

DANGEROUS MEDIOCRITY

A comparative analysis of sulfide mining
regulation in the Lake Superior Basin

Minnesota Summary



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The following are excerpts from **Sulfide Mining Regulation in the Great Lakes Region: A Comparative Analysis of Regulation in Michigan, Minnesota, Wisconsin & Ontario**. To read the full report, visit nwf.org/sulfidemining

MINNESOTA

In Minnesota, permitting, operation and reclamation of sulfide mining is regulated by the Department of Natural Resources, under the authority of Minn. Stat. §§ 93.44-93.51 and their implementing regulations, Minn. Rules Ch. 6132 (“Nonferrous Metallic Mineral Mineland Reclamation Rules”). The Rules were adopted in 1992 and as their name suggests, are specific to the regulation of only non-ferrous metallic mining. The state’s policy regarding reclamation focuses on both environmental protection and the economic value of mining to the state. DNR’s stated objective is “... that mining be conducted in a manner that will reduce impacts to the extent practicable, mitigate unavoidable impacts, and ensure that the mining area is left in a condition that protects natural resources and minimizes to the extent practicable the need for maintenance.” Rule 6132.0200; and see Minn. Stat. §93.44.

At the same time, the law authorizes DNR to lease state lands for sulfide mining activities, stating that “[t]he business of mining, producing, or beneficiating nonferrous metallic minerals is declared to be in the public interest and necessary to the public welfare, and the use of property therefor is declared to be a public use and purpose.” Minn. Stat. §93.43. A 2004 report on the future of nonferrous metallic mining suggested that the state should assist developers through better public access to land and mineral ownership records, opening more state land to mineral leasing, and financing geologic and geophysical mapping.¹ Further, the state has come under significant criticism recently for a number of pro-development decisions and policy changes. The 2011 legislature amended the permitting and environmental review laws to “streamline” the process, including a provision to allow applicants to write their own proposed EIS instead of having DNR write it, and tightening the deadlines for citizen intervention and for permitting decisions.² In the same session, the legislature created an exception for a state economic development board to commit state monies to private projects prior to environmental review being completed. This exception was applied retroactively to the Board’s \$4 million loan to a sulfide mine project (Polymet’s NorthMet project) that has not yet completed its environmental review or acquired a permit to mine.

Minnesota has never permitted a sulfide mine to operate, but is currently reviewing the application of Polymet’s NorthMet project, which has incurred a great deal of public criticism. Also, there is significant exploratory activity underway, particularly in the northeast corner of the state in the Duluth Complex, which is part of the mid-continental rift system. The Duluth Complex also underlies most of the eastern part of the Superior National Forest and the Boundary Waters Canoe Area Wilderness, a pristine and protected area that is the most-visited wilderness area in the nation. The proximity of Minnesota’s potential sulfide mines to these

¹ State of Minnesota, “Governor’s Committee on Minnesota’s Mining Future: Final Report”, (September 2004). Available online at <http://www.leg.state.mn.us/docs/2004/other/040639.pdf>. Accessed December 4, 2011.

² For more information, see Elanne Palcich, “New Law’s Effect: Minnesota Streamlines Pollution.” *Minnesota Post*, March 11, 2011. Available online at http://www.minnpost.com/community_voices/2011/03/11/26518/new_laws_effect_minnesota_streamlines_pollution. Accessed December 12, 2011.

protected water resources has heightened the concern over the efficacy of state mining regulations.

SUMMARY OF FINDINGS

The following summarizes the “Assessment” section of the report, providing an overview of each jurisdiction’s performance. The information found by this study reveals a number of interesting similarities and differences between the jurisdictions surveyed. A summary table can be found at Appendix B to this report, showing side by side all the criteria scores and overall scores for each jurisdiction.

However, as noted above, their very different practical experiences with sulfide mining regulation make an apples-to-apples comparison impossible. It would not be fair, for example, to assess the experiences of states that have already permitted sulfide mines against states that have no practical experience. It is, therefore, not the intent of this report to rank the jurisdictions against each other, but rather to evaluate each jurisdiction against the set of objective criteria set out in each assessment category. At the same time, it is worth noting any areas where one jurisdiction may provide a model of a regulatory framework or implementation practice for the other jurisdictions. Those suggestions are made in the “Recommendations” section at the end of the report.



As in Michigan, Minnesota’s nonferrous metallic mining regulations are set apart from its ferrous mining regulations, attesting to the state’s recognition of the special potential hazards of sulfide mines. The **regulatory scope** of Minnesota’s program is remarkably broad and detailed, and many of its regulations (Minn. Rules, Ch. 6132) can serve as models of technical specifications aimed at protecting the environment and especially water quality. Minnesota takes special pains to protect its wetlands’ integrity, and generally places great emphasis on appropriate siting of potential mines to cause the least environmental disturbance possible. At the same time, however, Minnesota’s overarching mining policy includes both environmental and economic goals and the environmental reclamation standard is therefore tempered by economic considerations. Minnesota has also recently amended its law to allow permit applicants to preclude a state environmental assessment of their projects by submitting their own self-produced assessments. To many, this step reduces the reliability of the environmental assessments that form the basis of the state’s mining permit application review.

Minnesota's permit **review process** requires a high level of standard technical detail to be provided by permit applicants, and also provides good opportunities for public participation through the environmental analysis stage of permit review. However, in contrast to the level of detail required in the application itself, the rules fail to provide clear and universal standards for permit approval or denial. Also, public participation is not encouraged in a meaningful way outside of the environmental analysis process. In the last year, the state made a major change to its policy of not allowing state approvals or permits to be granted to a project that has not yet completed environmental review, by carving out an exception to an economic development board that wished to loan funds to a proposed sulfide mine for land acquisition. This move drew sharp public criticism and signaled to many that the state values economic development over environmental concerns in the mining context.

The **enforcement** mechanisms of Minnesota's nonferrous mining regulations provide the DNR with ample opportunities to stop work and, notably, to directly assess civil penalties (without a court order) against a permittee who violates the statutes, rule, or mining permit. However, while DNR is permitted to inspect permitted operations at any time, it has no mandate to do so in a regular fashion. Minnesota set a high bar on citizen standing to intervene and participate in enforcement actions, and given some of its recent policy changes (noted above), it has facilitated an atmosphere somewhat hostile to citizen and specifically environmentalist involvement. Whether and how DNR will in fact utilize its enforcement powers remains to be seen.

Minnesota's **program resources** are funded by fairly weighty permit application fees and annual extraction fees, but staffing shortfalls and time constraints placed on application review might weaken the program's effectiveness in the near future. The financial assurance mechanisms, however, successfully ensure that the permittee will be held responsible for funding a cleanup operation either during or after mining operations and reclamation.

Finally, the **reporting and official statements** requirements do not provide a great deal of detail, as follows from the generally weak monitoring framework. All information is, however, reviewable by the public.

