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DEPARTMENT OF JUSTICE

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April 23, 2010

Mr. Glenn M. Stoddard
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130 South Barstow Street
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Re: Notice of Intent to File Citizen Suit under Wis. Stat. § 293.89 – Flambeau
Mine

Dear Mr. Stoddard:

By letter dated January 26, 2010, you responded to the November 10, 2009, letter I sent to you on behalf of the Wisconsin Department of Natural Resources (DNR) following our September 16, 2009, meeting at the DNR offices in Eau Claire. Our November 10 letter describes the attendees of the meeting and acknowledgement of your request that DNR commit to writing a summary of certain factual information concerning matters on which we appear to be in agreement or common understanding. This followed your June 16, 2009, Notice of Intent to File a Citizen Suit (NOI) under Wis. Stat. § 293.89, and our agreement to open a dialogue on issues raised in the NOI concerning DNR's regulation of the mine site.

Your letter is 18 pages long, single-spaced, not including several exhibits. Your letter raises 19 sets of separately headed issues (A. to S.), plus three sets of numerous recommendations, each involving references to other sources. We hope you can appreciate the time and effort it has taken to review and respond to your letter in a thoughtful way.

It is apparent from your letter that you expected more than what we believe we had offered to provide. We thought you wanted a response with respect to two primary issues – 1) stormwater discharges from the biofilter into Stream C, and 2) groundwater monitoring, with regard to which you asserted there was a violation of law or failure to perform a nondiscretionary duty. In addition to issues that were discussed at our meeting, you repeat issues that were discussed in our November 10 letter, and raise additional issues for which we were not aware you sought a response. We note that you appear to raise several issues or make recommendations that go beyond the scope of the subject of a citizen suit under Wis. Stat. § 293.89, which requires a showing of a violation of law or the failure of DNR to perform a nondiscretionary duty.

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Although we continue to appreciate your willingness to continue discussions, we are finding some of those discussions to be redundant and not productive. Still, there are issues identified in your most recent letter to which we are glad to respond or clarify. I have checked with the DNR and can report the agency's position on those issues as follows. Our response below uses the headings in your January 26, 2010, letter.

A. Designation of Stream C as an impaired water.

You state that at our meeting DNR staff gave the impression that they would pursue the listing of Stream C as impaired. To be more accurate, we believe DNR conveyed that DNR staff would explore the eligibility and propriety of Stream C for such designation under applicable criteria in the law. Stream C is an intermittent navigable stream. As a navigable waterway, Stream C is eligible as a water of the state for such designation provided it meets applicable criteria. *See Wis. Stat. § 281.65(4)(c), (4c)(am)1.b. and (d)2., Wis. Admin. Code chs. NR 153 & 155. WDNR, Draft Wisconsin 2010 Consolidated Assessment and Listing Methodology Guidance (WisCALM) (November, 2009) <http://dnr.wi.gov/org/water/condition/WisCALM%20November%2030%202009.pdf>.* DNR is taking measures to include Stream C on the list of waters to undergo impaired waters evaluation for potential listing. This activity does not mean Stream C is impaired. It simply means DNR will determine whether Stream C should be classified as an impaired water.

B. Reactivation of the SW-C6 sampling site in Stream C.

You request DNR to reactivate the SW-C6 sampling site in Stream C close to where Stream C enters the Flambeau River. As you point out, this site has not been sampled since 2005. This request appears to be a renewed request. On August 12, 2007, Laura Furtman wrote to DNR Phil Fauble and in point #5 at 2 states, "I noticed that the July 2007 report issued by FMC did not include any test results for the SW-C6 sampling site (where Stream-C discharges into the Flambeau River). In light of ongoing pollution problems in Stream-C, I suggest that SW-C6 be sampled as part of the expanded monitoring."

Please note that the SW-C6 sampling site on Stream C was not required by DNR regulation or permit. As part of the reclamation regulatory process on August 5, 2004, FMC proposed and DNR accepted a work plan for monitoring Stream C. It included the SW-C6 sampling site on Stream C and a monitoring plan scheduled to run through 2005. The results of this monitoring, including those from the SW-C6 sampling site, were submitted to DNR for review. Sampling was discontinued at the SW-C6 sampling site as anticipated under the work plan. During subsequent submittals by FMC to DNR, including during the Industrial Outlot Plan and Biofilter Management Plan processes, neither FMC nor DNR proposed reactivation of the SW-C6 sampling site, while other sampling points were proposed and ultimately included. We believe this is likely because the sampling sites closer to the biofilter would have picked up

potentially higher concentrations of pollutants from that source than at the SW-C6 sampling site, and would have acted as the sentinels for determining whether to reactivate the SW-C6 sampling site, such as in the event results from the upstream sampling sites suggested significant downstream effects might occur.

In May 2007 your clients entered into a Stipulation and Order In the Matter of the Application of Flambeau Mining Company for Issuance of a Certificate of Completion of Reclamation, Case No. IH-07-05. In Stipulation paragraph 6.c., FMC agreed to the monitoring of "[s]urface water at the three points where focused runoff leaves the mine in the Flambeau River above and below the mine site, including below the point of discharge of Stream C to the Flambeau River twice per year for five years." The Stipulation entered after extensive negotiations involving FMC, DNR, your clients, and several other environmental groups provided for monitoring of water quality parameters of sulfate, copper, iron, manganese, zinc, PH, hardness, and conductivity at several points. Your clients agreed to a stipulation to a water sampling protocol that did not include SW-C6. Because the DNR neither required sampling at this location nor required its evaluation for its effectiveness as a long-term monitoring point, DNR does not feel it is appropriate to require indefinite water quality monitoring at this location.

- C. Classification of the 0.9-acre biofilter in the Industrial Outlot as a point source discharge.**
- D. Issuance of a Wisconsin Pollution Discharge Elimination ("WPDES") stormwater discharge permit for the discharges by FMC from the Mine site to Stream C and the Flambeau River.**

We address these two points together. Under point C you state that DNR does not view discharges from the biofilter to be "point source" subject to the WPDES requirements of Wis. Stat. ch. 283. However, you assert that "Dr. David Chambers disagreed with Attorney Graff at the meeting and stated we consider the biofilter to be a point source discharge." You assert this issue warrants further consideration by DNR. Under point D you assert failure to obtain or require a WPDES permit for the discharge of storm water from the biofilter constitutes a violation of federal and state law, at least in part because the biofilter is a point source. First, it is DNR's position that the issue -- whether discharges from the biofilter is from a point source that requires a WPDES permit -- is a legal, not factual issue. We are not aware that Dr. Chambers is a legal authority on the question. His appears to be a lay view on a legal question. Second, DNR's position on the legal question was fully explained in our November 10, 2009, letter at 3-4. By the same token, you have not responded with legal reasoning why storm water discharges from the biofilter are required by law to be subject to WPDES requirements. By saying that "DNR should require FMC to obtain a WPDES storm water discharge permit," you appear to suggest that DNR has the authority under certain circumstances, but not necessarily a legal obligation, to impose water quality based effluent limits in a biofilter storm water discharge permit. If that is your assertion, we agree. *See* our November 10, 2009, letter at 4. If we do not

agree, you may be missing the distinctions in the law between most point sources (that usually are required to meet WPDES numerical effluent limits), storm water point sources (that are not required to meet WPDES numerical effluent limits), and storm water discharges that are regulated by mine permits. As you request, we have further considered this matter, and try again to explain.

On the general question of how to regulate point source discharges of storm water, the issue is not simply whether the biofilter is a point source. Rather, it is whether the biofilter is a point source that is required to meet the requirements in Wis. Stat. § 283.31 (WPDES program, which provides for both technology-based and numerical water quality-based effluent standards).

Wisconsin Stat. § 283.01(12) provides the following pivotal definition:

(12) "Point source" means either of the following:

(a) A discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants may be discharged either into the waters of the state or into a publicly owned treatment works *except for a conveyance that conveys only storm water.*

(b) A discernible, confined and discrete *conveyance of storm water for which a permit is required under s. 283.33 (1).*

(Emphasis added.)

It appears clear from this definition that there are two distinct types or classes of point sources. It is also clear that the two classes of point sources are exclusive of each other and may be regulated differently. The ordinary, general, and broad definition of point source in subpar. (12)(a) excepts and excludes all conveyances of *storm water* from the general class of point sources recognized in subpar. (12)(a). The purpose of this distinction is evident -- most point source discharges are to be regulated under Wis. Stat. § 283.31, while point source discharges of storm water ordinarily are to be regulated separately and differently under Wis. Stat. § 283.33.

