Mining for Public and State Approval: Corporate Strategies for Metallic Sulfide Mining on Michigan's Yellow Dog Plains

Bertossi

Follow this and additional works at: https://scholarworks.wmich.edu/masters_theses

Part of the Geography Commons

Recommended Citation
https://scholarworks.wmich.edu/masters_theses/4871
MINING FOR PUBLIC AND STATE APPROVAL: CORPORATE STRATEGIES FOR METALLIC SULFIDE MINING ON MICHIGAN'S YELLOW DOG PLAINS

by

Teresa A. Bertossi

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the requirements for the Degree of Master of Arts
Department of Geography

Western Michigan University
Kalamazoo, Michigan
April 2008
ACKNOWLEDGMENTS

Several people have been influential in the completion of this research. I would like to first give great thanks to my family, co-workers and friends, who have been with me throughout this process and have offered endless encouragement, advice, editing, support, laughter, and patience. I also would like to recognize and thank my thesis advisor Dr. Chansheng He who went above and beyond his duty to support and encourage me to complete this thesis. I wish to thank my additional committee members Dr. David Lemberg and Dr. Joseph Stoltman for their support, editing, and advice. I also thank Dr. Al Gedicks, from the University of Wisconsin La Crosse, not only for serving on my committee, but whose continued work (a major inspiration for my thesis) helps to protect communities from dangerous mining practices around the world. I also thank Laura Furtman who, along with Roscoe Churchill, wrote the biggest and best book I have ever read and sent me an unfinished copy in advance. Furthermore, I must thank Dr. Michael Broadway, Dr. Gregory Veeck, and Pat Oakes for encouraging me to continue with my education. I thank my big sister Kathy who has been an important role model in my life. I am forever grateful to my mother—her guidance, which included eating big red juicy tomatoes with her in her garden, taught me to appreciate the land, our freshwater resources, and to understand that I am only a part of a much greater circle. Finally, I dedicate this thesis in loving memory of my father Mark Dale Bertossi and to the future of my little brother and sister Lisa and Travis Bertossi.

Teresa A. Bertossi
Michigan has become a frontier for metallic sulfide mining due to a high global demand for minerals and a major concentration of sulfide deposits found throughout its Midcontinent Rift. Metallic sulfide mining is challenging, especially in a water-rich state like Michigan. The disturbance of a sulfide deposit during mining activity exposes the sulfide ore to air and water, which can result in sulfuric acid. Subsequently, precipitation can cause sulfuric acid to drain from the mine site, polluting surface water and groundwater. Recently, a corporation called Kennecott Minerals has proposed a metallic sulfide mine called the Eagle Project in Michigan's Upper Peninsula, on the Yellow Dog Plains. The Eagle Project will be the first under Michigan’s new legislation regulating nonferrous metallic sulfide mining. This research examines the environmental and resulting social consequences of sulfide mining. As opposition to mining projects grow more powerful around the world, mining corporations are using public relations strategies to stifle the opposition. So far, Kennecott has used public relations strategies such as extensive mineral exploration and leasing, negotiation, risk assessment, and persuasive rhetoric to gain state approval for its Eagle Project.
TABLE OF CONTENTS

ACKNOWLEDGMENTS .......................................................................................................................... ii

LIST OF TABLES ................................................................................................................................... viii

LIST OF FIGURES ................................................................................................................................. ix

CHAPTER

1. INTRODUCTION .................................................................................................................................. 1
   Problem Statement ................................................................................................................................. 2
   Significance of Study .............................................................................................................................. 3
   Methods ............................................................................................................................................... 4
   Overview ............................................................................................................................................. 5

2. HISTORICAL BACKGROUND ........................................................................................................... 7
   A Commodities Craze .......................................................................................................................... 7
   Mining's Inevitably Heavy Footprint ................................................................................................. 10
   Uranium Mining ................................................................................................................................. 11
   A Case Study of Uranium Mining ...................................................................................................... 11
   Gold Mining: After the Gold Rush ....................................................................................................... 14
   A Case Study of Gold Mining ............................................................................................................. 15
   Metallic Sulfide Mining ....................................................................................................................... 17
   Case Studies of Sulfide Mining .......................................................................................................... 19
   The Social Consequences of Mining ................................................................................................. 22
   West Papua's Grasberg Mine ............................................................................................................ 23
   Government and Corporate Affairs ................................................................................................. 26
## Table of Contents—Continued

### CHAPTER

<table>
<thead>
<tr>
<th>Social Movements</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peru: Protests Stop Newmont Expansion</td>
<td>28</td>
</tr>
<tr>
<td>Social Movements Challenge Mining Corporations</td>
<td>31</td>
</tr>
<tr>
<td>The Networking Structure of Grassroots Organizations</td>
<td>33</td>
</tr>
<tr>
<td>Case Study: Grassroots and Global Connections</td>
<td>35</td>
</tr>
<tr>
<td>Corporate Public Relations Strategies</td>
<td>36</td>
</tr>
<tr>
<td>Negotiation Strategies</td>
<td>37</td>
</tr>
<tr>
<td>Mineral Rights and Secret Land Purchases</td>
<td>38</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>40</td>
</tr>
<tr>
<td>Persuasive Rhetoric: Mass Media Campaigns</td>
<td>41</td>
</tr>
<tr>
<td>Case Study: Meridian Gold Versus Esquel</td>
<td>42</td>
</tr>
<tr>
<td>Summary</td>
<td>45</td>
</tr>
</tbody>
</table>

### 3. WISCONSIN'S ANTI-SULFIDE MINING MOVEMENT                | 47 |

<table>
<thead>
<tr>
<th>The Flambeau Mine in Northern Wisconsin</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Beginning of an Anti-Sulfide Mining Movement</td>
<td>49</td>
</tr>
<tr>
<td>Local Zoning Authority and Resolutions</td>
<td>50</td>
</tr>
<tr>
<td>Kennecott's Counter Strategy: Media Campaigns</td>
<td>51</td>
</tr>
<tr>
<td>The Consensus Process</td>
<td>52</td>
</tr>
<tr>
<td>Kennecott Returns with a Local Agreement Strategy</td>
<td>54</td>
</tr>
<tr>
<td>Kennecott Utilizes Its Gifting Tactic</td>
<td>58</td>
</tr>
</tbody>
</table>
Table of Contents—Continued

CHAPTER

Grassroots Organizations Begin Direct Action Tactics .................. 58
Kennecott's Counter Response to Grassroots Protests .................. 60
Legislative Tactics to Halt the Mine ............................................. 61
Kennecott and the State of Wisconsin ........................................... 62
The Wisconsin Crandon Project .................................................. 63
Economic Incentives ...................................................................... 64
The Roots of the Grassroots Movement ........................................ 65
Closed Door Negotiations, Legal Challenges, and the Local
Agreement Law ........................................................................... 67
Tribal Sovereignty ........................................................................ 68
The Tribe Purchases the Mine Site .............................................. 69
A Mining Moratorium ................................................................... 69
Summary .......................................................................................... 70

4. METHODOLOGY ........................................................................... 74

Overview ........................................................................................ 74
Focus Group .................................................................................... 75
Semi-Structured Interviews .......................................................... 77
Discourse Analysis and Coding .................................................... 78
Geographic Information Systems .................................................. 79
Comparative Analysis .................................................................... 80
Summary .......................................................................................... 80
<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. THE EAGLE PROJECT</td>
<td>Introduction to the Eagle Project</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>The Midcontinent Rift</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Kennecott Eagle Minerals Corporation</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Michigan's Metallic Sulfide Mining Legislation</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>The Eagle Project</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>The Yellow Dog Plains</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Grassroots Opposition to the Eagle Project</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Tourism and Recreation</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Treaty Rights</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Risks of Sulfide Mining</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Kennecott's Transportation Routes</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>A Possible Mining District</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>Government and Corporate Relations</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Grassroots Tactics</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>The Eagle Project and Gerlach's SPIN Model</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Correspondence with Wisconsin</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>Public Outreach</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Litigation: Stalling the Process</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Kennecott's Public Relations Strategies</td>
<td>113</td>
</tr>
</tbody>
</table>
Table of Contents—Continued

CHAPTER

Secret Purchasing of Mineral Rights ........................................... 113
Negotiation Strategies ................................................................. 115
Consensus Process ........................................................................ 116
Community Advisory Group ......................................................... 119
Backdoor Meetings and Gifting ...................................................... 121
Risk Assessment ........................................................................... 122
Mass Media Campaigns and Corporate Rhetoric ......................... 125
Kennecott Learns from Wisconsin ................................................. 130

6. CONCLUSIONS AND RECOMMENDATIONS ............................ 131

APPENDICES

A. Questions for the Focus Group Session ...................................... 140
B. An Example of Coding .............................................................. 141
C. Transcription of Interview with Jon Cherry ............................... 142
D. Human Subjects Institutional Review Board Approval ................. 158
E. Permission Letters .................................................................. 159

BIBLIOGRAPHY ........................................................................... 160
LIST OF TABLES

1. It is our heritage! .......................................................................................... 129
LIST OF FIGURES

1. Uranium Tailings Piles: Four Corners .......................................................... 14
2. Location of the Baia Mare Mine ..................................................................... 16
3. "Yellow Boy" Acid Mine Drainage ................................................................. 18
4. Mount Washington Mine ............................................................................... 20
5. Location of the Grasberg Mine ...................................................................... 24
6. Cajamarca, Peru ............................................................................................ 30
7. City of Esquel, Argentina ............................................................................... 43
8. Location of the Crandon Mine ........................................................................ 65
9. The Midcontinent Rift .................................................................................... 83
10. Location of the Eagle Project ........................................................................ 86
11. Kennecott's Eagle Project in Reference to the McCormick Tract, the Huron Mountain Club, and KBIC ......................................................... 87
12. First Protest Against the Eagle Project, Big Bay, Michigan, 2003 ............. 89
13. Sulfide Mining and Uranium Mining Exploration in the Upper Peninsula of Michigan .......................................................... 98
14. Connecting Water Connecting People Route .............................................. 108
15. Painted Barn, Big Bay, 2007 ........................................................................ 110
16. Earth Day Parade ......................................................................................... 110
17. Kennecott Mineral Rights, North Marquette County ................................. 114
CHAPTER 1

INTRODUCTION

Due to an escalating global demand for metals and the potential for rich mineral deposits in a geological feature called the Midcontinent Rift, mining companies are focusing on the Upper Midwestern United States for exploration. Furthermore, mining in this region is challenging because many of the minerals are found within sulfide ore bodies. This challenge is further exacerbated in water-rich areas within the Great Lakes Region. When excavated, if sulfide ore is exposed to water and air, a chemical reaction can occur that produces sulfuric acid. Subsequently, precipitation, can cause sulfuric acid to drain from a mine site—a process called acid mine drainage (AMD), which can bleed into nearby water resources and thereby harm people, plants, animals, and metal and concrete structures. Although sulfide mining poses major risks to freshwater resources, prior to 2004, Michigan had no regulations for nonferrous (metals that do not contain iron) metallic mineral mining. In March of 2004, due to increasing exploration of metallic sulfide ore bodies and pressure from citizens and environmental groups, the Michigan Department of Environmental Quality (MDEQ) created a workgroup to develop a statute to regulate nonferrous metallic mineral mining. The Kennecott Eagle Minerals Corporation (KEMC), a subsidiary of global mining giant Rio Tinto, is the first company to apply for a permit under the new regulations. Kennecott’s Eagle Project, if permitted, would be a small but valuable, underground nickel mine. Its location, relative
to freshwater resources, makes the proposed mine a contentious local issue. In order to counter the local public opposition and obtain state approval for the Eagle Project, Kennecott participated in secret and extensive mineral exploration; used negotiation and lobbying strategies to weaken legislation; and used persuasive rhetoric; mass media campaigns; and risk assessment strategies. Little literature exists comparing anti-mining movements to examine how mining companies deal with opposition and what they are able to learn from one project to another. Hence, this study helps identify patterns of similar strategies being used by mining corporations to open potentially hazardous mines.

Problem Statement

Local communities are vulnerable to corporate public relations strategies, partly because resources and information are unbalanced between mining corporations and local citizens. These corporate strategies are being used to open precarious mines around the world. Such tactics were used by mining corporations in the State of Wisconsin and the state is now experiencing negative environmental consequences from a nonferrous metallic sulfide mine called the Flambeau Mine. Wisconsin's neighboring state, Michigan, is also rich in mineral resources and has been exposed to similar mining tactics to open a nickel mine, called the Eagle Project that carries potential risks to Michigan's citizens and unique freshwater resources. Approval of the Eagle Project may open the flood gates to a sulfide and uranium mining district in Michigan's Upper Peninsula. This research was conducted to answer the following questions: 1) what tactics have grassroots organizations used to counter Kennecott's project on the Yellow Dog Plains, 2) has Kennecott used public relations strategies to outmaneuver environmental policies
and the rights of citizens, and 3) what did Kennecott learn in Wisconsin that was applied in the State of Michigan?

