u></p> <p>Street: <u>N4 100 Highway 27</u></p> <p>City/State/Zip: <u>Ladysmith, WI 54848</u></p>	<p>I hereby certify that the above information is true and correct to the best of my knowledge.</p> <p>Signature: <u><i>Jana Murphy for Erik Silvola</i></u></p> <p>Print Name: <u>Erik Silvola</u></p> <p>Firm: <u>Foth & Van Dyke</u></p>
--	---

NOTE: See instructions for more information including a list of county codes and well type codes.

Route To: Watershed/Wastewater Waste Management
Remediation/Revelopment Other

Facility/Project Name Flambeau Mining Co.		License/Permit/Monitoring Number 03180		Boring Number MW-1015A	
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: Mark Last Name: Bachhaus		Date Drilling Started 0_1_ / 1_1_ / 2001_	Date Drilling Completed 0_1_ / 1_1_ / 2001_	Drilling Method 6" air rotary	
Firm: Layne-Northwest		m m d d y y y y	m m d d y y y y		
WI Unique Well No. JN904	DNR Well ID No. 869	Well Name MW-1015A	Final Static Water Level 1092.09 Feet MSL	Surface Elevation 1098.91 Feet MSL	Borehole Diameter 6 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/>		State Plane _____ N, _____ E S/C/N		Local Grid Location (if applicable)	
1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W		Lat _____ ° _____ ' _____ "		41020.55 <input checked="" type="checkbox"/> N 38136.03 <input checked="" type="checkbox"/> E	
Long _____ ° _____ ' _____ "				Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
Facility ID 855034730	County Rusk	County Code 55	Civil Town/City/or Village Grant		

Sample	Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graph Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments		
										Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200			
				10	wet @ 9 - 10'												
				20													
				30													
				40													
				50													
				60	sample at 60 - 62' silty sand with gravel End of Boring	SM											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: James A. Key for Erik Silva Firm: Foth & Van Dyke

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this report is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Attachment 3

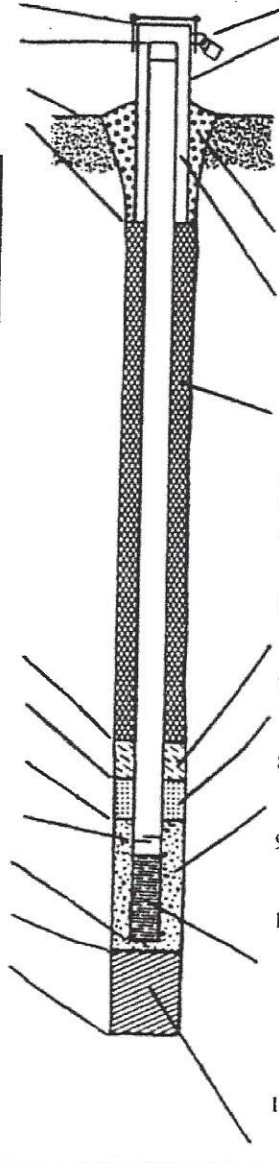
MW-1015B
Monitoring Well Construction/Soil Boring Log
Flambeau Mining Company

Facility/Project Name Flambeau Mining Co.	Local Grid Location of Well 41019.44 ft. <input checked="" type="checkbox"/> N. <input type="checkbox"/> S. 38130.36 ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-1015B
Facility (License) Permit or Monitoring No. 03180	Local Grid 40,000N 40,000E	Wis. Unique Well Number J N 9 0 5
Facility ID 855034730	St. Plane 587357 ft. N. 1713516 ft. E. S/C/N	DNR Well ID No. 8 7 0
Type of Well piezometer Well Code /	Section Location of Waste/Source 1/4 of SE 1/4 of Sec. 9, T. 34 N, R. 6 <input type="checkbox"/> E. <input checked="" type="checkbox"/> W.	Date Well Installed 0 1 / 1 0 / 0 1 m m d d y y
Distance From Waste/Source 1000 ft. Apply <input type="checkbox"/>	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input checked="" type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Well Installed By: (Person's Name and Firm) Mark Bachhaus/Bob Issacson Layne - Northwest

- A. Protective pipe, top elevation 1103.12 ft. MSL
- B. Well casing, top elevation 1103.19 ft. MSL
- C. Land surface elevation 1098.9 ft. MSL

