Resolution #01-2021
Sulfide Mining

Whereas, Oneida County is an extremely water rich part of Wisconsin, with over 1,100 lakes, and with nearly 38% of its surface comprised of lakes, rivers, streams, and wetlands, totaling over 463 square miles, and

Whereas, there are three known sulfide deposits in Oneida County that are associated with ancient rock formations of volcanic origin, and

Whereas, sulfide deposits contain minerals that are compounds of metal and sulfur, and the process of mining these deposits creates an enormous amount of waste material, when exposed to air and water, create a condition, know as Acid Mine Drainage, that leaches metals from the surrounding environment, and remain a threat to the water resource for hundreds of years, and

Whereas, in Oneida County, these ancient deposits were buried under thick layers of glacial drift and water when the Glaciers receded, and

Whereas, our lakes, streams, and wetlands are intimately connected to the water contained in this glacial material, and In order to keep a sulfide mining operation reasonably dry, the pumping required would reduce lake and water well levels, reduce stream flows, and impair wetland function, and

Whereas, more than 62% of Oneida County voters opposed a sulfide mine upstream of the Willow Flowage, which is of great County, Tribal, and regional significance, and

Whereas, Badger Minerals is planning to conduct exploratory drillings for sulfide minerals, at the Wolf River Deposit, near the upper Wolf River, which is also of great County, Tribal, and regional significance, and

Whereas, the water resources of Oneida County are of profound importance, providing many people that live and work here with sustenance, for generations, from our incredible fisheries, and many others that benefit economically from the folks that come from far and wide to enjoy the scenic beauty of the Northwoods, and

Whereas, the repeal of the Mining Moratorium Law, known as Act 134, eliminates the "Prove it first" provision from the metallic mining law, and also makes groundwater standards non-applicable in certain areas, weakens wetland protections, streamlines approval of bulk sampling, shortens the timeline for review of mine permits, weakens the criteria for the approval of high capacity wells, weakens the public process for the approval of mine permits, eliminates solid waste disposal fees, limits the timeframe for predictive modeling, and limits the timeframe to maintain an irrevocable trust for preventative and remedial activities, and

Whereas, the future of Oneida County depends on keeping our water clean and protecting our lakes, streams, and wetlands.

Now therefore be it resolved that the Crescent Town Board considers Sulfide Mining to be incompatible with the goals stated above, and ask the Wisconsin State Legislature to repeal Wisconsin 2017 Act 134.

By the Crescent Town Board this 10th day of February, 2021.

Steve Richardson, Chairman

Tracy Hartman, Clerk

Kyla Waksmonski, Supervisor I

Kurt Metz, Supervisor II

I am sending you a copy of a Draft Resolution, on behalf of Oneida County Clean Waters Action. Please check out the website at occwa.org.

Please read this Resolution carefully. If your group, Association, or Town, agrees with this Resolution, and would like endorse it, we would be happy to include the name of your group, Association, or Town at the end of the Resolution, as supporting the Resolution.

If you would like to pass a Resolution on this issue, please feel free to use this Draft, and edit as you see fit.

The intention is to present this Resolution to the State Legislature, the Oneida County Board, and our Federal Representatives.

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New Report Reveals Inadequate Monitoring and Mitigation Practices at Flambeau Mine

– Raises Awareness of Important Details to Scrutinize in New Mining Proposals

A new report reviewing mining industry practices at the now-closed Flambeau Mine[1] near Ladysmith, Wisconsin exposes how crucial environmental monitoring data have been withheld from the public. The Flambeau Mine, considered state of the art by today's standards, has been promoted by supporters of the **PolyMet** and **Twin Metals** projects in Minnesota as an example of a copper mine that operated "without polluting local waters." Similar claims have been made by proponents of the **Back Forty** project on the Michigan/ Wisconsin border, the **Eagle** and **Copperwood** projects in Michigan, the **GTac**, **Bend** and **Reef** projects in Wisconsin, and the **Pebble** project in Alaska. It's as if the Flambeau Mine has become the industry's calling card.[2]

The primary author of the report, the late Dr. Robert E. Moran (Michael-Moran Associates, Golden, CO; remwater.org)[3], reviewed thousands of pages of historical and modern Flambeau Mining Company (FMC) documents and concluded the following in his 116-page report, *Flambeau Mine: Water Contamination and Selective "Alternative Facts"*[4] (available online *at* https://deertailscientific.wordpress.com/moran-report/):

"For decades, some of the most relevant data and the most significant water-related impacts at the Flambeau Mine site have been withheld from public view."