Significance of the Study

Results of this study serve to aid in the understanding of the social impacts that mining ventures have on rural communities and indigenous tribes. Too often there is not enough time or money available for small local governments and citizens to research the history of complex interactions between mining companies and communities. Mining corporations typically have much more experience than local community members and organizations, as they are able to learn from public opposition encountered at risky mining projects throughout the world. Mining corporations also have lawyers, office staff, and public relations professionals working for them. Although citizens devote a great deal of time and money to their oppositional efforts, this is often a second job for community activists. A lack of financial resources and experts can lead to an imbalance of knowledge between communities, their local governments, and mining corporations—often giving mining corporations an advantage. By working at a specific local level, while at the same time keeping an eye to history, this study illuminates the treatment of public opposition by mining corporations and adds to the available and affordable information for communities—allowing for more informed decisions to be made when they are faced with proposed mines. Indeed, it is much more difficult for a corporation to be elusive if a local community is aware of the strategies incorporated in previous mining ventures.
Methods

This study employed mostly qualitative methodologies concentrating on collecting information to further understand Kennecott's public relations strategies concerning the Eagle Project in Marquette County, Michigan. A significant goal of this project was to include the community instead of treating them as a laboratory (Breitbart, 2005, p.162). To that end, numerous hours were spent observing and collecting data, working with communities, organizations, mining and public officials, and attending hearings and meetings. These participant observations proved to be extremely important, as I was able to gain a more comfortable relationship with the future participants of the focus group and the interview sessions.

Focus groups are used to collect information from a small group of individuals. The participants were chosen from a comprehensive list of anti-sulfide mining organizations. As the goal of the focus group session was to understand the relationship between the mining corporation and the small local grassroots organizations in opposition to the mine, it would have been too contentious to include the single grassroots organization that had developed in favor of the mine (a representative of this organization was instead interviewed). The information from the focus group session was used to frame questions and narrow objectives for the semi-structured interviews that followed. The semi-structured interviews were used to collect information from the Kennecott Eagle Minerals Corporation, the President of the Keweenaw Bay Indian Community, a representative and founding member of Citizens for Responsible Mining, an
environmental lawyer for a national organization, a representative of the Sierra Club, and a former treasurer of Marquette County.

A core element of this research was to analyze grassroots and corporate rhetoric, so a theoretical approach called discourse analysis was used to explore the themes and patterns present in the texts. This exploration was particularly important to examining the strategies used by grassroots organizations to oppose the Eagle Project, and furthermore to examine the corporate strategies used to overcome their opposition. Coding, a method of categorization and analysis, was used to help organize these themes and patterns. Moreover, the focus group session and the interviews were transcribed to examine patterns and themes in those, as well.

Finally, a Geographic Information System was used to explore mineral leasing in the Upper Peninsula of Michigan, particularly in Marquette County. Data including mineral leasing and mineral rights ownership were collected from the Michigan Center for Geographic Information, National Atlas, and Save The Wild UP. A more in depth analysis of the methodologies used for this research can be found in Chapter Four.

Overview

This is a case study of a proposed mine called the Eagle Project on the Yellow Dog Plains found in Michigan’s Upper Peninsula. Chapter Two explores a historical background analysis of the literature and research that exists on mining. Details about the anti-sulfide mining movement in Wisconsin as well as further information regarding Wisconsin’s Flambeau and Crandon mines are highlighted in Chapter Three. Chapter Four describes the methods and analysis used to research this study. Using the Flambeau
Mine as a lens, Chapter Five discusses the case study of the Eagle Project. Conclusions and recommendations are included in Chapter 6.
CHAPTER 2

HISTORICAL BACKGROUND

This chapter includes a review of the extensive literature that exists on mining which has provided the foundation for this thesis. It outlines the present day demand for mining and the consequent exploration and disturbance of undeveloped lands. It also includes examples of mining techniques while supporting the existence of inherent risks when handling large amounts of toxic chemicals and waste. Furthermore, this literature review explores not only the environmental impacts of mining, but also the often overlooked and intertwined social impacts of exploited resources. It will also provide information about the conditions in which anti-mining movements develop, the techniques participants in these movements use to battle unwanted mines, and the effects these oppositional movements have on mining ventures. Finally, this chapter will address several of the public relations strategies mining corporations utilize to manage opposition, persuade the public or government, and successfully open new mining developments—sometimes at the expense of the environment and local communities.

A Commodities Craze

As world population increases and less developed countries, such as China and India, face increasing industrialization and economic growth, there is a greater demand for mineral resources. On the per capita level China and India’s consumption and pollution may never catch up to the more developed countries (Wu, Zhong, & Zhang, 2006, pg. 29). The United States sets a very high consumption level to exceed; if per
capita consumption and pollution is considered, then China has to reach approximately one-third of US per capita consumption to attain a gross consumption-pollution amount that is equivalent to the US. According to Wu et al. (2006), China is experiencing record stable economic growth. Evidence of this growth exists in the improved living standards of 1.3 billion people (Wu et al., 2006, p. 21). The 250 million people living below the poverty line in 1978 dropped tremendously to 29 million in 2003 (Wu et al., 2006, p. 21). A further example of this growth rate includes China’s impact on the world’s economy, which it has boosted by 10% (Wu et al., 2006, p. 21). India has not seen as much rapid growth as China, but is experiencing intensive industrialization and urbanization (Energy Information Administration, 2004, Renewable Energy section, para. 19). This growth comes with a price; as industrialization and urbanization increase in China and India, so does the demand for cars, houses, and other natural resource dependent commodities. Along with extensive consumption in more developed countries, Wu et al. (2006) suggest this demand “may be too much for the world to bear” (p. 29). Adding to this demand, nuclear industry is being promoted as a deterrent for global warming and future energy supplies if oil production peaks globally (MacGill et al., 2006; Omoto, 2005). Currently there are 158 more nuclear reactors proposed around the world, with China proposing the greatest number (50), followed by South Africa (24), the United States (21), Russia (18), and India (15) (Uranium Information Center Ltd., 2007). Also, mineral resource depletion is a significant variable. Most of the high grade and surface level ore bodies that are the easiest, safest, and cheapest to identify and extract have already been depleted
(Cutter, 1999, p. 296)—when taking all of these factors into account the world has a recipe for aggressive and riskier mineral exploration.

The more expensive and difficult mining of lower grade ores in more remote regions and undeveloped countries has become profitable due to today's high demand for resources (Cutter, 1999, p. 269). Today, many of the easiest, safest, and richest ore bodies have already been mined and mining companies are exploring the world searching for new deposits (Cutter, 1999, p. 296; Gedicks, 1993, p. 15; Sampat, 2002). Moreover, mine sites are usually determined by the location of an ore body—not always whether the location is already environmentally appropriate (Cutter, 1999, p. 307). One such controversial location being developed is on the secluded island nation of Madagascar, a biodiversity hot spot containing 3% of the world's endemic species (Myers, Mittemeier, Mittemeier, da Fonseca, & Kent, 2007, p. 856). Anglo-Australian mining company Rio Tinto has begun mining coastal dunes in the town of Fort Dauphin, Madagascar—accessible only by air. In fact Fort Dauphin is so isolated, Rio Tinto (2007) reported they must build infrastructure such as a water port, roads, and power in order to operate their mine. The mine would also require 1,000 acres of rainforest to be destroyed (Observer, 2005). Ilminite, used for toothpaste, paint, and plastics, will be the main mineral mined by Rio Tinto in Fort Dauphin. Mining companies are exploring other secluded destinations including remote regions of Mongolia, Indonesia, the Congo, Peru (Leow & Hwee Ann, 2007), and Siberia (Moody, 2005, p. 22). Some of the mineral resources these companies are seeking in these remote areas include: minerals such as nickel, gold, copper, and diamonds; energy resources such as oil, coal, uranium, and natural gas; and
industrial materials including lime, sand, potash, and gravel. The environmental effects differ depending on the materials being mined, and certain mining techniques are riskier than others.

**Mining’s Inevitably Heavy Footprint**

This exploration of more remote locations and deeper and lower grade ores causes not only a greater disturbance to ecosystems, but also a greater dependence on technology to control or contain the chemicals produced or used during mining and beneficiation (the process of separating minerals from waste rock), including: liner systems, water treatment facilities, processing plants, ventilation systems, emission controls, leach detecting systems, and water monitoring systems to protect the environment. If improper technology is used, or the equipment or technological systems fail, there are damaging environmental consequences such as soil erosion, air pollution, and contamination of surface and groundwater. The chemicals that are produced or used during mining and beneficiation are intrinsically dangerous; these substances carry an inherent risk for accidents and must be handled very carefully. Some examples of risky mining ventures are the mining of uranium and gold, as well as the mining of minerals found in sulfide ore bodies. Chemicals used to separate minerals from the rock containing them and the byproducts produced as a result of mining processes aptly demonstrate the inevitable dangers mining poses to the environment. The following section describes these mining processes and highlights case studies of the dangers to humans and the environment.
Uranium Mining

Although nuclear power is being considered as an alternative energy source to help decrease greenhouse gas emissions, there are many risks associated with the mining and processing of uranium ores. Uranium is inherently radioactive whether or not it is processed; when it is extracted from the ground, the ore is often pulverized, creating dust and a need for tailings piles. Even when the uranium is separated from the ore, radioactivity remains in the waste rock (Edwards, 1992, Radioactivity section, para. 2). This waste rock is stored in large heaps, or tailings piles. According to the United States Environmental Protection Agency (USEPA) (2006), uranium from tailings piles can be blown by wind and carried by water and reintroduced into the environment (Exposure to Uranium section, para. 1). Additionally, Edwards (1992) justifies the dangers of uranium mining in his explanation of tailings piles and their ability to produce radon gas which (when carried by wind or water) can travel up to 1,000 miles in a matter of days, settling on plants and animals far beyond the mine site (Uranium tailings section, para. 5). Additionally, without proper ventilation mine workers can be exposed to cancerous levels of radon in mines. Exposure to radioactive elements from drinking water, food supplies, or radon gas can cause lung cancer, bone cancer, and numerous reproductive problems as exemplified in the following discussion of the Church Rock tragedy.

A Case Study of Uranium Mining

Perhaps no one has been exposed to the dangers of uranium mining more than the Native Americans in the southwestern US. Having been ignored by the US government and uranium mining companies, the Navajo (who call themselves the Diné) lost their
grazing economy, drank contaminated water, ate contaminated food, worked in improperly ventilated mines, and built homes from radioactive waste rock—so the US could build nuclear weapons. According to Brugge and Goble (2002), uranium really had no commercial value until the mid-twentieth century when the US Atomic Energy Commission spawned a mining boom by agreeing to buy all US mined uranium ore. Much of the uranium ore was mined on reservations near Kayenta, Arizona; Monument Valley, Utah; and Shiprock and Church Rock, New Mexico (Brugge & Goble, 2002, p. 27).

According to Gedicks (2006), the greatest amount of radioactive waste to be dumped (at once) in the US took place at Church Rock in 1979 when the United Nuclear Corporation's dam failed and polluted the Rio Puerco River with 100 million gallons of radioactive water from a tailings pond (Gedicks, 2006, p. 11). This event left the river and wells undrinkable to the Navajo and their livestock (Gedicks, 2006, p. 11). A government study concluded that the spill did not expose the Navajo to considerable health risks (Gedicks, 2006, p. 11); however, this poorly researched study conversely stated that residents eating contaminated meat had higher radiation exposure and suggested lifestyle changes including not drinking from the river or eating livestock that drank from the river (Gedicks, 2006, p. 11). Although studies have been conducted on the spatial distribution of the river water and the radioactive spill into the Rio Puerco River (Graf, 1990), no further studies have been conducted on the consequences of one of the greatest radioactive waste spills to the health of America’s indigenous citizens (Gedicks, 2006, p. 11).
Uranium mines and spills affected the lives of the Navajo not only in Church Rock but throughout the Four Corners Region; studies about the health effects of uranium mining have been conducted in other areas of New Mexico, Utah, Arizona, and Colorado, and have shown elevated levels of lung cancer in Navajo miners who were exposed to radon in underground mines (Mulloy, James, Mohs, Kornfield 2001, p. 305). Navajo miners worked in uranium mines and were not warned of the possible health threats (Yazzie-Lewis & Zion, 2006, p. 3). Miners’ families were exposed to uranium from particulates left on the miners’ clothing and carried home (Benally & Yazzie-Lewis, 2006, p. 18-19). Additionally, patterns of cancer rates and other negative health effects exist in areas of heavy uranium development in the Southwest including bone cancer, reproductive and lung cancer, still births, and learning disorders (Gedicks, 2006, p. 12-13). At present, Native Americans of the Southwest continue to suffer from ill health and expensive cleanup of abandoned uranium mines; current and abandoned uranium tailings still exist and threaten the Navajo (figure 1). Yazzie-Lewis’ and Zion’s (2006) study describes that the Navajo consider uranium as a type of monster snake—their word for monster is nayee, meaning “that which gets in the way of a successful life”—by naming a monster they believe they can begin to abate it; justifiably, they have named uranium leetso (yellow dirt) (p. 2).
Figure 1. Uranium Tailings Piles: Four Corners
(Data Source: ESRI, 2007)

Gold Mining: After the Gold Rush

As Flynn and Parsons (2001) point out in their hard rock mine study, “we no longer live in a pick and shovel era” (p. 250); today, mines are sometimes hundreds of thousands of feet deep, and can require thousands of acres for tailings ponds, uneconomic waste rock dumps, and heap leach piles (p. 251). The pick, shovel, and the lone idealistic prospector of the nostalgic gold rush era have been replaced with giant trucks, chemicals,
and corporations. Historically most gold was used for monetary exchange; however, presently, gold is mostly used for jewelry and the arts, as well as industrial products and dental work to a lesser degree (USEPA, 1994, p.1-5).

