

Between a Rock and a Hard Place: A Proposed Sulfide Mine Illustrates the Lack of Adequate Federal and State Environmental Regulations Over Hard Rock Mining and the Need to Utilize the Public Trust Doctrine

Scott A. Schultz

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Between a Rock and a Hard Place: A Proposed Sulfide Mine Illustrates the Lack of Adequate Federal and State Environmental Regulations Over Hard Rock Mining and the Need to Utilize the Public Trust Doctrine

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I. The Eagle Project on Upper Michigan's Yellow Dog Plains as a Case Study

Few activities permanently alter the environment more than mining. In 1997 there were over 70 hard rock mining¹ sites on the Superfund's National Priorities List (NPL).² Strong governmental regulation over hard rock mining is needed due to the potential risks posed to our natural resources. Specifically, a proposed sulfide mine poses a significant threat to the Yellow Dog Plains Aquifer, affected watersheds, the extremely rare and endemic coaster brook trout, and a block of wilderness and research natural area. A sulfide mine on the Yellow Dog Plains of Michigan³ would have enormous ecological and social impacts.

Few can argue that the Mining Law of 1872,⁴ governing locatable minerals on federal land, is not one of the most archaic and outdated Federal statutes still on the

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¹ Hard rock mining is the term used for metallic and industrial minerals. JAMES M. MCELISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION 1* (Environmental Law Institute 1996).

² The NPL identifies the most hazardous waste sites targeted for clean up. EPA, *MINING AND MINERAL PROCESSING SITES ON THE NPL* (1997).

³ See C. FRED RYDHOLM, *SUPERIOR HEARTLAND: A BACKWOODS HISTORY*, Published Privately (Liz Chaffee & Tom Dixon eds., 1989), for a fascinating account of the area's history.

⁴ General Mining Law of 1872, 30 U.S.C. §§ 22-39 (1872).

books.⁵ The Mining Law of 1872 does not protect federal land from the impacts of hard rock mining. The adequacy of environmental protections should not be seen through the lens of a law enacted in 1872. Instead, the present environmental regulations over sulfide mining, an unproven and risky method of hard rock mining, must be assessed through the demands on our natural resources in the twenty-first century. Present environmental regulations must take into account whether the technology exists to safely control the hazardous material that is created as a result of the sulfide mining process.

The permitting process over a proposed sulfide mine, termed the Eagle Project by Kennecott Minerals Company, illustrates how the natural resources of the people are improperly valued. A gap currently exists between federal environmental statutes and the regulation of hazardous waste and pollution contamination from hard rock mining. In an effort to bridge this gap, states must pass statutes and promulgate rules that require mining companies to follow a permit procedure before being allowed to operate.

At the national level, Congress has exempted the mining industry from the hazardous solid waste regulations of the Resource Conservation and Recovery Act (RCRA).⁶ Regulating hazardous waste, such as Acid Mine Drainage (AMD), is especially important due to the unique nature of sulfide mining. Acid Mine Drainage is the creation of sulfuric acid from exposure of the ore or waste rock produced by sulfide mining to air and water.⁷ Without federal laws⁸ providing protection against hazardous solid waste created from hard rock mining, the task is left entirely to the states.

⁵ See Generally, John F. Seymore, Note, *Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability*, 31 *ECOLOGY L. Q.* 795 (2004).

⁶ Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901–6992k (1988).

⁷ EARLE A. RIPLEY ET AL., *ENVIRONMENTAL EFFECTS OF MINING* 159 (1996).

⁸ The mining industry still must comply with the applicable Clean Air Act (CAA) and Clean Water Act (CWA) provisions. Kennecott Minerals Company, which is seeking to develop a sulfide mine on the Yellow Dog Plains, has not formerly applied for a permit or released the specific design of the

Local citizens and our natural resources are left vulnerable when the federal government abandons its power to regulate sulfide mining. Under the Commerce Clause⁹ Congress has the power to regulate hazardous solid waste, in addition to other aspects of sulfide mining. The federal government's abdication to the State, of its regulatory power over hard rock mining is not a devolution towards more local control. The federal government's abdication does not properly empower local citizens with control over decisions affecting their local area. Further, by not setting minimum standards for sulfide mine permitting, the federal government has left local citizens without a safety net if their state system stumbles.

At the State level, the Upper Peninsula of Michigan cannot muster enough political capital in Lansing to have a sulfide-mining moratorium brought to the table, despite the moratorium's existence in neighboring Wisconsin. With support from Kennecott Minerals Company (KMC) and Governor Jennifer Granholm, Michigan state legislators recently passed House Bill 6243.¹⁰ However, House Bill 6243 which regulates sulfide mining has several flaws.

House Bill 6243 does not provide for citizen participation or objective science. Without citizen participation and objective science— through an Environmental Impact Statement (EIS) and a baseline study completed by the United States Geological Study (USGS)— sulfide mining's human and ecological impacts are not properly taken into

proposed mine. Depending on the design, the proposed mine site may require a section 404 permit under the CWA if “navigable waters” are to be filled and/or a National Pollutant Discharge Elimination System (NPDES) permit under section 402— placing numeric limits on the discharge of pollution from a point source. See, John F. Seymore, Note, *Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability*, 31 *ECOLOGY L. Q.* 795, 822 n. 126 (2004) stating that “EPA staff do not always fully evaluate the site-specific factors required to establish appropriate permit conditions at hardrock mining sites because of a lack of resources.”

⁹ U.S. CONST. art. I, § 8, cl. 3. “The Congress shall have the Power . . . [t]o regulate Commerce with foreign Nations, and among the several States, and with Indian Tribes.” *Id.*

¹⁰ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004).

account. The current permitting procedures do not provide the public with any meaningful involvement in the decision making process. One potential ecological impact of the Eagle Project is polluting the Salmon-Trout River—the last remaining river on the southern shore of Lake Superior known to have a spawning run of coaster brook trout. By statutorily exempting pollution occurring at the extraction phase from regulation and legal remedies¹¹ the coaster brook trout is left unprotected from AMD.

House Bill 6243 also disenfranchises the local voter and their ability to make choices about the future economic and social well being of the area. The Bill contains a clause preempting locally enacted laws. Under their police powers, local governments are normally entrusted with the duty of enacting laws in order to protect the general health, safety, and welfare of citizens. One of the main tools used by local governments to protect the general health, safety, and welfare of their citizens is zoning. House Bill 6243 removes all the power and control that the local citizens have over local laws and places it with state administrative agencies, such as the Michigan Department of Environmental Quality (DEQ).

The various means in which the federal and state governments have experimented with regulating hard rock mining is now at an important crossroads. The legislation, promulgation of specific rules and regulations, and likely litigation over the proposed Eagle Project will have ramifications for the rest of the State and other areas of the country.

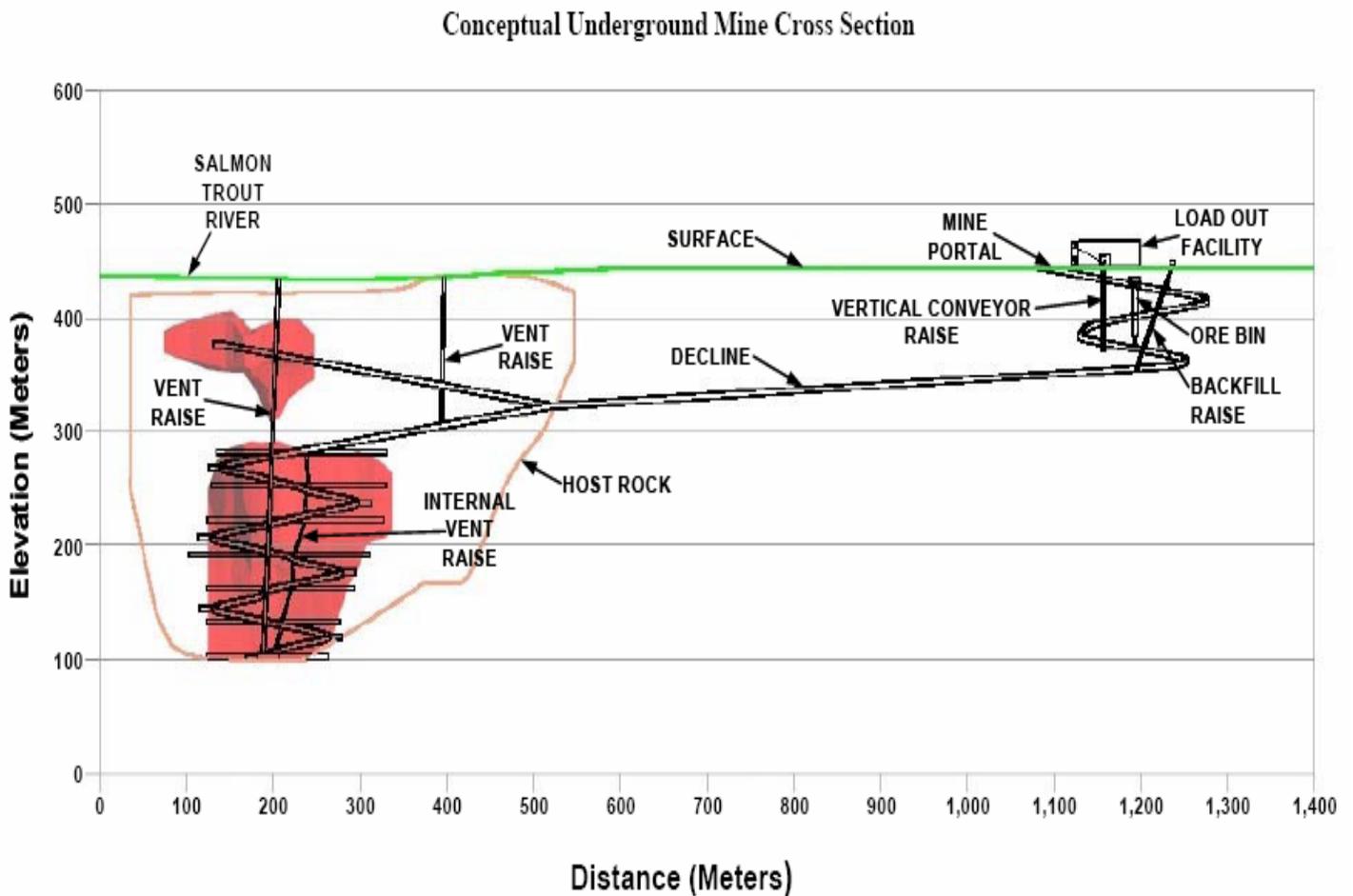
The permitting process for hard rock mining must take into account the overall impact of the activity. Without sufficient state and federal regulations over hard rock mine permitting, rational and sustainable planning is ignored for the short-term profit of

¹¹ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63205 (11)(b).

the mining industry. With House Bill 6243 the state legislature has failed in its obligation to protect the natural resources commanded by the Michigan Constitution.¹² Given the multi billion-dollar mining industry’s interest in the natural resources of the state, the public trust doctrine is the most equitable tool available to the judiciary in providing a check over the state legislature’s constitutionally imposed responsibility.

II. Proposed Sulfide Mining in Michigan

A. Underground Sulfide Mining to Be Done at the Proposed Eagle Project



¹² MICH. CONST. art. IV, § 52. “The conservation and development of the natural resources of the state are hereby declared to be of paramount concern in the interest of the health, safety and general welfare of the people. The legislature shall provide for the protection of the air, water and other natural resources of the state from pollution, impairment and destruction.” *Id.*

1. Nature of the Mineral Deposits and Mercury Hot Spots

The Eagle Project differs from the Upper Peninsula's past mining ventures in that the metals are not a pure metallic copper, gold, or iron oxide. Instead the metals found in the deposits located at the Eagle Project are chemically combined with sulfur— forming metallic sulfides. “Certain metals, such as copper, nickel, lead, and zinc have a strong natural affinity for the element of sulfur.”¹³ Sulfuric acid is formed when sulfide ores or the resulting waste rock is exposed to water and air. An analogy between sulfide mining and regular mining methods is that regular mining is like mining the chocolate chips out of a cookie, while sulfide mining is like mining the sugar out of a cookie.¹⁴ The past mining ventures in Michigan did not have anywhere near the same potential for Acid Mine Drainage (AMD) as the proposed Eagle Project.

In addition to creating sulfuric acid, the exposure of metallic sulfides to the surface environment could create a mercury hot spot which would allow elemental mercury to enter into the food chain easier. “For [elemental] mercury to get methylated and enter the food web, it must be processed by bacteria that thrive on sulfate, a sulfur compound. This means that dissolved organic matter and sulfur enhance methylation.”¹⁵ The issue of elemental mercury deposition could be of particular importance on the Yellow Dog Plains due to the location of two coal-fired electricity generation power plants¹⁶ in nearby Marquette. The combination of metallic sulfides being extracted from

¹³ KENNECOTT MINERALS, EAGLE PROJECT UPDATES: FEBRUARY 2004, WHAT IS SULFIDE MINING?, available at <http://www.kennecottminerals.com/Eagle-Project/WelcomeToEagleProject.htm> (last visited Dec. 5, 2004).

¹⁴ *Sulfide Mining - Legislator's Primer*, Oct. 29, 2004.

¹⁵ Rebecca Renner, *Mapping Mercury: Hot-Spot Unknowns Complicate Mercury Regulations*, SCI. AM., Sept. 2005, at 22.

¹⁶ The Presque Isle and Shiras power plants both produce electricity by burning coal to produce steam. The Presque Isle plant has nine boiler units which were recorded as emitting 89.9 pounds of mercury in 2002. The megawatt capacity of the units range from 25 to 90 megawatts. available at

the subsurface as a result of the sulfide mining process and the presence of two coal-fired electric generating plants, which combined to report over 100 pounds of mercury emissions in 2002, could make the Yellow Dog Plains region a mercury hot spot. As a mercury hot spot, the amount of mercury in the fish and in the human which consume them would be significantly higher than in typical areas.



Wisconsin Electric's Presque Isle Plant

2. Process of Sulfide Mining and its Impacts on the Environment

a. Extraction of the Ore

<http://www.epa.gov/airmarkets/epa-ipm/attachment-f.pdf> (last visited Oct. 15, 2005);
<http://www.deq.state.mi.us/documents/deq-aqd-air-aqe-mercury-report.pdf> (last visited Oct. 15, 2005). The Shiras plant has three boiler units in which electric production ranges between 34 and 44 megawatts. *Id.* The Shiras plant recorded 18 pounds of mercury emission in 2002.

One of the main risks of sulfide mining is its high potential for sulfuric acid to contaminate the groundwater and surface water sources. Sulfuric acid increases the acidity (lowering the pH) of any surface water and groundwater it contacts and can render the water toxic to aquatic life. The sulfuric acid is also referred to as Acid Mine Drainage (AMD).

The key issue surrounding sulfide mining is how to prevent the spent ore (waste rock¹⁷) from becoming a long-term pollution source. Pollution can come from the minerals naturally present in the waste rock and from chemicals introduced during the leaching process.¹⁸ An analysis of how the minerals naturally present at the Eagle Project¹⁹ react when exposed to air or water, creating AMD (or their acid producing potential), is still awaiting completion by Kennecott.

In addition to the high risk of AMD contaminating the groundwater and surface water systems, the structure of the underground mine will act as a well, “pulling water from the surrounding area.”²⁰ All of the groundwater will have to be pumped out of the mine in order for the ore deposit to be extracted.²¹ The cone of depression, from the mine

¹⁷ JAMES M. MCEL FISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION 3* (Environmental Law Institute 1996). The amount of waste rock varies according to the location, depth, and size of the ore body. Waste rock is the rock that must be excavated in order to reach the high mineral content ore. *Id.*

¹⁸ JAMES M. MCEL FISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION 3* (Environmental Law Institute 1996).

¹⁹ Pete Mackin, *DEQ Doesn't Want Water Survey on Yellow Dog Plains*, THE MINING J., Jan. 23, 2005. During the winter of 2005 Kennecott is conducting tests on the reactivity of the ore body.