1. REGULATORY SCOPE

The regulatory scope of a sulfide mining regulation program refers to the breadth and depth of issues and activities regulated by the jurisdiction, and also to the overall purposes and goals of the program. This analysis does not evaluate or account for how the law is actually implemented but simply how it is written; the quality of application and implementation is evaluated in later sections. An ideal program would cover all the major issues of concern (e.g., runoff from tailings, structural stability, financial capacity of the operator, etc.) and also set a robust policy goal for remediation and the greatest degree of environmental protection both during and after mining activities. Fulfillment of the following criteria would indicate a comprehensive system of regulation with an appropriate end goal of the greatest possible protection to the human and natural environment:

1. The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.
2. The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.
3. The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.
4. Regulations are applicable statewide or province-wide.
5. The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location's appropriateness for future mining.
6. The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.
7. The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.
8. The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures, contingency plan implementation.
9. Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.
10. A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.
11. An environmental review process that uses ecological values and carrying capacity is required and is applied by the state or province to determine where mining will be allowed.
12. Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every medium (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).
13. The state or province requires holistic mine plans, including factors like stability, workers' safety; long-term viability of the mine (prohibiting high-grading), economic plans for communities' long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.

14. Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.
15. The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.
16. The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.
17. The state or province requires contingency plans for any potential failures.

Minnesota's regulation of sulfide mining is fairly comprehensive, with great detail devoted to reclamation standards in particular. However, the program could be improved by increasing specificity in certain areas and by promoting environmental protection as the essential element in permitting decisions. As they stand, the regulations give significant leeway to DNR to make decisions in any number of ways, which may or may not be most protective of the environment.

Overall Grade: Fair.

1	The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.	YES
2	The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.	YES
3	The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.	SOME
4	Regulations are applicable statewide or province-wide.	YES
5	The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location's appropriateness for future mining.	SOME
6	The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.	NO
7	The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.	NO
8	The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures and contingency plan implementation.	SOME
9	Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.	YES

10	A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.	SOME
11	An environmental review process that uses ecological values and carrying capacity is required and is applied to determine where mining will be allowed.	SOME
12	Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every media (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).	SOME
13	The state or province requires holistic mine plans, including factors like: stability, workers' safety; long-term viability of the mine (not allowing just high-grading), economic plans for communities long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.	NO
14	Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.	NO
15	The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.	SOME
16	The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.	YES
17	The state or province requires contingency plans for any potential failures.	YES

Discussion:

- 1. The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.**

Minnesota regulates each of these areas, and provides a remarkable degree of detail in most.

Production, transport and fate of acid mine drainage and other contaminants: Minn. Rules 6132.2200 (“Reactive Mine Waste”) states as policy that “[r]eactive mine waste shall be mined, disposed of, and reclaimed to prevent the release of substances that result in the adverse impacts on natural resources.” All mining operations must meet four requirements: (A) conduct a waste characterization study as part of the permit application and annually through the life of the permit (R6132.1000), (B) be designed by a professional qualified engineer registered in-state, and (C) include a monitoring system in the project design, unless (D) adhering to the requirements would inhibit design. Minn. Rules 6132.2200, Subpt 2. The rules further specify that the permit application’s mining and reclamation maps must show “detailed drainage patterns

for waters that may contact reactive mine wastes.” Minn. Rules 6132.100, subpt 7(C). DNR cannot issue a permit to any operation that uses or results in “in-situ leaching as part of the beneficiating process.” Minn. Rules 6132.0300, Subpt. 4(B)(2).

Siting and buffers: The goal of the rules regarding siting is to “minimize adverse impacts on natural resources and the public.” Minn. Rules 6132.2000, subpt 1. “All sites shall incorporate setbacks or separations that are needed to comply with air, water, and noise pollution standards; local land use regulations; and requirements of other appropriate authorities.” *Id.* All mining operations should be sited to minimize impacts, including subsidence, runoff and seepage, conflicts with neighboring uses, and so on. *Id.*, Subpt 5. Buffers constructed of natural materials must be used to minimize impacts and make the operation compatible with surrounding non-mining uses. Minn. Rules 6132.2100.

In addition to the general siting policy applicable to all sites, mining is totally prohibited in a number of listed protected areas, such as the Boundary Waters Canoe Area Wilderness, Voyageurs National Park, state wilderness areas or state scientific natural areas, etc. Minn. Rules 6132.2000, subpt 2, A-H. Also, mining that disturbs surface areas is prohibited in other listed areas, generally within ¼ mile of the prohibited areas listed in subpt 2 (A-H), plus a number of other designated areas with special wilderness or environmental value. *Id.*, subpt 3, A-M.

Finally, mining is restricted (i.e., allowed only where there is no feasible and prudent alternative) in other listed areas, including national wildlife refuges, national waterfowl production areas, national trails, state wildlife management areas, state designated trails, specially identified peatlands, parts of the Lake Superior lakeshore, and within 500 ft of an occupied dwelling, school, church, public institution, public park or within 100 ft of a cemetery or right of way of a public road. Minn. Rules 6132.2000, Subpt 4. In any of these restricted circumstances, the applicant must show no adverse environmental impacts or that it will provide reasonable mitigation. *Id.* Finally, no mining is permitted in wetlands unless the draining/filling will be replaced or restored in accordance with the Wetlands Conservation Act and rules (6132.5300). (Subpt 6).

Heap and dump leaching: The reclamation standard rules set out very detailed requirements for design, monitoring and reclamation of heap and dump leaching facilities, “to be structurally sound, minimize hydrologic impacts, minimize the release of substances that adversely impact other natural resources, and promote progressive reclamation.” Minn. Rules 6132.2600. The heap and dump leaching facility design must provide site selection rationale, ensure that the design will meet all state and federal water quality standards, provide a means to detect and retrieve leaching solutions in the event of leakage, ensure that heavy rain or snow will not result in overtopping of ponds, identify monitoring locations, describe how residual leaching can be neutralized and detoxified, and include a schedule for engineering inspections throughout the construction, operation, reclamation and post-closure phases.

Waste rock piles and storage: The design, construction and operation of waste rock piles and storage is specifically addressed in the reclamation standards and must “minimize hydrologic impacts, enhance the survival and propagation of vegetation, be structurally sound, control erosion, promote progressive reclamation, and recognize the conservation of the mineral resources.” Minn. Rules 6132.2400. The rule sets height, slope, and buffer requirements for waste piles in different scenarios and for different types of waste.

Tailings basin management: The design, construction and operation of tailings basins are addressed in the reclamation standards and must be “structurally sound, control air emissions, minimize hydrologic impacts, promote progressive reclamation, and enhance the survival and propagation of vegetation.” Minn. Rules 6132.2500, subpt 1. The tailings basin design must meet many of the same standards set for waste rock piles and storage, including assurances of no overtopping in precipitation events, a reclamation plan for tailings basins, a schedule of engineering inspections, monitoring, and so on. *Id.*, subpt2.