Gold mining may not pose the same radioactive dangers as uranium, but the chemicals used in the process to separate the gold from the waste rock can be damaging to the environment. Studies show that cyanidation is the foremost technique used in the beneficiation process of extracting gold from waste rock (USEPA, 1994, p. 1-18). Ebell, Evangelou, and Schaefer (2007) describe cyanide as extremely toxic, but economic as it can be used to extract very low-grade precious metals from ore (p. 816). According to the USEPA (1994), there are two generally used cyanidation methods called heap leaching and tank leaching (1-18). Storage ponds of cyanide solution are often uncovered and in addition to cyanide can contain heavy metals; these ponds are dangerous to wildlife and the environment (Ebel et al., 2006, p. 816). Cyanide is poisonous, and a teaspoon of a 2% solution is fatal (Mineral Policy Center, 2000, p. 2). If something goes wrong in the process, it can have detrimental effects on water resources as exemplified in the case of a failed tailings pond dam in Baia Mare, Romania.

A Case Study of Gold Mining

Lucas (2001) points out that Marmuras County, northwest Romania, has a legacy of mining and already suffers from air, water, and soil pollution (figure 2) (p. 106). The Aurul SA Company (a joint venture between Australian based Esmeralda Exploration Limited and Romanian based Remin SA) opened the Baia Mare gold mine in 1999 using the cyanidation process to separate gold from waste rock. A tailings dam failed at the
Baia Mare gold mine in Romania in 2000 (January 30th). The failed dam destroyed 1,240 tons of fish, polluting the Tiza River, a tributary of the Danube River, and subsequently the main trunk of the Danube River with tens of thousands of tons of wastewater and sludge contaminated with cyanide, copper, and other heavy metals (Sampat, 2002). The dam failure also resulted in polluted drinking water for 2.5 million people (Sampat, 2002). According to Placer (2002), one month after the spill, Esmeralda Exploration Limited was forced to place itself into voluntary administration, a mechanism for companies in financial distress to avoid bankruptcy (Nicols & Brien, 2007), due to the prospective financial consequences of the accident. After the European Union and United Nations found the accident was an amalgamation of design defects, unusually wet weather, operator error, and flaws in Romanian licensing procedures, Esmeralda denied all responsibility by claiming it was only a shareholder in the Aurul SA Company (Placer, 2002).

Figure 2. Location of the Baia Mare Mine
(Data Source: ESRI, 2007)
Metallic Sulfide Mining

Sulfide mining is a Midwestern United States colloquial term, usually referred to as hard rock mining in the Western United States. Sulfide mining is not the process used to mine sulfides as the name might suggest, but actually the practice of extracting metals (such as copper and nickel) from a sulfide ore body. When excavated, if sulfide ore or the tailings piles are exposed to water and air a chemical reaction can create sulfuric acid. Precipitation, subsequently causes sulfuric acid to drain from the mine site—called acid mine drainage (AMD), which can drain into nearby water resources and thereby harm people, plants, animals, and metal and concrete structures (Fripp, Ziemkiewicz, & Charkavorki, 2000, p. 1-2). AMD has been described as the “most important and widespread” source of pollution associated with the mining industry throughout the world (Neculita, Zagury, Bussière, 2007, p.1). AMD can form red, orange, or yellow sediments in the bottom of streams, a phenomenon sometimes commonly referred to as “Yellow Boy” (figure 3). This sediment can kill plants and animals, especially fish as it coats their gills (House of Commons, 1999). The resultant AMD also dissolves heavy metals (lead, zinc, copper, and mercury), allowing them to enter ground and surface water. Sulfuric acid is 20 to 30 times more acidic than acid rain, and upon entering surface water can drastically change pH, disrupting the growth and reproduction of aquatic plants and animals (USEPA, 1994; USDA, 1993). According to most experts, the rate and degree of AMD can be increased by the action of certain acid-loving microorganisms, most typically, Acidithiobacillus ferroxidans (Mahmoud, Leduc, & Ferroni, 2004, p. 1). Because of the many variables involved in the process of AMD, including sulfide
content, water abundance and characteristics, metal content, precipitation, and microorganisms (Mahmoud, Leduc, Ferroni, 2004, p. 1), it is very difficult to predict or manage AMD from site to site. Not only is it difficult to predict, it is very expensive to treat AMD. Treatment is usually perpetual and typically includes lime applications; however, lime applications are in and of themselves unsustainable (House of Commons, 1999).

The Little Daisy Creek in Montana is polluted with acid mine drainage from multiple abandoned mines within the watershed.

Figure 3. “Yellow Boy” Acid Mine Drainage (Source: United States Geological Survey, 2007)
The difficulty in managing AMD is clearly evident in the western part of the US. The US Department of Agriculture (1993) identified acid drainage from mine sites as the most difficult and costly reclamation problem it faces within western metalliferous mining operations (p. 3). Once AMD begins, it is difficult to stop. According to the USDA (1993), current and future mining operations may generate acid drainage for years or decades after the mines cease operation (p. 3). Although much data still need to be collected, estimates place the number of mines producing acid drainage on US Forest Service lands at somewhere near 20,000 to 50,000 throughout the West (p. 3). These mines are also polluting between 5,000 and 10,000 miles of streams in the West (USDA, 1993, p. 2). This extensive pollution can be very expensive to clean up and has costly impacts on local economies.

Case Studies of Sulphide Mining

The Mount Washington Mine, a small open-pit copper mine on Vancouver Island, British Columbia (figure 4) opened in 1964 but was quickly abandoned in 1967. Tailings piles were left on the mine site and exposed to air and water—resulting in acid mine drainage and leaching dissolved copper into numerous local tributaries of the Tsolum River (National Orphaned/Abandoned Mine Initiative (NOAMI), 2003). According to NOAMI (2003), the problem was not discovered until twenty years later (1985) when water-monitoring results turned up high copper levels and 2.5 million pink fry disappeared. The maximum copper level allowed in freshwater was 7 ppb; however, the range in the Tsolum River and its tributaries was between 17 ppb and 1700 ppb directly below the mine site (NOAMI, 2003). A report submitted to the Commission on
Environmental Cooperation describes the Mount Washington Mine as having destroyed a salmon fishery that would have earned about $2 million per year and caused the decline of coho salmon from 15,000 in the 1960s to less than 100 in the late 1990s (Sierra Club, 1998). Acid mine drainage poses serious economic risks to Vancouver, as forestry, tourism, and fishing are very important to the economy. As illustrated by the Mount Washington Mine, acid mine drainage from abandoned mines may not be discovered or even become a problem for years after the mine has closed. Additionally, acid mine drainage, like uranium and cyanidation, can have tremendous affects on water resources, and soil.

Figure 4. Mount Washington Mine (Source: ESRI, 2007)
Sudbury, Ontario is another region that has been affected by sulfide mining and has suffered from the byproducts of smelting for many years. This area has seen extensive exploration, excavation, and smelting of mostly nickel and copper since its early discovery in 1883 when the transcontinental railroad was built through Canada (Peters, 1984, p. 405). In the early twentieth century, excavation and smelting were not regulated (Wright & Welbourne, 2002, p. 543). Today, as a result, the region now suffers from acid rain, and acidification and metal contamination of its waterways and soil. Inco Ltd. (Canada) (now Vale Inco, Brazil) and Falconbridge Ltd. (Ontario, Canada) (now Xstrata Plc., Switzerland) were the major corporations mining and smelting during the early years in Sudbury.

After the ores are mined in Sudbury, corporations separate the profitable minerals (such as nickel and copper) from the waste rock through a process called smelting. During this process, the ore is intensely heated in a facility until the precious metals are melted from the waste rock. Byproducts of the smelting process include waste rock, air pollutants, and wastewater. Air emissions are the greatest concern in the smelting process, resulting in sulfur dioxide and contributing to acid rain. Arsenic, cadmium, lead, mercury, and nickel compounds are also contaminants emitted into the air and have been classified as cancer causing substances, and it has been suggested that mining corporations in the Sudbury Region work to lessen these emissions (Pollution probe, 2003, p. 24). Acid rain also causes acidic soils, making it difficult for plants to grow. In addition to vast emissions problems, unsafe storage of waste rock is also a source of pollution from the mining industry. Unfortunately, mining corporations in Sudbury
stored much of their tailings in valleys. The mining industry’s failure to properly dispose of tailings piles and control air pollution are why, according to Peters (1984), “this region is one of the most ecologically disturbed in Canada” (p. 403). Today, citizens and corporations are working to help Sudbury recover from over 100 years of mining impacts.

The Social Consequences of Mining

The consequences of uranium mining, gold mining, and sulfide mining to the physical environment are not exclusive from the negative effects on the social environment. Environmental degradation can be devastating for local communities as illustrated by: the health effects of uranium mining to the Navajo community; the impact to citizen’s drinking water and fish resources from mines such as Romania’s Baia Mare and Vancouver, Canada’s Mount Washington; the health and environmental effects of smelting in Sudbury, Ontario; and the monetary expense footed by taxpayers needed to clean up acid mine drainage in the Western US from abandoned sulfide and uranium mines. Pellow (1999) stresses, “the exploitation of land and people go hand in hand” (p. 354), stating, “Similarly, where we find the exploitation of land and other natural resources, we also tend to find the exploitation of human populations.” The indigenous residents of West Papua, Indonesia, have prominently suffered from the degradation of their environment at the hands of large multinational corporations. Mining corporations’ involvement in West Papua is a strong testament to the social costs of mining. Furthermore, the case study of West Papua exemplifies the unfortunate fact that
indigenous populations in particular, have been disproportionately affected by mining throughout the world.

**West Papua’s Grasberg Mine**

"*When the excesses of business were criticized or opposed, business was likely to bribe legislators or use detectives or troops against workers.*" ~ Bernays, 1955, p. 53

The environmental degradation and subsequent human rights issues that have developed in West Papua (Irian Jaya), Indonesia, on the island of New Guinea suggest a strong correlation between the exploitation of the land and people. West Papua is home to one of the world’s largest copper and gold mines, Grasberg (figure 5), jointly owned by the Freeport Mining Company (US) and Rio Tinto (England/Australia). The joint venture company is named PT Freeport Indonesia (PTFI). The environmental degradation from mining in West Papua has had grievous consequences to the Papuan people. While the mining companies acquire the profitable ores they desire from the earth, these tribes live in poverty and see little compensation for their spoiled lands. The following section highlights the social and environmental effects of the Grasberg Mine—illustrating the consequences of corrupt governments and corporations as they try to gain the most profit by cutting corners, destroying natural resources, and forcing people to relocate from their homelands.
In the Central Highlands of West Papua, PTFI has bulldozed Grasberg Mountain and replaced it with a 70 meter deep open-pit copper and gold mine (Ecumenical Council for Corporate Responsibility (ECCR), 2006, p. 91). In this region indigenous people make up over half of the population of 2 million people in West Papua (Vaughn, 2006, p. 4). The Amugme are a tribe that represents a portion of this indigenous population. Their lives in particular have been greatly affected by the Grasberg Mine. First, the Grasberg Mountain is sacred to the Amugme—considered to be a mother to their tribe (ECCR, 2006, p.91). Similarly, Lake Wanagon, home to the spirits and ancestors of the Amugme, is currently being used to store tailings from the Grasberg Mine (ECCR, 2006. p.91). The Amugme have also been forced to relocate to lower lands where they are now more susceptible to malaria because their immune systems were adapted to the highlands.
in which fewer mosquitoes existed (ECCR, 2006. p.91). Moreover, because of the geologic instability of the region, tailings have been disposed of in the rivers; this method is illegal in the US (Gedicks, 2001, p.95) since tailings can be acid generating and contaminated with chemicals and heavy metals. Today tailings have increased with production to about 230,000 tons per day (ECCR, 2006 p. 91). Before the Grasberg Mine is complete, it will generate waste nearing 6 billion tons; extensive amounts of waste have already made their way into groundwater, rivers, and wetlands (Vaughn, 2006, p. 12). The Komoro, like the Amugme, live near the mine; their drinking water resources, as well as fish and plants important for hunting and gathering, have been significantly degraded by the disposal of tailings into the Aghawagon, Otomona, and Ajkwa rivers (ECCR, 2006, p. 91). In 1995 a US federal export credit agency, the Overseas Private Investment Corporation (OPIC), cancelled a $100 million political-risk insurance policy due to these significant environmental problems (Gedicks, 2001, p. 103). Political risk insurance (PRI), as explained by Roger Moody (2005), is supposed to safeguard overseas investments from “devaluing of assets, the sabotage of an electricity power plant, attacks on staff, restrictions on profit transfers, a company’s expulsion from a host country” (p. 7) and anything else that might happen to interfere with development plans. Hence the cancellation of the PRI reflects the severity of the tailings damage. In sum, the Amugme and Komoro’s lives are intertwined with the health of their environment, as the Grasberg Mine exploits the natural resources from the earth these indigenous tribes are forced to adapt or perish. Although PTFI has been criticized for its environmental degradation of Papuan lands, it may be best known for its ties with the Indonesian military.
Government and Corporate Affairs

There is a great need for multinational mining companies to be more transparent to citizens about their alignments with governments—as opaque activities lead to secrecy and fraudulence (Global Witness, 2005, p. 3). In some regions of political instability, mining companies pay state security forces to shield them from separatists or citizens who are unhappy with the mining ventures (Global Witness, 2005, p. 3). This is the case in West Papua; its citizens were forced under the rule of the Indonesian government and as a result there has been an ongoing tension in the region for many years (Gedicks, 2001, p. 94). This tension has helped to spark a symbiotic relationship between Freeport/Rio Tinto and the Indonesian government. Freeport/Rio Tinto’s Grasberg Mine plays a major role in the economy of the Indonesian government, including providing $33 billion in direct and indirect assets between 1992 and 1994 (Perlez, 2005); likewise Freeport is dependent on the security forces, as well as the rules and regulations of the Indonesian government. For example, the government helped support the mining corporation when the government issued a decree that native people must submit lands to national developments such as mines (Gedicks, 2001, p. 94). As government and corporate interests align, suspicions grow. In 1996 after a car driven by a PTFI employee hit a tribal man, 6,000 tribal people, feeling their government was not hearing their voices and problems, raided the company’s facilities (Gedicks, 2001, p. 106). Gedicks further describes that the Amugme tribal council demanded the Grasberg Mine be shut down; consequently, the Indonesian military rounded up 6,000 soldiers to guard the mine (2001, p. 106). Freeport/Rio Tinto has paid the military a great deal of money—approximately
$20 million dollars between the years of 1998 and 2004 for security forces (Perlez and Bonner, 2005). The military has been criticized for being corrupt and partaking in illegal business activities (Global Witness, 2005, p. 3), as well as for numerous human rights violations including rape, murder, torture, and deployment (Global Witness, 2005, p. 23). According to the Commission for Human Rights, many of these human rights violations are connected to the army's security of the Grasberg Mine (as cited in ECCR, 2005, p. 93). Freeport and Rio Tinto have been scrutinized for continuing to participate and benefit from such a corrupt system, both by continuing its mine and continuing to pay military forces. Indeed, the exploitation of the land in West Papua has led to the exploitation of the indigenous people. When communities have been ignored by their governments and pushed too far by corporations they often take matters into their own hands to preserve their culture, way of life, and health.