²⁰ *SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 2-3* (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission 1995), available at <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

²¹ *SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 3* (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission 1995) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

pulling water from the surrounding area, will impact the surface water levels.²² The impact of the dewatering largely depends on the geology and hydrology of the area.²³ In order to fully understand the geology and hydrology of the Yellow Dog Plains an objective and thorough baseline study needs to be undertaken.²⁴ A baseline study is vital due to “the complexity of the groundwater system [which] leads to uncertain predictions of the behavior of pollutants within the system and the adequacy of pollution control measures.”²⁵

Under the current regulations Kennecott can conduct its own baseline studies without any objective oversight. The local populace as requested the United States Geological Study (USGS) to perform a hydrologic study of the Yellow Dog Plains. The USGS study would provide crucial scientific information and understanding over the Yellow Dog Plains.²⁶

²² SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 3 (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission 1995) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

²³ SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 3 (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission 1995) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

²⁴ The categories of hydrologic information that should be collected are surface water discharges, surface water quality, groundwater hydrology, and groundwater quality. Some of the specific information that should be collected includes: stream flow measurements, whether stream chemistry varies as a function of watershed location, determine dissolved oxygen concentrations, determine the chemical composition of any subsurface materials that may come into contact with surface water as a result of future development, determine distribution of sediment thickness (depth to bedrock), determine lithology of sediments with special attention to determining vertical and horizontal location extent of clay layers, take intact samples of potential aquitards/aquitudes materials (e.g. clays) and determine hydraulic conductivity, determine horizontal groundwater flow directions and magnitudes in surficial aquifers and flow to/from underlying bedrock, determine transmissivity and storativity of surficial aquifers and underlying bedrock, and develop and calibrate numerical groundwater flow model, including surface water connections. ALEX MAYER ET AL., ASSESSMENT OF HYDROLOGIC INFORMATION CONCERNING THE YELLOW-DOG AND SALMON-TROUT RIVERS WATERSHED 18-19 (2004) *available at* <http://www.geo.mtu.edu/~asmayer/ydreport.pdf>. (last visited Oct. 14, 2005).

²⁵ SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 9 (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission 1995) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

²⁶ US Geological Survey – Science, Society, Solutions: An Introduction to the USGS, <http://www.usgs.gov/aboutusgs.html> (last visited Feb. 4, 2005). The USGS is the sole science agency for the Department of Interior and plays a non-regulatory role. *Id.*

b. Beneficiation

Once the rock containing the valuable ores has been extracted, the next step is the beneficiation process.²⁷ Because the deposits of the Eagle Project average approximately 3.6% nickel and 3.0% copper, the beneficiation process cannot be skipped.²⁸ Kennecott has given the impression that the beneficiation process will not be done on-site. Instead the ore would be shipped to Canada in order to be processed.²⁹

During the beneficiation process, the ore is milled and concentrated using various methods. “During milling a series of machines crush the ore into fine particles.”³⁰ There are several different methods in which to separate the valuable minerals once milling has been done: froth flotation, gravity separation, and leaching.³¹ The most used method is froth flotation:

In froth flotation, chemicals are added to the milled ore to produce a concentrate containing the targeted minerals. The chemicals are added so that the surfaces of the minerals in the slurry will repel water and attract air bubbles. The air bubbles rise to the surface of the slurry where the resulting froth, which contains the valuable minerals, is skimmed and collected. The froth is then dewatered and thickened, and the resulting concentrate is sent to a smelter for further processing.³²

In the gravity separation method, minerals are separated by their different specific gravities and settling rates after the milled ore is suspended in a fluid. The leaching

²⁷ If the ore is of a high enough grade this step can be skipped.

²⁸ Welcome to the Eagle Project, <http://www.kennecottminerals.com/Eagle-Project/WelcomeToEagleProject.htm> (last visited Dec. 5, 2004).

²⁹ Aaron Peterson, *Kennecott to Form Advisory Group*, THE MINING J., Aug. 15, 2004.

³⁰ *SUPRA SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 4* (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

³¹ *SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 5* (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

³² *SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 5* (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

method “involves pumping a chemical through [milled] ore to dissolve” the invaluable embedded rock.³³

c. Smelting

After the beneficiation process the concentrated mineral is smelted. The smelting process involves three separate steps: roasting, smelting, and converting. Roasting “oxidizes the iron in the concentrate and drives off the sulfur dioxide. Smelting bonds most of the remaining impurities . . . by combining the ore with a silica substance and heating it at a high temperature.” In the conversion step the silicate slag is discarded.

d. Reclamation of the Mine Site

Reclamation is the rehabilitation and restoration of the project site as close as possible to its original pre-mining condition. Due to the unique characteristics of each project site, reclamation procedures vary widely. The unique characteristics of the Yellow Dog Plains would likely pose severe problems to the reclamation process.

B. Kennecott Minerals Company and their Interest in the Area

Kennecott Minerals Company (KMC) is currently in the “prefeasibility” stage of a proposed sulfide mine on the Yellow Dog Plains³⁴ of Upper Michigan.³⁵ KMC has estimated that a 405-million-pound nickel and a 335-million-pound copper deposit are located below a twelve-acre area.³⁶ The deposits average approximately 3.6% nickel and 3.0% copper, with minor amounts of gold and other precious metals.³⁷ The proposed

³³ SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 5 (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission) <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005).

³⁴ See C. FRED RYDHOLM, SUPERIOR HEARTLAND: A BACKWOODS HISTORY, Published Privately (Liz Chaffee & Tom Dixon eds., 1989), for a fascinating account of the area’s history.

³⁵ KENNECOTT MINERALS, EAGLE PROJECT UPDATE 4: JUNE 2004, 1 (2004).

³⁶ Aaron Peterson, *Reaction to Mine Advisory Group Mixed*, THE MINING J., Sept. 19, 2004.

³⁷ Welcome to the Eagle Project, <http://www.kennecottminerals.com/Eagle-Project/WelcomeToEagleProject.htm> (last visited Dec. 7, 2004).

mine has been termed the 'Eagle Project' by Kennecott.³⁸ The Eagle Project would be the only nickel mine in the United States.³⁹ Both KMC and Kennecott Exploration Corporation (KEX) are subsidiaries of the Rio Tinto Group, based in London, England.⁴⁰ Rio Tinto is a large multinational corporation with worldwide operations ranging from a uranium mine in Namibia, Africa, to a gold mine in Indonesia, to a copper mine at Bingham Canyon, Utah.⁴¹ Rio Tinto is one of the largest mineral producers in the world.⁴²

C. A New Mining District?

KMC owns the mineral rights to 245,000 acres in Marquette County, has leased 5,500 acres of public land and leased 4,000 acres of mineral rights on private land.⁴³ The 5,500 acres of public land is part of the Escanaba River State Forest.⁴⁴ The mineral rights owned and leased by Kennecott are only the tip of the iceberg. There has been so much

³⁸ KENNECOTT MINERALS, EAGLE PROJECT UPDATE 4: JUNE 2004, 1 (2004).

³⁹ Hugh McDiarmid Jr., *UP Mining Plan is Controversial, Will be Talk of Legislature*, DETROIT FREE PRESS, Oct. 12, 2004.

⁴⁰ Rio Tinto: Minerals and Metals for the World, <http://www.riotinto.com/aboutus/companyInformation.aspx> (last visited Dec. 7, 2004). Rio Tinto was formerly referred to as the RTZ Corporation.

⁴¹ Rio Tinto: Minerals and Metals for the World, <http://www.riotinto.com/investor/administration/adr/registrar.aspx> (last visited Dec. 7, 2004). The principal market for Rio Tinto plc shares is the London Stock Exchange. In addition to its primary listing Rio Tinto plc shares are also traded on Euronext, Deutsche Börse and the New York Stock Exchange as ADRs [American Depositary Receipt]. Rio Tinto Limited shares are listed on the Australian Stock Exchange and the New Zealand Stock Exchange. Although not listed, Rio Tinto Limited shares are also traded on the London Stock Exchange, and in the US as ADR's. *Id.*

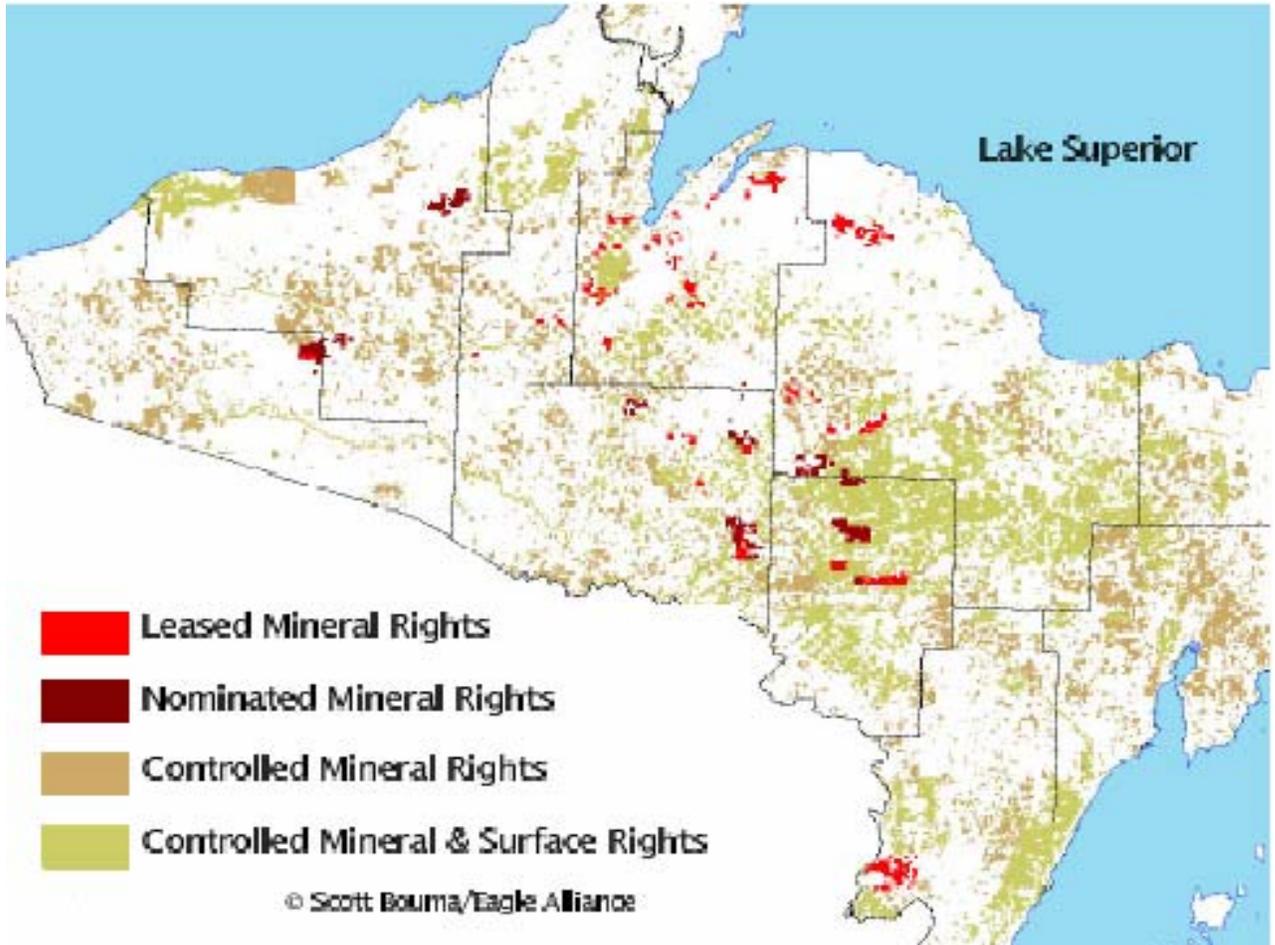
⁴² PETER H. KUCK, METAL PRICES IN THE UNITED STATES THROUGH 1998, 94-95 (US Geological Study, US Dept. of Interior, US Gov. Printing Office, 1999).

⁴³ Chuck Glossenger, *Michigan: Mining Exploration Concerns Marquette-Area Residents* (Superior Vision, Spooner, Wisconsin), Vol. 13, Issue 1, Winter/Spring 2004, at 3.

⁴⁴ "[T]he leases include a ten-year lease term, with options for extensions or continuation with production. Rental rates commence at \$3.00 per acres per year for years six through ten." MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY AND DEPARTMENT OF NATURAL RESOURCES, *Mineral Exploration and Metallic Reclamation Questions and Answers* 3 (2004).

interest in the acquisition of mineral rights in the western Upper Peninsula, that the rush has been equated to the finding of gold in California in the mid-nineteenth century.⁴⁵

Another sulfide mine has been proposed near the Menominee River in Lake Township. The project has been termed the Back Forty Project.⁴⁶ The interest in the Back Forty Project is a zinc ore body.⁴⁷



Picture from <http://www.nwf.org/nwfwebadmin/binaryVault/Overview3.pdf> (last visited Feb. 11, 2005).

D. Legal Framework of the Mineral Rights

⁴⁵ DVD: Sulfide Mining Presentation by Rusty Gowland and Ray Pittman at Northern Michigan University November 11, 2004 (Wolfpack 2004) (on file with author).

⁴⁶ Back Forty Project, *available at* <http://www.backfortympc.com/pages/2/index.htm> (last visited Oct. 14, 2005).

⁴⁷ First Point Minerals Corp., *available at* <http://www.firstpointminerals.com/s/Home.asp> (last visited Oct. 14, 2005).

The various rights within the law of property are often conceptualized as a ‘bundle of sticks.’ The sticks in the bundle are divided when the ownership of the surface and the subsurface estates differ. When the sticks in the bundle are divided, the rights of the surface and subsurface owner are severed. The severance of different property rights is referred to as a split estate. “In most states, common law views the mineral estate [subsurface] as the ‘dominant estate’ and the surface estate as the ‘servient estate.’”⁴⁸ As the owner of the dominant estate, the subsurface owner has an easement to use the surface estate in order to develop the minerals.⁴⁹

III. Significance of the Eagle Project’s Location

A. Importance of the Yellow Dog Plains Aquifer

The Eagle Project is located in northwest Marquette County in Michigamme Township. Marquette County is Michigan’s largest county, covering 1841 square miles (roughly 2,192,000 acres).⁵⁰ The proposed twelve acre mine site is east of the Ottawa National Forest’s McCormick National Wilderness Area⁵¹ and includes the watersheds of the Yellow Dog (part of which is designated a National Wild and Scenic River⁵²), Huron,

⁴⁸ Elizabeth H. Getches, *Multi-Layered, and Sequential, State and Local Barriers to Extractive Resource Development*, 23 VA. ENVTL. L.J. 1, 6 (2004) (quoting Robert E. Witwer, *Tension Beneath the Surface: The Evolving Relationship Between Surface and Mineral Estates*, 30-COLO. LAW. 67, 67 (Dec. 2001)).

⁴⁹ Elizabeth H. Getches, *Multi-Layered, and Sequential, State and Local Barriers to Extractive Resource Development*, 23 VA. ENVTL. L.J. 1, 6 (2004).

⁵⁰ Marquette County, MI, <http://www.infomi.com/county/marquette> (last visited Sept. 17, 2004)

⁵¹ Wilderness Act of 1964, 16 U.S.C. § 1132 (1964), McCormick Wilderness, Ottawa National Forest, MI.—Pub.L. 100–184, § 3(i), Dec. 8, 1987, 101 Stat. 1275. Prior to becoming a National Wilderness Area, the roughly twenty-seven square mile McCormick tract “was used as a vacation retreat and protected over the years by three generations of McCormicks, descendants of Cyrus H. McCormick, inventor of the reaping machine. The last owner, Gordon McCormick, donated the family estate to the USDA Forest Service in 1967 . . . It became part of the National Wilderness Preservation System when the President signed the Michigan Wilderness Act in December, 1987.” OTTAWA NATIONAL FOREST, FOREST SUPERVISORS OFFICE, MCCORMICK WILDERNESS (2001).