The significance of the language in subpar. (12)(a) stating "except for a conveyance that conveys only storm water" cannot be overstated. The Legislature could have treated point source discharges of storm water identically to other point sources. The Legislature could have included point sources of storm water within the ordinary definition of "point source" by not including both the exception language in subpar. (a) and the storm water provision in subpar. (b). Or, it could have expressly included point sources of storm water within the definition of point

source in subpar. (a) and not enacted subpar. (b) or Wis. Stat. § 283.33. The Legislature could have provided that point sources of storm water can or should be regulated like any other point source, that is under Wis. Stat. § 283.31, entitled, "Water pollutant discharge elimination system; permits, terms, conditions." It did none of these things. Instead, it expressly excluded from the definition and scope of point source in subpar. (a) any "conveyance that conveys only storm water." The Legislature went on to expressly provide in subpar. (b) that storm water conveyances are subject to regulation as point sources only under Wis. Stat. § 283.33(1). This is reinforced by the language in the regulatory sections of Wis. Stat. ch. 283.

Wisconsin Stat. § 283.31(1) provides in pertinent part:

(1) The discharge of any pollutant into any waters of the state or the disposal of sludge from a treatment work by any person is unlawful unless such discharge or disposal is done under a permit issued by the department under this section *or s. 283.33*. . . .

(Emphasis added.)

Wisconsin Stat. §§ 283.01(12)(b) and 283.33, of course, specifically provide for how point source storm water discharges shall be regulated.

As explained in our November 10, 2009, letter, point source discharges of storm water ordinarily would be subject to one of the DNR's Wis. Admin. Code ch. NR 216 storm water permits issued pursuant to Wis. Stat. § 283.33. Wisconsin Admin. Code ch. NR 216 stormwater permits are required to and generally contain narrative effluent limits in the form of structural treatment and operational practice requirements, including "best management practices" or "BMPs," as the basis for controlling runoff pollution.¹ *E.g., see* Wis. Admin. Code §§ NR

¹ Although the term "narrative effluent limits" might be interpreted to suggest a numerical effluent limit, that interpretation would be wrong. EPA and DNR use that term to describe BMPs. For example, EPA states in its storm water discharge rule (<http://www.epa.gov/npdes/regulations/phase2.pdf>), "Narrative effluent limitations *in the form of* BMPs may still be the best means of achieving those reductions." 64 Fed. Reg. 68722, 68753 (Dec. 8, 1999) (emphasis added). "Because NPDES permits can impose end-of-pipe numeric effluent limits, narrative effluent limits *in the form of* 'management' program requirements are also within the scope of Clean Water Act authority." *Id.* at 68765 (emphasis added). *See also* 40 CFR § 112.34 (1999), *id.* at 68843, stating,

For purposes of this section, narrative effluent limitations requiring implementation of best management practices (BMPs) are generally the most appropriate form of effluent limitations when designed to satisfy technology requirements (including reductions of pollutants to the maximum extent practicable) and to protect water quality. Implementation of best management practices consistent with the provisions of the storm water management program required pursuant to this section and the provisions of the permit required pursuant to § 122.33 constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable."

216.002(1), 216.27-216.29. DNR has the authority to impose water quality based numerical effluent limits on storm water discharges and may do so in the future via total maximum daily load (TMDL) limits, or may decide to use a combination of numerical and narrative limits (BMPs). However, as previously explained in our November 10, 2009, letter at 3-4, storm water discharges from the mine are governed by the mine permit in the manner there described. *See* Wis. Admin. Code § NR 216.21(4)(a).

While DNR does not have a nondiscretionary duty to regulate point sources of storm water under the WPDES provisions of Wis. Stat. § 283.31, the language of the statutes provide DNR with the discretionary authority to use its WPDES authority for storm water point source discharges where necessary. Indeed, DNR has interpreted the law this way in its administration of the statutes.

As stated in our November 10, 2009, letter at 4:

DNR has the authority to regulate storm water point source discharges from mining sites in order to achieve water quality standards as deemed necessary. In Wis. Admin. Code § NR 216.25(3)(c), this is authorized as follows:

(3) INDIVIDUAL PERMIT COVERAGE. If it determines that one or more of the following conditions are met, the department **may require** that a storm water discharge be covered by an individual WPDES permit under s. 283.31 or 283.33, Stats.:

....

(c) Effluent limitations or standards are promulgated for a storm water discharge.

(Emphasis added)

There are no numerical effluent limitations or standards for storm water discharges from industrial mining storm water discharge sites, and based on the monitoring data to date, DNR does not believe that the exercise of the authority under Wis. Admin. Code § NR 216.25(3)(c)

See also, Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) (May 27, 2009), § 2.1.2 at 13, http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf, and, "The permit clearly distinguishes between the effluent limitations (or effluent limits) from the requirements relating to the development of the SWPPP. Effluent limits (in Part 2, and for select industrial sectors, in Part 8) are qualitative and quantitative *control requirements* to which all permittees are subject . . ." Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges From Industrial Activities, 73 Fed. Reg. 56572, 56574 (Sept. 29, 2008), http://www.epa.gov/npdes/regulations/msgp2008_fr.pdf (emphasis added).

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can be justified. To date the storm water discharges from the Flambeau Mine have met the relevant requirements in the mining permit, so under Wis. Admin. Code § NR 216.21(4)(a), separate storm water permit coverage is not required. However, DNR continues to diligently monitor the situation.

E. Elimination of contaminated surface water discharge from Stream C.

You state that during our meeting "DNR suggested eliminating the 0.9 acre biofilter in the Industrial Outlot and replacing it with an infiltration gallery as a way of eliminating discharge of contaminated surface water runoff from the mine site to Stream C." While you expressed a concern about such a system potentially allowing contaminated groundwater from the system to make its way to Stream C, you state, "we believe this could be a workable solution to the problem." You ask that DNR follow up on this and provide further information regarding the feasibility of constructing an infiltration gallery at the site.

Although it may be an overstatement to say that DNR "suggested" eliminating the biofilter by replacing it with an infiltration basin(s), we agree this is an idea well worth exploring. Preliminary review of this idea suggests it is worth serious consideration and review provided the effect of removing, closing, or reengineering the biofilter are properly evaluated. DNR has broached this idea with FMC, which is reviewing these issues and preliminary response is positive. In the event this idea becomes a workable option, your client's cooperation in making it happen may be expected. We hope to have more to report to you on this in the near future.

F. Clarification of the location of the Flambeau Mine compliance boundary.

You ask for DNR to confirm whether the map provided by Lyman Wible and Lawrence Lynch in your referenced exhibits shows the compliance boundary for the Flambeau Mine site set forth in the permit. You ask that if the boundary has been altered, to let you know of any changes made. You do not indicate the purpose of your assertion, although we can assume it is for the purpose of further arguing that the law requires monitoring wells at that boundary, including the boundary shown west of the Flambeau River.

We can confirm that the map provided by Lyman Wible and Lawrence Lynch in your referenced exhibits shows a compliance boundary designation for the Flambeau Mine site as set forth in the permit. This boundary was dictated by administrative rule. For example, see "Application of Flambeau Mining Company for Permits to Build and Operate a Surface Mine in Rusk County, Wisconsin" (hereafter Mine Permit), Docket No. IH-89-14, (January 14, 1991), Conclusions of Law (COL) #9.a. at 89. The mapped compliance boundary is consistent with the rule. As stated in our letter of November 10, 2009, at 5-6, "The Compliance Boundary was set in

Condition 9(a) at 89 of the Mining Permit Approval at 1,200 feet from the outer perimeter of the pit/stockpiles, except for property boundary restrictions."

However, there are other components to the groundwater protection requirements of the law which affect the operation, monitoring, and use of the compliance boundary. They include the hydrogeology, legal purpose of the compliance boundary, and required monitoring that bear on the point you appear to be trying to make. These negate the implicit assertion that monitoring wells are required by law to be established at the mapped compliance boundary west of the Flambeau River.

First, the rule that creates the compliance boundary assumes that groundwater moving from the area of a contamination source could reach that boundary. However, all the evidence available indicates that the Flambeau River forms a groundwater discharge boundary so there is no, and cannot be, any movement of contaminated groundwater toward the mapped southwest compliance boundary beyond the Flambeau River. Any groundwater flowing through the mine site eventually discharges into the Flambeau River. This is the case even in deeper flow systems. Groundwater at the mapped compliance boundary west of the river is therefore at no risk of contamination from the mine. Another way of thinking of this might be to say the de facto compliance boundary is at the river. Because there is no groundwater discharge from the mine site migrating beyond this boundary, there is no need for monitoring at the compliance boundary west of the river for groundwater protection purposes and, consequently, no such requirement was included in the mining permit. As we stated in our November 10, 2009, letter at 6:

This [compliance] boundary, however, is modified by the presence of the Flambeau River within 140 feet of the western edge of the backfilled pit. The Mining Permit was approved based on the assertion made in Flambeau's Mining Permit Application submitted in final form on December 29, 1989 (hereafter the "Mining Permit Application") that the Flambeau River serves as a "hydraulic boundary" for any liquids migrating out of the backfilled pit and that the modeling showed that "[w]hile sulfate and manganese are both above the background concentrations and standards" they would not be an issue since "[a] comparison of the projected incremental increases in Flambeau River concentrations to average Flambeau River concentrations shows that the projected incremental increases are so low, that they would not even be detectable in river water" See Mining Permit Application, s. 5.7.1.2, p. 148. This then was the standard that had to be met by the Flambeau Mining Company in regards to protection of the Flambeau River from potential impacts from groundwater seeping from the backfilled pit.