In the example above, the corporations and governments paid little respect to the inherent relationship between humans and their environment as they evaded responsibility and ignored the requests of the people most affected by the environmental degradation of mining ventures. The actions and alignments of mining corporations and governments can have long-standing and serious social consequences, above and beyond environmental damage. This influence is further illustrated by the exacerbation of conflict (Gedicks, 2001 p. 122) and the distribution of sickness and disease (Hofrichter, 2000, p.3)—for instance malaria due to the forced relocation of the Amugme, or high cancer rates due to radiation exposure of the Navajo. As the public becomes more aware of these social costs, unsolved problems of handling large amounts of toxic and
radioactive waste, and frustrated with the corporate and political system, communities are rising to the challenge in order to protect their livelihoods. As these social movements arise, mining companies are beginning to face public relations problems around the globe.

Social Movements

"Opportunities for resistance grow . . . under conditions in which social needs remain unmet and corporate images of innocence jar with reality. The moment at which such disruption may occur is unpredictable and volatile . . . At any historical moment social forces can erupt that shift the political terrain."

~Hofrichter, 2000, p. 4

Due to great social injustices, citizens are beginning to fight back; when citizens are not given a platform to speak out about their concerns, they develop their own means to protect their livelihood. Today's environmental movements are found in all industrialized countries (Gedicks, 1993, p. 57) and are increasingly being seen in the developing countries as well. As described by Perlez (2005), "times are changing for multinational companies and governments long used to working out concessions in remote areas with a handshake, over the heads of local people". As people unite around the globe to protect their homelands, mining corporations are realizing that poor relations with local citizens are bad for business.

Peru: Protests Stop Newmont Expansion

In 1990, Newmont (a US, Denver-based corporation) began buying cheap land from villagers in Cajamarca, Peru (figure 6). Many of the villagers were pressured to sell their land and were not given a fair value (Earth Island Institute, 2008). Eventually, Newmont opened their Yanacocha gold mine, one of the largest mines in the world—
operating on nearly 22,000 acres of land (Earth Island Institute, 2008). The Yanacocha gold mine used the cyanide heap leaching process to collect gold from the waste rock.

Newmont, like so many mining corporations around the world, has proven incapable of properly containing and handling their hazardous waste. In 2000, more than 900 people were poisoned when a Newmont vehicle traveling to the Pacific Coast spilled canisters of toxic metals, 330 lbs of mercury, along a 25 mile stretch of road (Perlez & Bergman, 2005). Many citizens were exposed to the mercury and suffered vision and hearing impairment, birth defects, miscarriages, and liver and kidney damage (Earth Island Institute, 2008). Larry Kurlander, former senior vice president and administrator of Newmont, was sent to Cajamarca, to assess the damage. In response to the mercury spill Kurlander said, "We have come to this because we have been in denial. . . .We have not heeded the voices of those most intimate with our mine—those who live and work nearby" (Perlez & Bergman, 2005). Kurlander also reported acid mine drainage from improperly contained tailings, fishless rivers, and distrust of Newmont among the villagers (Perlez, Bergman, 2005; Earth Island Institute, 2008).

Despite the mercury spill Newmont continued to explore for more gold in the region. The company found a strong possibility for expanding their mine on the Mountain of Quilish. Mt. Quilish is a source of drinking water for the City of Cajamarca and is important for irrigating local farms (Perlez & Bergman, 2005). Many villagers consider the mountain a divine being, providing water to its people, and in 2000, the mountain was dedicated as a natural reserve (Earth Island Institute, 2008).
However, when the Newmont Mining Corporation decided to expand their Yanacocha gold mine the Peruvian government ruled in the company’s favor and allowed Newmont to explore the mountain. Almost immediately after Newmont began drilling, on September 2, 2004, citizens organized to protest the desecration of their sacred mountain and strategically placed boulders and vehicles to blockade the Yanacocha Mine. Despite public outcry, Newmont kept the mining operations up and running; the company used helicopters to get workers to the mine site (Earth Island Institute, 2008). After two weeks, nearly 10,000 people gathered to protest the project (Earth Island Institute, 2008). On September 15, 2004 a regional strike and street demonstration
caught the Peruvian government and Newmont's attention. Newmont was forced to sign an accord and agreed to leave the sacred mountain. After the company was forced to leave the mountain Newmont's former vice president also acknowledged the power of local citizens and said, "There is a social license, that in my opinion, is far more important than a government license. . . without building a trust with the people who live there and work there and have lived there for centuries, you are going to have trouble. And indeed they have" (Bergman, 2005). According to the New York Times the battle between Newmont and the locals was a "culmination of years of distrust between the peasants and the mine" and "was a chastening blow for an industry in the midst of a boom" (Perlez & Bergman, 2005)

Social Movements Challenge Mining Corporations

Indigenous, non-indigenous, and grassroots organized opposition can pose major impediments for mining companies today (Prager, 1997; Deegan, 2001), as exemplified by the proposed Quilish Mine in Peru. In one study, results of 34 case studies on activism supported that all groups had negatively affected corporations that were much more powerful than themselves (Deegan, 2001, p. 17). According to Prager, who has worked for mining giant BHP Billiton, "We can't mine without public approval" (1997, p. 37).

There are methods available for corporations to try to obtain citizen approval and protect companies from financial risks for large scale projects such as mining. Herz et al. (2007) outline six principles for "implementing consent procedures that will mitigate the business risks" (p. 3). The first is the "Information Principle". Under this standard
companies should allow communities access to free information prior to a project and sufficient time to review the information. Under the second principle, "Inclusiveness", the term "community" includes directly, indirectly, and those who may be affected by cumulative impacts. The third, titled the "Dialogue Principle", recognizes that there should be a formalized dialogue throughout the entirety of a project, including not only local authority but community representatives as well. The fourth is the "Legal Recognition Principle", in which consent "should be formally recognized through binding negotiated agreements". The fifth principle "Monitoring and Evaluation" suggests that a company or government have methods in place for third party monitoring of a community, allowing an avenue for independent grievances from community members. The final suggested principle is the "Corporate Buy-In" in which a community's right to free prior and informed consent should be included in the cost of any major project, although funds should appropriately be used in communities to "maintain the integrity of the process and the independence of the community's role" (Herz et al., 2007, p. 48-49). Once again, these six principles are suggested to try to gain community consent. Consent should not be expected, some communities may decide that a mining project is not well-suited to their community or lifestyle (Herz, et al., 2007, p. 32).

If the public does not approve of a mine, it can be very expensive for a mining company to compete with well-organized, grassroots opposition. Both governments and corporations can suffer considerable financial losses if they do not adequately address oppositional concerns and allow a platform for stakeholders to grant or refuse consent for
a project. The negative effects include costly delays of mine projects, concessions, litigation, and negative publicity for current and future projects (Freudenberg, 1984, p. 249; Prager, 1997, p. 40). Moreover, if a company pushes a project through without local consent, opposition may arise in the latter stages of an operating mine, or a rippling effect may be felt as a company’s poor reputation is shared nationally or globally resulting in community’s refusing to host mines (Herz et al., 2007, p. 14). Poor dealings with local citizens may also make it difficult for companies to obtain financial support or insurance for future projects (Herz et al., 2007, p. 15). If consent is not obtained citizens will organize and unite to protect their homeland and livelihoods. As discussed earlier, oppositional movements are very threatening to mining corporations. Gerlach (1999) suggests that much of the success of grassroots movements is found in a network-based and flexible structure that is very different from the common hierarchical structures more typical of corporations and bureaucracies.

The Networking Structure of Grassroots Organizations

Having studied grassroots movements of the 1960s Gerlach (1999) identified that the most common model for social movements was a segmentary, polycentric, and integrated-network (SPIN). “Segmentary” refers to the fact that a typical social movement is composed of multiple, diverse groups that grow and divide. For example, the “participatory ecology movement” of 1969 and 1970 spawned “movement groups” that were made up of: members of national organizations such as the National Wildlife Federation and the Sierra Club; alternatives to bureaucratic organizations such as Friends of the Earth or the Environmental Defense Fund; and small and local groups (p. 2-3).
“Polycentric” is the idea these organizations do not have a central leader, but typically are made up of multiple and situational leaders who are not elected but may instead be inspirational or charismatic (p. 6). Although certain people may be quoted in the newspapers more often than others, it is usually unlikely that participants in the movement will consider them leaders (p. 6). “Integrated-network” is an important aspect of the grassroots movement arena; organizations may come together and have overlapping members, share rhetoric, information, resources, ideas, and overall join together to take action (Gerlach, 1999, p. 295). Networking is critical; for instance, as illustrated in Gerlach’s research, protestors concerned with nuclear power plants in the 1970s teamed up with other movements such as feminist labor, solar and renewable energy, and civil rights. Gerlach (1999) further illustrates the tactic of networking by describing a partnership between the religious right and the wise use movement in elections of the 1990s. A SPIN model makes movements difficult for opponents such as mining companies to stifle, as it allows for greater recruitment and participant diversity—in other words, it is difficult to characterize, stereotype, or negotiate with a multiracial, multicultural, multi-class organization (p. 296). This structure is probably even more difficult for corporations more familiar with a hierarchical structure. Further, it allows for consistency and accuracy through a system of checks and balances, as different organizations and members are continuously duplicating and overlapping research. Finally, a SPIN structure allows for innovative oppositional techniques, as members of all ages, social classes, races, and all walks of life are able to share ideas and strategies (Gerlach, 1999, p. 307). Gerlach (1999) argues segmentary, polycentric, integrated
networks are more adaptable and "may well be the organizational form of the global future" (p. 307).

In addition to this model observed by Gerlach, today's age of communication and information technology has made grassroots movements even more efficient and globally connected. According to Burke (2005), "No government, no organization, no corporation is immune to the organizing potential of the Internet. Today, the click of a mouse allows a citizen group to e-mail thousands of contacts anywhere in the world within seconds" (p. 22-23). New information technology is making it easier for regional grassroots movements to share their experiences and develop into global movements against mining corporations.

Case Study: Grassroots and Global Connections

To return to the case of the Grasberg Mine in West Papua, the Amugme have set an example for indigenous people and rural communities affected by mines throughout the world. The following exemplifies the power of crossing borders and boundaries and using networking tactics against mining corporations.

Tom Beanal, an Amugme tribal leader, built an alliance with Friends of the Earth and Project Underground, utilizing networking tactics and legal challenges to contest Freeport/Rio Tinto. Although the Amugme started protesting long before 1996, this is the year they took their protest to an entirely new and global level with a $6 billion class-action lawsuit against Freeport in a US, New Orleans District Court (Gedicks, 2001, p. 107). Frustrated with the Indonesian government, the tribal leader sued Freeport for human and environmental neglect (Gedicks, 2001, p.107). Although Beanal did not win
the lawsuit, the judge ruled that he and other natives had standing to sue for damages. The tribal leader’s lawsuit was successful in that it garnered scrutiny and criticism from activists around the globe and inspired other West Papuans (Gedicks, 2001, p. 107-110).

The campaign against Freeport brought the human rights and environmental issues in West Papua into the spotlight with well researched facts and first hand accounts; it created a platform for the West Papuan indigenous people to speak of their concerns and compel others to listen. Today, the people of West Papua still battle for their land rights, fair pay, and a healthy environment.

Grassroot’s tactics that include mobilization and innovative and multifaceted legal, political, and marketing techniques to effect change. Also, as Gedicks (2002) highlights, the Amugme and their allies did not put all of their efforts into suing Freeport (p. 110), but instead used a multitude of other tactics such as pressuring shareholders, picketing, and handing out petitions to board of directors. In response to these grassroots tactics mining corporations are not choosing to better consult communities to try to receive consent but are instead using public relations tactics to spin their images and persuade or bribe citizens and push mining projects through.