Transportation of acid-producing materials: Transportation is not covered in the mining standards, but is covered in the environmental assessment done as part of the application. A non-ferrous metallic mining operation is required to produce both an EAW (environmental assessment worksheet), to be used as a scoping document for the EIS, and an EIS, under the Minnesota Environmental Policy Act (MEPA). Minn Stat, Ch. 116D, Rules 4410.4300, subpt 11; Rules 4410.4400, subpt 8. Mines are in the “mandatory EIS” category.

Long-term remediation and short and long-term acid production potential in pit and storage areas: A reclamation plan must be submitted with the application to mine, and must incorporate all the required elements of Rules 6132.2000-3200, which set forth the requirements for the design, methods, sequence and schedules of reclamation activities. Minn. Rules 6132.1100, subpt 6(C).

2. The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.

Structural integrity is ensured through minimum design requirements for pitwalls at Minn. Rules 6132.2300. Subsidence is further regulated by requiring that the mine design minimize subsidence to the extent practicable. Minn. Rules 6132.3000. If subsidence occurs, the permittee “shall establish ground control survey locations and conduct surveys to document the extent of ground movement” and shall contour or fill in such areas to protect public health and safety or natural resources. *Id.*

3. The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.

While the initial environmental review process considers effects and contaminants synergistically on an ecosystem-wide level, this coordinated review is not guaranteed in the actual regulation of an active mine. All metallic mineral mines and processing operations require the preparation of an EIS. Minn. Rules 4410.4400, subpt 8. DNR is the governmental unit “responsible for verifying the accuracy of environmental documents and complying with environmental review processes in a timely manner,” Minn. Rules 4410.0400, subpt 2, but the

permit applicant is the party responsible for creating the EIS.³ In the EIS, chemicals or indicators of concern are considered “synergistically” across the various potential dispersal routes (air, water, etc). Minn. Rules 4410.2300(H).

However, following that review, there is no mechanism for coordinated review of specific chemicals or indicators. There is ad hoc communication between departments and a memorandum of understanding might be created to coordinate and define the roles of different departments, but generally the departments handle separately each permit under their purview (e.g., NPDES, CAA emissions, mining, etc.). For instance, DNR manages the mining permit while MPCA is the delegated CWA and CAA permitting authority via the EPA.

4. Regulations are applicable statewide or province-wide.

There are no blanket or geographic exceptions to application of the law or regulations.

5. The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location’s appropriateness for future mining.

Exploratory activities are regulated only in very specific circumstances. If on land leased from the state, the lease requires reclamation for exploratory activities, and may also involve a department of health permit if drinking water is potentially affected. However, if located on private land, there is no permitting process for exploratory activities, unless again the water supply may be contaminated and department of health becomes involved. Bulk sampling would trigger an environmental analysis (at the EAW level) and would include a reclamation plan.⁴

6. The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.

Monitoring requirements are very thin in Minnesota. The only monitoring required by law is self-monitoring by the permittee. State monitoring is not required by the mining regulations, though the permittee must allow DNR to inspect the operation and its records at DNR’s discretion. Minn. Rules 6132.5200. DNR will inspect at least annually, to double-check the permittee’s annual report.⁵ There is no general schedule or requirement for self-monitoring by the permittee for construction, operations, and/or the reclamation and post-closure phases. However, the reactive mine waste storage facility, tailings basin, and heap and dump leaching facilities designs must include a schedule of inspection and monitoring points, “to ensure compliance with the design.” Minn. Rules 6132.2200, 2500, 2600.

DNR is not in charge of and does not consider water quality or other permits or monitoring for compliance with them. Instead, water quality is monitored by the Pollution Control Agency under a NPDES and SDS permit. (The SDS permit is the associated state water quality permit covering water quality issues not specifically addressed in the Clean Water Act.) NPDES/SDS permit-required water quality monitoring is done on a specified schedule (e.g.,

³ Note: Prior to a 2011 amendment, DNR was responsible for creating the EIS. Under the amended law, the applicant can bypass a state-created EIS by submitting its own. Minn. Stat. §116D.04(subd2a)(i). It is not expected, however, that the law change will drastically change the practical process for EIS development.

⁴ Jennifer Engstrom, Mineland Reclamation Section Manager, Minnesota DNR, (personal communication with author, August 9, 2011).

⁵ Id.

‘weekly’, ‘twice-monthly’, ‘monthly’, etc.) The permittee self-reports to the MPCA the results of the NPDES/SDS permit-required monitoring on a monthly basis using an MPCA-approved reporting form and format. These monthly reports are routinely reviewed (at least semi-annually or annually for larger facilities) by MPCA compliance and enforcement staff. As resources allow, MPCA staff may conduct independent verification monitoring of the permittee’s monitoring.⁶ See the Water Quality Report for additional information, at Appendix A.

7. The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.

The administrative regulations state that they in no way supplant or override any other rule, statute or ordinance. R6132.0300, subpt 4(B)(2). However, compliance with other applicable laws is not a requirement to obtain or maintain a mining permit, and falling out of compliance with any one of the others will not affect the permit to mine (unless the problem causing the compliance failure is directly due to something regulated within the mining permit). The mining permit is not an overarching or controlling permit; it is coequal with all other standards and regulations. Certain of the reclamation standards (specifically the reactive mine waste facility and heap and dump leaching facilities) require that the reclamation design of these facilities be consistent with state and federal standards. Minn. Rules 6132.2200, 2600. There is no state law requiring compliance with tribal regulations.

8. The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures, contingency plan implementation.

Financial assurance is calculated to cover (1) reclamation activities should the permittee fail to perform them when operations cease (based on the contingency reclamation plan, filed annually) and (2) corrective action costs if the permittee fails to perform required corrective actions. Minn. Rules 6132.1200. Financial assurance for the contingency plan must be calculated in the application and submitted to DNR before the permit to mine will be issued. Minn. Rules 6132.1200, Subpt 4. There is no “worst case scenario” general fund, as in Wisconsin, though the corrective action costs could account for this category of unforeseen damages.

9. Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.

Financial assurance must be maintained through the post-closure period. The permittee is released from this obligation when DNR determines through an inspection that all reclamation activities are complete and conditions necessitating post-closure maintenance no longer exist and are not likely to recur. Minn. Rules 6132.1200, subpt 4(H).

10. A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.

⁶ Ann Foss, Minnesota Pollution Control Agency, (personal communication to author, September 9, 2011).

Mining operations are not exempt from most environmental laws, including air and water quality.⁷ However, as noted above, coordination between the different permitting authorities and involved agencies is centralized during the EIS process, but thereafter is ad hoc.

11. An environmental review process that uses ecological values and carrying capacity is required and is applied by the state or province to determine where mining will be allowed.