Second, there is no requirement that monitoring wells be placed at the compliance boundary in the absence of DNR approval or requirement. The language of the rules you cite expressly condition the requirement to place monitoring wells on approval by the DNR. Such an

approval is not mandated by law, but rather is a judgment call based upon relevant factors. This makes eminent sense because the several intervention boundary wells are intended to monitor groundwater quality long before contamination may or may not risk causing exceedence of standards at the compliance boundary. If it appears that detected contamination at an intervention well may cause exceedence of a groundwater standard at the compliance boundary, further regulatory action could include "investigation of suspected groundwater contamination . . . as directed by the department" (Mine Permit Conditions, Part 1 General Conditions, #9.d)4. at 93), including the requirement for more monitoring wells between the intervention and compliance boundary and/or at the compliance boundary. Until the intervention wells suggest a risk of contamination and exceedence of standards at the compliance boundary, compliance boundary wells are unnecessary.

Third, Mine Permit Conditions, Part 1 General Conditions, #9.c) at 92-93 and Mine Permit Part 4, "Monitoring Plan Approval," starting at 119, provide for all the required groundwater monitoring, which includes monitoring well nests at the intervention boundary. No wells are required at the compliance boundary in the permit. They provide the approval for monitoring sites, sampling and testing parameters, and conditions for monitoring, and requires submissions for additional monitoring sites as the project stages progressed. None of the sites proposed or approved were sites on the mapped compliance boundary, including west of the east boundary of the Flambeau River. Mine Permit General Findings of Fact (FOF) #75 provides with respect to the "monitoring components contained in the mining permit," that "the monitoring plan provides adequate assurance that environmental changes resulting from the mining project will be detected and evaluated." To our knowledge neither this finding nor the designated monitoring sites or those designated since that time were judicially reversed. Groundwater monitoring sites have been established and legally modified. They remain in effect as the only monitoring wells required by law. The issue of whether there is required by law additional groundwater monitoring sites, absent additional good reason for DNR to decide whether to require them, is long past due for administrative or judicial review. DNR remains willing, of course, to consider new information that may cause it to require additional monitoring or remedial measures consistent with the law. That information, however, must be based on more than concern or speculation.

G. Clarification of the applicable water quality standards for the mine's compliance boundary.

In this section you suggest there is confusion in our November 10, 2009, letter over applicable water quality standards for the mine's compliance boundary. You assert, "Clearly, it seems DNR has confused FMC's predictions regarding surface water quality in the Flambeau River with the groundwater quality standards established in the Flambeau Mine Permit for the compliance boundary." You assert "[t]his mistake should be corrected by DNR, and . . . an acknowledgement . . . that the groundwater quality standards . . . are indeed the applicable

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standards for the compliance boundary, regardless of the presence or absence of detectable levels of pollutants in the Flambeau River."

There is no mistake, and there should be no confusion. First, the compliance boundary encircles the mine site. The compliance boundary north, east, and south of the mine site where groundwater is not discharged to the Flambeau River remains relevant. Second, we agree that the groundwater quality standards in the mining permit are the applicable standards for the compliance boundary, regardless of the presence or absence of detectable levels of pollutants in the Flambeau River. We disagree, however, whether the compliance boundary west of the Flambeau River has any practical relevance. *See* discussion above.

H. Additional monitoring wells to better assess movement of contaminated groundwater toward the mine's southwest compliance boundary and into the Flambeau River.

Your letter asserts that there should be "additional monitoring wells . . . to better assess movement of contaminated groundwater toward the southwest compliance boundary and into the river." There are already several groundwater monitoring wells between the mine site and the Flambeau River. As stated above, understand that the Flambeau River forms a groundwater discharge boundary so there is no, and cannot be, any movement of contaminated groundwater toward the mapped southwest compliance boundary beyond the Flambeau River.

On the issue whether DNR should require additional monitoring wells for the purpose of protecting surface water quality of the Flambeau River, DNR does not believe there is an adequate basis for requiring the additional monitoring you request, and DNR has no information on which to believe that it has a nondiscretionary duty to do so. Based on all the information available, both produced in the past and continuing to be submitted, DNR believes that current monitoring is adequate to meet the requirements of the law and for protection of the environment, including the river. DNR remains ready, of course, to consider new information that may cause it to require additional monitoring or remedial measures consistent with the law. That information, however, must be based on more than concern or speculation.

You cite five reasons why you believe the additional monitoring is required, although we believe that these points were adequately addressed in our November 10, 2009, letter to you.

To summarize, we acknowledge that the contaminant levels detected in the backfilled pit do not match the levels predicted in the original geochemical models prepared for the Mining Permit Approval in 1991. It is important to understand the limitations of any predictive models and that their primary usefulness is in helping to define systems in a general way and see how they would respond to different inputs. They are never intended to be absolute predictors of

behavior and their usefulness can be significantly affected by unpredicted factors, one of which occurred here and was described in our previous letter.

The groundwater flow has mostly reestablished itself and is flowing generally from the northeast to the southwest toward discharge into the Flambeau River as predicted. As was stated in our previous November 10, 2009 letter to you, the elevated concentrations in well MW-1000PR have been evaluated and found not to pose a threat to the water quality of the Flambeau River. The position and construction of the existing groundwater monitoring network was extensively evaluated and debated during the initial mine permitting process and established in the 1991 Mining Permit after presentation of evidence and testimony by a number of environmental groups and the Public Intervenor who provided expert testimony on the issue. The Department has seen no evidence that the logic applied at the time was faulty or that a reopening of the mining permit is necessary. Any new monitoring points would be of very limited usefulness since there would be no pre-mining background water quality data to compare with existing data. In addition, any well established between the pit and the river would likely be completed in unmined metallic sulfide ore, most likely resulting in the same problems associated with interpreting groundwater quality results as that from well MW-1000PR.

I. Compliance boundary monitoring wells.

Your letter at 6 points out that FMC's 2008 Annual Report at App. B-3, B-4, and B-6 references the MW-1015 well as one of the "Intervention Boundary Wells" even though our November 10, 2009, letter at 8 refers to it as a compliance boundary well. You ask that this discrepancy be resolved. You are correct, this is a discrepancy in the language used to describe this well that should be clarified. MW-1015 is described in the following correspondence and annual report as an intervention boundary well. According to the January 29, 2009, Memorandum in FMC's 2008 Annual Report at B-1, "Wells MW-1015A and MW-1015B . . . were constructed in January 2001 approximately 1000 ft. northwest of the backfilled pit and adjacent to the compliance boundary." MW-1015A and MW-1015B are listed at B-4 and B-6 under the heading on B-3 and B-6, respectively, as "Intervention Boundary Wells." The enclosed December 8, 2000, letter at 1 from Kennecott Minerals (Murphy) to DNR (Lynch) indicated, "[i]n support of the Long-Term Care and Maintenance Plan submitted as part of the Mine Permit Application for the Flambeau Project," Flambeau Mining Company intended to install MW-1015 "to provide data on groundwater levels and geochemistry near the compliance boundary northwest of the mine site property." By this time, active mineral extraction had concluded and reclamation plans were being drafted and implemented. The well was not proposed as a required intervention boundary well or compliance boundary well as part of the mining permit. The enclosed June 20, 2001, letter (with attachments) from FMC (Murphy) to DNR (Lynch) confirms, "Flambeau constructed these wells on its own volition to obtain further documentation of continued compliance with Flambeau's groundwater standards and provide results of baseline water quality closer to the compliance boundary." MW-1015A and MW-

1015B were not required by DNR, but were voluntarily proposed, constructed and operated by FMC without formal DNR approval or objection. Although this well nest is neither an intervention boundary well nor compliance boundary well, in practicality it acts more as an intervention boundary well than as a compliance boundary well because of its location inside the compliance boundary and its purpose is to provide groundwater quality information before potentially contaminated groundwater reaches the compliance boundary. Thus, we have no problem with it being labeled as an intervention boundary well even though technically it was not formally designated as such.