Corporate Public Relations Strategies

How do mining corporations, despite anti-mining movements and their questionable social and environmental track records, ever manage to get public and government approval of their mines? Realistically, in most situations the main objective of a corporation is to take the least risk to make a profit, and if the demand for mineral resources is present, there is a profit to be made. However, despite the company’s profit-
driven goals, mining corporations control their public image in order to appear to have philanthropic intentions, not unlike a nonprofit organization. Instead of coming to a community to mine and make a profit, the company instead appears to be in the community to provide jobs, and infrastructure, and to all around make it a better place. Moreover, mining corporations also utilize other well-thought out and intricately planned public relations strategies and rhetoric to control their image and manage public opposition movements in order to get their mines approved. Mining corporations also use their solid financial resources to hire experts and further their projects. Some important strategies for public relations in the corporate arena are the participation and negotiation with government and shareholders often including the production of regulations (Lerbinger, 2006, p. 6), secret purchasing of mineral rights and secret exploration, the use of science and risk assessments to rationalize hazardous materials, and utilization of informative and persuasive rhetoric through mass media campaigns.

**Negotiation Strategies**

Mining corporations are increasingly careful to keep lines of communication open with anti-mining coalitions. According to Deegan (2001), research supports that if corporations participate in negotiations with oppositional groups, these groups will become "less aggressive and less likely to involve third parties" (p. 35). It is to the benefit of a mining corporation to participate in negotiations and consensus building processes with anti-mining groups. Corporations have an advantage in the field of negotiation as they are able to hire public relations specialists, lawyers, and strong negotiators who have had experience fighting local groups and negotiating from one
venture to another (Freudenberg, 1984, p. 250). This method of interacting with the public is especially important in the public policy process in which participation with governments and stakeholders opens the way “of producing reasonable laws, regulations, and other understandings that enable a company to function at an optimal level” (Lerbinger, 2006, p. 6). As mining corporations typically have a more solid financial base, they often have a disproportionately large influence on negotiations and consensus-building processes as they can threaten lawsuits and takings—claiming that actions that are not in their favor diminish the value of their land and therefore they must receive compensation. This threat is a good pressure tactic as local and state governments and agencies, as well as grassroots organizations, rarely can afford such compensation, which can cost thousands, millions, and sometimes, billions of dollars.

Mineral Rights and Secret Land Purchases

Mining corporations secretly purchase mineral rights and conduct mineral exploration, often arguing these secretive actions are necessary in order to protect them from the competition of other mining corporations. Many landowners are unaware the property they own could be a split estate, meaning they own their surface rights but not the mineral rights that lie beneath their land (Garner, 2006). This is because many years ago poor landowners sold mineral rights to their property to mining corporations (Sohn, 2006) and in many instances citizens purchased land not considering whether they owned their mineral rights or not. In some states surface land ownership is second to mineral ownership and mining corporations have the right to extract minerals without the permission of the landowner (Klump, 2006) even though the landowner pays the property
taxes. Moreover, in the early 1860s, the Pacific Railway Acts were passed, thus opening land across the nation to the railroad companies. These acts granted surface land and mineral rights to railroad companies. The companies were granted odd number sections while the government held control of the even numbered sections, forming a checkerboard-like grid throughout many states; much of this grid land ownership pattern is still present today, although the railroad companies have sold much of their land to private land owners and corporations (Kunce, Gerking, Morgan, 2001, p. 3).

Mining corporations have purchased some of these lands throughout the US to explore for precious metals and other minerals. However, the minerals do not follow the same ownership patterns and sometimes lie beneath public or private lands. In order to obtain the minerals beneath the lands the mining corporations do not own, they must lease, trade, or purchase them from state governments, federal governments, and local landowners. This often creates land use conflicts so mining corporations secretly purchase mineral rights from governments and private landowners and “before anyone in the community realizes the seriousness of the situation, large tracts of mineral-rich lands have passed out of local control and into the hands of mining companies,” (Gedicks & Clokey, 1982, p. 3). The secret purchasing of mineral rights is beneficial to a mining corporation because if the public were fully informed of the “potential value” of the minerals or had time to study the risks, it would be very costly and difficult for a mining corporation to continue with their project (Gedicks & Clokey, 1982, p. 3).
Risk Assessment

Another strategy used by mining corporations is risk assessment, in order to argue and persuade officials and citizens that a potentially hazardous activity or substance is “safe” or poses “insignificant harm” as long as they mind Maximum Contaminant Levels, or Total Maximum Daily Loads (O’Brien, 2001, p. 114). According to O’Brien (2001), risk assessments assume that “some dose of poison is safe” or some hazard is safe and “we can figure out which dose is safe and not too harmful” and what the probability is of a hazard occurring (p. 117). O’Brien (2001) uses an example of an incinerator located 400 yards from an elementary school in Liverpool, Ohio. The incinerator is used to burn toxic wastes and in the process emits some of these wastes into the air the children are exposed to on a daily basis. The incinerator was built near the school because a risk assessment showed the incinerator’s released toxins were under the allowable limit of lead, mercury, and particulates to be released into the air, and therefore the children could “safely” be exposed to some lead, mercury, and particulates (p. 114-115).

Another example of risk assessment took place near Salt Lake City Utah when memos surfaced revealing, that since 1988 despite legal and scientific advice, Kennecott Utah Copper (a Rio Tinto subsidiary) had not notified the local citizens of Magna, Utah of the risks associated with their tailings. If a major earthquake were to occur, without proper containment, Kennecott’s tailings could harm, and likely kill, the local citizens. Kennecott/Rio Tinto, “commissioned a census of the men, women and children living in the inundation zone...and requested that Kennecott management determine the “approximate value placed on loss of life by Utah courts” (Gardner, 2007). Further, “The
company decided the cost of human life was not worth completing the seismic upgrade” (Gardner, 2007). The potential risk would be less expensive than the cost of notifying the public.

As citizens realize the difficulty in handling toxic waste in mining practices such as radioactive materials, cyanide solutions, and tailings, corporations must present the release of these chemicals into the environment as an acceptable risk. This message is easier to accomplish when using media to spread their messages and get their mines approved.

**Persuasive Rhetoric: Mass Media Campaigns**

In 1996 a television ad aired in Beal, Montana; the ad depicted a mining representative drinking from a stream containing discharge from the Beal Mountain Mine to show that a legislative initiative to restrict water discharges of hard rock mines was unnecessary (Montana Environmental Information Center, [MEIC], n.d.). It is a common strategy for mining corporations to utilize the media to control legislation and their own public image. Lerbinger (2006) argues that television is especially advantageous to corporations as “people simply receive what is dished out to them through inadvertent exposure” (p. 138). One of the strongest tactics used to control a company’s public image includes advertisements in which a mining corporation has ultimate control of the message they are sending to the public as opposed to broadcast appearances in which a corporation has partial control over the message they are sending (the interviewer usurps some control) (Lerbinger, 2006). Mining advertisements often utilize images of the natural environment as “pleasing aesthetic representations” associated with their
corporate relations (Andersen, 2001, p. 202). Mining corporations use images of the natural world to link feelings associated with the environment to public perceptions of their corporation—and as watching television provokes little thought (Lerbinger, 2006, p. 138) no one stops to wonder why mining promotes rainbows and blue skies, deer frolicking through the forest, frogs singing in the wetlands, or birds flying through an especially blue sky. As there are often great amounts of money at stake, it is very important for a mining corporation to protect their public image and get their mining projects approved. The following case study illustrates the public relations strategies used by a mining corporation to control their image and intimidate local public opposition.

**Case Study: Meridian Gold Versus Esquel**

The City of Esquel lies in the southern region of Argentina within the Province of Chubut (figure 7). The Minera, El Desquite mining company (a subsidiary of US/Canadian-based Meridian Gold) has proposed to mine for gold using the process of cyanide leaching. According to Valente (2007a), many citizens of Esquel, who were not happy with the project, started an organization called the Self-Organized Assembly of Esquel Residents. The citizens have fought the mine in many ways using grassroots efforts including at least 61 protests, a referendum in which 81% of voters did not support the project, legal injunctions, and demands for environmental impact studies. However, Meridian Gold felt the most threatened when citizens confiscated a tape recording of the inner workings of the mining corporation—a closed door meeting between the Meridian
Gold company and a survey company regarding new public relations strategies to get their mine approved.

Figure 7. City of Esquel, Argentina
(Source: ESRI, 2008)

The Self-Organized Assembly of Esquel Residents presented this tape to the mining corporation’s shareholders. In the recording, the corporation “discussed strategies to change the unfavourable attitudes towards the mine” (Valente, 2007a). These strategies included “contracting respected residents to be opinion leaders, capable of persuading hardliners,” "social benefits for residents,” “holding meetings, interviews and sending reports to national and provincial political leaders” and “coopting prestigious non-governmental organizations such as the Wildlife Foundation (FVSA), Citizen Power
(Poder Ciudadano) and the Environment and Natural Resources Foundation (FARN), in order to counterbalance the voices of opposing organizations like Greenpeace.” Valente (2007a) further reports, the tape also included the following conversation with a survey consultant:

We will use the survey to find the breakpoint between those to whom the environment matters even if they are starving, and those to whom money and economic benefits come before environmental issues. My concern is the information that we're going to try to turn this community around may get out on the streets.

In response to the distribution of the tape recording the mining corporation sued Esquel citizens for “circulating information from a private meeting of directors and shareholders,” claiming that perhaps the residents did not steal the tape but became a party to the crime when they released it to the public. Sociologist Maristella Svampa said, “Using the courts to stop social action is a new way of discouraging protest and teaching demonstrators a lesson. Putting protesters on trial is a practice that began with the state, and now it's recourse used by multinational corporations too" (Valente, 2007a). Today Meridian Gold still has not developed their proposed mine in Esquel. A recent Supreme Court decision in Argentina upheld the rights of provinces to locally regulate and restrict activities (Valente, 2007c). Minera El Desquite, despite their public relations strategies, remains blocked by citizen-influenced Chubut laws prohibiting open pit metal mining and the use of cyanide (Valente, 2007c).
Summary

Today’s aggressive mineral exploration is mainly being driven by rising international demands for metal. Additionally, aggressive exploration for uranium mining is increasing due to governments’ and companies’ shortsighted attempts to quench the problems of global warming. Companies, such as Rio Tinto, are now exploring undeveloped lands like Fort Dauphin, Madagascar and are willing to settle for lower grade ore. Since metals are in such high demand lower grade ores are now profitable. Mining is inevitably destructive, as the alteration and removal of the earth is necessary to an underground or open pit mining project. Some mining projects, such as uranium mining or mining in sulfide ore bodies, carry inherent dangers from the mere disturbance of the ore body. Furthermore, gold mining typically involves cyanide solutions or heap leaching—processes that require the use of hazardous substances and leave behind hazardous byproducts. Although much of the boom in mining exploration is being led by human consumption, governments and corporations are responsible for the social and environmental destruction their alignments and short cuts have caused.

Mining corporations have a difficult time handling large amounts of hazardous waste, as evidenced by the case studies of the Church Rock disaster in the US; the cyanide spill in Baia Mare, Romania; the death of thousands of fish due to acid mine drainage at the Mount Washington Mine in Vancouver, Canada; acid rain and soil degradation due to the smelting processes in Canada’s Sudbury, Ontario; and the mercury poisoning of 900 citizens in Peru. These companies continue to leave a trail of human rights violations and land and water degradation in their path.
As mining corporations exploit land and water they continue to exploit people. As evidenced by the case study of the Grasberg Mine in West Papua, corporations often align themselves with governments. Due to the innate dangers of mining, numerous communities around the world are rising up to fight for their livelihoods. Grassroots campaigns are becoming more effective against risky mining ventures. For example, the villagers of Cajamarca, Peru successfully protested and were able to stop the destruction of their sacred Quilish Mountain. However, all communities are not as successful as Cajamarca. In fact, even though corporations carry poor environmental and social track records they are still able to get their projects approved. This is because mining companies use public relations tactics such as informative and persuasive rhetoric, participation and negotiation with governments, secret purchasing of mineral rights, and the use of science and risk assessments to rationalize their mining projects and the use or development of hazardous materials. A pattern of such strategies exists throughout the world. Further evidence can be found in the case study of an anti-sulfide mining campaign in Wisconsin. The following chapter highlights another community that was improperly consulted—similar to the residents of Esquel, Cajamarca, and West Papua—that chose to unite to protect their livelihood and stand up to a multinational mining corporation.
CHAPTER 3

WISCONSIN’S ANTI-SULFIDE MINING MOVEMENT

This chapter outlines the struggle between the mining corporations and the citizens of Wisconsin. In the 1970s, numerous mining corporations were exploring to open mines in the State of Wisconsin. Part of this intense mineral exploration was due to a need for mining corporations to mine in a country with a more stable government rather than their previous mineral resource colonies in Asia, Africa, and Latin America (Gedicks, 1982, p. 1; Whaley and Bresette, 1994, p. 184). Also at this time, corporations that typically drilled for oil began exploration for hard rock mineral resources (Whaley & Bresette, 1994, p. 184). This chapter describes two case studies of the battles over the Flambeau and the Crandon mines proposed in the 1970s in northern Wisconsin. Each case study highlights the strategies used by grassroots organizations to oppose risky mines in their communities and the counterstrategies used by mining corporations to manage the local opposition in order to try to open their proposed mines. It is significant to understand Wisconsin’s sulfide mining movement and use it as a lens to view the Eagle Project, as it has had and continues to have a great impact on the anti-sulfide mining movement that is currently taking place in the State of Michigan.
The Flambeau Mine in Northern Wisconsin

The Kennecott Exploration Company began mineral exploration in Wisconsin in the 1950s; the Flambeau deposit, named after the river that runs near it, was discovered in 1968 (Northwest Regional Planning Commission, 2002, p. 6). The final Flambeau Mine, a copper and gold metallic sulfide mine was located both within the City of Ladysmith and the Township of Grant, in Rusk County, Wisconsin. The Flambeau Mine was open between 1993 and 1997 and was a project of the Flambeau Mining Company, a wholly owned subsidiary of the multinational mining corporation Rio Tinto with head corporate offices in London, England and Australia. The Flambeau Mine was also part of the ceded territory of the Chippewa, a category of land that was sold to the federal government in the 1800s with the understanding that the tribe would maintain its hunting and fishing rights. The mine was regulated under the Wisconsin Department of Natural Resources (WDNR) and managed to spark criticism and opposition from citizens in Rusk County in its earliest stages. Oppositional tactics employed by grassroots organizations included meetings, utilization of local government authority—including zoning laws, resolutions, and moratoriums—proposing legislative amendments, organizing citizens to meet at public meetings, gathering signatures on petitions, educating citizens about the proposed mine, fundraising, newsletters, lawsuits and protests. The tactics used by the grassroots organizations would prove to delay Kennecott’s mine plans repeatedly. However, the mining corporation’s counter-strategies would provide a difficult obstacle for grassroots organizations to overcome. Kennecott’s strategies included negotiation strategies to attack local authority and amend and write legislation, secret purchases of
mineral rights and land, risk assessment, persuasive rhetoric and mass media campaigns, lawsuits and legal proceedings, as well as hurrying approval processes (Gedicks, 1993, p. 96). The following sections of this chapter include examples of the strategies used by grassroots organizations and the Kennecott Minerals Corporation as well as the history that led up to the eventual production of the mine in 1993.