⁵² The National Wild and Scenic River System was passed by the 90th Congress in 1968. The purpose of the Act was to “preserve in a free-flowing condition selected rivers which, with their immediate environments, possess outstandingly remarkable scenic, recreation, geologic, fish, and wildlife, historic,

Dead, Mulligan, and Salmon Trout rivers.⁵³ The Yellow Dog Plains aquifer flows into both Lake Superior and Lake Michigan. Water draining into Lake Superior from the Yellow Dog Plains enters near the Huron Islands National Wilderness Area.⁵⁴

The topography of the area between the Yellow Dog Plains and Lake Superior is characterized by an extremely steep gradient⁵⁵ and sandy till outwash.⁵⁶ Water drains very quickly through the coarse grain sands of the outwash and into the groundwater.⁵⁷ The Yellow Dog Plains area receives an average of 200 inches of snow and 32-36 inches of rain annually.⁵⁸ The topography, soil characteristics, and amount of precipitation that the Yellow Dog Plains area receives are all crucial hydrological factors in how released contaminants will act.

cultural or other similar values.” The Act directly affects mining to be done next to a Wild and Scenic River: “[A]ll public lands which constitute the bed or bank, or are within an area extending two miles from the bank of the river channel on both sides of the rivers . . . are hereby withdrawn, subject to valid existing rights, from all forms of appropriation under the mining laws.” National Wild and Scenic Rivers Act of 1968, 16 U.S.C. § 1280(b).

⁵³ Chuck Glossenger, *Michigan: Mining Exploration Concerns Marquette-Area Residents* (Superior Vision, Spooner, Wisconsin), Vol. 13, Issue 1, Winter/Spring 2004, at 3.

⁵⁴ Wilderness Act of 1964, 16 U.S.C. § 1132 (1964), Huron Islands Wilderness, Huron Islands National Wildlife Refuge, MI—Pub.L. No. 91–504, § 1(e), Oct. 23, 1970, 84 Stat. 1105. Designated as a refuge in 1905 the Huron Islands National Wildlife Refuge is the oldest refuge in the Midwest. The Islands are located three miles off the south shore of Lake Superior. Huron National Wildlife Refuge, <http://refuges.fws.gov/profiles/index.cfm?id=31511> (last visited Apr. 7, 2005).

⁵⁵ Dennis A. Albert, Shirley R. Denton, & Burton V. Barnes, *Regional Landscape Ecosystems of Michigan*, School of Natural Resources, University of Michigan (1986). “Elevations rise rapidly from Lake Superior at 602 feet [above sea level] to a maximum of 1980 feet at Mt. Curwood, the highest point in the state. Bedrock is at or near the surface in much of the district . . .” [other than the Yellow Dog and Mulligan Plains areas].

⁵⁶ Dennis A. Albert, *Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin: A Working Map and Classification*, Michigan Highland, Subsection IX.2, Gen. Tech Rep. NC-178. St. Paul MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, 181 (1995) available at <http://www.npwrc.usgs.gov/resource/habitat/rlandscp/sub9-2.htm> (last visited Nov. 15, 2004).

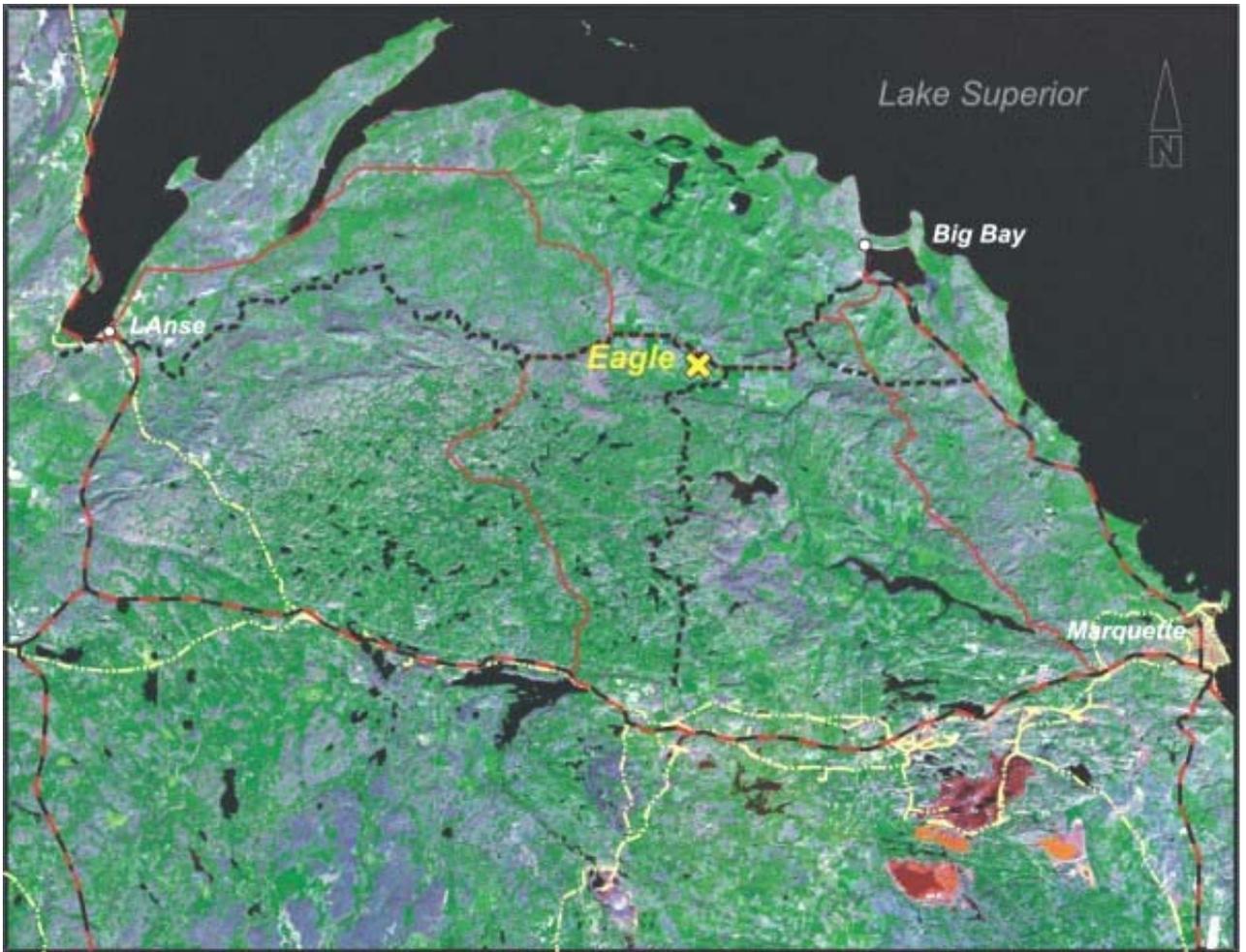
⁵⁷ Dennis A. Albert, *Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin: A Working Map and Classification*, Michigan Highland, Subsection IX.2, Gen. Tech Rep. NC-178. St. Paul MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, 181 (1995) available at <http://www.npwrc.usgs.gov/resource/habitat/rlandscp/sub9-2.htm> (last visited Nov. 15, 2004).

⁵⁸ Dennis A. Albert, *Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin: A Working Map and Classification*, Michigan Highland, Subsection IX.2, Gen. Tech Rep. NC-178. St. Paul MN: U.S. Dep’t of Agriculture, Forest Service, North Central Forest Experiment Station, 181 (1995) available at <http://www.npwrc.usgs.gov/resource/habitat/rlandscp/sub9-2.htm> (last visited Nov. 15, 2004).

Because of the importance and size of the Yellow Dog Plains Aquifer an objective and complete hydrologic baseline study is essential. The collection of 3,000 signatures petitioning the United States Geological Study (USGS) to conduct a hydrology study shows the importance of the Yellow Dog Plains to the citizens of Powell Township.⁵⁹ The health of the Yellow Dog Plains Aquifer and groundwater of the area directly impacts the surface flow of the Salmon Trout River and its endemic coaster brook trout population. The Salmon Trout River is primarily ground water fed⁶⁰ and has a low flow rate of only 60 cubic feet per second (c.f.s.).

⁵⁹ Pete Mackin, *DEQ Doesn't Want Water Survey on Yellow Dog Plains*, THE MINING J., Jan. 23, 2005.

⁶⁰ Tom Buhr, *Proposed Mine in U.P. Could Put Coaster Brookies to the . . . Acid Test*, MICH. STREAMSIDE J., Oct.–Nov. 2004, at 7.



B. Last Remaining Spawning Run of Native Coaster Brook Trout on the South Shore of Lake Superior

1. What is a Coaster Brook Trout?

The proposed mine is located in a remote and pristine area a few hundred feet from the headwaters of the Salmon Trout River, the last remaining river in the United States, outside of Isle Royale National Park, known to have a spawning run of coaster brook trout.⁶¹ A coaster brook trout differs behaviorally from a typical brook trout in that

⁶¹ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman and Robert B. DuBois, 7 (March 1996). Washington Harbor, Tobins Harbor, and Big Siskiwit Bay (within Isle Royale National Park) are known to contain coasters.

a coaster spends part of its life in the river and part in Lake Superior. The coaster brook trout acts like an anadromous salmon species,⁶² hence the name ‘Salmon Trout River.’⁶³ In addition to the behavioral differences, coasters are physically different from typical brook trout. Mature coasters typically weigh considerably more than a brook trout that resides totally within a river system.⁶⁴ Coasters also mature later than non-coaster populations, “often not reaching maturity until their third summer.”⁶⁵

It is estimated that the Salmon Trout River supports a coaster population of 100 to 200 individuals. Once abundant along the shoreline of Lake Superior, the population of coasters dropped dramatically in the late nineteenth century because of their popularity as a food and sport fish.⁶⁶ On the heels of over-harvesting⁶⁷ followed a period in which an enormous amount of stream habitat was destroyed or altered. The coaster population was unable to rebound from the over-harvesting when coupled with the destruction of their habitat.

“The coaster brook trout . . . are as much a trademark for the region as the Pacific salmon are to the Northwest, the Yellowstone cutthroat to Yellowstone or the greenback

⁶² Coaster Brook Trout are classified as anadromous, as are many species of salmon. *Id.* at 3.

⁶³ A fish that migrates from a fresh water lake to spawn in a river is called “potamodromous.” Peter Dykema, *Coasters* (June 2005) (on file with author).

⁶⁴ Scot Swanson, *Coaster Brookie Initiative Explained*, THE MINING J., Dec. 12, 2004.

⁶⁵ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman and Robert B. DuBois, 10 (March 1996).

⁶⁶ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman and Robert B. DuBois, 10 (March 1996). It is interesting to note that in a recent tagging of roughly thirty Salmon Trout coasters, five were subsequently caught by local anglers. The high angling mortality rate illustrates the coasters’ susceptibility to over fishing. Telephone Interview with Casey Huckins, Aquatic Ecologist, Michigan Technological Institute (Feb. 2, 2005).

⁶⁷ WIS. DEP’T OF NATURAL RESOURCES, FACT SHEET – WHAT IS A COASTER BROOK TROUT?, available at <http://www.dnr.state.wi.us/org/gmu/superior/Fish/Coaster%20Brook%20Trout.htm> (last visited Dec. 12, 2004). “The loss of forest canopies exposed cool-water streams to the sun, raising temperatures . . . The uprooting of trees also diminished the capacity of the land to store and hold water, increasing the frequency and destructiveness of floods. The rolling of cut logs off riverbanks and the running of logs downstream to market released and stirred up huge amounts of sediment, destroying spawning habitat . . .” DAVE DEMPSEY, ON THE BRINK: THE GREAT LAKES IN THE 21ST CENTURY 47–48 (2004).

cutthroat are to the Rocky Mountain Front Range.”⁶⁸ The coaster brook trout, a native of the Great Lakes (and possibly Quebec), are a “heritage species” for the Great Lakes region. The term “heritage species” tiers to the coaster’s cultural, historical, and ecological significance to the natural landscape.

Much research remains to be done on the genetics of the coaster brook trout, along with identification of their critical habitat and needs.⁶⁹ Coaster brook trout have not yet been specifically described as a separate subspecies genetically discreet from the brook trout (*Salvelinus fontinalis*) that reside completely within a river system. “While the coaster has still not been described by genetic analysis, biologists now appreciate that the Lake Superior coaster populations may be unique and comprise an evolutionary significant unit.”⁷⁰

2. Coaster Brook Trout and the Endangered Species Act⁷¹

If the coaster brook trout were to be listed under the Endangered Species Act (ESA) it would likely be as an evolutionary significant unit (ESU). “The term endangered species means any *species* which is in danger of extinction throughout all or a significant portion of its range”⁷² The distinction between a coaster and a river-dwelling brook trout may lie somewhere between that of a subspecies and a distinct population segment — an evolutionary significant unit. “The term species includes any

⁶⁸ Tom Buhr, *Proposed Mine in U.P. Could Put Coaster Brookies to the . . . Acid Test*, MICH. STREAMSIDE J., Oct.–Nov. 2004, at 9.

⁶⁹ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman and Robert B. DuBois, 4 (March 1996).

⁷⁰ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman & Robert B. DuBois, 3 (March 1996).

⁷¹ Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2001).

⁷² Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544, § 1532 (6) (2001) (emphasis added).

subspecies of fish or wildlife or plants, and any *distinct population segment* of any species of vertebrate fish or wildlife which interbreeds when mature.”⁷³

The National Marine Fisheries Service (NMFS) has defined an evolutionary significant unit as: 1) “substantially reproductively isolated from other nonspecific population units; and 2) representative of an important component in the evolutionary legacy of the species.”⁷⁴ The NMFS further clarified that “reproductive isolation must be strong enough to permit evolutionarily important differences to accrue in different population units.”⁷⁵ In further defining whether the coaster is “representative of an important component in the evolutionary legacy” the NMFS considers if the population is genetically distinct from other nonspecific populations; if it occupies an unusual or distinctive habitat; and if it shows evidence of unusual or distinctive adaptation to its environment.⁷⁶

In the determination of whether coasters fit the first part of the ESU definition—being substantially reproductively isolated from other nonspecific population units—it is appropriate to compare the Salmon Trout strain with that of the Tobin Harbor (Isle Royale) strain. Preliminary evidence suggests that there is reproductive isolation strong enough to permit evolutionarily important differences to develop in different population units. The preliminary evidence is that, while the Salmon Trout strain spawns in the river, the Tobin Harbor strain spawns in Lake Superior. A study of the three coaster populations at Isle Royale provides more evidence of reproductive isolation in that there

⁷³ Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544, § 1532 (16) (2001) (emphasis added).

⁷⁴ See 56 Fed. Reg. 58,618 (1991).

⁷⁵ *Id.*

⁷⁶ STANFORD ENVIRONMENTAL LAW SOCIETY, THE ENDANGERED SPECIES ACT, 38 (P. Stephanie Easley, et al. eds., Stanford University Press 2001).

was “no evidence of interchange between stocks which [were] separated by a minimum of twenty-five miles of shoreline.”⁷⁷

In terms of the second definition of an ESU, that coasters are representative of an important component in the evolutionary legacy of the brook trout species, one must look to the behavioral and physical differences. Examining the first relevant consideration — whether the coaster is genetically distinct from brook trout that reside completely within the river — genetic distinctiveness cannot currently be determined because of the lack of scientific research on the subject. Coasters meet the second relevant consideration of occupying an unusual or distinctive habitat through their distinctive anadromous behavioral characteristic. The third relevant consideration, that coasters show evidence of an unusual or distinctive adaptation to their environment, is illustrated in that when mature, coasters are physically larger than the exclusively stream dwelling brook trout.

Regardless of whether the coaster brook trout meets any of the technical designations under the ESA, preliminary evidence appears to show that the endemic coaster brook trout is both behaviorally and physically distinct from the typical brook trout. Further, with or without protection from the ESA, the fact remains that only 100 to 200 unique and naturally breeding coasters remain on the south shore of Lake Superior, a remnant of their historic population.⁷⁸ The size and strength of the Salmon Trout’s

⁷⁷ Henry R. Quinlan, *Biological Characteristics of Coaster Brook Trout at Isle Royale National Park, Michigan, 1996-98*, U.S. Fish & Wildlife Service: Ashland Fishery Resources Office (November 1999), available at <http://www.fws.gov/midwest/ashland/brook/biochar/biochar.html> (last visited Feb. 7, 2005).

⁷⁸ Status of Brook Trout in Lake Superior, prepared for the Lake Superior Technical Committee by The Brook Trout Subcommittee, edited by Lee E. Newman and Robert B. DuBois, 5 (March 1996).

coaster population is such that the strain could not be used in a recent reintroduction campaign into streams within the Pictured Rocks National Lakeshore.⁷⁹

C. Huron Mountain Club: Courting the Salmon Trout and Virgin Forest

Proper watershed management is responsible for the preservation of the Salmon Trout coaster population. The Huron Mountain Club has been responsible for a significant portion of the management and protection of the Salmon Trout watershed. Other than at its headwaters, the Salmon Trout River runs completely through land owned and managed by the Huron Mountain Club. Yet, with the headwaters of the Salmon Trout River outside the holdings of the Club, and only hundreds of feet away from the proposed Eagle Project, the mine's potential impact on the river is of king-sized importance.