Siting is a key aspect of the environmental review process. The rules call for detailed site analysis and list a number of prohibited or restricted areas, including all state wilderness areas, scientific and natural areas, and state parks. Minn. Rules 6132.2000. The goal of the siting policy is to allow mining only at sites that “minimize adverse impacts on natural resources and the public.” *Id.* The basic tenet of MEPA is to prohibit any governmental action, approval or permit of an activity that may cause significant harm to any part of the environment where there is a feasible or prudent alternative available. Minn. Stat. § 116.04(d), subd. 6.

12. Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every media (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).

As a baseline (in the absence of more stringent state standards), federal standards for air and water quality apply equally in all states; there are no federal exceptions for sulfide mining. For water quality standards, see the Water Quality Report, at Appendix A. Air and water quality standards are set on a case-by-case basis, depending on underlying conditions. However, there are some general standards for heavy metals, chlorine, and other substances relevant to sulfide mining. See Minn. Rules 7050.

13. The state or province requires holistic mine plans, including factors like: stability, workers’ safety; long-term viability of the mine (not allowing just high-grading), economic plans for communities’ long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.

The purpose of the mining plan is to establish the physical design of the operation, rate of extraction, and remediation plan to prevent environmental harm to the greatest possible extent. While the surrounding communities’ wishes may be involved in the permitting decision-making process or monitoring of the facility, the law and regulations do not allow or suggest that the mining plan itself will incorporate conditions or requirements beyond immediate, on-site physical removal and remediation activities.

At the very least, however, the EIS process must take into account “economic, employment and socio-economic effects” of the proposed operation. Minn. Stat. 166.04(d), subd. 1(a). All direct, indirect, and cumulative effects, both positive and negative, must be described. Minn. R. 4410.2300(H). Also, the permittee must submit as part the application a certificate of

⁷ One exception is that non-ferrous metallic mining and beneficiation is not subject to Minnesota’s general hazardous waste permitting regulations. Minn R. 7045.0120, subpt 1(l). The Ch. 6132 reclamation standards provide a substitute set of regulations.

insurance confirming it carries liability insurance for the proposed operation to compensate anyone who might be damaged as a result of the mining operation or any reclamation or restoration connected with the operation. R6132, Subpt 3(C).

14. Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.

Minnesota's policy goal does not necessarily require or aim for "functionality" but rather emphasizes doing the best job possible and returning the environment to the best "practicable" state:

...it is the policy of the Department of Natural Resources that mining be conducted in a manner that will reduce impacts to the extent practicable, mitigate unavoidable impacts, and ensure that the mining area is left in a condition that protects natural resources and minimizes to the extent practicable the need for maintenance.

Minn. Rules 6132.0200. The limitation provided by "to the extent practicable" is in keeping with the general policy of Minnesota's regulation, which attempts to balance environmental protection with the promotion of economic development:

... it is hereby declared to be the policy of this state to provide for the reclamation of certain lands hereafter subjected to the mining of metallic minerals [...]to control possible adverse environmental effects of mining, to preserve the natural resources, and to encourage the planning of future land utilization, while at the same time promoting the orderly development of mining, the encouragement of good mining practices, and the recognition and identification of the beneficial aspects of mining.

Minn. Stat. §93.44.

15. The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.

DNR and the other permitting agencies rely on the EIS process to analyze as many impacts as are reasonably foreseeable, be they direct, indirect or cumulative. R 4410.2300(H). However, the statute and regulations do not give specific guidance or a rubric for DNR to follow in making a permitting decision. See Minn. Rules 6132.4000 ("Procedures for Obtaining a Permit to Mine"). Therefore, it is not clear whether all impacts must in fact be analyzed and included in permitting decisions.

16. The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.

Cumulative impacts are required as part of the EIS. Minn. Rules 4100.2300(H). This will include all parts of the proposed operation that require permitting or state action, involving in all cases beneficiation and transportation (where transportation is at a level or of a type requiring a permit).⁸

17. The state or province requires contingency plans for any potential failures.

⁸ Jennifer Engstrom, supra note 25.

A contingency plan must be created annually to set reclamation, closure and post-closure plans if the operation were to cease in the following year. Minn. Rules 6132.1300, subpt 4. The contingency plan must also be part of the application (for the first year's operation). Minn. Rules 6132.1100, subpt 8.

2. REVIEW PROCESS

Since each jurisdiction surveyed prohibits mining or related activities without a state-issued permit, with the sole exception of Ontario, the process of reviewing an application for a mining permit is a critical part of the states' regulatory scheme. The application stage is a jurisdiction's best opportunity to control a sulfide mine by setting the parameters of the operation's location, technologies, monitoring requirements, and so on, or by denying an application that fails to meet the state's safety requirements. An ideal application review process is highly detailed, independent, and public. There are a number of factors the jurisdiction can require of a proposed mine that will decrease the likelihood of environmental damage and ensure that the mine operator/owner is providing a net positive value to the jurisdiction. The jurisdiction should apply clear standards to each application, and should have the resources (financial and expert) to conduct a thorough and competent review. It is also important that the application review process be open to the public and that special care be taken to respond meaningfully to the concerns of any local governments or tribes whose interests are directly affected by the proposed mine. These standards and expectations are set forth in the following criteria:

1. The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.
2. The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.
3. The state or province has an integrated process for assessing applications and integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.
4. The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.
5. Consent by any impacted tribe/First Nation is required for mine approval.
6. Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI "Prove it first" law).
7. Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.
8. Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.
9. The state or province denies permits if they do not meet the regulatory standards.
10. All state or province analytical materials and data are available to the public.

11. The state or province requires that all data supporting an application be available to the public.
12. The state or province supplements applicant-provided data with its own, independently-gathered data.
13. Tribes/First Nations impacted by a mine proposal have delegated authority, if desired, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.
14. The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.
15. Public funds may not be committed to financing or assisting project development until environmental review is completed.
16. Financial assurance is calculated transparently and well-before any permit is issued.
17. Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.

Minnesota’s permit review process is highly detailed insofar as the submission requirements, but fails to set out a clear standard or set of standards for decision-making. Public participation is highly regulated but not meaningfully encouraged past the environmental review phase. Tribal interests are consulted to a greater extent than in other jurisdictions, but no official regulatory authority is given to tribal governments.

Overall Grade: Fair.

1	The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.	YES
2	The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.	YES
3	The state or province has an integrated process for assessing applications and integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.	SOME
4	The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.	SOME
5	Consent by any impacted tribe/First Nation is required for mine approval.	NO
6	Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI “Prove it first” law).	NO
7	Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.	YES
8	Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.	NO
9	The state or province denies permits if they do not meet the regulatory standards.	N/A
10	All state or province analytical materials and data are available to the public.	YES

11	The state or province requires that all data supporting an application be available to the public.	YES
12	The state or province supplements applicant-provided data with its own, independently-gathered data.	SOME
13	Tribes/First Nations impacted by a mine proposal have delegated authority, if desired, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.	NO
14	The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.	YES
15	Public funds may not be committed to financing or assisting project development until environmental review is completed.	SOME
16	Financial assurance is calculated transparently and well-before any permit is issued.	YES
17	Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.	N/A

Discussion:

1. The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.

The application for a mining permit must include an extremely lengthy list of technical documentation, maps, and other assessment data, too lengthy to quote here. See Rule 6132.1100, subpt 3. These regulations are similar in scope and detail to Wisconsin's, stating specifically not just the type of information that must be submitted but the technical format of such information and parameters for measuring and setting forth the information.