The Beginning of an Anti-Sulfide Mining Movement

A Grant Township (WI) citizen, dairy farmer, activist, teacher and author Roscoe Churchill (2007) reports that after newspaper articles ran reporting that the Kennecott Minerals Corporation helped write their own copper tax bill in 1973 the locals became suspicious (p. 33). Further newspaper articles reported that Kennecott was not paying enough for taxes (only 1.5% on the market value) (p. 33) drawing even further attention of local Grant citizens. Shortly after, Grant citizens also realized their land taxes had risen an average of 72%. In Grant Township in the 1970s, land taxes were affected by property sales (p. 36); for example, if Kennecott bought forty acres of land at a higher price than it would usually be sold, then their purchases would raise the equalized value of the neighboring land and the property taxes would increase. Although the local citizens asked questions as to why their property taxes increased, they never received definite answers, but instead grew more suspicious of the mining corporation as they found out that Kennecott had recently purchased over 3,000 acres of land in their area—a very likely cause of the increased property taxes (p. 66). In 1974, Kennecott began the permitting process for the Flambeau Mine. Initially they planned an open pit mine 55 acres at the surface and 285 feet deep, which would consist of 11 years of open pit
mining and 11 years of underground mining. The pit would be remediated as a 50 acre lake and a 156 acre waste containment area would be revegetated and terraced into a small flat top hill (State of Wisconsin DNR, 1976, p. 1). Citizens became even more apprehensive toward the mine as their worries grew over the dangers of sulfuric acid and heavy metal contamination that might develop at the bottom of the remediated lake. Citizens were even more concerned these contaminants might find their way into the Flambeau River or the groundwater system. Furthermore, as if taxation issues and environmental hazards were not enough to get the people of Wisconsin motivated, some of the property Kennecott purchased included 11 previously operating dairy farms (this was a real public agitator as Wisconsin partially sustains its economy on dairy farming). In 1975, in reaction to their taxation and environmental concerns, the citizens of Grant Township formed one of the first organizations, the Rusk County Mining Tax Committee to question the Flambeau Mine.

Local Zoning Authority and Resolutions

The Rusk County Mining Tax Committee, made its debut at a local town meeting where they first used local zoning authority to help stop Kennecott from getting the mine site rezoned from an agricultural/residential site to an industrial site (Churchill, 2007, p. 39). Supporting Gerlach’s Segmentary Polycentric Integrated-network (SPIN) model, this organization eventually divided into numerous other organizations—the second of which was the Rusk County Citizens Action Group (RCCAG, March, 1976), founded by two Grant Township citizens with the objective of educating the public about the potential mine (Churchill, 2007, p.85). RCCAG’s most powerful tactic was the further
utilization of their local governing authority as they strategically used resolutions and their current zoning laws to fight the mine. One resolution in particular, Resolution #229 (November 1976), was a significant setback for Kennecott, in which Grant citizens voted 21 to 0 to deny Kennecott a permit to mine until the State of Wisconsin improved its mining laws; as this story hit the press statewide the mining corporation was forced to respond if they were to continue with their project (Churchill, 2007, p. 114-115).

**Kennecott’s Counter Strategy: Media Campaigns**

The counter response from the company was the utilization of media campaigns and rhetoric to promote the grassroots local authority tactic as a flaw in the system and an attack on business and job opportunities in Wisconsin. Their attack is exemplified in a quotation reported by Churchill (2007) originally found in an article in the local Ladysmith News (1976), that read: "Robert Shilling, manager of Kennecott, said such action is ominous for industry in Wisconsin and reflects the dilemma local units of government are facing," (p. 115). Furthermore, Shilling was quoted as saying, "Whenever local units of government are dissatisfied with an applicable state law all they have to do, if they follow the lead of Rusk County is to deny local permits necessary for any development until state laws are changed (p. 115).” Kennecott continued to fight the local citizens as they took the Township of Grant to court multiple times and began taking Rusk County board members out to lunch—fulfilling the corporate strategy previously discussed that a line of communication means a chance for negotiation (Churchill, 2007, p. 121-122). These legal proceedings and attempts to entice Rusk County were overshadowed by the strength of local government authority; in fact
Kennecott did not stay in Rusk County for an extensive period and in 1977 it withdrew its permits due to low copper prices "and continued anti-mining sentiment in Wisconsin" (Northwest Regional Planning Commission, 2005, p. 13). Although Kennecott withdrew its permits, its future return to develop the Flambeau Mine was foreshadowed by its continued participation in the legislative processes that proceeded to take place in the State of Wisconsin.

The Consensus Process

One such legislative process Kennecott participated in was the consensus process. Between the years of 1979 and 1983 local concerned citizens were encouraged to participate in a consensus process to rewrite Wisconsin's mining regulations. The process was promoted, as a round table discussion where everyone's concerns—(the citizens', the state's, Native Americans', and the mining companies')—could be included under the new mining legislation. Those who took part in the consensus process included representatives of Exxon, Kennecott, Inland Steel, WDNR officials, Wisconsin's Environmental Decade (an environmental organization), townships, and citizens among others (Churchill, 2007, p. 141). These meetings were held in Madison Wisconsin—making it difficult for citizens from Grant, who had become most familiar with and involved in the current mining situation in Wisconsin, to attend (Churchill, 2007, p. 142.). The consensus process is a beneficial public relations strategy for mining corporations to get their projects permitted, as mining corporations are better able to hire expert negotiators and further utilize other resources for the process making it difficult for the average person, low budget local government, or environmental organization to
compete. Also, the consensus process can easily be portrayed through the media as conclusive to the citizens not partaking in the process even though not everyone is agreeing about the final resolution; as Gedicks points out (2003), “This strategy of consensus decision-making is in reality a subversion of democratic decision-making whereby potential conflicts which may otherwise arise between corporate and community interests are either suppressed or neutralized in the legislative and regulatory process” (p. 93). Moreover, the consensus process leaves little room for citizens to outright deny a permit forcing them to negotiate with the mining corporation, according to one citizen of the Township of Grant in reference to the public intervener and the Grant Township attorney:

Peshek and the town’s attorney, Kevin Lyons, kept pushing the townspeople to sit down and negotiate with Kennecott as part of the “consensus” process. For some reason they didn’t want to accept the fact that we had made up our minds and didn’t want to negotiate. All we wanted to do was to stop the mine. The consensus process was no more than an attempt to force us to continue talking (Churchill, 2007, p. 141).

The consensus process appears to have possibly led to more lenient regulations for the mining company to follow despite public opposition to certain aspects of the regulations. For example, some participants suggested the regulations require the mining company to be responsible for supplying water to local people if any drinking water contamination were to occur. However, the current rules that evolved from the consensus process placed the responsibility on the local government to supply water (Churchill, 2007, p. 142). Moreover, prior to the consensus process the State of Wisconsin had a non-degradation policy for polluting groundwater (Churchill, 2007, p. 156, Gedicks, 1993, p. 53).
95). Despite concerns from local citizens, the new regulations under the consensus process permitted mining corporations to degrade groundwater to a maximum contaminant level (MCL) (a federal drinking water standard)—reminiscent of the use of risk assessment to rationalize that some amount of pollution is safe. These standards do not take into account the fact that groundwater can sometimes be much cleaner than the drinking water standard, allowing mining corporations to degrade groundwater to a greater degree (Gedicks, 2003, p. 94). Despite the consensus process public relations strategy, the grassroots organization’s ingenuity and proficiency did not fade as they continued to oppose the mining corporation.

Kennecott Returns with a Local Agreement Strategy

Kennecott returned to Grant Township in Rusk County having realized the deposit was even richer than anticipated (Gedicks, 1993, p. 162) and was better prepared with greater counterstrategies to the anti-sulfide mining movement. While the company was gone, the citizens who opposed the mine had anticipated Kennecott’s return to Rusk County, and on April 13, 1982, the Township of Grant passed another resolution with support of two-thirds of the town’s citizens—this time an all out moratorium on mining and exploration within the Township of Grant (Churchill, 2007, p. 201). This was another major achievement for the grassroots anti-sulfide mining movement and another obstacle for mining corporations:

Among the many lessons the mining industry drew from the Kennecott defeat in 1976, one was paramount: any future mine proposal would have to find a way around the intractable problem of democratic veto power over controversial mine projects at the grassroots level of government (Gedicks, 2003, p. 96).
In response to this major obstacle, Kennecott had changed their plans for the Flambeau Mine; it was to be much smaller. This time the open pit mine would be backfilled with waste rock instead of made into a lake, and the ore would be crushed and shipped by rail away from the mine site (in the 1970s when Kennecott first proposed the Flambeau Mine the ore was to be processed south of the mine) (Churchill, 2007, p. 256). However, local citizens were still concerned with the mine’s location, as it would be constructed within only 140 feet of the Flambeau River and ore containing sulfides would still be stored in piles on site (Gedicks, 1993, p. 100). Although the new mine design was unfavorable, it was the Local Agreement Law that really wounded the anti-sulfide mining movement, as it undermined the citizens’ use of their local governing authority that had helped to push Kennecott out the door in 1976. According to Gedicks (1993):

In one of Kennecott’s “issue papers,” the company identified “a small vocal opposition group” whose concerns about mining impacts could be “neutralized” if local leaders and company officials could negotiate a “local agreement” addressing some of these concerns (p. 97).

Although Kennecott blatantly stated that the objective of the Local Agreement Law was to neutralize local leaders, the Wisconsin Department of Natural Resources (WDNR) (1997) reported otherwise. The WDNR (1997) described the Local Agreement Law in one of its Mining Information Sheets. According to the information sheet, in 1988 Wisconsin’s mining legislation was amended to grant local municipalities the right to use an additional method other than local zoning or land use authority to approve a proposed mine. Under this provision a local government could enter into a local agreement or a contract with a mining corporation (WDNR, 1997). The municipality may then set up a
committee to develop special conditions for the local agreement (WDNR, 1997). The WDNR (1997) further states that, "Rather than reducing or eliminating local authority, the local agreement law offers greater control and flexibility to the local municipalities by shifting authority to it from the local zoning committee" (Local Agreement sect.). Many citizens were opposed to the Local Agreement Law, stating the amendment was a method to ignore local zoning codes and provisions (Churchill, 2007, p. 289). Without the Local Agreement amendment Kennecott would have to abide by the zoning authority and resolutions that were passed in the Township of Grant, such as the 1982 moratorium and the zoning code (the site was still zoned as an agricultural/residential site). Prior to a Local Agreement amendment, it would be illegal under Wisconsin law for the municipality to override the 1982 moratorium and the zoning code and grant Kennecott a permit to mine (Churchill, 2007, p. 289). So, the State made it possible for Kennecott to mine despite local government authority. Another criticism of the Local Agreement Law was that it did not require funding for a local government to hire a lawyer to help in the negotiation process with a mining corporation (Churchill, 2007, p. 298). Once again, similar to the consensus process, a mining corporation is put into a position in which it can use its capital, access to more information, and a specialized legal staff to pressure local or state governments, or citizens who have access to fewer resources and legal aids. This is exactly what Kennecott did as its lawyers threatened annexation and litigation against the Township of Grant. Annexation of land would give all tax benefits to the City of Ladysmith and not the Township of Grant—Grant would get nothing if the mine went in, and under litigation Kennecott could claim that it was being deprived of its rights to
use its property—often referred to as a takings—which could drastically drain the small town’s treasury (Gedicks, 1993, p. 98).

