

Regulatory and Permitting Framework for Metallic Mining in Minnesota

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Overview of Presentation

- Brief description of environmental review
- Listing of permits required by mining operations
- Permit to Mine
 - Statute and rules
 - Components of permit
 - Difference between ferrous and non-ferrous

Environmental Review

- The Minnesota Environmental Policy Act (MEPA) requires that an environmental impact statement (EIS) be conducted for all new mining operations.
- DNR is often the Responsible Government Unit (RGU).
- Often involves federal government depending on specific conditions at the site (land ownership, wetlands, etc)

What Environmental Review Does

- Helps permit/approval decision makers understand the environmental and socioeconomic impacts of a proposed project
- Takes a hard look at the project for potentially significant impacts using the best available data
- Explores ways to avoid, minimize, or mitigate potential environmental impacts through alternate designs, technologies, or practices

What Environmental Review Does

- Gives the public early access to decisions makers with multiple opportunities for public input
 - Public notice during scoping
 - Public notice of draft environmental impact statement (EIS)
 - Public notice of final EIS
 - Two public meetings (during scoping and for draft EIS)
- Prohibits issuance of final permits until environmental review process is complete

What Environmental Review Does Not Do...

- Approve or deny a proposed project
- Guarantee that permits can be issued
- Analyze every conceivable impact
- Answer every question

Permitting

- MN Pollution Control Agency
 - National Pollution Discharge Elimination System / State Discharge System Permit ('Water Quality Permit')
 - Permit authorizing the treatment and disposal of wastewaters, including mine dewatering, process wastewater, stockpile drainage, sewage, and storm water
 - Air Emission Permit ('Air Quality Permit')
 - Permit authorizing construction, modification, and/or operation of an air emission facility
 - Other Permits (selected)
 - Liquid Storage Tank Permit
 - Solid Waste Facility (Landfill) Permit
 - Hazardous Waste Generator License

Permitting

- MN DNR Division of Waters
 - Water Appropriation Permit
 - conserve and utilize the water resources of the state in the public interest
 - Public Waters Permit
 - minimize adverse environmental effects, preserve water resources, and provide for future water use
 - Dam Safety Permit
 - ensure safe construction of tailing basin dams

Permitting

- MN DNR Division of Lands and Minerals
 - Permit to Mine
 - ferrous (taconite, iron ore, and scam), non-ferrous, peat
 - control adverse environmental effects of mining and provide for reclamation and good mining practices
 - Wetland Replacement Plan
 - no net loss

Mineland Reclamation Act

- Passed in 1969
- Statutes 93.44 to 93.51
- Authorized commissioner to adopt rules providing for reclamation of lands disturbed by metallic mining
- Peat was added in 1983 by amendment of statute

Minnesota Statute RECLAMATION OF LANDS 93.44 DECLARATION OF POLICY

In recognition of the effects of mining upon the environment, 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 or peat where such reclamation is necessary, both in the interest of the general welfare and as an exercise of the police power of the state, 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.

Mineland Reclamation Act What is being reclaimed?

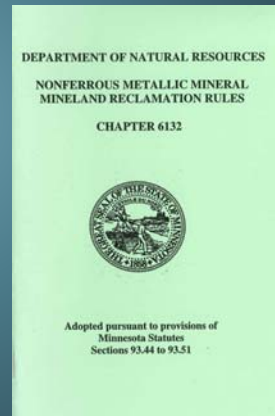
- Open pits
- Waste rock and surface material stockpiles
- Tailings basins
- Buildings and equipment
- Infrastructure no longer needed
- Revegetation of disturbed ground
- Wetlands by restoration, reclamation, or replacement

(not an all-inclusive list)



Promulgation of Rules

- Iron ore and taconite in 1980
- Peat mining in 1985
- Non-ferrous in 1993



Permit to Mine

Taconite/Iron Ore and Non-Ferrous

- Examples of components in application
 - Corporation organizational data and certificates
 - Geology and location of ore body
 - Forest and soil inventories
 - Management of runoff
 - Mining and reclamation maps and plans
 - Stockpile design and siting
 - In pit disposal
 - Tailings basin design and operation plans

(not an all inclusive list)

Permit to Mine Non-Ferrous

- Currently no non-ferrous mine in Minnesota
- Similar components as with taconite operations
- Important differences in waste characterization and financial assurance

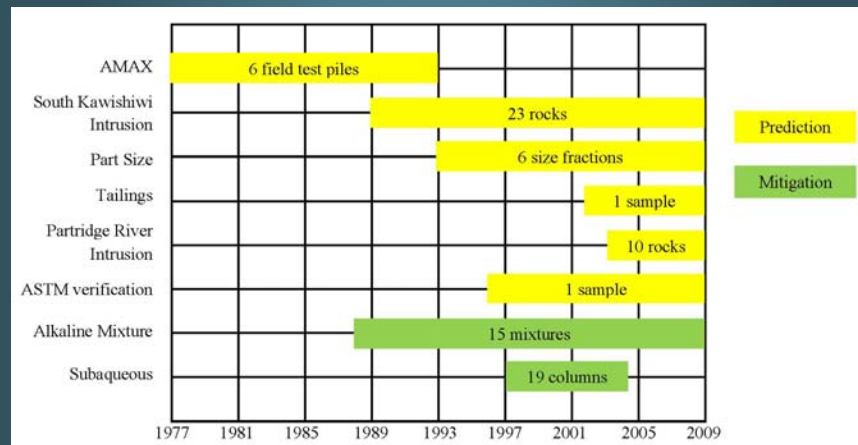
Permit to Mine: Non-Ferrous Waste Characterization

- Conference to outline analyses and tests to characterize waste materials
- Chemical, mineralogical, petrologic, and leaching characteristic results provided
- Results provided
 - At time of permit application
 - To agencies establishing water quality and monitoring standards
 - Throughout life of mine

Waste Characterization

- Combination of laboratory testing, modeling, and prediction to evaluate potential impact of operation
- Lands and Minerals has been conducting research on sulfur containing rocks for 30 years
- Anticipation of mining in the Duluth Complex (DC) rock in Minnesota

DNR Duluth Complex Rock Prediction Research



Other rock types have also been tested.

Waste Characterization



In the lab and in the field

Permit to Mine: Non-Ferrous Financial Assurance

- Ensure that there is a source of funds to be used by the commissioner if the permittee fails to perform:
 - reclamation activities including closure and postclosure maintenance needed if operations cease
 - corrective action if noncompliance with design and operating criteria occurs
- Bankruptcy proof, evaluated by third party, available when needed, sufficient amount

Potential Changes to Statute?

- House File #2560 introduced January 8, 2010
 - Informational hearings only
- Senate File #2349 introduced February 3, 2010
 - Withdrawn after hearings
- Primarily suggests changes to
 - Definition of responsible person
 - Financial assurance for non-ferrous mining
 - Form (instrument)
 - Annual and public review requirements
 - Process for release
 - Handling during environmental review
 - What is covered

Summary

- System in place to conduct environmental review
- Series of permits in rule to regulate both ferrous and non-ferrous mines [and peat]
- More recent developments in copper/nickel deposits calling into action State's knowledge of unique components of this type of mining