Critical Points Extracted from:

SUMMARY - Flambeau Mine: Water Contamination and Selective "Alternative Facts"

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- "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 ground water 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.**"
- "FMC wells within the backfilled pit have median dissolved concentrations as high as the following (2014-16): Copper = 503 µg/L; Iron = 14,000 µg/L; Manganese = 33,500 µg/L; Zinc = 1200 µg/L; Arsenic = 23 µg/L; Sulfate = 1600 mg/L; Alkalinity = 610 mg/L; Hardness = 2150 mg/L; Total Dissolved Solids = 3110 mg/L; Specific Conductance = 3180 µS. **These values greatly exceed baseline data and relevant water quality standards and aquatic life criteria.** FMCs "baseline" ground water data report that uranium was detected in between 64 to 100% of their samples, yet **uranium was not included in the routine monitoring**."
- "These ground waters are also being contaminated with numerous minor / trace constituents (e.g. aluminum, arsenic, chromium, lead, nickel, uranium, etc.) as a result of FMC operations. Drawing reliable, ***quantitative*** conclusions about these constituents is difficult as ***FMC has been allowed to characterize the water quality using data that are not representative of the actual, chemically-unstable ground waters.***"
- "FMC and their contractors supplied all of the data and interpretations used to compile the permit-related reports and subsequent Annual Reports. Such an approach obviously reflects FMC's interests, but is likely quite different from financially-independent, public-interest science. **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.**"
- "FMC has failed to define either the actual flow pathways for ground waters exiting the backfilled pit, or to define the ground water-surface water interactions."
- "Contaminated discharges from the southeast corner of the FMC site have resulted in … [a tributary of the Flambeau River] being added to the Environmental Protection Agency (EPA) impaired waters list for exceedances of acute aquatic toxicity criteria for copper and zinc. Since 1998, FMC has instituted six different work plans to address this soil and water contamination issue. As of fall 2016, copper levels in the Flambeau River tributary still exceed the acute toxicity criterion [despite passive water treatment], and FMC has not secured a mine reclamation Certificate of Completion (COC) for this portion of the mine site."
- "Backfilled waste rock was mixed with limestone to minimize the formation of acid and release of trace constituents into the pit waters. However, the rise in pH due to the addition of limestone (or especially lime) can also generate conditions that increase the water concentrations of those trace elements that form mobile species ***at elevated pHs, such as aluminum, arsenic, antimony, chromium, manganese, nickel, selenium, molybdenum, uranium, zinc, etc.***"
- "Wastes from the FMC operation will remain onsite ***forever***. While limestone was added to the waste rock as it was backfilled into the pit, the ability of the limestone to neutralize the formation of acid waters is limited and finite. After the limestone has reacted with the waste rock, its neutralizing action will cease and the ***pit waters are likely to become increasingly acidic and the concentrations of potentially-toxic contaminants are likely to increase***. The deeper pit well waters already show evidence of increased degradation of water quality, in roughly 20 years, post-closure. **It is reasonable to conclude that the Flambeau ground and surface water quality will further degrade in the coming decades if current site maintenance practices continue.**"
- "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. It is doubtful that these statements represented the opinions of FMCs technical experts. Such statements are most useful for obtaining permits, less so for generating quantitatively-reliable predictions."
- "I know of no metal-sulfide mines anywhere in the world that have met the criteria of Wisconsin's 1998 moratorium on issuance of permits for mining of sulfide ore bodies without degrading the original water quality, long-term."
- **"Obviously the mining and remediation practices employed at Flambeau do not represent a *sustainable, long-term solution*.** While FMC may have satisfied State oversight and disclosure requirements, the site ground waters are contaminated, and ***these waters would require expensive, active water treatment to be made suitable for most foreseeable uses. Historically, most such costs are paid by the taxpayers.*"**

The full report can be found here