A Kennecott lawyer drafted the local agreement legislation and it was passed as an attachment with the state budget bill without a public hearing in 1988 (Gedicks, 2001, p. 163). This is a strategy Gedicks refers to as “legislative initiatives to thwart local democratic control” (1993, p. 162). The Township of Grant’s municipality participated in a Local Agreement process with Kennecott, despite the concerned citizens, in which Kennecott used another corporate strategy as it hurried the process along by demanding the agreement to be finished by June 30, 1988 (Churchill, 2007, p. 321). Many of the locals were concerned, especially because an Environmental Impact Statement (EIS) had not been completed, thinking the decision and local agreement should be based upon the findings of an EIS (Churchill, 2007, p. 321; Gedicks, 1993, p. 91). The company’s response to these concerns was printed in the Ladysmith News (July 28, 1988): “To get an Environmental Impact Statement is going to cost our company four to five million dollars. Should we do all this and have the local people prevent the mine?” (Churchill, 2007, p. 321). Kennecott wanted the Local Agreement signed before the corporation spent money on an EIS and so the local municipality could override the 1982 moratorium. Even with a public hearing on the Local Agreement in which the majority of citizens were opposed, the local representatives not knowing what environmental impact the proposed mine might have ignored the people they were supposed to represent. In July of 1988 the Local Agreement between Kennecott, the Township of Grant, the City of Ladysmith, and Rusk County was signed (Gedicks, 1993, p. 99).
Kennecott Utilizes Its Gifting Tactic

Kennecott had secured its presence in the local community. With the Local Agreement, Kennecott had opened up the lines of communication with the local government allowing for possible negotiation and weakening the powers of the local authority. The company continued to secure its position by offering money to local communities as well, a tactic sometimes referred to as gifting, typically used by mining companies to control local opposition, become part of the community, and get their mines approved. Kennecott gifted tens of thousands of dollars to local charities, schools, governments, and fire departments (Gedicks, 1993, p. 194). One of the most notable was a gift to the Ladysmith Fire Department of $60,000 to help purchase a truck. Gedicks (1993) writes that the company was quoted in The Flambeau News as stating, “the truck would be ordered as soon as the company gets the permits it needs to build the mine,” (p. 104)—a gift with specific conditions, or a bribe. Another notable contribution included $30,000 to a Junior Achievement Program for four area schools (Gedicks, 1993, p. 104). Although Kennecott had bought local government support, the grassroots organizations were not neutralized as Kennecott may have anticipated.

Grassroots Organizations Begin Direct Action Tactics

After the signing of the Local Agreement, those opposing the mine did not cease action; having exhausted their use of legal, zoning, and public hearing avenues, they began more direct action tactics. Locals and grassroots organizations continued with protests, demonstrations, and festivals. In October of 1988 after the Local Agreement had been signed, the Wisconsin Resources Protection Council (WRPC) and Earth First!
organized one of the first demonstrations in the region consisting of a canoe flotilla of over 60 people and nearly 20 canoes on the Flambeau River in order to gain attention and protest the mine (Churchill, 2007, p. 354). For their next demonstration, the organizations and citizens of Wisconsin organized the fourth annual Protect the Earth Festival to discuss sulfide mining on Sept 24, 1989; discussion topics included Kennecott’s mining proposal, treaty rights, peace, resistance, women’s rights, and issues occurring in the third world (Churchill, 2007, p. 384-387).

Despite this obvious local anti-mining sentiment and with the help of the Local Agreement Law, Kennecott continued onward with the permitting process. In fact, Kennecott eventually completed its Environmental Impact Statement. Many citizens felt the EIS was inadequate. Even if parts of the EIS adequately followed regulations, Wisconsin’s mining legislation was simply too weak to protect Wisconsin’s citizens and the environment from the inherent dangers posed by sulfide mining. In response to the final hearing on the Environmental Impact Statement, the citizens once again held a large demonstration. This protest was a true testament to grassroots global networking, as People Against Rio Tinto Zinc and Its Subsidiaries (PARTIZANS), a London-based organization, held a demonstration in London against the mine on the very same day at Rio Tinto’s world headquarters (Churchill, 2007, p. 435). On June 27, 1990, another protest rally took place in front of Kennecott’s office in Ladysmith (Churchill, 2007, p. 432). Churchill (2007) describes in his account of the demonstration that participants in the rally carried signs that read “Children Before Dollars,” and “RTZ—Go Mine in Hell” (p. 432).
A master hearing on the Environmental Impact Statement and Kennecott's mining permits took place between July 16 and August 7, 1990. The hearings consisted of contested and non-contested cases; during the contested case hearing the Lac Courte Oreilles Chippewa Tribe (LCO) requested thirty more days to submit a list of witnesses for the hearing, as they had had limited funds to properly respond. They needed more time to examine comments made by the public and the federal government and to analyze their treaty rights; the LCO Chippewa were granted 10 more days (Gedicks, 1993, p. 113-114). The examiner had 90 days to make a decision (Churchill, 2007, p. 455), so while waiting for the hearing examiner's decision, in October of 1990, plans began for yet another grassroots tactic—a Freedom March inspired by Dr. Martin Luther King (Churchill, 2007, p. 472).

Kennecott's Counter Response to Grassroots Protests

In an attempt to control growing grassroots momentum, Kennecott yet again used the media by releasing an article to counteract the grassroots direct action strategy in the company newsletter, *The Flambeau News*, which was attached to the local newspaper. This newsletter warned people to stay away from the Freedom March in order to not get hurt, while at the same time used rhetoric to make the opposition appear as ignorant, unruly outsiders and Kennecott as a friend and a good neighbor, a true philanthropist:

while we recognize the rights these marchers will be exercising, we are also reminded of another of the basic tenets of the American way of life: government that governs closest to the people governs best. Local issues should be discussed and decided on a local level. Many of those demonstrating may be tired from long drives. Others may not appreciate how we normally conduct ourselves here in Ladysmith. I am concerned their weariness or lack of understanding may encourage them to seek confrontation. For that reason, and because I do not want
to see anyone—supporters or opponents of the mine—endangered, I am writing to you who, like me, live and work in Ladysmith and Rusk County to ask you to avoid any confrontation with those marching through our town on November 10. But once again, let me ask you as a friend and as a neighbor to let these outsiders march on our town without incident and without an audience (Churchill, 2007, p. 473).

The portrayal of opposition as outsiders is an interesting variation that contradicts the more commonly used NIMBY ("not in my backyard") rhetoric. Despite this negative campaign against the Freedom March, 500 farmers, medical doctors, nurses, teachers, college professors, and Native Americans did not heed Kennecott’s warnings, but instead marched over a mile into Ladysmith—passing closely by Kennecott’s office; in the end, the Freedom March proceeded peacefully on November 10, 1990 (Churchill, 2007, p. 474).

**Legislative Tactics to Halt the Mine**

The examiner who presided over the EIS hearings ruled in favor of Kennecott’s Environmental Impact Statement and mine permits on January 14, 1991—once again regardless of the requests and information shared by the majority of citizens who spoke out in opposition to the mine at the public hearings (Churchill, 2007, p. 457). To support the inadequacy of the examiner’s ruling, however, the Environmental Impact Statement was shortly thereafter proven to be missing information on endangered species that were present in the Flambeau River. The EIS mentioned nothing of the endangered species that were found in May of 1991; a purple warty back clam and a bullhead mussel were found in the Flambeau River by Wisconsin’s Department of Natural Resources (Gedicks, 1993, p. 137; Churchill, 2007, p. 506). Other endangered species had also recently been found near the mine site, including the snaketail dragonfly, the gilt darter, and river
A redhorse. The LCO Chippewa and the Sierra Club filed a lawsuit against the Department of Natural Resources to issue an injunction against the mine until a Supplemental Environmental Impact Statement (SEIS) could be completed on the endangered species (Gedicks, 1991, p. 143). The Sierra Club and the tribe, this time, were successful in halting the mine, as the judge ordered Kennecott to stop mine construction until a Supplemental Environmental Impact Statement was completed (Gedicks, 1993, p. 148).

Kennecott and the State of Wisconsin

When governments remain unmoved by the arguments or concerns of locals, these citizens often develop a strategy of direct action. This strategy took the form of a series of protests and trespassing on Kennecott's land called Flambeau Summer that began on July 6, 1991 (Gedicks, 1993, p. 126). The Department of Natural Resources completed their Supplemental Environmental Impact Statement in April of 1992 (Churchill, 2007, p. 607), and the company was eventually granted permission once again to mine the Flambeau deposit. Hence in May of 1993, after years of writing and rewriting legislation through local agreements and consensus processes, gifting to communities, and running media campaigns, Kennecott began production of the Flambeau deposit. Although seemingly defeated, the Grassroots organizations' fights delayed Kennecott's project for nearly 17 costly years, while influencing other anti-sulfide mining movements. The Flambeau Mine closed early in 1997 due to low copper prices. Today, there are a number of environmental concerns (environmental concerns of the Flambeau Mine will be discussed in Chapter 5).
The Wisconsin Crandon Project

As mines are proposed, indigenous land rights and sovereignty often become matters of controversy and spark movements to uphold cultural traditions and treaty rights (Behrendt & Stielein, 2001, p. 1-2). Such a movement arose in the State of Wisconsin in which a diverse alliance of the Chippewa (Ojibwa), non-native local residents, and small and national environmental organizations defended their environmental rights. This alliance was revolutionary because indigenous people and environmental organizations have historically operated on opposite sides, partly because numerous indigenous people around the world have been forced to relocate due to national parks and other preservation developments (Gedicks, 1993, p. 189). This particular multicultural environmental alliance grew in response to the proposal of an underground sulfide mine near the City of Crandon in northern Wisconsin in 1975 when the US based multinational corporation, Exxon Coal and Minerals, discovered one of North America’s top ten sulfide deposits of copper and zinc (Whaley & Bresette, 1994, p. 184) (figure 8). The deposit was located 5 miles south of the City of Crandon, Wisconsin, near the Mole Lake Chippewa Reservation on their ceded territorial lands, and also in close proximity to one of Wisconsin’s largest trout streams, the Wolf River. Those factors made it a highly controversial location (figure 9) (Whaley & Bresette, p. 184). The mine was originally planned to be open for 25 years (Whaley & Bresette, 1994, p. 184). Movements such as the anti-sulfide mining movements that took place against the Flambeau and Crandon mines can be very costly for mining corporations. For this reason, multinational mining corporations often develop strategies to manage public
opposition in order to attempt to secure approval for their mining proposals—
corporations will go to great lengths for substantial profit, but grassroots organizations
often campaign vigorously to protect their land, culture, and health.

Economic Incentives

According to Whaley & Bresette (1994), the mining company claimed the
Crandon Mine would create 1,000 construction jobs and 2,000 indirectly linked jobs such
as services and real estate (p. 184). Furthermore, the mine would be a positive
investment for the State of Wisconsin because it would generate $16 million in taxes (p.
184). When Exxon first discovered the deposit, they offered the Mole Lake Tribe
$20,000 dollars to allow the company to explore the mineral rights on the reservation
(Whaley & Bresette, 1994, p. 184). These are examples of the common strategies
employed by mining corporations when they arrive in a community—offer jobs and other
tempting financial and charitable incentives. They are very difficult tactics to contest;
how can a grassroots organization successfully argue for environmental protection when
a town is in desperate need of jobs, schools, libraries, and funds? In spite of these
incentives, the tribe did decline a $20,000 offer.
Figure 8. Location of the Crandon Mine (Source: ESRI)

The Roots of the Grassroots Movement

Despite the economic incentives, many citizens were still concerned about the proposed mine; some worried the mine would actually have negative economic impacts from such a sudden economic boom—a common criticism of mining. For example, during a mining boom a community might see huge increases in school enrollment. In response, new classrooms may have to be built, but when the local mine goes out of
business and people move away it becomes difficult to continue to keep the now larger school up and running. Others were concerned that water usage from the mine could dry up wells or cause lake levels to decline. Because mining would take place in a sulfide ore body, there were also concerns of acid mine drainage and cyanide spills (Whaley & Bresette, 1994, p. 184). Moreover, the Chippewa were apprehensive about the effect such spills could have on their culturally and economically important wild rice beds (Whaley & Bresette, 1994, p. 184). Bresette and Whaley (1994) highlight that these concerns were shared by a very diverse group including: the Mole Lake Chippewa; Menominee; Potawatomi (Forest County); local non-native citizens; sports groups; and environmental organizations who eventually developed into a coalition against the mine (p. 184)—characteristics supportive of Gerlach’s SPIN model. The collaboration with the Native American tribes was highly beneficial. Native American treaty rights signed in the 1800s proved to be major impediments for Exxon (Whaley & Bresette, 1994, p. 189). Exxon’s plans to store waste near the Wolf River were stopped by a Langlade County resolution (Whaley & Bresette, 1994, p. 185).

Citizens were also successful in throwing up an additional roadblock for Exxon. After putting up a fence around the proposed mine area, the Mole Lake Chippewa sued Exxon claiming the fence prohibited the tribe from their legal hunting, gathering, fishing, and trapping rights on their ceded territorial lands (Whaley & Bresette, 1994, p. 189). In 1986, Exxon claimed low copper prices and temporarily withdrew from the permitting process.
Closed Door Negotiations, Legal Challenges, and the Local Agreement Law

In January of 1987, recently elected Wisconsin Governor Thompson met with the Exxon vice president to determine under what conditions Exxon would reapply for another Crandon permit (Whaley & Bresette, 1994, p. 185). Shortly after, in May of 1987, the Governor’s Ad Hoc Task Force on Mining was set up and helped to pass the Local Agreement Law of 1988 that was discussed earlier in the chapter (Whaley & Bresette, 1994, p. 185). A few years later, in 1993 Exxon returned to set up the Crandon Mining Company (CMC), this time Rio Algom (London) was their partner and utilization of the newly enacted Local Agreement Law was their strategy (Gedicks, 2001, p. 163). Redolent of Kennecott and the anti-Flambeau Mine movement, CMC was hoping to get permission from the township to mine even before the state granted it the proper permits. The township’s residents were not in agreement with their local government, which had already participated in closed-door negotiations with Exxon, and petitioned for a special meeting on whether or not to enter into a Local Agreement with CMC (Gedicks, 2001, p. 163). Over 300 citizens arrived in December of 1996 to discuss the Local Agreement, but were turned away by the police and their town Chairman, claiming the meeting was illegal (Gedicks, 2001, p. 164). Although 250 people objected to the Local Agreement, the town board approved it in December of 1996 (Gedicks, 2001, p. 164). In an election for the town board held in 1997, four board members were accordingly voted out of office and replaced by candidates who were opposed to the Local Agreement—which in turn resulted in the withdrawal of the Local Agreement and exemplified the extensive opposition present in the Township of Nashville (Gedicks, 2001, p.165). Utilizing the
strategy of legislative initiatives, CMC claimed the board could not cancel the Local Agreement and took the town board to court (Gedicks, 2001, p. 165). The board then sued the mining corporation, claiming the township's previous attorney and former board members were conspiring with Exxon; the town board admitted to the closed-door meetings with CMC, but the judge still agreed the legal document could not be repealed (Gedicks, 2001, p. 165).