D. Surface seal, bottom 0000.0 ft. MSL or 00.0 ft.

12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14. Drilling method used: Rotary <input checked="" type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____
17. Source of water (attach analysis): City of Ladysmith Shop Well - Potable



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 0.40 in.
 - b. Length: 10.0 ft.
 - c. Material: Steel 04
Other
 - d. Additional protection? Yes No
If yes, describe: _____
- 3. Surface seal: Bentonite 30
Concrete 01
Other
- 4. Material between well casing and protective pipe: Bentonite 30
Annular space seal
Sand
- 5. Annular space seal:
 - a. Granular Bentonite 33
 - b. 11.2 Lbs/gal mud weight . Bentonite-sand slurry 35
 - c. 11.2 Lbs/gal mud weight Bentonite slurry 31
 - d. 11.4 % Bentonite Bentonite-cement grout 50
 - e. 11.4 Ft³ volume added for any of the above
 - f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32
 - c. Hole Plug 3/8" Chipped Bentonite Other
- 7. Fine sand material: Manufacturer, product name & mesh size
a. Unimin 45/65
b. Volume added 0.38 ft³
- 8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint filter #30
b. Volume added 1.22 ft³
- 9. Well casing: Flush threaded PVC schedule 40 23
Flush threaded PVC schedule 80 24
Other
- 10. Screen material: PVC
 - a. Screen Type: Factory cut 11
Continuous slot 01
Other
 - b. Manufacturer Johnson Screens
 - c. Slot size: 0.010 in.
 - d. Slotted length: 5.0 ft.
- 11. Backfill material (below filter pack): None 14
Native cave (rock chips & sand) Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.
 Signature: Dennis A. Keagy for Erik Silvala Firm: Foth & Van Dyke

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stat., and ch. NF 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stat., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stat., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name Flambeau Mining Co.		County Name Rusk	Well Name MW-1015B	
Facility License, Permit or Monitoring Number <u>0 3 1 8 0</u>		County Code <u>5 5</u>	Wis. Unique Well Number <u>J N 9 0 5</u>	DNR Well Number <u>8 7 0</u>

<p>1. Can this well be purged dry? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>2. Well development method</p> <p style="padding-left: 20px;">surged with bailer and bailed <input type="checkbox"/> 41</p> <p style="padding-left: 20px;">surged with bailer and pumped <input type="checkbox"/> 61</p> <p style="padding-left: 20px;">surged with block and bailed <input type="checkbox"/> 42</p> <p style="padding-left: 20px;">surged with block and pumped <input type="checkbox"/> 62</p> <p style="padding-left: 20px;">surged with block, bailed and pumped <input type="checkbox"/> 70</p> <p style="padding-left: 20px;">compressed air <input type="checkbox"/> 20</p> <p style="padding-left: 20px;">bailed only <input type="checkbox"/> 10</p> <p style="padding-left: 20px;">pumped only <input type="checkbox"/> 51</p> <p style="padding-left: 20px;">pumped slowly <input checked="" type="checkbox"/> 50</p> <p style="padding-left: 20px;">Other _____ <input type="checkbox"/> 5</p> <p>3. Time spent developing well <u>0 1 8 0</u> min.</p> <p>4. Depth of well (from top of well casing) <u>1 5 2.3</u> ft.</p> <p>5. Inside diameter of well <u>1.9 2</u> in.</p> <p>6. Volume of water in filter pack and well casing <u>2 4.9</u> gal.</p> <p>7. Volume of water removed from well <u>2 2 8.0</u> gal.</p> <p>8. Volume of water added (if any) <u>0 0 0.0</u> gal.</p> <p>9. Source of water added _____</p> <p>10. Analysis performed on water added? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, attach results)</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Before Development</th> <th style="text-align: center;">After Development</th> </tr> </thead> <tbody> <tr> <td>11. Depth to Water (from top of well casing)</td> <td>a. <u>1 5.9 2</u> ft.</td> <td><u>1 2.1 0</u> ft.</td> </tr> <tr> <td>Date</td> <td>b. <u>0 3/1 5/0 1</u> m m d d y y <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.</td> <td><u>0 4/1 9/0 1</u> m m d d y y <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.</td> </tr> <tr> <td>Time</td> <td>c. <u>1 2:0 8</u> <input checked="" type="checkbox"/> p.m.</td> <td><u>0 8:2 0</u> <input type="checkbox"/> p.m.</td> </tr> <tr> <td>12. Sediment in well bottom</td> <td><u>0 0.0</u> inches</td> <td><u>0 0.0</u> inches</td> </tr> <tr> <td>13. Water clarity</td> <td>Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)</td> <td>Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)</td> </tr> </tbody> </table> <p>Fill in if drilling fluids were used and well is at solid waste facility:</p> <p>14. Total suspended solids <u>0 0 0 0.0</u> mg/l <u>0 0 0 0.0</u> mg/l</p> <p>15. COD <u>0 0 0 0.0</u> mg/l <u>0 0 0 0.0</u> mg/l</p> <p>16. Well developed by: Name (first, last) and Firm First Name: Jack Last Name: Christman Firm: Independent Contractor representing Flambeau Mining Co.</p>		Before Development	After Development	11. Depth to Water (from top of well casing)	a. <u>1 5.9 2</u> ft.	<u>1 2.1 0</u> ft.	Date	b. <u>0 3/1 5/0 1</u> m m d d y y <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>0 4/1 9/0 1</u> m m d d y y <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Time	c. <u>1 2:0 8</u> <input checked="" type="checkbox"/> p.m.	<u>0 8:2 0</u> <input type="checkbox"/> p.m.	12. Sediment in well bottom	<u>0 0.0</u> inches	<u>0 0.0</u> inches	13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
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17. Additional comments on development:

<p>Name and Address of Facility Contact/Owner/Responsible Party</p> <p>First Name: <u>Jana</u> Last Name: <u>Murphy</u></p> <p>Facility/Firm: <u>Flambeau Mining Co.</u></p> <p>Street: <u>N4 100 Highway 27</u></p> <p>City/State/Zip: <u>Ladysmith, WI 54848</u></p>	<p>I hereby certify that the above information is true and correct to the best of my knowledge.</p> <p>Signature: <u>Jana A. Key for Erik Silvola</u></p> <p>Print Name: <u>Erik Silvola</u></p> <p>Firm: <u>Foth & Van Dyke</u></p>
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NOTE: See instructions for more information including a list of county codes and well type codes.

Route To: Watershed/Wastewater Waste Management
Remediation/Revelpment Other

Facility/Project Name Flambeau Mining Co.		License/Permit/Monitoring Number 01380		Boring Number MW-1015B	
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: Mark Last Name: Backhaus		Date Drilling Started 01 / 09 / 2001 m m d d y y y y	Date Drilling Completed 01 / 11 / 2001 m m d d y y y y	Drilling Method 6" air rotary	
WI Unique Well No. JN905	DNR Well ID No. 870	Well Name MW-1015B	Final Static Water Level 1091.09 Feet MSL	Surface Elevation 1098.91 Feet MSL	Borehole Diameter 6 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/>			Local Grid Location (if applicable)		
State Plane _____ N, _____ E S/C/N 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E/W		Lat _____ ° _____ ' _____ "	Long _____ ° _____ ' _____ "	41019.44 <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> E Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	
Facility ID 855034730	County Rusk	County Code 55	Civil Town/City/or Village Grant		

Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graph Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			0.5	0.5 dark brown (7.5 YR4/3)	SM-SP										
				silty fine medium sand minor gravel											
			10	5 - 10' dark brown (7.5YR 4/3 - 4/4) silty gravelly fine sand - fine sand gravel wet at 9' with cobbles	SM-GM										
				15 - 20' as above gravel sl. coarser	SM-GM										
			20	20 - 25' gravel cleaner and coarser	GM-GP										
				23 - 25' brown (7.5 YR 5/4) silty fine - medium sand with gravel (minor c. sand) (till)	SM										
				25 - 30' as above sl. finer (till)	SM										
			30	30 - 35' Brown (7.5 YR 5/4- 5/5) fine to course sand with silt & minor gravel	SM-SP										
				35 - 40' as above	SM-SP										
			40	40 - 45 as above fine to medium sand with gravel (till)	SM-SP										
				45 - 50' Brown (10Y/R 5/4 - 4/4) medium to coarse sand some gravel and cobbles (till)	SM-GM										
			50	50 - 55' as above											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Opis A Key for Erik Silvala Firm: Foth & Van Dyke

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this report is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