2. The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.

The state has a well-developed though somewhat informal relationship with tribal authorities, and so far has given them a good opportunity to participate as reviewing agencies with the Polymet mine application. Federal coordination is ad hoc but so far cooperative.

Much of northern Minnesota is ceded territory (ceded by tribes in 19th Century treaties) and now public land, where the tribes retain usufructory rights to hunt, fish and gather. Thus, when public lands are involved, the tribes will have special say in the permitting and management of a sulfide mine. This has been the case in the Polymet project. Polymet's mine and site locations are in ceded territory under an 1854 treaty with the Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa, and Grand Portage Band of Chippewa. The Bois Forte Band and Fond du Lac Band are participating as cooperating agencies in the Polymet review and their viewpoint is interjected in numerous places throughout the draft EIS. A memorandum of understanding (last amended in May 2008) defines the roles and responsibilities of these parties. The Grand Portage Band is not currently a cooperating agency or

signatory to the memorandum of understanding, but it was not involved in the DEIS preparation process and recently requested formal confirmation of cooperating agency status for the project.⁹

Also, over the years, DNR has initiated quarterly update meetings on issues affecting tribes, and tribes are given an extra notice on mining permit applications. Their interests are more important than those of local units of government, in that they are consulted in a way that gives them more authority than local governments.

3. The state or province has an integrated process for assessing applications and integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.

Coordination among agencies is informal and not officially mandated. The EIS is produced in a joint effort between all potentially involved agencies, but after that the agencies coordinate efforts only on an ad-hoc basis. There is no common permit, or superior permit or regulator among them. Public input must be systematically included in the EIS process. The extent of political influence is unknown.

4. The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.

Minnesota sets very detailed standards for public input, allowing for a great deal of involvement through the EIS phase, but limiting involvement in permit review and enforcement. In the EIS and scoping phase, any interested person may participate in the scoping process for the EIS (to determine the subjects, concerns, etc., addressed in the EIS), and may comment on the draft EIS. Those comments must be incorporated and addressed in the final EIS. R 4410.2100, 2600, 2700. Interested persons may also submit written comments on the adequacy of the final EIS for 10 days following its publication. R 4100.2800, subpt 2.

During the permit review process, there is a more limited scope for participation than Wisconsin or Michigan allow. The permit applicant must publish a notice of the application in a newspaper of local circulation in the affected area. R6132.4900. Objections to the proposal must include a statement of interest and/or evidence of a material issue of fact that should be brought out through a contested case hearing. Minn. Rules 6132.4900, subpt 2. The commissioner then decides whether the person has standing and/or a reasonable claim (or is an affected local government or agency) and if so, a contested case is held and that person may participate. Otherwise, the commissioner proceeds as if no objection was filed.

In the enforcement phase, public comment is not solicited, nor is there a formal mechanism for input. Informal complaints or comments are fielded by a program staff person, who then will put the person in touch with the responsible agency or the permittee, as needed. A citizen complaint will not automatically trigger a departmental investigation.

5. Consent by any impacted tribe/First Nation is required for mine approval.

Consent by impacted tribes is not required for approval.

⁹ The complete Draft EIS is available on DNR's website at http://files.dnr.state.mn.us/input/environmentalreview/polymet/draft_eis/summary_document.pdf. Accessed December 13, 2011.

6. Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI “Prove it first” law).

Minnesota’s application standards are highly detailed and therefore allow for easier and more concrete decision-making. However, there is a lack of a clear decision-making standards based on those submissions. DNR must approve the permit only if the applicant has complied with the requirements, but this could be read to say merely that the application is complete and in the proper format.

7. Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.

A reclamation plan must be filed with the application for the permit to mine. R6132.1100, subpt 6. Before granting the permit, DNR must “determine that that the reclamation or restoration planned for the operation complies with lawful requirements and can be accomplished under available technology and that a proposed reclamation or restoration technique is practical and workable under available technology.” Minn. Stat. §93.481, subd 2.

8. Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.

The tribes are consulted prior to application submission and are updated at least quarterly on any activities potentially affecting their interests or rights. Three tribes are participating agencies in the EIS review of the PolyMet project, and have submitted numerous comments and questions in the public record. The extent to which these comments and concerns will be addressed is as yet unknown, as no sulfide mine has come into operation and Polymet is still under review. However, there is no general indication in the law that tribal standards or requests must or even should be integrated.

9. The state or province denies permits if they do not meet the regulatory standards.

DNR is directed by statute that it may grant a permit only once it has determined that the proposed project meets all “lawful requirements”. Minn. Stat. §93.481, subd 2. However, there is no experience with this yet since only one permit has been sought under these rules and is currently still in the environmental review phase.

10. All state or province analytical materials and data are available to the public.

Everything is available, though it may not be automatically posted. If the applicant or operator requests confidentiality, it must be done through a specific statutory process.

11. The state or province requires that all data supporting an application be available to the public.

Yes, all application data is available.

12. The state or province supplements applicant-provided data with its own, independently-gathered data.

DNR does a site visit in the pre-application phase and helps the applicant set up the method of the mine characterization study, which becomes the basis for the reclamation plan. DNR also double-checks all the calculations made in the mine characterization study.

13. Tribes/First Nations impacted by a mine proposal have delegated authority, if desired, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.

Tribes have no special significance or statutory/regulatory power in the regulation or monitoring of the mining operation, once running, unless the project is on their property. They can gain official regulatory authority only if they choose to be a “cooperating agency” in the EIS (though this authority would evaporate following environmental review), and can gain federal “treatment as state” status and exercise authority in water quality regulation.¹⁰

14. The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.

Minn. Stat. §43A.38 is the code of ethics for executive branch employees and includes a prohibition of financial conflicts of interest.

15. Public funds may not be committed to financing or assisting project development until environmental review is completed.

Public financing, approval, or permitting of a project cannot occur until the project’s environmental review is complete. The Minnesota Environmental Policy Act prohibits a “final governmental decision ... to grant a permit” until any environmental review is complete. Minn. Stat. §116D.04, sub 2(b); Minn R. 4410.3100, sub 1. Under the Rules, a “permit” means, *inter alia*, a “commitment to issue or the issuance of a discretionary contract, grant, subsidy, loan or other form of financial assistance, by a governmental unit.” Minn. R. 4410.0200, sub 58.