You assert that if MW-1015 is not a compliance boundary well, then there are no compliance boundary wells along the entire 3.7 mile long compliance boundary in violation of administrative rules. This is not true. As previously explained, no compliance boundary wells are required at the present time. The reference in your letter at 6 to the statement in our November 10, 2009, letter at 6 that "FMC was in compliance with the groundwater standards at the compliance boundary" is a universally true statement with respect to the entire compliance boundary for the mine. This is because no intervention boundary well suggests there is a threat of exceeding groundwater standards at the compliance boundary. The purpose of the intervention well monitoring is to detect contamination that threatens to exceed groundwater contamination at the compliance boundary long before groundwater reaches that boundary and to prevent it from happening. A compliance boundary well at this stage is unnecessary without information from intervention boundary wells that a threat is posed. Some monitoring wells between the mine and river were completed deeper than the river bed simply to better define the groundwater quality conditions along the entire depth of the mine excavation. Modeling indicates that groundwater flow beneath the river bed discharges upward into the river. There is no evidence that water discharging from the base of the backfilled pit could migrate through the length of the unmined sulfide ore body to discharge on the other side of the Flambeau River. At this point there appears to be no justification for requiring monitoring wells at the compliance boundary of the mine site.

J. Clarification of the source of contaminants in intervention boundary well MW-1000PR and addition of monitoring wells on either end of the slurry wall.

In this section of your letter at 7 you state your disagreement with our November 10, 2009, letter at 7-8 in which DNR concluded that some of the raised groundwater contaminant levels could be attributed to the falling and rising of the groundwater table that influenced the geochemistry around the borehole of Well MW-1000PR, rather than attributing it solely to contamination originating at the mine pit. You provide in your letter at 8 a quotation from the October 12, 2000, Foth & Van Dyke/SRK Consulting memo (your letter Ex. 14) at 3, concluding, "our experts agree with FMC's consultant that the elevated levels of contaminants in intervention boundary well MW-1000PR are indeed coming from the backfilled pit"

First, DNR does not interpret the Foth report as concluding that the detected contamination is entirely caused by infiltration from backfilled pit-contaminated water. Rather, the quoted statement says that water is migrating from the pit toward the well and is showing elevated levels of contaminants.

Second, we see no contradiction between the Foth report and DNR's conclusion that some of the observed elevated levels in the well are likely attributable to geochemical effects from the lowering and elevating of the water table at the well's bore hole. We disagree with your statement, "If DNR maintains that the monitoring results from well MW-1000PR are due to 'local geochemical changes,' then there is no adequate intervention or compliance boundary monitoring well between the pit and the Flambeau River." Local geochemical changes from the oxidation of in-situ sulfide ore will influence the water quality results of any well constructed and screened within unmined portions of the ore body and complicate efforts to separate out local influences from water originating from the pit. However, groundwater monitoring trend analysis will continue at well MW-1000PR to determine whether and to what extent contamination from the pit may be migrating. It was determined at the time of the mining permit decision that well MW-1000PR would function as an effective intervention well, and we have no evidence it is not functioning as expected.

Third, DNR has reviewed the data submitted by FMC, analyzed it, and determined that the results do not call for further action at this time. This analysis took the most conservative approach of assuming all the contamination detected at the well originated from the backfilled pit. DNR has complied with the law with respect to the monitoring conducted to date. It remains, as stated in our letter at 8, that "[i]t is the DNR's opinion that the groundwater analytical results have been satisfactorily explained, analyzed and determined not to present a threat to the Flambeau River or the environment. Based on those results, the DNR has also determined that the anomalous results at the intervention boundary will not result in compliance boundary exceedances, and that the requirements of the permit so far have been met."

K. Clarification of the DNR's logic regarding Wis. Stat. § 293.13(2)(c)3.

Your letter at 9 asserts a disconnect between the acknowledged elevated levels of copper in Stream C and the following statement in our November 10, 2009, letter at 3-4: "FMC's mining permit, as amended in 1998, includes measures to meet the requirements of Wis. Stat. § 293.13(2)(c)3. for the "[m]anagement, impoundment or treatment of all underground or **surface runoff waters** from open pits or underground prospecting or mining sites so as to prevent . . . pollution of surface or subsurface waters or damage to public health or safety." (Emphasis added.) You assert that contamination of Stream C has not been prevented and this should be addressed by DNR. In large part, this is a repeat of your points C.-D. of your January 26, 2010, letter addressed in the corresponding sections above concerning the regulation of storm water discharges from the biofilter to the stream. As stated, storm water discharge regulation typically

is not based on water-quality based effluent limits like other WPDES point sources, but rather are regulated on the basis of best management practices which currently are being implemented at the biofilter. Water quality-based effluent limit regulation of storm water discharges from the biofilter would require extensive study and review of many factors, including background contributions of copper from the stream's watershed as well as from the biofilter. This, in part, is why consideration is being given to replacing the biofilter with an infiltration basin so as to reduce if not eliminate direct stormwater discharges to the stream from the mine site.

L. Clarification of requirements for storm water discharges from the Flambeau Mine.

You quote from our letter at 4, "To date the storm water discharges from the Flambeau Mine have met the relevant requirements in the mining permit, so under Wis. Admin. Code § NR 216.21(4)(a), separate storm water permit coverage is not required." You ask for a citation to the requirements in the mine permit.

Those requirements include Mine Permit: Part 2 - Mining Plan Approval ¶¶ 10 at 97, ¶ 15 at 98, ¶ 20 at 100; Part 3 - Reclamation Plan Approval ¶¶ 7-1 at 116-117; Water Regulatory Permits ¶¶ 57 & 58 at 160. By letter dated January 8, 1998, from Mine Manager Jeff Earnshaw to Lawrence Lynch, with attached Supplement to the Surface Reclamation Plan for the Flambeau Mine (December 1997), FMC "proposed modifications to the Reclamation Plan in accordance with Conditions 2. and 3. of Part 3 (Reclamation Plan Approval) of Flambeau's Mine Permit (IH-89-14 and NR 132.13(3)(a), Wisconsin Administrative Code." That plan included the 28-acre outlot and "piping draining stormwater to the former Surge Pond . . . as part of a storm water biofilter system . . ." *Id.* Submitted with that application was "Appendix B, Surface Water Analysis, Flambeau Mine Reclamation, Ladysmith, Wisconsin" (enclosed with November 10, 2009, letter). The last page of the selected pages from Appendix B describes the purpose of the biofilter to be converted from the surge pond. In the March 20, 1998, letter from Lawrence Lynch to FMC's Murphy, DNR reiterated that "stormwater management will fall under the regulatory authority of the Mining Permit and its associated plans." The FMC Plan was approved by the July 30, 1998, Findings of Fact, Conclusions of Law, Mining Permit Modifications letter from Suzanne Bangert to Mr. Earnshaw.² *See also* the September 23, 1998 letter from DNR's Paul Luebke to FMC's Jana Murphy, a copy of which was enclosed with our November 10, 2009, letter, in which the Department allowed discharges from the future biofilter to be regulated under the runoff management provisions of FMC's revised mining permit. By letter of May 4, 2006 from DNR's Joanie Burns to FMC's Murphy "RE: Flambeau Industrial Outlot Work Plan – May 2, 2006," DNR acknowledged receipt of the Plan "addressing the issue of elevated copper concentrations in the on-site surficial soils and biofilter an in site runoff

² As noted in that approval, your clients originally had requested a contested case hearing on the modification and subsequently withdrew their request after a public hearing was held.

Mr. Glenn M. Stoddard
April 23, 2010
Page 15

[sic]." That letter accepted the plan subject to stated conditions. Monitoring requirements also include the May 31, 2007, Stipulation and Order in Case No. IH-07-05 ¶ 6, which your clients agreed to.

In addition, you ask "under what conditions, if any, that DNR would likely conclude that a storm water permit would be required at the Mine site." This is answered in two letters -- a) October 26, 2004, letter from DNR attorney Chuck Hammer to GLIFWC Administrator James Schlender explaining DNR's review of discharge data from the biofilter and water quality data from Stream C as it relates to elevated levels of copper monitored, the actions taken to that date, with the pledge to continue monitoring the situation, while "treating this matter very seriously. . . ." (enclosed with our November 10, 2009, letter); and b) the September 7, 2007, letter from DNR Mining Program Coordinator Philip Fauble to John Coleman (enclosed). In the latter, Mr. Fauble explained that "the January 12, 2007 Biofilter Management Plan . . . was submitted as a follow-up to FMC's remedial action taken in the summer of 2006 in response to elevated levels of copper detected in the Biofilter outfall in the Industrial Outlot portion of the closed Flambeau Mine." Continuing, "The elevated copper levels in runoff water triggered a response by FMC in accordance with the contingency section of the Mining Permit. . . . Actions taken to correct the problem included . . . installation of an improved drainage system into the Biofilter. . . . The results, spread out over three years and reported to the Department, should give us a general understanding of the effectiveness of the remedial actions. . . . We will continue to evaluate FMC's sample results from the mine site and Outlot and will require additional remedial actions if they are necessary." If, following these measures, elevated levels of copper persist or increase in the stream, DNR will evaluate their effects, and attempt to determine the cause and to address that cause, including whether a discharge permit would be the appropriate response to that cause.