Established in 1889, the Huron Mountain Club is a private organization whose members own and manage roughly 15,000 acres.⁸⁰ Included in the 15,000 acres is “one of the best remaining stands of old-growth forest⁸¹ left in the upper Midwest.”⁸² The old-growth forest is a prime example of what the Hemlock—White Pine—Northern

⁷⁹ Instead, the Tobin Harbor (in Isle Royale National Park) and Nipigon River (in Ontario, Canada) strains were used. Telephone Interview with Jill Leonard, Physiological Ecologist, Northern Michigan University (Jan. 12, 2005).

⁸⁰ TERRY L. ANDERSON & DONALD P. LEAL, *ENVIRO-CAPITALISTS: ENVIRONMENTALISTS IN BUSINESS SUITS*, Political Economy Research Center, Bozeman, Montana, available <http://www.ecoworld.org/Animals/articales/articles2.cfm?TID=16> (last visited November 14, 2004). “The Club was established and incorporated under the laws of Michigan on November 29, 1889 with 7,000 acres and \$5,000 capital generated from the sale of member shares and annual dues initially set at \$100 and \$25, respectively.” *Id.*

⁸¹ The Michigan DNR's working definition of an old growth forest is “those that approximate the structure, composition, and functions of native forests. These native conditions generally include more large trees, canopy layers, native species, and dead organic material The U.S. Forest Service estimates there are between 60,000 and 70,000 acres of true, native ‘old growth’ within Michigan’s 19.3 million acres of forested land.” MICHIGAN DEPARTMENT OF NATURAL RESOURCES, FOREST, MINERAL, AND FIRE MANAGEMENT DIVISION OLD GROWTH AND BIODIVERSITY STEWARDSHIP FACT SHEET FOR MICHIGAN (Dec. 5, 2001).

⁸² Curt Meine, *How Should We Manage Nature?: Aldo Leopold and the Huron Mountain Club*, 9 ENVTL. REV. 7, 1 (July 2002).

Hardwoods region once was. The beauty and ecological value of the land owned by the Club is so great that it was strongly considered by the National Park Service as a site for a National Park in 1959.⁸³ The Club's management of the land is an excellent example of effective conservation methods.

In 1938, the Huron Mountain Club hired Aldo Leopold⁸⁴ to develop a land management plan for the 15,000 acres. Leopold used a landscape level-approach to manage the Club's land.⁸⁵ Leopold's noble plan was for the Club to establish "a core zone of land [approximately 8,000 acres] that would be preserved in its natural state; a surrounding buffer zone where human impacts would be less intensive; and around that area sustainable forestry could be practiced."⁸⁶ The landscape level-approach employed by Leopold "protects biodiversity and ecosystem processes while recognizing the human presence in the landscape."⁸⁷ The Salmon Trout watershed and its endemic coaster brook trout were thus buffered and protected by Leopold's landscape-level management.

⁸³ Brain C. Kalt, *Sixties Sandstorm: The Fight over Establishment of a Sleeping Bear Dunes National Lakeshore, 1961-1970* (1994) (undergraduate seminar paper, University of Michigan).

⁸⁴ Aldo Leopold (1887-1948) is the author of *A Sand County Almanac* and one of the founders of the Wilderness Society.

⁸⁵ Curt Meine, *How Should We Manage Nature?: Aldo Leopold and the Huron Mountain Club*, 9 ENVTL. REV. 7, 5 (July 2002). "The Club owned a 15,000-acre tract of virgin hardwood forest near Lake Superior. Harris, [a representative of the Club,] asked Leopold to devise a land program for the club's holdings. For Leopold, it was a rare, important opportunity to experiment with his new approach to ecologically based land management. The club's land encompassed one of the last vestiges of the "big hardwoods" that Leopold had so eagerly explored as boy" CURT MEINE, ALDO LEOPOLD: HIS LIFE AND WORK, 385 (The University of Wisconsin Press, 1988).

⁸⁶ Curt Meine, *How Should We Manage Nature?: Aldo Leopold and the Huron Mountain Club*, 9 ENVTL. REV. 7, 5 (July 2002).

⁸⁷ The goals for the Club property were listed as: 1) To preserve and maintain the aesthetic value of the northern hardwood-hemlock forest upon which the recreational use depends, 2) To preserve and maintain a habitat conducive to a balanced wildlife population, 3) To preserve the beauty of the streams and lakes and maintain the optimum habitat for aquatic life, 4) To maintain a centrally located area in a natural state as a laboratory for studies of plant and animal ecology, 5) To contribute to the attainment of the forgoing objectives by making a light selective cut on the timberline outside of the specially reserved recreational, wildlife, and natural areas, 6) To conduct this cut according to a rational plan for continuous operation, designed to obtain an annual income with which to further the land purchase program of the club and thus contribute to objective 1 to 4. Roger Monthey, *Aldo Leopold, Selective Cutting, and Forest Stewardship Planning*, available

D. Yellow Dog Plains an Essential Piece of Keystone Forest Area

The land within the Ottawa National Forest's McCormick Wilderness Area, the Huron Mountain Club, and the Escanaba River State Forest is an area of tremendous natural beauty, in addition to its unique ecological significance.⁸⁸ Currently, the keystone forest area remains remote and primarily roadless.⁸⁹ This jewel of the Upper Midwest is also essential for scientific research. The area's importance to scientific research is evidenced both by the Huron Mountain Wildlife Foundation⁹⁰ and the Ottawa National Forest's 3,675 acre McCormick Research Natural Area— designated as a wilderness in 1971.⁹¹ The presence of these two research areas speaks to the area's role and importance in understanding “landscape-level relationships and processes.”⁹²

The McCormick Research Natural Area (RNA) provides strong protection for the area's ecosystem, preserving it for use by future generations. The management of RNAs is such that “natural conditions are allowed to prevail usually by elimination or limiting

<http://www.fs.fed.us/na/durham/coopforest/stewardwhip/text/leopold.shtml> (last visited Jan. 20, 2005); Curt Meine, *How Should We Manage Nature?: Aldo Leopold and the Huron Mountain Club*, 9 ENVTL. REV. 7, 5 (July 2002).

⁸⁸ See E. LUCY BRAUN, DECIDUOUS FORESTS OF EASTERN NORTH AMERICA (The Free Press, 1950) for more information about the area's forest make-up.

⁸⁹ Roads will substantially increase the amount of silt runoff into fragile watersheds, such as the Salmon Trout. Tom Buhr, *Proposed Mine in U.P. Could Put Coaster Brookies to the . . . Acid Test*, MICH. STREAMSIDE J., Oct.–Nov. 2004, at 7. In August 2004 Kennecott publicly announced that they had made road improvements, including a crossing over the Salmon-Trout River. Aaron Peterson, *Kennecott Upgrading Triple A Road Near Mine Site*, THE MINING J., Aug. 16, 2004. In April 2005, spring runoff washed out a 80-foot section of the road dumping roughly 98 tons of soil into the Salmon-Trout River. Pete Mackin, *Washout Dumps Tons of Soil into River; Heavy Runoff*, THE MINING J., Apr. 16, 2005.

⁹⁰ The Huron Mountain Wildlife Foundation (HMWF) is a natural area of approximately 30 square miles contained within the Huron Mountain Club. The scientific research area is in an ecosystem that has remained “unusually free of direct, human impact.” Huron Mountain Wildlife Foundation, <http://www.hmwf.org/research/> (last visited Jan. 13, 2005).

⁹¹ OTTAWA NATIONAL FOREST, FOREST SUPERVISORS OFFICE, MCCORMICK WILDERNESS (2001).

⁹² FOREST SERVICE, U.S. DEP'T OF AGRIC., PRODUCED IN COOPERATION WITH THE NATURE CONSERVANCY, PREPARING FOR THE FUTURE: FOREST SERVICE RESEARCH NATURAL AREAS, FS-503 (1992).

human intervention . . . [they] also provide valuable opportunities for nonmanipulative research and monitoring of long-term ecological change”⁹³

[The] two dominant purposes for developing a comprehensive system of Research Natural Areas stated by *A Directory of Research Natural Areas on Federal Lands on the United States* are: 1) to preserve a representative array of all significant natural ecosystems and their inherent processes as baseline areas, 2) to obtain, through scientific education and research, information about natural system components, inherent processes and comparisons with representative manipulated systems.⁹⁴

The information provided by the scientific research done in RNAs enables natural resource managers to make more informed land management decisions.⁹⁵ The protection of each RNA⁹⁶ is of increased importance because they represent the best of the best as to what is left of functional and intact ecosystems. There is a finite availability in how many RNAs still exist. The enormous amount of development that a mine would create in the area, such as access roads⁹⁷ and power generation, would forever alter this key wilderness block.

E. Valuation of Wilderness-Research Areas and the Precautionary Principle

In addition to the development, the likelihood that an unproven and risky method of mining would permanently destroy an important ecological area is a prime example of

⁹³ *Preparing for the Future: Forest Service Research Natural Areas*, U.S. Department of Agriculture, Forest Service, FS-503, produced in cooperation with The Nature Conservancy January 1992.

⁹⁴ *Preparing for the Future: Forest Service Research Natural Areas*, U.S. Department of Agriculture, Forest Service, FS-503, produced in cooperation with The Nature Conservancy January 1992.

⁹⁵ 36 C.F.R. § 251.23 (1966). “. . . the Chief shall establish a series of research natural area, sufficient in number and size to illustrate adequately or typify for research or educational purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance. Research Natural Areas will be retained in a virgin or unmodified condition except where measures are required to maintain a plant community which the area is intended to represent.”

⁹⁶ The entire network of RNA’s numbers over 250 for the entire nation. *Preparing for the Future: Forest Service Research Natural Areas*, U.S. Department of Agriculture, Forest Service, FS-503, produced in cooperation with The Nature Conservancy January 1992.

⁹⁷ See *supra* note??

when the precautionary principal ought to be adhered to.⁹⁸ Thinking about the mine in terms of its obvious effects on the use and enjoyment⁹⁹ of those recreating within the wilderness area and the impact on future scientific research cannot be adequately measured. Yet, when two competing uses on our public land are incompatible with one another, the two uses are compared with one another. Putting aside the ways in which political decision-making and rational decision-making clash, and the argument of what the correct way is to compare the two competing uses on our public land, a market analysis is often the method used by our government to make a decision.

Despite the perception of many environmentalists, an economic analysis of the two competing uses is not the problem, but rather how the economic analysis is framed. Whether the economic analysis is framed in terms of short or long-term gain is essential to the determination of the value of the use on the public land. Framing the analysis in long-range terms is dealt with in *The Economics of Natural Environments*:

A general theme that emerges . . . is the failure of the market to allocate efficiently the resources of natural environments. The market failure dealt with here is generally due to the presence of what has termed ownership and public goods externalities in a static or timeless context [T]here are additional problems for efficient market and nonmarket allocation where the resources in question are natural endowments not producible by man.¹⁰⁰

⁹⁸ See Generally, INDUR M. GOKLANY, *THE PRECAUTIONARY PRINCIPLE: A CRITICAL APPRAISAL OF ENVIRONMENTAL RISK ASSESSMENT* (2001).

⁹⁹ On a side note— if a nuisance claim was filed against a mine operating on the Yellow Dog Plains—what is the standard for the reasonable use and enjoyment of a Wilderness area? The intentional tort of public nuisance is defined as an “unreasonable interference with a right common to the general public.” Restatement of Torts (2d) § 821 B (1978). When the nuisance definition is combined with how Congress defined the public’s wilderness there appears to be a potential valid claim. Congress defined Wilderness as,

[A]n area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable. Wilderness Act of 1964, 16 U.S.C.A. § 1131(c) (1964).

¹⁰⁰ JOHN V. KRUTILLA & ANTHONY C. FISHER, *THE ECONOMICS OF NATURAL ENVIRONMENTS: STUDIES IN THE VALUATION OF COMMODITY AND AMENITY RESOURCES* 20 (1975).

Economically, the region will see a greater gain in the short term if a mine is in operation on the Yellow Dog Plains. The short-term economic gain would be the indirect trickle down effect on the local businesses of money paid by Kennecott to its employees and directly by the money Kennecott appears to already be dangling in front of local organizations.

However, the determination of the optimal use of the public land should not be done merely in terms of short-term economic gain. Instead the value of the use on the public land must be done through a long-term economic cost-benefit analysis. In a long-term economic cost-benefit analysis, the region will see more benefits by having the wilderness area preserved. It is impossible to give a precise quantification on the value of wilderness to the region. However, the permanent alternation to the wilderness-recreation area would negatively impact the area's tourism industry enough to make the cost-benefit analysis a one-sided affair.

The determination of the optimal use of the public land is made even easier if the precautionary principal is factored into the valuation equation. The precautionary principal is vital to the valuation equation at issue because of the unproven and risky sulfide mining method. The risk to the environment by sulfide mining is extremely high due to the devastating and permanent impact of acid mine drainage.

IV. Impact on Local Region

A. Impact on Local Economy: A Lose-Lose Situation

The mines brought two lane highways,
So they could bring the horseless carriage,
Like a shotgun wedding for a loveless marriage.
He rode through the summer, rode throughout the fall,
Rode out of town one winter, lonesome as a falcon call¹⁰¹

Predicting the economic impact of the Eagle Project on the regional economy is simple—rolling the dice for the chance of a negligible short-term gain while guaranteeing a loss of profits in the long-term. In terms of employment, the best estimate given by Kennecott is that the mine would employ 140 people¹⁰² for ten years.¹⁰³ Of the 140 employees, no more than half would be from the local area.¹⁰⁴ Kennecott has a policy of not hiring union workers, which is of particular relevance regarding employee benefits after mine closure. In a state dominated by the auto industry and its unions, a powerful coalition between environmentalists and union workers should be formed.

The ten years that Kennecott states it will employ workers is the maximum amount of time that the mine will be open. The mine's lifespan will be significantly reduced if the market price for nickel or copper drops. In the past fifteen years the annual average price for a pound of nickel has been as low as two dollars and as high as six dollars.¹⁰⁵ If the market price drops, due to its close relation to the volatile supply and

¹⁰¹ STEPPIN' IN IT, *Tin Can Sullivan*, on HIDDEN IN THE LOWLANDS (Independent Release 2004).

¹⁰² Hugh McDiarmid Jr., *Task Force to Continue UP Mining Talks*, DETROIT FREE PRESS, Aug. 26, 2004.

¹⁰³ Aaron Peterson, *Kennecott to Form Advisory Group*, THE MINING J., Aug. 15, 2004. According to Kennecott spokesman John Cherry, the construction phase would last two years, followed by six to eight years of production, and finally two years to break down and remove.

¹⁰⁴ DVD: Sulfide Mining Presentation by Rusty Gowland and Ray Pittman at Northern Michigan University November 11, 2004 (Wolfpack 2004) (on file with author).

¹⁰⁵ PETER H. KUCK, METAL PRICES IN THE UNITED STATES THROUGH 1998, 91 (US Geological Study, US Dept. of Interior, US Gov. Printing Office, 1999).

demand market forces,¹⁰⁶ the mine would likely shut down. “Because of the volatility of the mineral markets, mining companies incorporate and dissolve with some frequency.”¹⁰⁷ There is no guarantee that intangible market factors will remain stable five or ten years into the future and that Kennecott will employ workers for even ten years.

The Wolfpack, an independent organization of roughly sixty business professionals, calculates that “90% of the value of the ore mined will leave the community and state.”¹⁰⁸ While the KMC and royalty owners of Rio Tinto “stand to gain about \$2.8 billion” from the Eagle Project, the local area residents will lose millions from the loss of tourism.¹⁰⁹ The lack of an all inclusive value model to predict the full economic impact of the Eagle Project has been identified as an inherent failure in the decision-making process.

The economy of the Upper Peninsula will not benefit from another boom-and-bust period of mineral extraction. On the opposite side of the spectrum from mineral extraction is the tourism industry, sustainable development that Marquette County has sought to develop its economy around. Using its location on Lake Superior and accessibility to public forestland, Marquette had done incredibly well marketing itself as a tourist destination.