However, the state’s handling of the Polymet mine opened the door for investment/loans to sulfide mines by a state board, even while environmental review is pending. A number of governmental entities are exempt from the general rule prohibiting a commitment to financing or assisting: courts, school districts, and regional development commissions other than the Metropolitan Council. Minn. Stat. 116D.04, sub 1(a)(e). The 2011 Legislature added another entity to this exemption list, the Iron Range Resources and Rehabilitation Board (IRRRB). This was done just months after the IRRRB granted the Polymet project developer a \$4 million loan for property acquisition required for the project, and was sued by a number of environmental groups for violating MEPA. Once the IRRRB was added to the exemption list in summer 2011, the lawsuit was dropped for mootness and the loan was secured.

16. Financial assurance is calculated transparently and well-before any permit is issued.

Financial assurance must be in place before the mining permit is issued. R6132.1200, subpt 4(B). The department does the calculation but may hire a third party to evaluate the financial assurance (in which case, the permittee bears the cost of this third party review). Minn.

¹⁰ See Water Quality Report, Appendix A.

Rules 6132.1200, subpt 4(A). It is available for public review, though the permittee could request confidentiality if it shows sufficient grounds.

17. Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.

Since the EIS process is coordinated by state agencies (as opposed to the applicant), the environmental information and expertise of the state should be integrated into the financial assurance calculation. Whether this happens in practice remains to be seen, as Minnesota has no experience with such calculations as of yet.

3. ENFORCEMENT

A regulatory structure is only as strong as its enforcement, including the mechanisms and powers granted to the regulators and whether and how the regulators actually use them. An ideal enforcement system gives regulators the tools and resources to enforce the standards set forth in statutes, rules and permits, and to ensure that deviations from or violations of those standards are reversed and adequately punished so as to deter future violations. In addition to having the authority, staff, and money to enforce the law, a meaningful enforcement system must have regulators capable of and committed to enforcement.

It is important to note that the lack of experience in regulating sulfide mines in the jurisdictions surveyed leaves a lack of certain data in this area. Until sulfide mines are permitted, operate, and close under the existing laws, it is impossible to say how a jurisdiction actually and fully enforces its laws and permit conditions, and this report does not speculate on such issues. Furthermore, we recognize that the strength of enforcement may depend to some extent on the political climate in a jurisdiction, and may therefore ebb and flow with legislative and executive changes. However, there is at least some experience to work from in some jurisdictions, and the basic capacity for enforcement is very clearly set out in the statutory authorization, staffing and funding of each jurisdiction's sulfide mining program.

In all states, a mine operator/owner holding a Clean Water Act (CWA) wastewater/stormwater permit will be subject to CWA penalties for violating those permits, including monetary sanctions and stop orders. In all states, citizens can sue operators for violations of CWA permits, with attorneys' fees awarded to successful plaintiffs. In all states, the CWA allows citizen intervention in NPDES permit, 404 and 401 appeals. This system of regulation operates in parallel with the mining permit enforcement scheme in each U.S. jurisdiction, but there is little to no operational overlap. For a review of states' CWA enforcement mechanisms, see the Water Quality Report at Appendix A.

1. The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.

2. The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney’s fees for prevailing citizens.
3. The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.
4. The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.
5. The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.
6. The state or province requires personnel to conduct inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.
7. Citizens have access to all enforcement data.
8. Reclamation, enforcement and monitoring are enabled beyond the life of the permit.
9. Post-closure enforcement is strong, with adequate resources and public involvement.
10. Immediate independent judicial review is available to citizen plaintiffs.
11. Citizens can initiate and participate in inspections.
12. Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.
13. Permit conditions and work plans are reviewed at least annually.
14. The agency has authority to modify permit conditions whenever necessary (“adaptive management”), and exercises that authority as needed.
15. Any permit variances, amendments, or changes requested by the permittee are rare and uncontested.

Minnesota’s enforcement scheme empowers the agency to take nearly unfettered and immediate enforcement action against a permit violator. However, it falls short in not requiring a strong or regular inspection schedule, and in limiting citizen intervention with a high bar for establishing standing.

Overall grade: Fair.

1	The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.	YES
2	The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney’s fees for prevailing citizens.	SOME
3	The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.	SOME
4	The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.	SOME

5	The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.	N/A
6	The state or province requires personnel to conduct inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.	NO
7	Citizens have access to all enforcement data.	YES
8	Reclamation, enforcement and monitoring is enabled beyond the life of the permit.	YES
9	Post-closure enforcement is strong, with adequate resources and public involvement.	N/A
10	Immediate independent judicial review is available to citizen plaintiffs.	NO
11	Citizens can initiate and participate in inspections.	SOME
12	Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.	YES
13	Permit conditions and work plans are reviewed at least annually.	YES
14	The agency has authority to modify permit conditions whenever necessary (“adaptive management”), and exercises that authority as needed.	YES, N/A
15	Any permit variances, amendments, or changes requested by the permittee are rare and uncontested.	N/A

DISCUSSION:

- 1. The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.**

Minnesota grants the DNR many tools and options to enforce its rules and statutes including, notably, the ability to assess monetary penalties directly (i.e., without a court order).

Stop orders: The commissioner of DNR may suspend operations (i.e., the entire permit) or any portion(s) of the permit “if the commissioner finds it necessary in an emergency to protect the public health or safety or to protect public interests in lands or waters against imminent danger of substantial injury in any manner or to any extent not expressly authorized by the permit, or to protect persons or property against such danger” Minn. Stat. § 93.481, subd 4(d); Minn. Rules 6132.4500, subpt 1. The suspension order is limited to 30 days, unless the permittee is given at least 10 days written notice and an opportunity to be heard at a formal hearing. Minn. Stat., §93.481, subd D; 6132.4500, subpt 3.

Corrective action orders – In addition to or as an alternative to a stop order under §93.481, the commissioner may order a permittee to “take all measures necessary to prevent or remedy the emergency situation.” Minn. Stat. §93.481, subd 4(d); Minn. Rules 6132.4500, subpt 2. Further, and more specifically, on observation or reporting of a violation of the permit or the rules, the DNR is not only permitted but required by statute to order the permittee to take immediate corrective action (where there is imminent danger) or submit an action plan within 2 weeks. Minn. Rules 6132.3100; and see Minn. Stat. § 93.481, subd 4(d).

Civil penalties – Civil penalties may be assessed directly by DNR if the permittee violates any provisions of the applicable statutes, rules, or permit for at least 15 days after being noticed of such failure or after the expiration of time for corrective action. Minn. Stat. § 93.51, subd 1; Minn. Rules 6132.5100. There is no minimum penalty, but penalties are capped at \$1,000 per day of violation. Id.

Cost of inspection charged to permittee: DNR has authority to monitor through the construction phase and charge its costs of inspection directly to the permittee. Minn. Stat. § 93.482, subd 2. There is no provision, however, for recovering inspection costs after construction. The permittee also pays for all monitoring required by the NPDES permit, including sample collection and analysis.