M. Correction of misleading information on DNR site.

This section of your letter at 9 claims the following statement, at the DNR web site at <http://www.dnr.state.wi.us/org/aw/wm/mining/metallic/flambeau/> is inaccurate:

The first few rounds of samples collected during 1999 from the wells installed within the backfilled waste rock indicated that elevated levels of sulfate, copper, manganese and iron were present. These results were not a surprise and were approximately equal to or slightly greater than the concentrations originally predicted during permitting and later updated prior to backfilling.

This is an expression of the opinion of the author in a historic document based on his interpretation of the data at the time. DNR will not modify an existing historic document, but may archive it if it is deemed no longer relevant during a periodic review of the Mining Program website.

N. Correction of inappropriate citation of Wis. Admin. Code § NR 182.075(1).

This section of your letter claims that our November 10, 2009, letter at 5 incorrectly cites to Wis. Admin. Code § NR 182.075(1)(a) because it was not in effect at the time of the mining permit in 1991. You state this is an incorrect citation because it implies that we claimed it was in effect at that time. No such implication is made or intended. The cited paragraph is accurate and makes clear we are in agreement that the cited language does not apply to the Flambeau mine.

O. Expansion of DNR's citation of Wis. Admin. Code § NR 182.075(1).

This section of your letter quotes additional language from Wis. Admin. Code § NR 182.075, in addition to the language of the rule quoted in our November 10, 2009, letter at 5. No response appears to be solicited or required.

P. Definition of applicable standards for determining river impacts.

This section of your letter at 12 refers to excerpts from the July 1991 Updated Monitoring Plan for the Flambeau Project (your Ex. 17), and to our November 10, 2009, letter citation at 6 to the approved mining application that states, "[a] comparison of the projected incremental increases in Flambeau River concentrations to average Flambeau River concentrations shows that the projected incremental increases are so low, that they would not even be detectable in river water" From this you conclude, "There is no acknowledgement by DNR of the other river-based studies required by the Mine Permit. Thus, it appears DNR has ignored the potential for bio-*accumulative* impacts of the mine on the river community." (Emphasis in original.)

First, on its face your conclusion does not follow from our statement. The statement that concentrations of contaminants flowing into the river would be so low as to be non-detectable in river water simply does not lead to a conclusion that DNR "ignored" the potential for bio-accumulative impacts of the mine on the river community.

Second, the excerpts you cite from the July 1991 Updated Monitoring Plan for the Flambeau Project are not related to biological effects of groundwater discharges to the Flambeau River. Clearly, they are related only to surface water discharges regulated by the WPDES permit for the project. See Updated Monitoring Plan Table of Contents Section 2.4. This makes eminent sense for two reasons. First, such monitoring was and is authorized by law only for surface water discharges pursuant to the WPDES program. Consistent with this, the excerpts that you cite from the Updated Monitoring Plan, including its river biological monitoring requirements, are no longer in effect and its requirements were discontinued consistent with the cessation of point source discharges regulated under the WPDES program. Thus, these are not

"applicable standards for determining river impacts," as the title to this section of your letter suggests.

Third, DNR believes such monitoring would be futile because it would be next to impossible to determine whether and to what extent such low concentrations from groundwater would impact river biota. While you say at 13, "It remains unclear with regard to the Flambeau River's surface water quality whether or not the mine is having an adverse impact on the river," you do not explain how bio-monitoring in the river is likely to show that adverse impacts, even if detected, were caused by undetectable groundwater discharges from the mine, as opposed to other potential and more likely causes, including but not limited to climate change, other discharges to the river, and natural variability, cycles or causes.

Fourth, your May 2007 Stipulation and Order In the Matter of the Application of Flambeau Mining Company for Issuance of a Certificate of Completion of Reclamation, Case No. IH-07-05, paragraph 6. c. & d. appear to provide for the bio-monitoring you appear to want in your letter.

Q. Evaluation of statistical trends in Flambeau River sediment and biological data.

This section of your letter at 13-14 criticizes DNR for not responding to a discussion at our meeting of Dr. Ken Parejko's statistical analysis of river monitoring data in which you quote him as saying "[crayfish and walleye] copper concentrations were found to be significantly higher downstream than upstream, suggesting a possible mine effect" and criticizing FMC's bio-monitoring studies. We were not aware a response was solicited. Nevertheless, DNR has reviewed Dr. Parejko's analysis and believes data "*suggesting a possible mining effect*" (emphasis added) is not an adequate basis for regulatory action. DNR will review this information in the context of any additional data submitted in response to the May 2007 Stipulation, but with the limitations expressed in the previous section in mind. Criticism of FMC's bio-monitoring studies design comes too late, as this monitoring requirement has expired. *See also* response in Section P.

R. Correction of poor study design elements incorporated into FMC's river monitoring program.

This is the same criticism expressed in Section Q of your letter. See our previous response in Section Q.

S. Assessment of endangered species at the Flambeau Mine site.

In this section of your letter at 15 you assert that endangered or threatened species of clams and dragonflies were discovered in the vicinity of the mine site, that mine construction

was halted while DNR prepared a supplemental EIS on endangered resources in the area, and that no follow-up studies have been conducted to determine the fate of those species. We were not aware that a response was solicited. As you know, DNR performed the supplemental EIS and that mining proceeded upon the finding that mining would not have a significant effect on endangered or threatened species. You cite no authority for requiring the study you request. In any event, should some endangered species impacts be detected, there would be almost no way to definitely tie their fates back to releases from the mine. The groundwater discharges are too low to be measureable, the wastewater treatment plant operated within its discharge permit limits, and even potential copper releases from Stream C could not be distinguished between potential mine operational inputs and natural metal inputs from a watershed that is mineralized.

Specific Monitoring Proposals and Suggested Requirements

In this section of your letter from 15 to 18 your letter offers suggestions for measures to be taken for "A. Surface Water Monitoring," "B. Groundwater Monitoring," and "C. Biomonitoring." We appreciate your suggestions. DNR will keep them in mind as information is submitted to DNR for review and during the remainder of the regulatory process for the mine. As indicated to you, we are considering some of them. However, you cite no authority or resources for DNR to conduct or require these suggested measures. DNR cannot simply require these measures by fiat or because it would be nice to have them performed. There must be legal authority and sufficient basis and proof to support the imposition of additional legal obligations that alter FMC's current obligations within the mine permit, reclamation, and approval process.³ Under current law, suggested or possible effects or mere uncertainty are not sufficient. Moreover, the opportunity to suggest, justify, and potentially require these measures has passed with the mine permit, reclamation, and other approvals that have been issued for the mine and its reclamation. The most recent opportunity for your clients to have advocated and sought imposition of these requirements culminated in the May 2007 Stipulation and Order In the Matter of the Application of Flambeau Mining Company for Issuance of a Certificate of Completion of Reclamation, Case No. IH-07-05.

CONCLUSION

Within the last two letters, we have responded to all your major concerns and points. We have attempted to do so without being argumentative even where we disagree. While we are sensitive to your client's concerns and share a mutual desire to protect the environment, DNR is

³ Moreover, we note that these legal obligations were created after extensive public review. As noted by the Administrative Law Judge who conducted the hearings and issued the Mine Permit:

I believe it is fair to say this project has been the subject of as much public scrutiny as any other project before a state agency in the history of the State of Wisconsin. (Decision at 3).

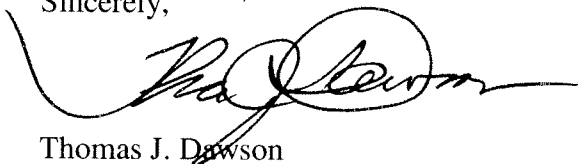
Mr. Glenn M. Stoddard
April 23, 2010
Page 19

required to focus its concerns through the lens of both substantive law and due process, while exercising sound professional judgment based on facts derived from sound science. Based on the facts and evidence available, DNR has neither the basis, authority, nor reason for imposing many of the requirements you seek in your letter.

For these reasons, we believe we have exhausted the extent of the formal exchange in which we have been engaged. We do not believe a further exchange of "point/counter-point" letters would be a good use of our time and resources. By now, we believe we both know where our respective clients stand on the issues discussed.

Nevertheless, DNR remains receptive to any information you or your clients wish to share that may assist DNR in carrying out its statutory duties. We hope soon to be able to share with you the results of DNR's review of the idea for replacing the biofilter to eliminate storm water discharges to Stream C and the process for evaluation of Stream C as an impaired water. We appreciate your client's concern for the environment.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Dawson", written over a horizontal line.

Thomas J. Dawson
Assistant Attorney General

TJD:drm

Enclosures

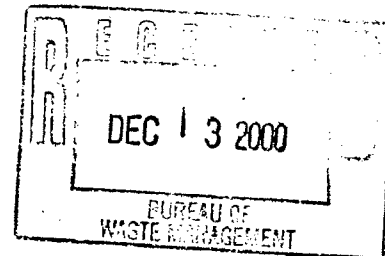
c w/encs.: Attorney Dan Graff (DNR)
Hydrogeologist Phil Fauble (DNR)

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.