¹⁰⁶ PETER H. KUCK, METAL PRICES IN THE UNITED STATES THROUGH 1998, 94-95 (US Geological Study, US Dept. of Interior, US Gov. Printing Office, 1999). Since 1979 nickel has been priced and traded on the London Metal Exchange (LME). Although the LME’s hedging and option capabilities have “served as a futures market, providing” some protection to producers, traders, and consumers, nickel speculation is still a “high-risk venture.” *Id.*

¹⁰⁷ John F. Seymore, Note, *Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability*, 31 *ECOLOGICAL L. Q.* 795, 939 (2004).

¹⁰⁸ DVD: Sulfide Mining Presentation by Rusty Gowland and Ray Pittman at Northern Michigan University November 11, 2004 (Wolfpack 2004) (on file with author).

¹⁰⁹ DVD: Sulfide Mining Presentation by Rusty Gowland and Ray Pittman at Northern Michigan University November 11, 2004 (Wolfpack 2004) (on file with author).

Located in Michigan's Upper Peninsula, Marquette County is a rural community with a cosmopolitan attitude. Nestled within 100 million acres of forest and woodland, the area enjoys a high quality of life thanks in part to its fine sand beaches, abundant natural resources and unlimited recreation opportunities. Its northern boundary, Lake Superior, is the largest fresh water lake in the world and has a shoreline dotted with lighthouses and shipwrecks whispering maritime tales of life on the historic Great Lakes. Marquette County's recreational opportunities are endless and year-round. You can fly fish and sunbathe on one of the region's 80 inland lakes, and bike, ski and dog sled along its miles of peaceful trails.¹¹⁰

Another example of the marketing done by Marquette and the state of Michigan is the various economic grants and program of the Cool Cities program.¹¹¹ Given Marquette's proximity to major population centers, such as Chicago, Minneapolis, Detroit, and Milwaukee, it has become a host to major outdoor sporting activities such as mountain biking,¹¹² the UP 200 sled dog race,¹¹³ cross skiing,¹¹⁴ and downhill skiing.¹¹⁵

In order to gain an understanding of the mine's full impact on the region the value of the natural resources and watersheds must be quantified. Healthy watersheds are important to the current primary employers in Marquette County: Marquette General Hospital, Northern Michigan University, Marquette Branch Prison, and the Empire Mine (at which iron ore is mined¹¹⁶). In terms of a sustainable economy and employment, Marquette County and the rest of northern Michigan should continue to concentrate on

¹¹⁰ America's Most Livable: Marquette, MI, <http://www.mostlivable.org/cities/marquette/home.html> (last visited March 10, 2005).

¹¹¹ The "Cool City Pilot" Program!, <http://www.coolcities.com/docs/rfp.pdf> (last visited Mar. 10, 2005); John Gallagher, GRANHOLM'S 17 COOL CITIES: START WITH A COOL HUNDRED RAND, THE DETROIT FREE PRESS, June 3, 2004, http://www.freep.com/money/business/cool3e_20040603.htm; <http://www.mqtcty.org/Cool%20Cities.htm> (last visited Mar. 10, 2005).

¹¹² Ore To Shore, <http://www.oretoshore.com/www/index.html> (last visited Mar. 10, 2005).

¹¹³ UP 200, Midnight Run, and Jack Pine 30 Sled Dog Races, <http://www.up200.org/v2/200checkpoints.htm> (last visited Mar. 10, 2005).

¹¹⁴ Noquemanon Trail Network, <http://www.noquetrails.org/index.php?sectionid=33> (last visited Mar. 10, 2005).

¹¹⁵ MM Splash, <http://www.marquettemountain.com/> (last visited Mar. 10, 2005).

¹¹⁶ The chemical composition of iron ore and the substantial differences in extractive and processing methods make the current iron ore mining operations in the Marquette area a stark contrast to the proposed sulfide mining operation.

areas such as the high tech medical industry¹¹⁷ and not the boom and bust cycle of resource extraction.

B. Local Sentiment Surrounding the Proposed Mine

From the first mineral exploration to occur within the Yellow Dog Plains there has been strong opposition to the development of a sulfide mine in the area. Opposition to the mine has a broad range of support from local grassroots organizations to concerned businessmen from across the state. The area that would be most affected is Powell Township. In a canvassing of Powell Township done by the Concerned Citizens of Big Bay, 380 of the 500 registered voters stated that they were directly opposed to the Eagle Project.¹¹⁸ The Yellow Dog Watershed Preserve and the National Wildlife Federation in response to the mineral exploration being done in the Upper Peninsula of Michigan specifically formed an organization—The Eagle Alliance.¹¹⁹

The local media has consistently covered the issues surrounding the proposed sulfide mine. The local media, consisting primarily of *The Mining Journal* newspaper and TV6 news, have been surprisingly critical of the Eagle Project. The coverage by *The*

¹¹⁷ Pioneer Surgical Technology Homepage, <http://www.pioneersurgical.com/> (last visited Mar. 10, 2005).

¹¹⁸ Gene Michael Champagne, Letter to the Editor, *Big Bay Against Mine*, THE MINING J., Feb. 15, 2005, at 4A.

¹¹⁹ The Eagle Alliance, <http://www.ydeaglescry.com> (last visited Feb. 7, 2005). The Eagle Alliance is supported by: Northwoods Wilderness Recovery; Upper Peninsula Environmental Coalition (UPEC); Friends of the Land of Keewenaw (FOLK); Keweenaw Bay Indian Community; Huron Mountain Club - Big Bay; Environmental Sciences Organization (ESO) - NMU; The Yellow Dog Student Organization; Sweetwater Visions and their Sulfide Mining Page; The Big Bay Sportsman's Club; Michigan Resource Stewards (retired DNR and DEQ Employees); 18th Century Reproductions; Advance Mobile Accessories; The Art of Framing; Big Bay Outfitters; Bosio and Sons Wholesalers; Change Masters Consulting; Clark Roberts, RN/CMT; Downwind Sports; Drapeau Building and Masonry; Emma Joe's Coffee House; Jolly Lama Juggle Stix; Ken Baker, Licensed Builder; Little Tree Cabins; Marquette Food Co-Op; Merry Mary's Leather Art Studio; North Country Publishing; Racine Realty, Inc.; Second Skin Shop; Snowbound Books; Third Street Bagel Company; Uncle Ducky Charters; White's Party Store; Writer's Block Brick Paving; Yellow Dog Canoes; American Beauty Painting.

Mining Journal demonstrates the strong bipartisan support for protecting the Yellow Dog Plains.

Soon after the Michigan House passed legislation regulating sulfide mining, *The Mining Journal* ran an editorial voicing the concern “that the bill does not have a strong enough foundation.”¹²⁰ Although *The Mining Journal* supported passage of House Bill 6243, the editorial illustrates the general concern that the Bill does not go far enough. “The concerns about the enforcement and a lack of specific details regarding environmental standards” in HB 6243 kept United States Representative Bart Stupak, a Democrat, and the Keewenaw Bay Indian Community (KBIC) from supporting the Bill.¹²¹

C. Marketing by Kennecott Minerals Company

Kennecott is in the midst of an all-out marketing blitzkrieg in the area over the proposed mine. John Cherry, manager of environmental and government affairs for KMC, moved to Marquette even before the intentions of the Eagle Project were known to the local community. KMC created a community advisory group,¹²² chaired by Cherry, to provide “a forum in which representatives from a cross-section of the community can voice ideas, concerns, support and advice associated with the potential development of a

¹²⁰ Editorial, *Despite Positive Reassurance, House Bill 6243 May be Flawed*, THE MINING J., Jan. 3, 2005, at 4A.

¹²¹ Editorial, *Despite Positive Reassurance, House Bill 6243 May be Flawed*, THE MINING J., Jan. 3, 2005, at 4A.

¹²² Aaron Peterson, *Reaction to Mine Advisory Group Mixed*, THE MINING J., Sept. 19, 2004. The participating groups are: Michigamme and Powell Townships; Marquette County; Marquette City; Michigan United Conservation Clubs; Fred Waara Chapter of Trout Unlimited; Central Lake Superior Watershed Partnership; Lake Superior Community Partnership; Northern Michigan University; Michigan Technological University professor Ted Bornhorst; Michigan Department of Environmental Quality; the U.P. Construction Council; and state Representative Stephen Adamini’s office. The Groups that were invited but declined to participate: the National Wildlife Federation and the Keweenaw Bay Indian Community.

mine.”¹²³ The means by which the KMC organized the community advisory group meetings was widely criticized.¹²⁴

The community advisory group was not open to the public, severely compromising the reliability of the information that was provided at the meetings. Concerned citizens were left only with speculation as to the filter in which KMC provided information to their political representatives. Without the public, the representatives were the only means by which to provide an unbiased ‘check’ on the process. This check was compromised by the community advisory group’s lack of procedural and substantive transparency.

D. A Lack of Economic and Political Capital

Because of the population, economic status, and physical isolation of Marquette County and the Upper Peninsula, the region carries very little political capital at the national or state levels. The population of Marquette County is 64,634 and the median income per household is \$35,548.¹²⁵ Marquette County is the most populated county in the Upper Peninsula, which has a total population of 317,616 according to the 2000 census. Nationally, one member of the House, Bart Stupak, represents the entire Upper Peninsula and part of northern Lower Peninsula. At the State level, six legislators cover the Upper Peninsula districts. Representatives: Scott Shackleton, Tom Casperson, Stephen Adamini, and Rich Brown; Senators: Michael Prusi, and Jason Allen.¹²⁶ No politician has publicly supported sulfide mining on the Yellow Dog Plains, while the

¹²³ Scott Swanson, *Commission May Appoint Mining Group member*, THE MINING J., Aug. 31, 2004.

¹²⁴ Editorial, *Closed-Door Meetings Will Not Serve Public*, THE MINING J., ???, 2004, at 4A.

¹²⁵ Definition of Marquette County, MI, www.wordiq.com/definition/Marquette_County,_Michigan (last visited Oct. 26, 2004).

¹²⁶ MICHIGAN DEP’T OF ENVTL. QUALITY, DEQ ESTABLISHES MINING WORK GROUP, *available at* <http://www.michigan.gov> (last visited Sept. 1, 2004).

region's only national representation, Bart Stupak has vigorously called for strict controls over sulfide mining. Marquette County's lack of political capital makes it nearly impossible to bring sufficient attention to the important issues that affect its citizens.

V. Bridging the Gap between Citizens and Natural Resources— The Public Trust Doctrine

The Yellow Dog Plains is enormously valuable, not only to the citizens of Marquette County and the adjoining communities, but also to the State of Michigan. The natural resource rights at issue with the proposed sulfide mine are the reasonable use of water, the health of the coaster brook trout and Yellow Dog Plains Aquifer, the minerals, and the surface use interest in the Escanaba River State Forest. The political dynamics surrounding the proposed sulfide mine mirror what Joseph Sax had in mind when he advocated for the use of the public trust doctrine in the early 1970's.¹²⁷ Conceptually, the public trust doctrine requires the state legislature to take a broader view of the natural resources at issue. Under the public trust doctrine, the state as a sovereign holds the property in trust for all citizens. The common law doctrine of the public trust provides some teeth to the state Constitution which obligates the state legislature to protect the natural resources of the state.¹²⁸

Since the 1970's and the renewed interest in the public trust doctrine, the landscape of environmental law has dramatically changed for most industries, but not for hard rock mining. Much of the debate over the public trust doctrine centered on different conceptualizations in the theory of government. “[P]ublic choice analysts argued [that]

¹²⁷ Carol M. Rose, *Joseph Sax and the Idea of the Public Trust*, *Issues in Legal Scholarship* 2003, article 8, available at <http://www.bepress.com/cgi/viewcontent.cgi?article=1050&context=ils> (last visited Feb. 4, 2005).

¹²⁸ MICH. CONST. art. IV, § 52.

sharply focused minority interests often could get their way in legislatures at the expense of diffuse majorities.”¹²⁹ “Meanwhile, in the administrative arena, “capture” theorists described the very similar ways that regulated interests could take over the very public agencies that supposedly regulated them.”¹³⁰ Interestingly, and not merely coincidentally, Joseph Sax was a major player in developing the Michigan Environmental Policy Act (MEPA).¹³¹ Sax realized the limits of regulatory statutes and sought the public trust doctrine to be utilized as a “general device for managing change and recognizing community values in diffuse resources.”¹³² Sax’s realizations have never rung more true than in the issue of sulfide mine permitting.

VI. Michigan’s Current Regulations over Sulfide Mining are Inadequate for the Task

A. Michigan Environmental Policy Act (MEPA) and the Public Trust Doctrine

In 1970, the Michigan Environmental Policy Act (MEPA)¹³³ was enacted to protect the water, air, and other natural resources of Michigan from pollution, impairment, or destruction. To protect Michigan’s natural resources MEPA provided for citizen suits.¹³⁴ Under Michigan’s Constitution, the legislature is responsible for

¹²⁹ Carol M. Rose, *Joseph Sax and the Idea of the Public Trust*, Issues in Legal Scholarship 2003, article 8, at 3, available at www.bepress.com/cgi/viewcontent.cgi?article=1050&context=ils (last visited Feb. 4, 2005).

¹³⁰ Carol M. Rose, *Joseph Sax and the Idea of the Public Trust*, Issues in Legal Scholarship 2003, article 8, at 3, available at www.bepress.com/cgi/viewcontent.cgi?article=1050&context=ils (last visited Feb. 4, 2005).

¹³¹ See generally Joseph L. Sax & Roger L. Conner, *Michigan’s Environmental Protection Act of 1970: A Progress Report*, 70 MICH. L. REV. 1003 (1972).

¹³² Carol M. Rose, *Joseph Sax and the Idea of the Public Trust*, Issues in Legal Scholarship 2003, article 8, at 5, available at www.bepress.com/cgi/viewcontent.cgi?article=1050&context=ils (last visited Feb. 4, 2005).

¹³³ Thomas J. Anderson, *Gordon Rockwell Environmental Protection Act of 1970*, Mich. Comp. Laws § 324.1701.

¹³⁴ Thomas J. Anderson, *Gordon Rockwell Environmental Protection Act of 1970*, Mich. Comp. Laws § 324.1701 (1). “The attorney general or any person may maintain an action in the circuit court having jurisdiction where the alleged violation occurred or is likely to occur for declaratory and equitable

protecting the natural resources of the state.¹³⁵ The legislature’s responsibility is accomplished through MEPA.¹³⁶ MEPA “was the first state act of its type and has been used as the model for several environmental statutes enacted by other states.”¹³⁷

To make a prima facie case under MEPA, a plaintiff must show “that the conduct of the defendant has . . . or is likely to pollute, impair, or destroy the air, water or other natural resources or the public trust in these resources.” “Success on the merits is more difficult under MEPA than NEPA [National Environmental Policy Act] where the plaintiff need only show a violation of a procedural requirement.”¹³⁸

The citizen suit provision of MEPA has been restricted by recent case law of the Michigan Supreme Court. In what has been called “judicial activism disguised as judicial restraint”¹³⁹ the Michigan Supreme Court held that the legislature could not confer standing on a party through MEPA. The reasoning of the majority opinion is that following from the separation of powers, the judiciary has plenary power in conferring standing.¹⁴⁰ Thus, in order for a party to have standing under MEPA a plaintiff must

relief against any person for the protection of the air, water, and other natural resources and the public trust in these resources from pollution, impairment, or destruction.” *Id.*

¹³⁵ MICH. CONST. art. IV, § 52. “The conservation and development of the natural resources of the state are hereby declared to be of paramount concern in the interest of the health, safety and general welfare of the people. The legislature shall provide for the protection of the air, water and other natural resources of the state from pollution, impairment and destruction.” *Id.*

¹³⁶ Fred R. Jensen, *Developing the Future of Michigan Environmental Law: Expanding and Blending MEPA with the Public Trust Doctrine*, DET. C.L. REV., 65, 76 (1989).

¹³⁷ Fred R. Jensen, *Developing the Future of Michigan Environmental Law: Expanding and Blending MEPA with the Public Trust Doctrine*, DET. C.L. REV., 65, 75–76 n.62 (1989).