Attorney/staff costs charged to permittee: The application fee of \$50,000 plus the annual operating fee goes into an account dedicated to funding DNR’s mining program. The annual fee is static, set at \$37,500 for the first year and \$75,000 for every year thereafter, including post-closure years. Minn. Stat. § 93.482, subd 1(c). Also, the applicant is directly billed the department’s costs of reviewing the permit application or a variance request and will not be granted a permit until those costs are paid in full. Minn. Stat. § 93.482, subd 2.

Enforcement policy available to public: DNR’s enforcement policy is available only as written in the regulations and statute.

2. The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney’s fees for prevailing citizens.

Citizens have access to state enforcement action under limited circumstances (i.e., when they have standing), but citizen suits are not directly authorized. Citizens are allowed to participate in hearings (should they occur) on “substantial” permit variance requests (which are treated the same as a new application, Minn. Rules 6132.4100) or a modification initiated by the department, or suspension or revocation of a permit, all of which must follow the general administrative contested case rules. Minn. Rules 6132.5000. Under those rules, a person may intervene in a contested case only with standing (their rights, duties or interests are directly affected by the case) or the judge may allow public participation and input at her discretion, without creating a party interest. Minn. Rules 1400.6200.

Citizen suits are not directly allowed by statute. However, citizens have right to sue agencies generally under the MAPA if objecting to a final agency action in a contested case in which they participated, Minn Stat. 14.63 et seq., or to a rule (as written) or application of a rule. Minn. Stat. 14.44 et seq. Additionally, the Minnesota Environmental Rights Act, Minn.Stat. ch.116B, contains general citizens’ suit provisions that should apply to the enforcement of mining permit conditions.

3. The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.

Citizens can intervene in permit proceedings and state suits, but only after meeting quite onerous standing requirements. An intervenor in a permit review process must show that she owns property that will be affected by the proposed operation; is a federal, state or local

government agency with responsibilities affected by the proposed operation; or raises material issue(s) of fact and there is a reasonable basis that holding a hearing would allow relevant info to come to light that would aid the commissioner in resolving the issue. Minn. Rules 6132.4000, subpt 2 (C)(1-3). In a state suit, intervention is not permitted specifically by statute but is permitted generally under the Minnesota Rules of Civil Procedure if the intervenor has an interest directly affected by the action or could seek the court's permission to intervene if she presents a question of law or fact in common with the main action. Minn. Rules of Court, Rule 24.

4. The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.

This is a question of perspective. Many environmentalists see the state as extremely pro-industry, citing its treatment of the PolyMet project. They point to the \$4 million loan for land acquisition by a state development board, and to the way that PolyMet's application is being handled. There is a significant, if as-yet unsubstantiated, fear that the state will fail to regulate the industry as required by law. On the other hand, the state has still not approved the PolyMet application and state regulators interviewed for this project do not see themselves as agents of industry but rather as protectors of the state's resources and as technical experts.

5. The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.

Given the lack of enforcement experience with a working sulfide mine, this cannot be fully analyzed yet. However, with only 3-4 FTE employees ready to work on the program, and given the number of applications expected and extensive exploratory activity underway in northern Minnesota, it is reasonable to suspect the program will eventually be understaffed. Also, as noted later in this report, there may be a shortage of technical expertise in the mining program due to the recent retirement of senior agency personnel.

6. The state or province requires personnel to conduct inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.

The state conducts inspections at least annually (in conjunction with review of the permittee's annual report.) Permittees are required not to interfere. This is only slightly more regular than Wisconsin and Michigan's rules, which do not set any guidelines or specific schedules but leave the inspection up to the department. There is therefore significant room to improve monitoring and inspection regulations.

7. Citizens have access to all enforcement data.

All data, submissions and reports are available to the public under the Data Practices Act. Minn. Stat. §13.03. The only exception is information that the permittee has specially requested be kept confidential; that is a formal process under the Data Practices Act that must be reviewed by the Commissioner of the Department of Administration. Minn. Stat. §13.06.

8. Reclamation, enforcement and monitoring are enabled beyond the life of the permit.

Administrative rules detail extensive and thorough closure and post-closure maintenance requirements. Minn. Rules 6132.3200. The requirements here are much more detailed than in Michigan or Wisconsin, including specific steps of closure e.g., when access road and storage pads must be removed, access that must be available for monitoring, sealing of the shaft, etc.

9. Post-closure enforcement is strong, with adequate resources and public involvement.

Post-closure enforcement is well-detailed in the rules (see above criterion), but public involvement is informal and ad hoc, just as in the regular operations phase. Given the lack of experience with a post-closure scenario, this criterion cannot be fully evaluated yet.

10. Immediate independent judicial review is available to citizen plaintiffs.

There is no citizen suit allowed by law; a citizen must go through the regular administrative complaint and review process, as detailed above.

11. Citizens can initiate and participate in inspections.

Citizens cannot initiate inspections, but in theory they could participate (though this has never yet been requested in Minnesota). If accompanying state employees, citizens would need the same MSHAW training to be on site, unless perhaps there is an agent of the permittee on site leading the inspection. In any case, the state would also require the permittee's and/or landowner's permission before allowing a citizen to observe an inspection.

12. Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.

Minnesota requires a successor/purchaser to be assigned the mining permit and take on the responsibilities therein. The permit may be assigned to a successor "only if the commissioner determines that the assignee will perform all outstanding obligations of law [under the chapter] and the permit to mine." R6132.4700

13. Permit conditions and work plans are reviewed at least annually.

The permittee's annual report forces the department to consider "whether it complies with the provisions of the permit to mine." R6132,4000, subpt 5.

14. The agency has authority to modify permit conditions whenever necessary ("adaptive management"), and exercises that authority as needed.

The DNR has the authority to modify permit conditions when necessary to correct dangerous conditions, when the permittee is violating the permit or the rules, or when new information related to reclamation becomes available that needs to be addressed and added to the permit to mine. R6132.4300. Since Minnesota has never permitted a nonferrous mine, there has been no opportunity to exercise this authority as yet.

15. Any permit variances, amendments, or changes requested by the permittee are rare and uncontested.

Given the lack of experience in this area, this cannot be answered yet.

4. PROGRAM RESOURCES

In order to implement the provisions of statutes, rules, and permit conditions, a regulatory authority must have the resources to do so. Necessary resources include time, money, expertise and personnel. Ideally, the state or province funds the sulfide mining program adequately and ensures that payments and penalties assessed against mine owners and operators go back to the mining program. Such funding or self-funding must be adequate to cover the program’s needs in all stages including regulating exploration and prospecting, reviewing permit applications, overseeing ongoing mining operations and reclamation activities, and post-closure monitoring.

1. The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of permit applications, modifications to permit, enforcement activities, and post-closure cleanup activities.
2. The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.
3. The state or province allows civil penalties to be used by the mining regulation program.
4. Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.