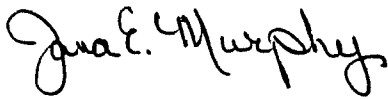
In accordance with monitoring well installation practice at the Flambeau Mine, MW-1015A and MW-1015B will be constructed with 5-ft screens. During construction of the wells, the PVC casing will be hung from the drill rig to maintain straightness. Annular space sealant will be placed in accordance with 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.

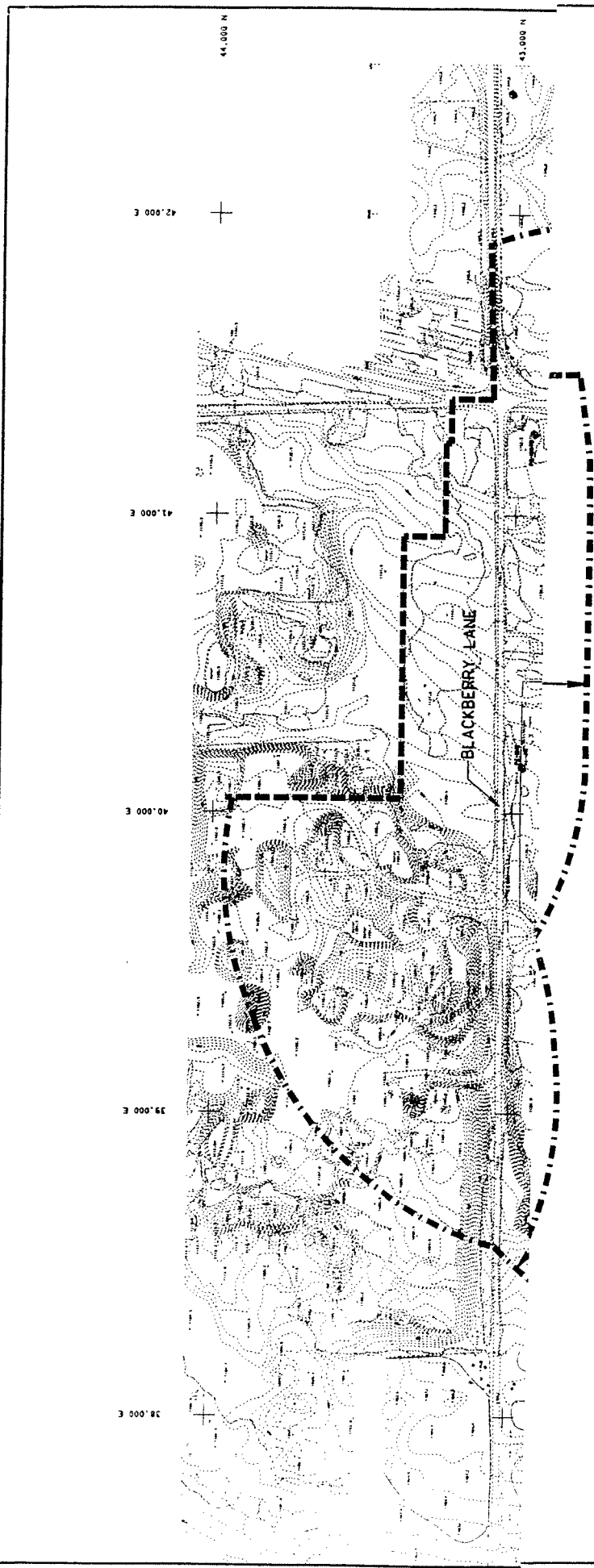
Sincerely,



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



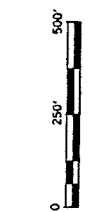
- LEGEND**
- ◊ PE-53 EXISTING GROUND CONTOUR
 - ⊕ BT-5 EXISTING SPOT ELEVATION
 - DEPRESSION
 - TREES AND/OR BRUSH
 - EXISTING ROAD
 - ▭ EXISTING BUILDING
 - ⬢ EXISTING FENCE
 - ⬢ MONITORING WELL
 - ⬢ WELL ON THE WATER QUALITY MONITORING PROGRAM
 - ⊕ PROPOSED MW WELL NEST LOCATION
 - ⊕ PEZ-53 PIEZOMETER
 - ⊕ BT-5 WETLAND STAFF GAUGE
 - POTABLE WATER WELL
 - APPROXIMATE LIMITS OF COMPLIANCE BOUNDARY (1200' DISTANCE)
 - APPROXIMATE LIMITS OF COMPLIANCE BOUNDARY (DETERMINED BY PROPERTY 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 T25N, R6W, R54E COUNTY, WISCONSIN.
2. TOPOGRAPHIC BASE MAP INSIDE DISTURBANCE LIMITS PREPARED FROM AERIAL SURVEY BY HORIZONS, INC. 3600 41ST DR. RAPID CITY, SOUTH DAKOTA. DATE OF PHOTOGRAPH JULY 3, 1996.
3. TOPOGRAPHIC BASE MAP OUTSIDE DISTURBANCE LIMITS PREPARED FROM AERIAL SURVEY BY SURDEX CORP., CHESTERFIELD, MISSOURI. DATE OF PHOTOGRAPH APRIL 24, 1970. ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY WARRIORD 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 CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:
 STATE PLANE COORDINATES
 CENTRE POINT: 40000 N * 40000 E *
 STATE PLANE COORDINATES
 CENTRE POINT: 587.357.8087 N 1.713.516.1229 E

THE ANGULAR ROTATION FROM STATE PLANE BEARINGS POINT 1 TO THE BASE POINT.

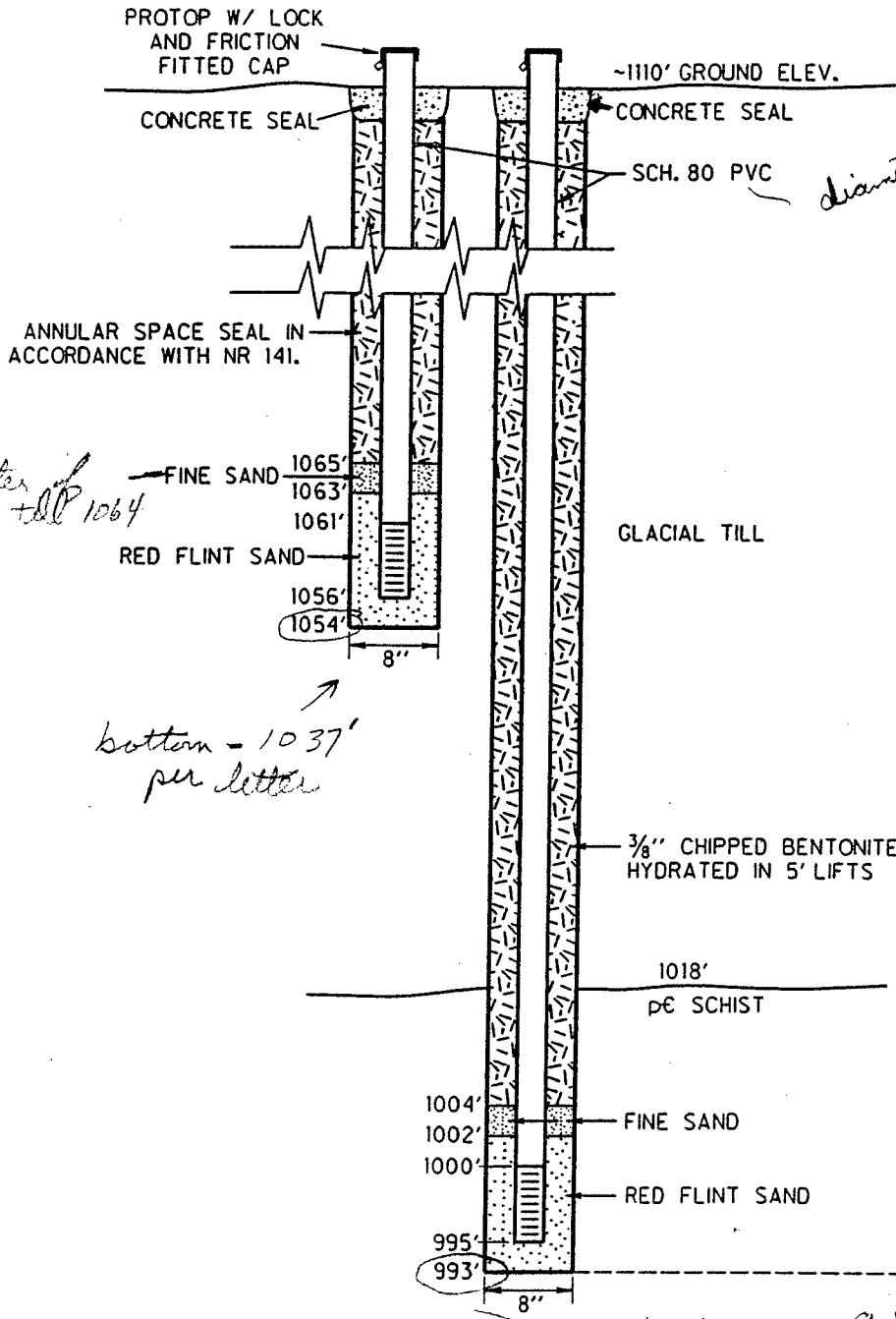


FLAMBEAU MINING COMPANY
 LADYSMITH, WISCONSIN
PROPOSED WELL NEST LOCATION
COMPLIANCE BOUNDARY MAP
 FIGURE 1
 OCTOBER, 2000