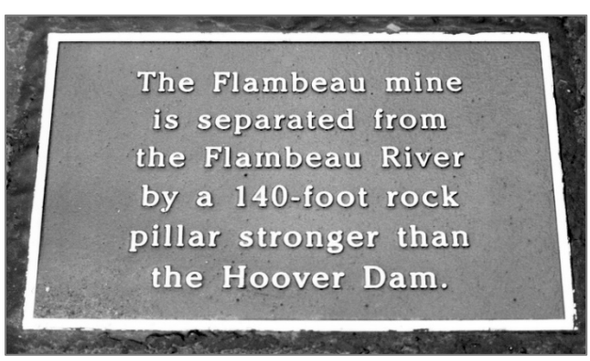
It's unclear if some of the crucial data Dr. Moran sought but found missing in the FMC reports had indeed been collected by the company and simply *not made public*, or if the company, realizing the data might prove problematic for them, *never collected it to begin with* **(i.e., Don't Ask – Don't Tell)**.

One thing is clear though: Dr. Moran, with his more than 45 years of domestic and international experience in conducting and managing water quality, geochemical and hydrogeologic work for private investors, industrial clients, tribal and citizens groups, NGO's, law firms, and governmental agencies at all levels, identified numerous deficiencies in the environmental monitoring program at Flambeau. He summed it up like this:

"I know of no metal-sulfide mines anywhere in the world that have operated without degrading the original water quality, long-term – even those employing modern technologies. Given this historical reality, FMC's approach has been to ensure that damaging data have not been made public."

Following are some of the major problems identified by Dr. Moran in his report:

- All routine Flambeau groundwater monitoring data are from filtered samples, from which some if not most of the chemical components have been removed by the filtering, thereby lowering the original concentrations.
- The number and location of monitoring wells along the mine's so-called "compliance boundary" (where groundwater standards are enforced by the state) are inadequate. There is only one nested well along the entire 3.5-mile boundary encircling the mine site, and it appears to be positioned outside the main groundwater flow path identified by FMC.
- FMC's own data shows that their decision to mix limestone with the backfilled waste rock in the mine pit to help curtail pollution has not prevented significant degradation of groundwater quality – this despite the fact that no tailings are stored at the Flambeau site (all ore was shipped by rail to Canada for processing). As Dr. Moran noted: "The site groundwaters are contaminated, and *these waters would require expensive, active water treatment to be made suitable for most foreseeable uses.*"
- The Wisconsin Department of Natural Resources (DNR) allowed FMC to "inappropriately restrict the list of chemical constituents monitored in waters from wells, waste rock, pit leachates, and the influent waters to the mine's waste water treatment plant." Dr. Moran added: "FMC permit reports and subsequent public documents were based on these inadequate data."
- In a 1989 technical report submitted by FMC to the Wisconsin DNR as part of their *Mine Permit Application,* the company described the narrow 140-foot pillar of bedrock between the soon-to-be constructed mine pit and Flambeau River as "fractured" and predicted that "… all of the groundwater flowing through the [high sulfide] waste rock in the [backfilled] pit will exit the pit through the Precambrian rock in the river pillar and flow directly into the bed of the Flambeau River." This was not disclosed in the 1990 *Environmental Impact Statement* circulated for public review. Instead, this is what FMC told Wisconsin citizens, as memorialized in a plaque posted near the open pit during mine operations:



Plaque displayed by FMC at the Flambeau Mine site (circa 1995).

- FMC's surface water monitoring program for the Flambeau River has been "totally inadequate," both in terms of the number and location of sampling sites and the number of constituents reported. No samples have been collected for analysis immediately adjacent to the backfilled pit, even though, as noted above, FMC's own modeling showed that groundwater flowing through the waste rock in the backfilled pit would "flow directly into the bed of the Flambeau River."
- FMC discontinued their program of testing Flambeau River walleye for metals accumulation in 2011, despite earlier data showing an increase in walleye liver copper concentrations subsequent to mining, with downstream concentrations being significantly higher than upstream concentrations.
- FMC has conducted no follow-up testing to determine the fate of endangered species found in the Flambeau River near the mine site prior to operations.
- FMC told the public that it was "clearly impossible for any activity at the mine, on one side of the river, to affect any water wells on the other side of the river." However, as noted by Dr. Moran, technical reports filed by FMC's own experts indicated that "significant volumes of pit groundwater may be flowing down-gradient below the Flambeau River" via fractures and faults. He added: "Even though a number of private homes are located directly across the river from the mine site, with contaminated groundwater from the backfilled pit possibly headed in that direction," it appears that "no baseline or recent monitoring of wells on the west side of the river has been conducted by FMC or the State, at least no such data are publicly available."
- The Wisconsin DNR allowed FMC to severely restrict the constituents determined in effluent from the mine's waste water treatment plant after only 12 weeks of sampling, when blasting in the pit had commenced only 2 months earlier. These waters would have had insufficient time to evolve chemically and become suitably representative of waters in contact with sulfide-rich rocks.
- Most of the FMC monitoring wells currently in use have an inner diameter of only 2 inches – too narrow to allow adequate development (purging/cleaning) or sampling in such chemically-unstable waters. Thus, much of the FMC groundwater data is not representative of the *in-situ* water quality.
- A Flambeau River tributary that carries contaminated stormwater runoff from the mine site to the river has been added to the EPA's impaired waters list for exceedances of acute toxicity criteria for copper and zinc, despite passive water treatment (similar to what has been proposed for the PolyMet project).