B. MINNESOTA

Minnesota’s funding of sulfide mining regulation is clearly set up to maintain a functioning regulatory system in response to changing workloads, and even in response to potential cleanup operations. However, staffing of the program and time constraints placed on application review may prove a problem in the future if the number of applications increases.

Overall grade: Fair

1	The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of permit applications, modifications to permits, enforcement activities and post-closure cleanup activities.	SOME/ N/A
2	The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.	YES
3	The state or province allows civil penalties to be used by the mining regulation program.	NO
4	Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.	YES

Discussion:

- 1. The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of**

permit applications, modifications to permit, enforcement activities, and post-closure cleanup activities.

Minnesota has a number of mechanisms in place to ensure adequate funding is provided, mostly at the direct expense of the regulated parties. The \$50,000 application fee is deposited in an account dedicated to use by the sulfide mining program only. The annual fees (\$75,000) are likewise dedicated to the program. Minn. Stat. 93.482, subd 1(c). Also, the applicant is directly billed DNR's costs of reviewing the permit application or a variance request and will not be granted a permit until those costs are paid in full. Minn. Stat. 93.482, subd 2. Finally, DNR has authority to charge its monitoring costs through the construction phase (done at its sole discretion) directly to the permittee. Minn. Stat. 93.482, subd 2.

However, program staffing may be a problem if and when applications start coming in. There are 3-4 FTE DNR employees working on the program currently, though no one is working exclusively with the program. DNR has recently lost a couple key senior staff people with expertise in this area and until they hire more they are "moving slowly."¹¹ At present there is not a crunch, though this may be because there is only one pending application.

Whether DNR has sufficient time to conduct a thorough review of applications and modification requests is an open question. Recent legislation gives DNR a "goal" of making a permit decision within 30 days of the EIS adequacy determination. This is not a requirement, and the other timing and regulatory requirements may toll the period, for example if an application is contested with cause and an administrative hearing is held. In that case, the objector has 30 days from the date of publication of the application to object; the department will set a hearing date no later than 30 days after the last day to respond; and a determination will be made to grant or deny the permit within 120 days after the hearing. Rule 6132.4000. These time constraints have not yet been applied or tested.

2. The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.

The \$50,000 application fee goes into an account dedicated to the sulfide mining program. Minn. Stat. §93.481. The application fee is not necessarily commensurate with the cost of application review.

3. The state or province allows civil penalties to be used by the mining regulation program.

There is no provision for direct allocation of civil penalties to the mining regulation program.

4. Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.

Minnesota plainly requires that financial assurance must "not be dischargeable through bankruptcy" and must "be available and made payable to the commissioner when needed." R Minn. Rules 6132.1200, subpt 5. DNR may access the funds "when the operator is not in

¹¹ Kim Lapakko, Minnesota DNR, (personal communication with author, August 9, 2011).

compliance with either the contingency reclamation plan or the corrective action plan” set forth by the department. Minn. Rules 6132.1200, subpt 6.

5. REPORTING AND OFFICIAL STATEMENTS

An ideal sulfide mining regulatory program requires the highest quality data from permittees so decisions and actions are based in fact, not simply on a permittee’s assurances. Not only must the permittee be accountable to the regulators, but the regulators must be accountable to the public whose safety and resources they are charged to protect. In order to assess these factors, the following criteria were considered:

1. The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.
2. All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.

For information on water quality monitoring and reporting, see the Water Quality Report, at Appendix A.

Minnesota’s requirements for permittee and state-produced reports are minimal, at best. On the other hand, the state provides total access to public scrutiny, meriting a mixed result of meeting “some” of the criteria.

Overall score: Poor

1	The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.	NO
2	All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.	SOME

Discussion:

1. The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.

Until Minnesota actually reviews an entire permit application and has experience monitoring an active mine, it is difficult to say how precise its reporting requirements and review will be. However, the basic reporting framework does not specify standards for accuracy, validation, or verification of a permittee’s submissions. The permittee’s annual report to DNR is not intended to be a highly technical reporting device and does not require reporting of water quality monitoring or other operational indicators. Water quality reports are sent separately to the PCA as part of the permittee’s NPDES/SDS permit. The permittee submits the results of testing monthly, and these are reviewed by PCA staff “at least semi-annually.” The PCA may conduct independent verification monitoring “on a limited basis”, but verification is neither required nor

part of the regular enforcement/monitoring program.¹² Given this basic structure, Minnesota certainly does not “require” (as a matter of policy) accurate, adequate or truthful reporting.

2. All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.

The annual reports are available to the public, including post-closure reports. The department prefers to send all documents in electronic format. Future methods of handling of monitoring reports are unknown, but web posting is not required.

RECOMMENDATIONS

A. Recommendations for Michigan, Wisconsin and Minnesota:

1. There should be a formal, standard method set forth in the law to coordinate the efforts of the various agencies responsible for different aspects of permitting, monitoring, and enforcement of a mining project.
2. State-conducted independent monitoring should be conducted regularly and systematically at any active mine and reclamation site, including in the post-closure phase, and should be funded by the permittee. Leaving this essential task to the permittee is unacceptable. DEQ should be required, not just empowered, to take immediate action to stop and/or remediate any problem found.
3. Affected tribes should be empowered to participate in permit decisions and monitoring.
4. Mine plans should include non-environmental goals and standards such as workers’ safety, long-term viability of the mine (prohibiting high-grading), economic plans for communities’ long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.
5. Public funds must not be committed to financing or assisting any project that has not completed and passed environmental review. This should be a matter of law with no exceptions.
6. Civil penalties and fees assessed for noncompliance should be dedicated to return to the nonferrous metallic mining program.

¹² Ann Foss, supra note 27.

B. Minnesota-specific recommendations:

1. Exploratory activities should be regulated in all circumstances, not just on government-owned or –leased land.
2. Environmental Assessment should not be done by the applicant but by the state, and funded by the applicant.
3. The goal of reclamation should be to return the area to environmental functionality, not to find a balance with economic development or simply “do one’s best.”
4. The permittee should be required to comply with all applicable state and federal standards, and violation of any should be grounds for permit revocation until the violation or deficiency is corrected.
5. The law should require the state to address each and every potential impact identified in the EA and approve an application only when it positively determines that all of the application standards set forth in the rules are met. Setting standards is meaningless unless the agency is bound to enforce them.
6. The state should improve its integration of and responsiveness to public concerns and questions regarding permit applications, regardless of whether the citizen(s) are directly affected by the proposal. All citizens have a recognized interest in and right to preserving the state’s resources.
7. Citizens should be allowed to participate in permitting decisions and state enforcement actions regardless of whether their property rights are immediately affected by the issue. The public should also be empowered to initiate immediate civil enforcement actions where the state is not taking sufficient action.
8. The state must provide DNR with adequate staff and time to make fair and fully informed decisions on permit applications, monitoring and enforcement actions.

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(Cover Photo: Adam Kahtava)