¹³⁸ Merry Goodenough, *Public Participation in a State-Assumed Wetlands Permit Program: the Michigan Example*, J. ENVTL. L. & LITIG., 222, 281 (1995). Unlike NEPA, MEPA has no procedural requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) and distribute it for public notice and comment.

¹³⁹ *Nat’l Wildlife Fed’n v. Cleveland Cliffs*, 2004 WL 1724879, at *28 (2004) (Weaver, J., concurring in result only).

¹⁴⁰ *See Nat’l Wildlife Fed’n v. Cleveland Cliffs*, 2004 WL 1724879, 1 (2004).

meet the judicial test set forth by the United States Supreme Court in *Lujan v. Defenders of Wildlife*.¹⁴¹

Restricting MEPA from the plain language of the statute makes it more difficult for citizens to bring forth suits in order to protect the environment. The citizen suit provision also provides a check on the state administrative agencies. With citizen suits restricted by judicial activism, use of the public trust doctrine is necessary. The public trust doctrine is the only check that the judicial branch has over the legislature's constitutionally imposed responsibility of protecting the natural resources of the state.

B. Recently Passed Legislation on Sulfide Mining— Michigan House Bill 6243

The proposed Eagle Project left local state legislators and the Michigan Department of Environmental Quality (DEQ) scrambling to place regulations on sulfide mining. Prior to House Bill 6243 there were no specific regulations over sulfide mining. Local state legislators first introduced House Bill No. 5324, which regulated sulfide mining in a similar manner to that of other forms of mining. House Bill 5324 would merely have changed Michigan's Mine Reclamations under Part 631 to include underground mining.¹⁴²

Governor Jennifer Granholm signed Michigan House Bill 6243 into law on December 27, 2004¹⁴³ after a 90-0 vote in the Michigan House and 37-0 vote by the Michigan Senate.¹⁴⁴ House Bill 6243 adds Part 632, Nonferrous Metallic Mineral Mining, to the Natural Resources and Environmental Protection Act (NREPA). The recent legislation is a step in the right direction in regulating sulfide mining.

¹⁴¹ See *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992).

¹⁴² Proposed Amendment to Michigan's Mine Reclamation Regulations, Natural Resources and Environmental Protection Act, Act No. 451 of the Public Acts of 1994, as amended Part 631.

¹⁴³ Pete Mackin, *Sulfide Mining Bill Signed by Granholm*, THE MINING J., Dec. 27, 2004.

¹⁴⁴ John Pepin, *Sulfide Mine Bill Passes*, THE MINING J., Dec. 9, 2004.

Despite the success and broad support for House Bill 6243, the legislation has several flaws. Two interested and concerned parties, The Keweenaw Bay Indian Community (KBIC) and United States House Representative Bart Stupak, did not support the bill stating that the lack of “minimum standards makes the rules for conducting mining activity unenforceable.”¹⁴⁵ Like most legislation, House Bill 6243 is the product of compromise.

House Bill 6243 was the product of a task force spurred by Governor Granholm. Granholm called upon the DEQ to form a stakeholder’s work group to respond to explorations by mining companies in the state. The formation of a stakeholder’s work group was in part the result of the six state legislators whose districts cover the Upper Peninsula¹⁴⁶ requesting that DEQ Director, Steven Chester, expand the review process.

1. Incomplete Devolution of Power— House Bill 6243’s Pre-emption of Local Laws

Section 63203 (3) [A] local unit of government shall not regulate or control mining or reclamation activities that are subject to this part, including construction, operation, closure, postclosure monitoring, reclamation, and remediation activities and does not have jurisdiction concerning the issuance of permits for those activities.

(4) A local unit of government may enact, maintain, and enforce ordinances, regulations, or resolutions affecting mining operations if the ordinances, regulations, or resolutions do not duplicate, contradict, or conflict with this part. In addition, a local unit of government may enact, maintain, and enforce ordinances, regulations, or resolutions regulating the hours at which mining operations may take place and routes used by vehicles in connection with mining operations.

(5) Subsections (3) and (4) do not prohibit a local unit of government from conducting water quality monitoring.

House Bill 6243 further disenfranchises the political and economic choices of the local voter with a clause preempting locally enacted laws. States usually “provide for

¹⁴⁵ Editorial, *Despite Positive Reassurance, House Bill 6243 May be Flawed*, THE MINING J., Jan. 3, 2005, at 4A.

¹⁴⁶ See *supra* note ?

home rule authority delegating general police powers” to “home rule units” such as municipalities or counties.¹⁴⁷ Under their police powers, local governments are normally entrusted with the duty of enacting laws in order to protect the general health, safety, and welfare of citizens. One of the main tools used by local governments to protect the general health, safety, and welfare of their citizens is zoning. “It is the rare exception, rather than the general rule, that a state expressly preempts sub-state regulation of the extractive industry.”¹⁴⁸ House Bill 6243 removes all the power and control that the local citizens have with local laws and places it with state administrative agencies, such as the DEQ.

2. Who Does the EIS?— Accountability and Funding of Baseline Studies

When there is a “major federal action significantly affecting the quality of the human environment” an Environmental Impact Statement (EIS) is required to be completed by the responsible federal or state official.¹⁴⁹ In contrast, recently passed House Bill 6243¹⁵⁰ allows the mining company to conduct its own environmental impact assessment, requiring that certain things be included.

An environmental impact assessment for the proposed mining operation that describes the natural and human-made features, including, but not limited to, flora, fauna, hydrology, geology, and geochemistry, and baseline conditions in the proposed mining area and the affected area that may be impacted by the mining, and the potential impacts on those features from the proposed mining operation. The environmental impact assessment shall define the affected area and shall address feasible and prudent alternatives.¹⁵¹

¹⁴⁷ Bruce M. Kramer, *Local Land Use Regulation of Extractive Industries: Evolving Judicial and Regulatory Approaches*, 14 U.C.L.A. J. ENVTL. L. & POL’Y 41, 94 (1995).

¹⁴⁸ Bruce M. Kramer, *Local Land Use Regulation of Extractive Industries: Evolving Judicial and Regulatory Approaches*, 14 U.C.L.A. J. ENVTL. L. & POL’Y 41, 95 (1995).

¹⁴⁹ National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4332(2)(C) (1994) (“include . . . responsible official . . .”).

¹⁵⁰ Pete Mackin, *Sulfide Mining Bill Signed By Granholm*, THE MINING J., Dec. 27, 2004, at 1A.

¹⁵¹ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63205 (2)(b).

The difference in who creates the environmental impact statement under federal jurisdiction and that under the state of Michigan brings to light two major limitations of state control over environmental regulations— accountability and funding.

By allowing the regulatee to produce the environmental impact assessment the state administrative agency is left unaccountable for any potential errors or omissions in the assessment. In allowing the regulatee to produce the scientific studies which make-up the environmental impact assessment, citizens are left in the dark when it comes to the scientific analysis.

The importance of the scientific analysis is magnified in the scientifically complex and ecologically sensitive Yellow Dog Plains area. The need for a better scientific understanding about the area has local citizens seeking the United States Geological Study (USGS) to conduct a hydrologic study of the area.¹⁵² A baseline study is being sought, which would provide “information about the current stream and groundwater conditions and flow patterns prior to any mining activity taking place.”¹⁵³ When a study is conducted by the USGS, data must be made available to the public at all times during the monitoring process.¹⁵⁴

Instead of the USGS doing a study, Kennecott is seeking the USGS to play a role as a third-party reviewer for their own study.¹⁵⁵ Kennecott has stated that they have already spent more than one million dollars conducting their own study of the area.

¹⁵² John Pepin, *Mining Opposition Group Lauds Geological Survey at Yellow Dog*, THE MINING J., at 1A.

¹⁵³ John Pepin, *Mining Opposition Group Lauds Geological Survey at Yellow Dog*, THE MINING J., at 1A.

¹⁵⁴ John Pepin, *Mining Opposition Group Lauds Geological Survey at Yellow Dog*, THE MINING J., at 1A.

¹⁵⁵ John Pepin, *Mining Opposition Group Lauds Geological Survey at Yellow Dog*, THE MINING J., at 1A.

However, it seems unlikely that the USGS would serve as a third-party reviewer for a study done by Kennecott because the USGS is required to perform its own work, unless approached by a governmental intermediary, such as the Environmental Protection Agency. When state administrative agencies only review studies done by the regulatee and are not responsible for conducting their own study, the agency is much more likely to only disagree with a certain portion of the study, rather than the study in its entirety.

Most states are unable to promulgate regulations that require administrative agencies¹⁵⁶ to perform their own environmental impact statements due to budgetary constraints.¹⁵⁷ The price tag on the five-year USGS study is \$1.5 million, over a million of which would have to be raised by the local area.¹⁵⁸ Tight budgets are particularly true in the cash-strapped state treasuries of the rust belt. A declining population and loss of jobs have severely restricted the state treasuries of the rust belt. In addition, the federal government's recent cutbacks in funding have added to the already tight fiscal situation.

Michigan's inability to properly fund administrative agencies, such as the Department of Environmental Quality, severely limits their capacity to provide a reasonable check on large, multi-national industrial corporations. The federal government is much more effective at dealing with large international corporations, such as Rio Tinto. Kennecott's willingness to foot the bill for environmental impact

¹⁵⁶ Michigan's Mine Reclamation Regulations are administered by the Office of Geographical Survey (OGS) pursuant to the statutory requirements of Part 631, Reclamation of Mining Land, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and MCL 324.63101 – 324.63108. *Metallic Mining & Reclamation Overview*, available at www.michigan.gov (last visited Jan. 3, 2005).

¹⁵⁷ Money was not a major issue for the state of Wisconsin in the proposed Crandon Mine site. Separate Environmental Impact Statements were prepared both by the state DNR and the Army Corp of Engineers. Elizabeth Sheldon, *Practicing Preventative Medicine: Recommendations for Financing Mining Waste Sites in Perpetuity*, 3 WIS. ENVTL. L.J. 181, 186 (1996).

¹⁵⁸ Pete Mackin, *DEQ Doesn't Want Water Survey on Yellow Dog Plains*, THE MINING J., Jan. 23, 2005. Around \$400,000 of the cost would come from the USGS Cooperative Water Program funds. *Id.*

assessments¹⁵⁹ is welcomed by many cash strapped states; however the integrity of the permitting process is severely compromised.

In contrast to Wisconsin's Mining Moratorium Law, which bans sulfide mining in the state until it can be proven to be done safely and verified by the responsible state administrative agency, Michigan requires the mining company to include in their plan,

[i]nformation that demonstrates that all methods, materials, and techniques proposed to be utilized are capable of accomplishing their stated objectives in protecting the environment and public health, except that such information may not be required for methods, materials, and techniques that are widely used in mining or other industries and are generally accepted as effective. The required information may consist of results of actual testing, modeling, documentation by credible independent testing and certification organizations, or documented applications in similar uses and settings.¹⁶⁰

3. Conflict between the Financial Assurance Provision and the Equitable Powers of the Bankruptcy Code

It is essential to include provisions that protect the state's fiscal liability into statutes that regulate hard rock mining.¹⁶¹ Without proper provisions, the public is often left with the burden of paying for the clean up of hazardous waste contamination when a hard rock mining company files for bankruptcy.¹⁶² The purpose of the financial assurance requirement is for the mining company, not the state, to pay for reclamation of the site, including the clean up of any hazardous waste contamination.

¹⁵⁹ KENNECOTT MINERALS, EAGLE PROJECT UPDATE 5: SEPTEMBER 2004, 2 (2004).

¹⁶⁰ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63205 (2)(c)(ii).

¹⁶¹ Elizabeth Sheldon, *Practicing Preventative Medicine: Recommendations for Financing Mining Waste Sites in Perpetuity*, 3 WIS. ENVTL. L.J. 181 (1996)(discussing the specific financial burdens and language of reclamation bonding laws in Wisconsin).

¹⁶² "Active sites, too, often require using public funds as mining companies experience insolvency, and bonds prove insufficient. Where mining companies remain solvent, CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act] enforcement can be costly and protracted. Imposition of joint and several liability under CERCLA can impose huge liabilities on an entity that, through a combination of bad luck and market volatility, may be the only remaining viable party at a site. Despite these problems, no dedicated source of funding for mine cleanups exists." John F. Seymore, Note, *Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability*, 31 ECOLOGY L. Q. 795, 936 (2004).

When a mining company files for bankruptcy, a trustee will be appointed by the Court to represent the estate.¹⁶³ Under the Bankruptcy Code a trustee is allowed to abandon property that is burdensome to the estate.¹⁶⁴ Once the trustee abandons the property, the estate is no longer liable for any contamination that may be present. Abandonment releases the estate of clean-up obligations. In an effort to remedy the gap between the federal environmental statutes and the Bankruptcy Code, House Bill 6243 requires that companies provide financial assurance to the state before being permitted to operate.

The financial assurance shall consist of a conformance bond, escrow, cash, certificate of deposit, irrevocable letter of credit, or other equivalent security, or any combination thereof, covering at least 75% of the total required amount. Financial assurance for the balance of the required total amount, if any, shall consist of a statement of financial responsibility.¹⁶⁵

Such financial assurance may have limited effect, however. The Bankruptcy Code limits the effectiveness of these provisions in two ways.

a. Property of the Estate

An ‘estate’ is created by operation of law when a debtor files a bankruptcy petition. Once a debtor files a bankruptcy petition all property in which the debtor has a legal or equitable interest becomes ‘property of the estate.’¹⁶⁶ A bankruptcy court looks

¹⁶³ 11 U.S.C. § 323(a) (Aspen Supp. 2004). For purposes of this paper the term trustee of the estate is used synonymously with ‘trustee’ and ‘debtor-in-possession’ (DIP). The trustee has a fiduciary responsibility to the debtor’s creditors.

¹⁶⁴ 11 U.S.C. § 554(a) (Aspen Supp. 2004). “After notice and a hearing, the trustee may abandon any property of the estate that is burdensome to the estate or that is of inconsequential value and benefit to the estate.” *But see*, *Midlantic Nat’l Bank v. N.J. Dept. of Env’tl. Protection*, 474 U.S. 494 (1986). “[W]e hold that a trustee may not abandon property in contravention of a state statute or regulation that is reasonably designed to protect the public health or safety from identified hazards.” *Id.* at 507.

¹⁶⁵ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63211(2).

¹⁶⁶ *But see*, 11 U.S.C. § 541(b) (Aspen Supp. 2004). “Property of the estate does not include...”

to state law to determine what constitutes a legal or equitable interest in property.¹⁶⁷ The first limitation of the legislature's financial assurance requirement is that it may be subject to becoming property of the estate¹⁶⁸ and therefore subject to the automatic stay provision of the Bankruptcy Code.¹⁶⁹ The automatic stay provision acts as an injunction that prevents all lawsuits and collection activity against the debtor and property of the estate. The provision goes into effect once the bankruptcy petition is filed. If the financial assurance becomes property of the estate then its value as a fiscal safeguard is effectively diminished. The state may be able to access the bond or escrow to begin the clean up process.

There are several means by which a state may protect against the financial assurance from becoming property of the estate. Conceptually, the statutory mechanisms designed to limit the state's fiscal and environmental liability seek to further define the required financial assurance as a security interest and therefore the state as a secured creditor. As a secured creditor, the State can ask for relief from the stay to access the bond or escrow account.

One route a state may take is to specifically define the mining company's legal or equitable interest in the financial assurance. State law determines what constitutes a legal or equitable interest in property.¹⁷⁰ A mining company's legal and equitable interest in the escrow account can be limited by statutory requirements. The statutory requirements

¹⁶⁷ *Butner v. U.S.*, 440 U.S. 48 (1979).

¹⁶⁸ 11 U.S.C. § 541(a)(1) (Aspen Supp. 2004). [T]he commencement of a case . . . of this title creates an estate. Such estate is comprised of all the following property, wherever located and by whomever held: . . . all legal or equitable interests of the debtor in property as of the commencement of the case. *Id.*

¹⁶⁹ 11 U.S.C. § 362(3) (Aspen Supp. 2004). “[A]ny act to obtain possession of property of the estate or of property from the estate or to exercise control over property of the estate.” *Id.*; “[A]ny act to collect, assess, or recover a claim against the debtor that arose before the commencement of the case under this title.” 11 U.S.C. § 362(6) (Aspen Supp. 2004).