MW-1015 WELL NEST

SHALLOW WELL
MW-1015A

DEEP WELL
MW-1015B



to bottom of screen
1110

diameter?

center of till 1064

54' - bot of screen

bottom - 1037' per letter

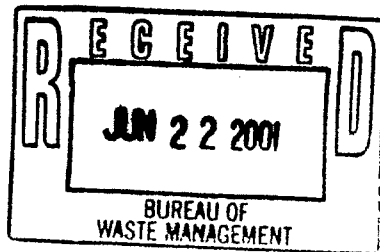
61'
92' to 65'

115'

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

Attachment 2

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

| | | | |
|--|---|--|--------------------------|
| Facility/Project Name Flambeau Mining Co. | Local Grid Location of Well <input checked="" type="checkbox"/> N. <input type="checkbox"/> E. 41020.55 ft. <input type="checkbox"/> S. 38136.03 ft. <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 1 N 9 0 4 | DNR Well ID No. 8 6 9 |
| Facility ID 8 5 5 0 3 4 7 3 0 | St. Plane 587357 ft. N. 1713516 ft. E. S/CN | Date Well Installed 0 1 / 1 1 / 0 1 m m d d y y | |
| 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. | Well Installed By: (Person's Name and Firm) Mark Bachhaus/Bob Issacson Layne - Northwest | |
| 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 | Gov. Lot Number | |
| Distance From Waste/ Source 1000 ft. Apply <input type="checkbox"/> | | | |

A. Protective pipe, top elevation 11 03 .05 ft. MSL

B. Well casing, top elevation 11 03 .10 ft. MSL

C. Land surface elevation 1 09 8 .9 ft. MSL

D. Surface seal, bottom 0 0 0 .0 ft. MSL or 0 0 .0 ft.

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

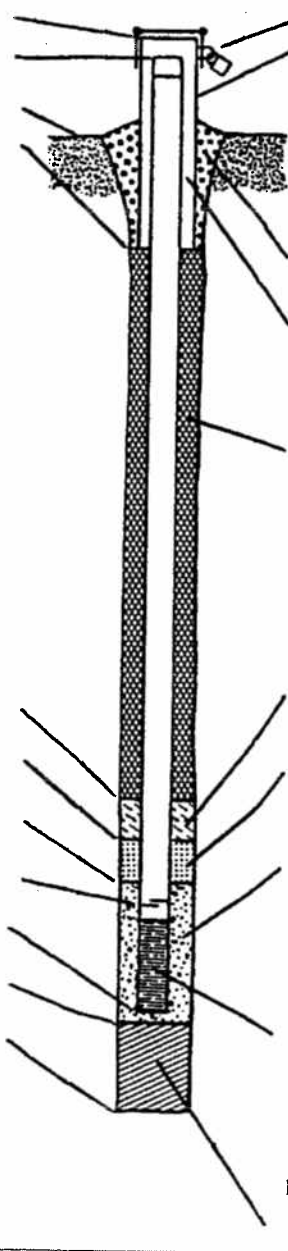
13. Sieve analysis attached? Yes No

14. Drilling method used: Rotary 5 0
 Hollow Stem Auger 4 1
 Other 3 0

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

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: 1.00 ft.
 c. Material: Steel 0 4
 Other _____
 d. Additional protection? Yes No
 If yes, describe: _____

3. Surface seal: Bentonite 3 0
 Concrete 0 1
 Other _____

4. Material between well casing and protective pipe:
 Bentonite 3 0
 Annular space seal _____
 Sand _____
 Other _____

5. Annular space seal:
 a. Granular Bentonite 3 3
 b. _____ Lbs/gal mud weight . Bentonite-sand slurry 3 5
 c. 10.1 Lbs/gal mud weight Bentonite slurry 3 1
 d. _____ % Bentonite Bentonite-cement grout 5 0
 e. 4.5 Ft³ volume added for any of the above
 f. How installed: Tremie 0 1
 Tremie pumped 0 2
 Gravity 0 8

6. Bentonite seal:
 a. Bentonite granules 3 3
 b. 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 3 2
 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 2 3
 Flush threaded PVC schedule 80 2 4
 Other _____

10. Screen material: PVC
 a. Screen Type: Factory cut 1 1
 Continuous slot 0 1
 Other _____
 b. Manufacturer Johnson Screens
 c. Slot size: 0.0 01 0 in.
 d. Slotted length: 0 5 .0 ft.

11. Backfill material (below filter pack): None 1 4
 Other _____

E. Bentonite seal, top 1 05 0 .1 ft. MSL or 4 8 .8 ft.

F. Fine sand, top 1 04 5 .0 ft. MSL or 5 3 .9 ft.

G. Filter pack, top 1 04 2 .9 ft. MSL or 5 6 .0 ft.

H. Screen joint, top 1 04 0 .9 ft. MSL or 5 8 .0 ft.

I. Well bottom 1 03 5 .9 ft. MSL or 6 3 .0 ft.

J. Filter pack, bottom 1 03 3 .9 ft. MSL or 6 5 .0 ft.

K. Borehole, bottom 1 03 3 .9 ft. MSL or 6 5 .0 ft.

L. Borehole, diameter 6 .1 in.

M. O.D. well casing 2 .38 in.

N. I.D. well casing 1 .92 in.

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

Signature

Firm

Janis Keys for Erik Silva

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. 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-1015A | |
| 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 4</u> | DNR Well Number <u>8 6 9</u> |

| | | |
|--|--|---|
| 1. Can this well be purged dry? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | 11. Depth to Water (from top of well casing) a. <u>1 5.6 1</u> ft. Before Development After Development <u>1 1.0 1</u> ft. |
| 2. Well development method surged with bailer and bailed <input type="checkbox"/> 41 surged with bailer and pumped <input type="checkbox"/> 61 surged with block and bailed <input type="checkbox"/> 42 surged with block and pumped <input type="checkbox"/> 62 surged with block, bailed and pumped <input type="checkbox"/> 70 compressed air <input type="checkbox"/> 20 bailed only <input type="checkbox"/> 10 pumped only <input type="checkbox"/> 51 pumped slowly <input checked="" type="checkbox"/> 50 Other <input type="checkbox"/> | Date b. <u>0 3 / 1 5 / 0 1</u> m m d d y y <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m. | Time c. <u>1 1 : 1 5</u> <input type="checkbox"/> p.m. <input checked="" type="checkbox"/> p.m. |
| 3. Time spent developing well <u>0 0 4 5</u> min. | 12. Sediment in well bottom <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) |
| 4. Depth of well (from top of well casing) <u>0 6 7.2</u> ft. | 14. Total suspended solids <u>0 0 0 0.0</u> mg/l | 15. COD <u>0 0 0 0.0</u> mg/l |
| 5. Inside diameter of well <u>1.9 2</u> in. | 16. Well developed by: Name (first, last) and Firm First Name: Jack Last Name: Christman Firm: Independent Contractor representing Flambeau Mining Co. | |
| 6. Volume of water in filter pack and well casing <u>0 1 2.2</u> gal. | | |
| 7. Volume of water removed from well <u>1 7 0.0</u> gal. | | |
| 8. Volume of water added (if any) <u>0 0 0.0</u> gal. | | |
| 9. Source of water added _____ | | |
| 10. Analysis performed on water added? (If yes, attach results) <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

Fill in if drilling fluids were used and well is at solid waste facility:

| | | |
|----------------------------|-----------------------|-----------------------|
| 14. Total suspended solids | <u>0 0 0 0.0</u> mg/l | <u>0 0 0 0.0</u> mg/l |
| 15. COD | <u>0 0 0 0.0</u> mg/l | <u>0 0 0 0.0</u> mg/l |

16. Well developed by: Name (first, last) and Firm
First Name: Jack Last Name: Christman
Firm: Independent Contractor representing Flambeau Mining Co.