Dr. Moran also commented on the inaccuracy of some of the predictions made by FMC's environmental consultant, Foth (Green Bay, WI), regarding the extent of groundwater pollution expected at Flambeau. He stated:

- "The narrative 'predictions' made by FMC's main Wisconsin consultant in the various permit-related and Annual Reports appear to be largely naïve geochemically and hydrogeologically … most useful for obtaining permits, less so for generating quantitatively-reliable predictions."

Foth also consults for **PolyMet** and **Twin Metals** in Minnesota and has been involved in drafting permit-related documents for the **Back Forty**, **Copperwood** and **Eagle** projects in Michigan.

After his thorough review of FMC documents, Dr. Moran concluded his report with the following comment:

"In short, the Flambeau Mine is the poster child for a severely-flawed permitting and oversight process that has likely generated long-term public liabilities."

He added: "Flambeau ground and surface water quality is being and has been degraded—despite years of industry public relations statements touting the success of the FMC operation. Rio Tinto said in a 2013 public relations (PR) release regarding the Flambeau Mine: 'Testing shows conclusively that groundwater quality surrounding the site is as good as it was before mining.' In efforts to encourage development of the other metal-sulfide deposits in northern Wisconsin and the Great Lakes region, the industry approach has been to simply repeat this false statement over and over, assuming that repetition will make it believed. Unfortunately, the FMC data show otherwise."

To read Dr. Moran's report in its entirety and for a summary of the key findings, go to:
https://deertailscientific.wordpress.com/moran-report/

For more information, please contact Deer Tail Scientific[5] *at* deertailscientific@gmail.com
or visit our website *at* deertailscientific.wordpress.com/.

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1. The Flambeau Mine, a Rio Tinto/Kennecott project, was a small open pit copper-sulfide mine that operated near Ladysmith, Wisconsin in the mid-1990s. The project was controversial, in part due to the close proximity of the 32-acre pit to the Flambeau River (a 140-foot separation). When production ceased in 1997, the Flambeau pit was backfilled with waste rock, some of it amended with limestone. No tailings are stored at the site, since all ore was shipped by rail to Canada for processing. Yet the site groundwaters are contaminated, and "*these waters would require expensive, active water treatment to be made suitable for most foreseeable uses*" (Moran, 2019). Environmental monitoring, included as part of the owner's long-term care responsibilities under Wisconsin law, is expected to continue through at least 2047 (40 years following the 2007 certification of the completion of pit reclamation activities), but state regulations also include a provision allowing for potential early termination of the responsibility.

2. To see a letter and "fact sheet" featuring the Flambeau Mine that was sent to Minnesota Governor Mark Dayton and all Minnesota lawmakers by *Mining Minnesota* (a mining trade association) in September 2013, go to: https://deertailscientific.files.wordpress.com/2019/11/flambeau-promotionals.pdf. Flambeau-related promotional materials circulated by others (Rio Tinto, Foth, Twin Metals, Aquila Resources, Wisconsin Mining Association, Pebble Partnership, Kennecott Eagle Minerals Company, etc.) are also posted.

3. This project was undertaken by hydrogeologist Robert E. Moran (Michael-Moran Associates, Golden, CO; remwater.org) in February 2017. He published a summary of his initial findings in April 2017 (https://remwater.org/projects/flambeau-mine-ladysmith-wisconsin-u-s/) while continuing to work on a more detailed report to be issued later the same year. Upon the premature death of Dr. Moran, the project was completed by Dr. David Chambers (Center for Science in Public Participation, Bozeman, MT; csp2.org) and research assistant Laura Gauger (Deer Tail Scientific, Duluth, MN; deertailscientific.wordpress.com), with funding provided by Deer Tail Scientific.

4. Flambeau Mine: Water Contamination and Selective "Alternative Facts", Robert E. Moran, Ph.D. (Michael-Moran Associates, Golden, CO; remwater.org), May 2019 (posthumous), 116 pg.; available online *at* https://deertailscientific.wordpress.com/moran-report/.

5. Deer Tail Scientific is a 501(c)3 nonprofit organization founded in 2017. As stated in its bylaws: *The mission of Deer Tail Scientific is to educate the public, government officials and tribal sovereign nations with fact-based information on: (1) the permitting, development, reclamation, environmental performance and economics of Wisconsin's Flambeau Mine; and (2) how the Flambeau Mine compares to other mines (closed, currently operating or proposed) in the Great Lakes region and beyond.*