¹⁷⁰ *Butner v. U.S.*, 440 U.S. 48 (1979).

would stipulate that the mining company (debtor) or trustee of the estate would only have an interest in the financial assurance when particular and specific site reclamation standards were met. The baseline for the standards should be to provide the state with adequate protection against future pollution. A statutorily required financial assurance provision should provide the state with assurance that the necessary reclamation obligations will be performed.

It is essential for the state to have a secured interest in the long-term health of the reclaimed mine site. Wisconsin law provides an example of how a state can retain control over the financial assurance after a mining company has finished its operations at a site.¹⁷¹ In Wisconsin, the mining company may *petition* the Department of Natural Resources (DNR) for the return of its financial assurance four years after it notifies the agency that it has completed the required site reclamation.¹⁷² By forcing the mining company to petition the DNR, and not having the financial assurance automatically revert back to the company, the state retains some control over the long-term pollution control devices required at specific sites.¹⁷³

The length of time that a state has an interest in the health of the financial assurance is especially important due to the volatile nature of sulfide mining and the elevated potential it has to generate acid mine drainage long after a site has been closed. British Columbia, Canada, has a unique approach to alleviate some of the government's financial uncertainty in protecting against future pollution. The approach requires

¹⁷¹ Elizabeth Sheldon, *Practicing Preventative Medicine: Recommendations for Financing Mining Waste Sites in Perpetuity*, 3 WIS. ENVTL. L.J. 181 (1996) (discussing the specific financial burdens and language of reclamation bonding laws in Wisconsin).

¹⁷² Wis. Stat. Ann. § 144.90(1) (West 1989). There are specific standards for the required site reclamation. Wis. Stat. Ann. § 144.83(2)(c) (West 1989); Wis. Admin. Code § NR 132.08 (Sept. 1995).

¹⁷³ While Wisconsin's statutorily mandated petition procedure clears up the question of legal interest under § 541(a)(1), it does not address "equitable interests of the debtor in property."

bonding in two parts— the first part covers the costs of the reclamation and the second part is a “risk premium.”¹⁷⁴ Calculation of the risk premium is done on a site-specific basis.¹⁷⁵

Risk premiums should be used when specific sites have a high potential for costly and prolonged contamination clean up. A risk premium would alleviate some of the extra liability that a state assumes when risky and unproven mining methods are used. The risk premium is as an opportunity to provide adequate protection to the state fisc. The calculation of the risk premium should include an analysis of the mining companies finances, including cash and equity reserves, and geological and hydrological tests.

b. Valuation of the Financial Assurance Required

The second limitation as to the effectiveness of the financial assurance provision is the means by which it is valued. The purpose of proper valuation of the financial assurance is similar to that of the risk premium— providing adequate protection to the state fisc. Proper risk and financial analysis must be used to calculate the necessary amount of financial assurance that is needed for a specific mine site. The current analysis is archaic and needs to be updated in order to incorporate current clean up costs and the valuation of lost resources. Two examples of the taxpayer having to pay for the environmental clean up of bankrupt mining companies despite financial assurance provisions in place are Galactic Resources’ Summitville Mine and Pegasus Gold’s Zortman-Landusky Mine. In 1992 Galactic Resources filed for bankruptcy.¹⁷⁶ The Environmental Protection Agency (EPA) estimated the clean up costs at the Summitville

¹⁷⁴ MINISTRY OF ENERGY, MINES, AND PETROLEUM RESOURCES, MINE RECLAMATION SECURITY IN BRITISH COLUMBIA, Feb. 1995.

¹⁷⁵ *Id.*

¹⁷⁶ JIM KUIPERS, MINERAL POLICY CENTER, PUTTING A PRICE ON POLLUTION: FINANCIAL ASSURANCE FOR MINE RECLAMATION AND CLOSURE 9 (2003).

Mine in Colorado to be around \$180 million.¹⁷⁷ Colorado's required financial assurance of \$5 million plus the \$28 million that was collected as part of a bankruptcy settlement still leaves the taxpayers with an enormous amount of clean up costs to absorb.¹⁷⁸

In 1998 Pegasus Gold filed for bankruptcy.¹⁷⁹ Six years prior, the Montana Department of Environmental Quality found that the water had been contaminated.¹⁸⁰ However, at the time Pegasus Gold filed for bankruptcy little reclamation work had been done at the site.¹⁸¹ Following bankruptcy the reclamation plan chosen by the state and federal agencies involved totaled \$52 million while the reclamation bond only covered \$30 million.¹⁸² The two examples illustrate the enormous costs involved in the clean up of contamination, the importance of correctly estimating the potential reclamation costs, and the need for strong financial assurance provisions.

House Bill 6243 seeks to deal with the issue of undervaluation of the financial assurance in section 63211.

Every 3 years, or as the department considers necessary, a permittee shall update the statement of financial responsibility required under subsection (2) and shall adjust the conformance bond, escrow, cash, certificate of deposit, irrevocable letter of credit, or other security, as applicable.¹⁸³

Section 63211 has four major flaws. As written, the regulation is at best a low procedural hurdle that the mining company may have to comply with.

The first flaw is that without the phrase, "as the department considers necessary" being further defined, the section will likely never be used. The second flaw of the

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 14.

¹⁸⁰ *Id.* at 14.

¹⁸¹ *Id.* at 14.

¹⁸² *Id.* at 14.

¹⁸³ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63221(3).

section is that it provides no substantive guidelines as to what would require an adjustment in the financial assurance required. Should the financial assurance be adjusted based on the mining company's current financial health or an increase in their overall liability at the mine site, or a combination of both? Without any substantive guidelines the state agency is extremely unlikely to require a mining company to increase its financial assurance regardless of whether there is an increased likelihood of permanent and costly contamination at the mine site. House Bill 6243 must provide the state agency with a set of baseline criteria under which it can require a mining company to adjust its financial assurance.

The third flaw of section 63211 is that it provides no guiding principle as to how the value of the financial assurance relates to the risk of long-term contamination and reclamation costs. The fourth flaw is that the language of the provision could be interpreted in a way that the mining company determines the amount in which the financial assurance is adjusted. If the mining company were responsible for determining the amount that is adjusted, the state agency's role as a regulator would be shifted to a mere perfunctory procedure with little discretion.

c. The Current Legislation Regulating Sulfide Mining Inadequately Protects the State of Michigan's Fisc

In order to provide the state of Michigan with protection from a mining company declaring bankruptcy, the state legislature and responsible administrative agencies (in particular the Department of Environmental Quality) must tighten and clarify the language of the current sulfide mining regulations, keeping in mind the specific provisions of the Bankruptcy Code. The state needs to further define the financial assurance required from the mining companies. Wisconsin utilizes a procedural hurdle to

provide it with some protection over its interest in the financial assurance from being sucked up and lost when a mining company files for bankruptcy. The procedural hurdle used by Wisconsin is that the mining company must *petition* the state after the mine site has been properly reclaimed. Learning from the mistakes made by states in the past, Michigan must require that the financial assurance provision required of mining companies is valued correctly. The calculation must include site specific factors and an analysis of the mining company's finances, including cash and equity reserves, and geological and hydrological tests.

4. Pollution Definition

The proposed mining operation will not pollute, impair, or destroy the air, water, or other natural resources or the public trust in those resources In making this determination, the department shall take into account the extent to which other permit determinations afford protection to natural resources. For the purposes of this subsection, excavation and removal of nonferrous metallic minerals and of associated overburden and waste rock, in and of itself, does not constitute pollution, impairment, or destruction of those natural resources.¹⁸⁴

VII. Why is Hazardous Waste from Hard Rock Mining Exempt from Federal Regulation?

There are no federal statutes that regulate the hazardous waste generated from sulfide mining. If it were not for an exemption, the hazardous solid waste generated by the various processes of sulfide mining would be heavily regulated under the Resource Conservation and Recovery Act (RCRA). The distinction between hard and soft rock mining is important to understand why other Federal statutes do not apply. Hard rock mining waste is not regulated under the Surface Mining Control and Reclamation Act (SMCRA); instead hard rock mining waste fits under the RCRA regime.

¹⁸⁴ H.B. 6243, 92d Leg., Reg. Sess. (Mi. 2004) § 63205 (11)(b).

A. Hazardous Solid Waste from Hard Rock Mining Exempt from Resource Conservation and Recovery Act (RCRA)

1. History and Regulatory Mechanisms of RCRA

In 1976 Congress passed RCRA, altering the Solid Waste Disposal Act, passed as title II of the Clean Air Act of 1965.¹⁸⁵ RCRA was meant to regulate the generation, transportation, treatment, storage, and disposal of “hazardous waste” through a permitting program.¹⁸⁶ After determining that the waste is a solid waste,¹⁸⁷ the next step is to determine whether the waste is hazardous and therefore subject to regulation under Subtitle C, rather than under Subtitle D which regulates just solid waste.¹⁸⁸

The “critical difference between Subtitle C and Subtitle D is that Subtitle D focuses on establishing environmentally sound management plans for solid waste on the state level, while Subtitle C represents a comprehensive, mandatory federal program for managing hazardous wastes from cradle-to-grave.”¹⁸⁹ The increased costs¹⁹⁰ and liabilities associated with Subtitle C have shrunk the number of companies that can afford

¹⁸⁵ JAMES E. MCCARTHY & MARY TIEMANN, SOLID WASTE DISPOSAL ACT/RESOURCE CONSERVATION AND RECOVERY ACT, Congressional Research Service Report RL30022, Summaries of Environmental Laws Administered by the EPA, *available at* <http://www.ncseonline.org/nle/creports/briefingbooks/laws/h.cfm> (last visited Oct. 19, 2004).

¹⁸⁶ *Id.*

¹⁸⁷ 42 U.S.C. § 6903(27) (1988). RCRA defines “solid waste” as, “[a]ny garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sourced subject to permits” *Id.*

¹⁸⁸ Glenn C. Van Bever, *Mining Waste and the Resource Conservation and Recovery Act: An Overview*, 7 J. MIN. L. POL’Y 249, 6 (1991).

¹⁸⁹ Glenn C. Van Bever, *Mining Waste and the Resource Conservation and Recovery Act: An Overview*, 7 J. MIN. L. POL’Y 249, at 3 (1991).

¹⁹⁰ “The EPA estimated the average lifetime costs of hazardous waste regulation of certain mine wastes could range from \$7 million to almost \$800 million per year.” Glenn C. Van Bever, *Mining Waste and the Resource Conservation and Recovery Act: An Overview*, 7 J. MIN. L. POL’Y 249, 3 (1991).

to deal with hazardous wastes. Subtitle C is “one of the most complex and technologically-dependent systems of environmental regulation in existence.”¹⁹¹

2. Characterization of Waste and Political Pressure from Mining Industry

Because of the enormous amount of solid waste produced by mining and the cost of dealing with the hazardous waste it produces, the mining industry felt that compliance with RCRA would make its mining operations “economically infeasible.”¹⁹² Moreover, due to the unique nature of mining waste, the mining industry was concerned about the mixture rule under RCRA. An expert’s description of the unique nature of the mining waste:

The metal content of mining wastes can vary significantly over time because of the differing metals concentrations throughout the ore body. The tailing waste generated at a mining operation may not regularly exhibit the RCRA characteristic of toxicity, but could do so periodically based on “spikes” of toxic metals in the ore.¹⁹³

The mixture rule stated, “if the resulting mixture exhibited any characteristics of hazardousness, the entire mixture would be subject to RCRA Subtitle C requirements.”¹⁹⁴

In 1980, Congress acted on the industry’s concerns by passing the Bevill Amendment. Under the Bevill Amendment, solid waste from the “extraction and beneficiation processing” of ores and minerals were exempted from Subtitle C of RCRA.¹⁹⁵ “The EPA [Environmental Protection Agency in 1996] acknowledged that

¹⁹¹ Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 155 (2003).

¹⁹² Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 156 (2003).

¹⁹³ Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 156–57 (2003).

¹⁹⁴ 40 C.F.R. § 261.3 (1981); Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 157 (2003).

¹⁹⁵ Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 155 (2003).

Subtitle D did not currently contain effective enforcement¹⁹⁶ and oversight tools that would be necessary to create such a program, but it would work with Congress to obtain these authorities, and would rely to the extent possible on the existing regulatory effort of the states.”¹⁹⁷

Subtitle D has remained little more than an administrative afterthought. The EPA has long maintained that “Subtitle D lacks the enforcement and federal permitting authority, and that Congress must act before a program can be constructed.”¹⁹⁸ As a result of the Bevill Amendment— and the inability or unwillingness of the EPA to regulate hazardous solid waste from the mining processes of beneficiation, extraction, and processing of ores and minerals under Title D— there are currently no federal regulations that regulate the waste produced by sulfide mining.

B. Bevill Amendment’s Effect over the Regulation of Sulfide Mining

The Bevill Amendment allows mining companies to ignore the hazardous waste produced by their various mining practices. If the solid hazardous waste produced by sulfide mining was regulated under Title C of RCRA, as it is characterized to be, the incurred liability of effectively dealing with the waste would force mining companies to look more closely at the feasibility of projects. Instead, mining companies salivate at the generation of such an enormous return on relatively little capital. According to the

¹⁹⁶ Yvette R. Hurt, *EDF v. EPA: The Dispute Surrounding Mining Waste Regulation Under the Bevill Amendment*, 6 J. MIN. L. POL’Y 103, at 2 (1990/1991). “[W]hile the waste management requirements under Subtitle C are independently enforceable by the federal government, those under Subtitle D are not.” *Id.*

¹⁹⁷ The EPA’s determination was upheld in *Env’tl. Def. Fund v. EPA*, 852 F.2d 1309 (D.C. Cir. 1988); Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 159 (2003).

¹⁹⁸ Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 3, 192 (2003).

Wolfpack’s analysis, Kennecott can expect to make a roughly three billion-dollar profit on the Eagle Project.¹⁹⁹

VIII. States Left to Control Hard Rock Mining

Without federal laws regulating the hard rock mining process, the responsibility is left to the individual states. Not only are there no federal laws that directly regulate the hard rock mining process, but the Mining Law of 1872²⁰⁰— governing locatable minerals on federal land— leaves states without any guidance on how to proceed. The states are forced to serve as laboratories for innovation²⁰¹ in how to deal with hard rock mining issues, such as sulfide mining.

The primary means by which a state may control a sulfide mine is the permitting process. The state may deny, approve, or approve with conditions a permit for a mining company’s proposed mine. The permitting process is usually done by a state administrative agency. The process is often set-up so that once a permit is approved only parts of the project can be questioned, not the project in its entirety.

The permitting process and the regulations over hard rock mining vary significantly from state to state.²⁰² The various state systems differ at the permitting, regulation, oversight, and reclamation stages.²⁰³ Despite the fact that all of the state systems are less than twenty years old, the public’s changing expectations of the mining

¹⁹⁹ DVD: Sulfide Mining Presentation by Rusty Gowland and Ray Pittman at Northern Michigan University November 11, 2004 (Wolfpack 2004) (on file with author).

²⁰⁰ General Mining Law of 1872, 30 U.S.C. §§ 22–39 (1872).

²⁰¹ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 355 (Environmental Law Institute 1996).

²⁰² JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* (Environmental Law Institute 1996). Comparing and contrasting the state of Arizona, California, Colorado, Idaho, Montana, Nevada, and South Dakota. *Id.*

²⁰³ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 6 (Environmental Law Institute 1996).

industry are not properly reflected. The failure of the state systems to meet the changing expectation is due in large part to the stunted evolution in innovation by state legislatures and agencies. While western states have had more experience dealing with mining activities, the experience has not resulted in a comprehensive framework.²⁰⁴ Two statutory approaches that state agencies have taken to create minimum standards for the mining industry are site reclamation and water quality. However, it is the lack of coordination among the different state agencies, not the approach chosen, which has limited the effectiveness of the overall regulatory systems.²⁰⁵

The effectiveness of the overall regulatory system is also a product of how much discretion the statutory language gives the state agency. When the language of the statute is broad, rather than specific and prescriptive, the agency is able to interpret the statute broadly.

Regardless of the terms and conditions of the statutes, the terms and conditions under which mining is actually carried out are primarily determined by *negotiation between the mine operator and the state*. In virtually every case, the standards that matter are those set out in the permit, rather than those appearing in the statute or regulations. In some states this is because of explicit waiver provisions; in others, it is due to the discretionary language used in the regulations. Nevertheless, statutory and regulatory standards are quite important, because they establish the framework within which the negotiation takes place.²⁰⁶

The statutory and regulatory framework of Wisconsin's mining regime is of particular relevance to Michigan's current debate over sulfide mining. Wisconsin's regime— a

²⁰⁴ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 351 (Environmental Law Institute 1996).