17. Additional comments on development:

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

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 Firm 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 | |
| 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 |
| Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> | | State Plane _____ N, _____ E S/C/N 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W | | Local Grid Location (if applicable) 41020.55 <input checked="" type="checkbox"/> N 38136.03 <input checked="" type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W | |
| Facility ID 855034730 | | County Rusk | County Code 55 | Civil <u>town</u> 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 | 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 | SM | | | | | | | | | |
| | | | | End of Boring | | | | | | | | | | |

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

Signature James J. Kesy for Erik Silvola 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 <input checked="" type="checkbox"/> N. <input type="checkbox"/> E. 41019.44 ft. <input type="checkbox"/> S. 38130.36 ft. <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 | Section Location of Waste/Source <input type="checkbox"/> E. <input checked="" type="checkbox"/> W. | Date Well Installed 0 1 / 1 0 / 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 Layne - Northwest |
| Distance From Waste/Source 1000 ft. Apply <input type="checkbox"/> | Gov. Lot Number | |

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 000.0 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

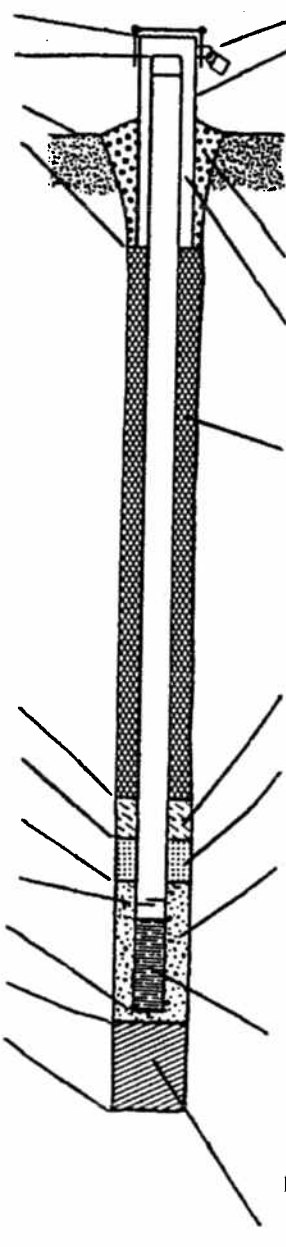
13. Sieve analysis attached? Yes No

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



- Cap and lock? Yes No
- Protective cover pipe:
 - Inside diameter: 04.0 in.
 - Length: 100 ft.
 - Material: Steel 04
Other
 - Additional protection? Yes No
If yes, describe: _____
- Surface seal: Bentonite 30
Concrete 01
Other
- Material between well casing and protective pipe: Bentonite 30
Annular space seal
Sand Other
- Annular space seal:
 - Granular Bentonite 33
 - 11.2 Lbs/gal mud weight . Bentonite-sand slurry 35
 - 11.2 Lbs/gal mud weight Bentonite slurry 31
 - 11.4 % Bentonite Bentonite-cement grout 50
 - 11.4 Ft³ volume added for any of the above
- How installed: Tremie 01
Tremie pumped 02
Gravity 08
- Bentonite seal:
 - Bentonite granules 33
 - 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32
 - Hole Plug 3/8" Chipped Bentonite Other
- Fine sand material: Manufacturer, product name & mesh size
a. Unimin 45/65
b. Volume added 0.38 ft³
- Filter pack material: Manufacturer, product name and mesh size
a. Red Flint filter #30
b. Volume added 1.22 ft³
- Well casing: Flush threaded PVC schedule 40 23
Flush threaded PVC schedule 80 24
Other
- Screen material: PVC
 - Screen Type: Factory cut 11
Continuous slot 01
Other
 - Manufacturer Johnson Screens
 - Slot size: 0.010 in.
 - Slotted length: 5.0 ft.
- Backfill material (below filter pack): None 14
Native cave (rock chips & sand) Other

- E. Bentonite seal, top 0970.9 ft. MSL or 128.0 ft.
- F. Fine sand, top 0963.4 ft. MSL or 135.5 ft.
- G. Filter pack, top 0957.9 ft. MSL or 141.0 ft.
- H. Screen joint, top 0955.9 ft. MSL or 143.0 ft.
- I. Well bottom 0950.9 ft. MSL or 148.0 ft.
- J. Filter pack, bottom 0947.7 ft. MSL or 151.2 ft.
- K. Borehole, bottom 0946.9 ft. MSL or 152.0 ft.
- L. Borehole, diameter 06.2 in.
- M. O.D. well casing 02.38 in.
- N. I.D. well casing 01.92 in.

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

Signature Dennis A. Keay 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. 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>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"/> 1</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"> <thead> <tr> <th></th> <th>Before Development</th> <th>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</td> <td><u>0 4 / 1 9 / 0 1</u> m m d d y y</td> </tr> <tr> <td>Time</td> <td><input type="checkbox"/> a.m. c. <u>1 2 : 0 8</u> <input checked="" type="checkbox"/> p.m.</td> <td><input checked="" type="checkbox"/> a.m. <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 | <u>0 4 / 1 9 / 0 1</u> m m d d y y | Time | <input type="checkbox"/> a.m. c. <u>1 2 : 0 8</u> <input checked="" type="checkbox"/> p.m. | <input checked="" type="checkbox"/> a.m. <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) |
|---|--|--|--------------------|-------------------|--|-----------------------|--------------------|------|--|---------------------------------------|------|---|---|-----------------------------|---------------------|---------------------|-------------------|--|--|
| | 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 | <u>0 4 / 1 9 / 0 1</u> m m d d y y | | | | | | | | | | | | | | | | | |
| Time | <input type="checkbox"/> a.m. c. <u>1 2 : 0 8</u> <input checked="" type="checkbox"/> p.m. | <input checked="" type="checkbox"/> a.m. <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) | | | | | | | | | | | | | | | | | |

17. Additional comments on development:

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

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

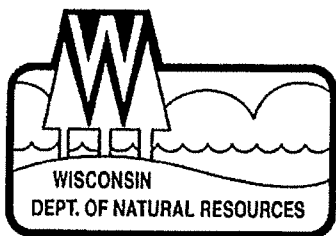
| | | | | | |
|---|------------------------|---|--|---|-------------------------------|
| Facility/Project Name Flambeau Mining Co. | | License/Permit/Monitoring Number 01380 | | Boring Number MW-1015B | |
| Boring Drilled By: Name of crew chief (first, last) and Firm First Name: Mark Last Name: Backhaus Firm: Layne - Northwest | | 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. J N 905 | 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"/> | | State Plane _____ N, _____ E S/C/N _____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W | | Local Grid Location (if applicable) 41019.44 <input checked="" type="checkbox"/> N 38130.36 <input checked="" type="checkbox"/> E _____ Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W | |
| Facility ID 855034730 | County Rusk | County Code 55 | Civil <u>Town</u> 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 | USCS | Graph Log | Well Diagram | PID/FID | Soil Properties | | | | | RQD/ Comments |
|-----------------|------------------------------|-------------|--------------------------------------|--|-------|-----------|--------------|---------|----------------------|------------------|--------------|------------------|-------|---------------|
| | | | | | | | | | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | |
| | | | | 0.5 dark brown (7.5 YR4/3) | SM-SP | | | | | | | | | |
| | | | | silty fine medium sand minor gravel | | | | | | | | | | |
| | | | 10 | 5 - 10' dark brown (7.5 YR 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 coarse 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 Janis A. Key for Erik Silvola Firm Foth & Van Dyke

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

September 7, 2007

FID# 855034730

John Coleman
Great Lakes Indian Fish and Wildlife Commission
P.O. Box 9
Odanah, WI 54861

Subject: Stream C Biofilter Management Plan, Flambeau Mine, Ladysmith, Wisconsin

Dear Mr. Coleman:

Your letter to the Department regarding the January 12, 2007 Biofilter Management Plan submitted by the Flambeau Mining Company (FMC) was received by the Department on August 20, 2007. The Biofilter Management Plan was submitted as a follow-up to FMC's remedial action taken in the summer of 2006 in response to elevated levels of copper detected in the Biofilter outfall in the Industrial Outlot portion of the closed Flambeau Mine.

The elevated copper levels in runoff water triggered a response by FMC in accordance with the contingency section of the Mining Permit. The Department concurred with the remedial action plan submitted by FMC and subsequently concurred that the plan had been properly implemented. Actions taken to correct the problem included removal of soils beneath the Outlot parking lot, reconstruction of the parking lot with clean gravel and the installation of an improved drainage system into the Biofilter.

The intent of the Biofilter Management Plan was to provide details of FMC's long-term care of the Biofilter. This was achieved through the establishment of a surface water sampling schedule and annual inspections of the physical state of the Biofilter. The results, spread out over three years and reported to the Department, should give us a general understanding of the effectiveness of the remedial actions. However, it was never intended that they should serve as a benchmark against which to measure the effectiveness of the remedial action. The "stabilization" mentioned in the plan merely refers to a point at which the parameters are no longer in decline and it is obvious that the geochemical effects of the remedial action have subsided.

We will continue to evaluate FMC's sample results from the mine site and Outlot and will require additional remedial actions if they are necessary.

If you have any further questions or comments, please feel free to contact me at (608) 267-3538.

Sincerely,

Philip Fauble, P.G.
Mining Program Coordinator