²⁰⁵ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 6 (Environmental Law Institute 1996).

²⁰⁶ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 6 (Environmental Law Institute 1996).

product of citizen involvement— is relevant because of its shared border with the Upper Peninsula.

A. Wisconsin’s Concern over Sulfide Mining Leads to Moratorium Law

1. Proposed Crandon Mine Site near the Wolf River Leads to Moratorium²⁰⁷

The Crandon Mining Company, a subsidiary of Exxon Coal and Minerals Corporation, and Rio Algom Limited, owned the mineral rights to the Crandon deposit located in Forest County, Wisconsin. In the early 1990’s the Crandon deposit again gained the interest of Exxon Coal and Minerals. Exxon estimated the mining activity at the proposed Crandon Mine to last thirty-five years. In comparison to the average 3% grade of the Eagle Project deposits, the ore of the proposed Crandon Mine contained 8.4% zinc and 0.7% lead.²⁰⁸

The proposed Crandon Mine was strongly opposed by various environmental organizations, Native American tribes, and local citizen groups due to the nature of the mining process and the mine’s location near the Wolf River.²⁰⁹ Concerns over the production resulted in the exertion of political influence. Political influence was exerted, “By elevating a local battle to the state and national level, activists enlisted the energy, influence, and comparative wealth of environmentalists who valued the pristine nature of

²⁰⁷ Kennecott’s Flambeau Mine Site was built prior to the moratorium. The Flambeau Mining Site located in Rusk County, Wisconsin started in 1993 and operated until 1997. The Flambeau Mine produced over \$500 million worth of copper, zinc, gold, and silver and employed 75 people. Michael J. Keane, *Wisconsin Briefs from the Legislative Reference Bureau- Regulation of Metallic Mining in Wisconsin*, LRB-00-WB-15, 2, Nov. 2000; KENECOTT MINERALS, EAGLE PROJECT UPDATE 3: SEPT. 2004, 4 (2004). It primarily extracted copper ore, which was then shipped to Canada for processing. Elizabeth Sheldon, *Practicing Preventative Medicine: Recommendations for Financing Mining Waste Sites in Perpetuity*, 3 WIS. ENVTL. L.J. 181, 184 (1996).

²⁰⁸ SULFIDE MINING: THE PROCESS & THE PRICE, A TRIBAL & ECONOMIC PERSPECTIVE 3 (David J. Seigler ed., Great Lakes Indian Fish & Wildlife Commission) available at <http://www.glifwc.org/pub/sulfidemine.pdf> (last visited Feb. 21, 2005); see *supra* note 6.

²⁰⁹ See JOHN J. MUTTER JR., TO SLAY A GIANT: THE FIGHT TO PROTECT THE WOLF RIVER FROM THE PROPOSED CRANDON COPPER MINE (Burstone-LLC 2000).

the region Madison's [Wisconsin] activist community, much closer to the state's power structures, influenced policy in the capital city."²¹⁰



The Flambeau Mine in Rusk County, Wisconsin, is located just 140 feet from the Flambeau River. (Photo courtesy of the Wisconsin DNR.)

2. Wisconsin's Mining Moratorium Bill: A Product of Citizen Involvement & Political Capital

On May 7, 1998, as a result of the political pressure from various groups concerned with the proposed Crandon Mine, the Mining Moratorium Bill (1997 Wisconsin Act 171) was signed into law by then Governor Tommy Thompson. Act 171 (1997 Senate Bill 3) passed by an assembly vote of 91-6 and a senate vote of 29-3.²¹¹ The Mining Moratorium Bill "extended the mining permit process to require applicants to

²¹⁰ Douglas J. Buege, *The Crandon Mine Saga*, Z Magazine Online, Vol. 17, No. 2, available at <http://zmagazine.zmag.org/Feb2004/buegepr0204.html> (last visited Nov. 16, 2004).

²¹¹ MICHAEL J. KEANE, THE MINING MORATORIUM, Legislative Briefs from the Wisconsin Legislative Reference Bureau, Brief 98-1 (May 1998).

present evidence that sulfide mines have been operated and closed without causing pollution to ground or surface water.”²¹²

293.50 Moratorium on issuance of permits for mining of sulfide ore bodies.

(2) ... the department may not issue a permit under s. 293.49 for the mining of a sulfide ore body until all of the following conditions are satisfied:

(a) The department determines, based on information provided by an applicant for a permit under s. 293.49 and verified by the department, that a mining operation has operated in a sulfide ore body which, together with the host rock, has a net acid generating potential in the United States or Canada for at least 10 years without the pollution of groundwater or surface water from acid drainage at the tailings site or at the mine site or from the release of heavy metals.

(b) The department determines, based on information provided by an applicant for a permit under s. 293.49 and verified by the department, that a mining operation that operated in a sulfide ore body which, together with the host rock, has a net acid generating potential in the United States or Canada has been closed for at least 10 years without the pollution of groundwater or surface water from acid drainage at the tailings site or at the mine site or from the release of heavy metals.

(2m) (a) The department may not base its determination under sub. (2) (a) or (b) on any mining operation that has been listed on the national priorities list under 42 USC 9605 (a) (8) (B) or any mining operation for which the operator is no longer in business and has no successor that may be liable for any contamination from the mining operation and for which there are no other persons that may be liable for any contamination from the mining operation.

(b) The department may not base its determination under sub. (2) (a) or (b) on a mining operation unless the department determines, based on relevant data from groundwater or surface water monitoring, that the mining operation has not caused significant environmental pollution, as defined in s. 293.01 (4), from acid drainage at the tailings site or at the mine site or from the release of heavy metals.²¹³

In October 2003, the Forest County Potawatomi and the Sokaogan band of

Chippewa purchased the mineral rights to 5,770 acres of land for \$16.5 million.²¹⁴

²¹² MICHAEL J. KEANE, THE MINING MORATORIUM, Legislative Briefs from the Wisconsin Legislative Reference Bureau, Brief 98-1 (May 1998).

²¹³ WIS. STAT. § 293.50 (1997).

²¹⁴ Douglas J. Buege, *The Crandon Mine Saga*, Z Magazine Online, Vol. 17, No. 2, available at <http://zmag.site.zmag.org/Feb2004/buegepr0204.html> (last visited Nov. 16, 2004).

The Mining Moratorium Law illustrates the stark contrast between the sulfide mining regulations of Wisconsin and those of Michigan. The moratorium was the result of concerns that Wisconsin citizens had over sulfide mining and the state legislature responding accordingly. Many of the federal statutes protecting the environment were passed due to an unease over wide inconsistencies among states regulating a particular and hazardous private sector.²¹⁵

B. A Mining Company's History and its Legal Implications

Several states such as Montana, Nevada, South Dakota, and Wisconsin have permit block provisions that either require or authorize permit denial where the applicant has prior violations and bond forfeitures.²¹⁶ Kennecott's history of abiding by state and federal laws is checkered with violations. Kennecott has compared the Eagle Project to their Greens Creek Mine, outside Juneau, Alaska²¹⁷ — the nation's largest silver producer.²¹⁸ The Greens Creek Mine is located within the Admiralty Island National Monument in the Tongass National Forest.²¹⁹ The Greens Creek Mine has a long list of violations within a multitude of both state and federal laws.²²⁰ Kennecott also owns two

²¹⁵ The unfair competitive advantage that one state has over another as a result of a wide discrepancy in environmental regulations is known both as the race to the bottom or the race for laxity.

²¹⁶ JAMES M. McELFISH JR. ET AL., *HARD ROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION* 351 (Environmental Law Institute 1996); WIS. STAT. § 293.50 (1997).

²¹⁷ KENNECOTT MINERALS, *EAGLE PROJECT UPDATE 5: SEPTEMBER 2004*, 4 (2004). The Greens Creek Mine is a joint venture between Kennecott Minerals Company (70.3%) and Hecla Mining Company (29.7%).

²¹⁸ KENNECOTT MINERALS, *EAGLE PROJECT UPDATE 5: SEPTEMBER 2004*, 4 (2004).

²¹⁹ KENNECOTT MINERALS, *EAGLE PROJECT UPDATE 5: SEPTEMBER 2004*, 4 (2004).

²²⁰ The Greens Creek Mine is not a model of an industry being pro-active or showing environmental stewardship. "Since opening, Greens Creek has paid two penalties of \$50,000 in 1989 and \$300,000 in July 1997 for violations of the EPA NPDES permit requirements. Daily occurrences exceeding the NPDES standards (95% pH related), and 14 failures to perform required monitoring occurred between 1989 and 1994 (90% in 1991–1992). The mine temporarily ceased operations in 1993 due to low metal prices. In 1994, Greens Creek personnel identified the problems during internal assessments of system performance in preparation to restarting production in 1995–1996. These permit compliance issues were investigated internally to confirm and ensure full accounting, and then self-reported to the United States Environmental Protection Agency (USEPA) and Alaska Department of Environmental Conservation (ADEC).

copper mines in Utah listed on the Superfund's National Priorities List. The "Bingham Canyon mine created a 72-square-mile plume of sulfate contaminated groundwater under the homes of 70,000 Salt Lake area residents. The Environmental Protection Agency (EPA) estimates that full remediation of this groundwater resource would cost around \$2.2 billion."²²¹

Kennecott's difficulty in complying with permitting standards illustrates the rationale of Wisconsin's moratorium—the precautionary principle. The mining industry has yet to demonstrate that it is possible to run a sulfide mine within the minimum pollution standards. Since sulfide mining has a history of Acid Mine Drainage, it is appropriate for the industry to bear the burden of proving that the control technology exists and that the mining method can be done safely.

IX. Jurisdictional and Sovereignty Issues: Rights of the Keweenaw Bay Indian Community²²²

The Keweenaw Bay Indian Community (KBIC) is an independent political entity that has inherent powers of self-government.²²³ In the Treaty of 1842, the Chippewa Indians ceded lands to the federal government, "in one of the largest land cession

During the re-startup program in 1995–1996, Greens Creek recognized the passive water treatment facility had performance flaws in high flow scenarios where naturally occurring low pH water from a muskeg swamp entered the treatment system, resulting in exceeding the NPDES discharge permit limits described above. Greens Creek invested about \$10 million in new water treatment and handling facilities, designed and constructed to address these shortcomings before restarting production in 1996. The passive water treatment facility was replaced with two active process water treatment facilities. The only exceedances of the USEPA NPDES permit standards since 1996 when Greens Creek reopened were related to two discharges in February 1997, both of which EPA characterized as minor without penalties being accessed." *Id.*

²²¹ High Stakes for Admiralty Island National Monument, www.seacc.org/TakeAction/greencreekmine.pdf (last visited Jan. 16, 2005).

²²² Robert N. Van Alstine, *Keweenaw Bay Chippewa Indian Community*, July 11, 2001 available at <http://www.itcmi.org/thehistorytribal14.html> (last visited Nov. 19, 2004). The KBIC of Lake Superior Chippewa Indians is a federally recognized Indian tribe and the successor in interest of the L'Anse Band of Chippewa Indians. *Id.*

²²³ The Constitution and By-laws of the KBIC can be accessed at: <http://www.edwards1.com/rose/native/kbconst.htm> (last visited Nov. 19, 2004).

agreements ever made between the US government and Indian tribes.”²²⁴ The Treaty “includes provisions and stipulations that the Chippewa retain their rights to fish, hunt, and gather on these ceded lands.”²²⁵ Tribes are prevented from suing states under the Eleventh Amendment. The KBIC Constitution and By-laws were approved in 1936 by the Secretary of the Interior and ratified by a majority vote of the qualified voters of the KBIC.²²⁶ The KBIC Tribal Council passed a resolution opposing sulfide mining in July of 2004.²²⁷

²²⁴ Robert N. Van Alstine, *Keweenaw Bay Chippewa Indian Community*, July 11, 2001 <http://www.itcni.org/thehistorytribal14.html> (last visited Nov. 19, 2004).

²²⁵ Treaty with the Chippewa, ARTICLE 1:
The Chippewa Indians of the Mississippi and Lake Superior, cede to the United States all the country within the following boundaries; viz: beginning at the mouth of Chocolate river of Lake Superior; thence northwardly across said lake to intersect the boundary line between the United States and the Province of Canada; thence up said Lake Superior, to the mouth of the St. Louis, or Fond du Lac river (including all the islands in said lake); thence up said river to the American Fur Company's trading post, at the southwardly bend thereof, about 22 miles from its mouth; thence south to intersect the line of the treaty of 29th July 1837, with the Chippewas of the Mississippi; thence along said line to its southeastwardly extremity, near the Plover portage on the Wisconsin river; thence northeastwardly, along the boundary line, between the Chippewas and Menomonees, to its eastern termination, (established by the treaty held with the Chippewas, Menomonees, and Winnebagoes, at Butte des Morts, August 11th 1827) on the Skonawby river of Green Bay; thence northwardly to the source of Chocolate river; thence down said river to its mouth, the place of beginning; it being the intention of the parties to this treaty, to include in this cession, all the Chippewa lands eastwardly of the aforesaid line running from the American Fur Company's trading post on the Fond du Lac river to the intersection of the line of the treaty made with the Chippewas of the Mississippi July 29th 1837.

ARTICLE 2:

The Indians stipulate for the right of hunting on the ceded territory, with the other usual privileges of occupancy, until required to remove by the President of the United States, and that the laws of the United States shall be continued in force, in respect to their trade and inter course with the whites, until otherwise ordered by Congress. TREATY WITH THE CHIPPEWA, Oct. 4, 1842, art. 1-2, 7 Stat. 591, 542-543, INDIAN AFFAIRS: LAWS AND TREATIES, Vol. II, Treaties, Compiled and edited by Charles J. Kappler. Washington: Government Printing Office, 1904. *available at* <http://digital.library.okstate.edu/kappler/Vol2/treaties/chi0542.htm> (last visited Dec. 7, 2004); Robert N. Van Alstine, *Keweenaw Bay Chippewa Indian Community*, July 11, 2001 <http://www.itcni.org/thehistorytribal14.html> (last visited Nov. 19, 2004).

²²⁶ *Id.*

²²⁷ KEEWENAW BAY INDIAN COMMUNITY, MINING EXPLORATION RETURNS TO THE AREA, *Giiikendaam Chiwiikwegamag*, Issue 3 (Aug. 2004).

X. Conclusion

The current federal and state regulations over hard rock mining do not provide citizens protection against the dangers posed by sulfide mining to the natural resources of Michigan. While recently passed House Bill 6243 provides some regulation where none previously existed, it is riddled with flaws. The permitting process provided for in House Bill 6243 does not take into account the affected watersheds, Yellow Dog Plains aquifer, a keystone wilderness area, or the last remaining spawning run of coaster brook trout on the south shore of Lake Superior. Leaving states with the burden of regulating hard rock mining allows them to experiment with various control mechanisms. However, the state's freedom to innovate with the law should not allow the mining industry the freedom to experiment with an unproven and dangerous form of mining. The burden of proof over whether the control technology is available for sulfide mining should rest on the shoulders of the mining industry.

Under Article Four of Michigan's Constitution the legislative branch is entrusted with protecting the natural resources of the state. The permitting procedures in HB 6243 over the proposed sulfide mine are left to the responsible state administrative agencies, leaving citizens without any protection over their natural resources. The state's natural resources are held in trust by the state legislature. The plain language of the Michigan Environmental Policy Act (MEPA) provides for a judicial check on the legislature's responsibility. The Michigan Supreme Court has recently restricted access to the judicial check expressly provided for in MEPA. In order to provide the judiciary and the citizens of Michigan with a check on the legislature, the public trust doctrine must be utilized. The region's lack of political capital and an inability to influence state legislation

combined with the significant dangers posed by the proposed sulfide mine on the Yellow Dog Plains illustrate the need to utilize the public trust doctrine.

Although writing about the West, Charles Wilkinson sums up the current issue involving the Upper Great Lakes,

[N]atural resource policy is dominated by the lords of yesterday, a battery of nineteenth-century laws, policies and ideas that arose under wholly different social and economic conditions, but that remain in effect due to inertia, powerful lobbying forces, and a lack of public awareness.²²⁸

²²⁸ CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST 17 (1992).