**Tribal Sovereignty**

Eventually, revenue from tribal casinos had allowed for a more balanced situation between the tribe and the mining corporation and the Chippewa were better able to hire lawyers and technical experts (Gedicks & Grossman, 2001). The tribes' sovereign right to object to the issuance of waste water discharge permits to the mining company was upheld in court, and the tribes were accordingly granted the right to deny permits to the mining company if they could not meet the tribal standards (Gedicks & Grossman, 2001). However, it was very difficult for the tribes to gain these sovereign rights, as the mining industry and the State of Wisconsin fought against them. In fact, according to Gedicks (2001), "the Wisconsin Mining Association warned that tribal water quality authority could be the most controversial and contentious environmental development affecting the state in decades" (p. 172). Legislators commented on the sovereign rights granted to the tribes by claiming the tribe's new environmental authority was detrimental to economic prosperity and businesses and undermined state rights; the WDNR requested that the USEPA should not allow tribes to have such rights over water quality standards and the
State of Wisconsin's Attorney General sued the Environmental Protection Agency for their decision (Gedicks, 2001, p. 173).

The Tribe Purchases the Proposed Mine Site

After 20 years, in 2003 the tribes bought the land and its mineral rights. They completed the entire purchase by November of 2006 (Midwest, 2006). The success of the movement against the Crandon Mine was due to a collaboration of different oppositional tactics and strategies; Gedicks and Grossman (2001) highlight three significant strategies used by the Mole Lake Chippewa and their alliance, including: utilization of their sovereign rights to assert environmental regulations; employing a movement made up of multiple tribes, locals, sports groups, and environmental organizations; and networking throughout the United States and the State of Wisconsin.

A Mining Moratorium

Part of the success of the Crandon and Flambeau anti-mining movements included the passing of legislation commonly referred to as the Mining Moratorium Law (s. 293.50, Wisconsin Statutes) in the State of Wisconsin in 1998 (Churchill, 2007, p 916; WDNR, n.d.). The law was an amendment to the metallic mining statute. Under the mining moratorium law, a mining corporation must provide examples of operations in the US. or Canada that have not resulted in significant environmental pollution (WDNR, n.d.). In order to operate a mine in Wisconsin, an applicant must show evidence based on water monitoring that meets the following conditions: 1) provide an example of a mine that has been closed for 10 years without polluting water resources with acid drainage or heavy metals, and 2) provide an example of a mine that has operated for 10 years without
degrading water resources with acid drainage or heavy metal contamination (WDNR, n.d.). The moratorium was strongly influenced by the resolutions and moratoriums passed during the grassroots movement against the Flambeau Mine (Churchill, 2007, p. 917). The passing of the moratorium was a success because of the strong grassroots movement that took place. Another influential factor in the passing of the legislation was especially creative demonstrations by the grassroots organizations. One of them was a project called the Wolf Watershed Educational Project in which participants spoke in 22 different towns along the Wisconsin and Wolf rivers, educating the public on the possible impacts of the Crandon Mine and the need for a moratorium (Churchill, 2007, p. 923). Today the moratorium stands as a major obstacle to the mining corporations; for instance, a survey of mining corporations conducted by the Fraser Institute (2003/2004) to determine which mining companies were exploring in North America, supports that corporations consider the State of Wisconsin one of the worst places to mine based upon the effects of government policy (p. 8-9). Recently Kennecott applied for a Certificate of Completion (COC) to get the now closed Flambeau Mine certified as an example that meets the criteria of the Mining Moratorium Law, as it has been closed for over ten years. This request has been met with much public opposition in the states of Wisconsin and Michigan (a further analysis of this topic is discussed in Chapter Five: The Eagle Project).

Summary

When mining corporations migrated to Wisconsin in the 1970s to find a more stable place to mine, they grossly underestimated their opposition. The grassroots organizations that evolved against the Flambeau Mine were equipped with clear
objectives, persistent, and efficient as they used their democratic rights to write moratoriums, resolutions, and protect their zoning authority. However, mining corporations were also persistent and Kennecott was able to hire experts to handle their enormous public relations problem in Wisconsin and write the Local Agreement Law that took away some of the local authority of the Township of Grant. When Exxon then tried to open a mine in Crandon, they too faced a tremendous public relations problem. The grassroots organizations of the anti-sulfide mine movement employed their Native American treaty rights, as well as networking strategies, once again reminiscent of Gerlach’s SPIN model. The two movements worked together as they did with organizations throughout the US and the world. This exemplifies how people and environments are more globally linked now than ever before. Today with new improved transportation and communication systems companies and citizens can contact, sell to, buy from, visit, and move to anywhere in the world. Places around the world have always been environmentally integrated: destroyed rain forests in Brazil can affect the climate of the entire world; consume too much water from the Colorado River in the State of Nevada and the river no longer reaches the Gulf of California; dump waste into the Pacific Ocean and it washes up on the shores of the North Atlantic and South America. The world is also interconnected politically and culturally through migration of people and ideas, wars and colonization, but more so now than ever with free trade agreements and multinational corporations. According to Shurmer-Smith (2002), “a globally integrated system of production and consumption involves everyone, everywhere: industrial workers, peasant farmers, landless labourers, retired people,
traders, professionals, students, people bringing up children, and those trying to find work” (p. 1). The environmental movements that took place against the Flambeau and Crandon mines in the State of Wisconsin have highlighted this interconnectedness as multi-racial, multi-class grassroots organizations have worked together throughout Wisconsin and throughout the world in places such as England and Australia. Today the reverberations of Wisconsin’s anti-sulfide mining movement have been felt strongly in the State of Michigan. Kennecott/Rio Tinto is now experiencing the rippling affect of a poor reputation that can be caused by a lack of local consent. Numerous citizen groups fought long and hard for the adoption of the strict metallic sulfide mining legislation now in place in the State of Wisconsin. Their battles, including the most notorious struggles in Crandon and Ladysmith, have been well publicized in the Midwest. Today other communities have looked to these organizations for answers, encouragement, and tactics when faced with similar mining ventures and limited financial resources and expertise. According to Herz et al. (2007), “the adverse impacts of resistance can transcend the specific project and affect corporate operations more broadly” (p. 5). One such place is the Upper Peninsula (U.P.) of Michigan, which is currently being explored by numerous mining corporations due to its high potential for metallic mineral-bearing sulfide deposits found along the Mid-continent Rift. Case studies of the public relations strategies used in the States of Wisconsin and Michigan serve to examine the intricate and interwoven anti-sulfide mining strategies of the two states and the pattern of strategies used by mining corporations against modern grassroots public opposition, and outline what Kennecott
learned from the Flambeau Mine in the State of Wisconsin that it applied to its proposed Eagle Project in the State of Michigan.
CHAPTER 4

METHODOLOGY

Overview

In the beginning of this study my interests typically consisted of using quantitative analysis tools to examine the impact the proposed Eagle Project might have on the environment. As I became more involved in the controversy through participant observation, I came to understand the cultural impacts from mines on communities were significantly connected to the environmental threats, and furthermore the relationship between pro-mining and anti-mining discourses was terrifically complex. Although participant observation and qualitative data collection are often criticized for lack of objectivity, I felt that a more quantitative analysis might not enable me to delve into the underlying complexities of the Eagle Project—thus perhaps missing the economic, cultural, and scientific issues as they pertain to the community. For this reason, this research took a turn in an entirely new direction. As the focus of my research was to analyze the relationship between mining corporations and communities, this research mostly consisted of qualitative methodologies examining how space, place, people, and the environment are interconnected. The methods I chose were not presented word for word in any document. A mixture of evolving methodologies was instead used as each was judged appropriate and relative to the data sources and contexts of the study. According to Shurmer-Smith (2002), "Given that cultural geography is concerned with
trying to understand ideas and performances that are in constant flux, it is obvious that one is going to have to innovate within the realms of accepted practice, rather than follow strict recipes" (p. 7). Additionally, I felt that a qualitative analysis allowed for more community involvement—and according to Breitbart (2005), “communities are often treated as laboratories, provided no role in the research process and benefit little from the results of studies conducted in their borders” (p. 162). To avoid these shortcomings, qualitative research, such as direct communication with organizations and citizens, was very important to this study. In this regard, I spent numerous hours collecting data by different means including: working with communities; talking to grassroots organizations (both anti and pro-mine); interacting with mining and public officials such as those from the Michigan Department of Environmental Quality; and attending public hearings, grassroots meetings, Community Advisory Group (CAG) meetings held by the mining company, rules workgroup meetings for metallic sulfide mining legislation, forums, and fundraisers. These experiences in the community were most helpful as I was able to gain a more comfortable and trusting relationship with the eventual focus group participants, as well with the interviewees. A brief description of my interaction with those groups is given below.

Focus Group

A focus group is a qualitative geography method employed to collect data from a small group of individuals. Focus groups are especially important to research involving highly complex situations in order to learn about the histories, thoughts, and responses of citizens to issues in their communities (Bennett, 2006, p. 151). A unique aspect of the
focus group is that it can reveal the interrelationships between the participants, which are especially important when trying to understand an environmental movement. The focus group session took place in Marquette, Michigan on January 4, 2007, on the campus of Northern Michigan University. The site was easily accessible and comfortable, as the right setting was important to the success of the focus group. Drinks and hors d'oeuvres were also served to make the setting more friendly and relaxed. The central idea of the focus group was to discuss issues related to mineral rights and public participation concerning the Kennecott Eagle Minerals Corporation's communication and relationship with the public. The session lasted approximately 2 and ½ hours. There were 15 participants present from various grassroots organizations. Grassroots organizations in this paper refer to small, non-governmental, not for profit, locally-based organizations. These organizations were selected from a list of organizations that were opposed to the Eagle Project. Initially the involvement of the mine supporters was considered for the focus group. However, there was only one organization that had evolved to support the mine, and I was concerned that this group's inclusion would make the evening too contentious and therefore less productive as the main objective was to learn how anti-mining grassroots and Native American organizations interacted with the mining company. The Citizens for Responsible Mining, the pro-Eagle Project organization, was selected to participate in the interview sessions, but not in the focus group. The organizations present in the focus group included representatives of the UP Conservation Club, land Owners Opposed to Sulfide Mining, Concerned Citizens of Big Bay, Yellow Dog Watershed Preserve, Keepers of the Water, Save The Wild UP, Northwoods
Wilderness Recovery, the 550/510 Coalition, the American Indian Coordinating Council Inc. of Marquette, and the Native American Student Association. The questions for the focus group session is included in the appendices as appendix A. The session was recorded with a small unobtrusive digital recorder; the small size was important to make participants comfortable near recording equipment. The session was later transcribed and analyzed (techniques for the analysis will be discussed later in this chapter). Information gathered from the focus group was used to help frame questions and better define objectives for the subsequent semi-structured interviews.

Semi-Structured Interviews

Semi-structured interviews were used to collect information from: Jon Cherry, the Eagle Project’s manager; Marvin Roberson, a Sierra Club representative and forest ecologist; Susan LaFernier, the former president of the Keweenaw Bay Indian Community (KBIC); a national environmental protection group attorney; and a retired iron miner and founding member and representative of the grassroots organization called Citizens for Responsible Mining. Semi-structured interviews are a way of gathering information through conversation and not interrogation, so it was important to leave some unstructured time in case the interviewee brought forth information that I had not previously considered (Bennett, 2006, p. 155). These participants were selected because they were either a previous participant in Michigan’s rules workgroups held in 2005 to help write regulations for sulfide mining in the State of Michigan, a spokesperson for an organization or corporation, or an elected or appointed official. Schurmer-Smith (2006) argues that interviews are more appropriate for leaders and public figures who typically
“state the normative values of the community” or “the way it is felt things ought to be” (p. 97). A small digital recorder was used to record the interviews. These interviews were later transcribed and analyzed.

**Discourse Analysis and Coding**

Throughout this research I amassed substantial amounts of documentation from both the mining corporation and the grassroots organizations in and around the County of Marquette. For the purposes of this study, the word text refers not only to written text, but also to visual media (such as pictures and video) and spoken dialogue. The heart of this thesis was the analysis of grassroots and corporate rhetoric to explore possible present themes and patterns. Through a theoretical approach called discourse analysis, I was able to analyze and interpret texts while at the same time consider their underlying meanings. Che (2004) used discourse analysis to explore divergent opinions regarding the placement of a prison in Forest County, Pennsylvania (p. 811). Similarly, this study involved exploring and analyzing the conflict between citizens and organizations in opposition to the proposed metallic sulfide mine in Marquette County and the Kennecott Eagle Minerals Company’s (KEMC) proposed mining project. Through the comparison of rhetoric, I was able to explore some of the strategies used by grassroots organizations to oppose mining projects as well as the public relations strategies mining corporations have used to overcome obstacles to their projects. As one author succinctly states, “Discourse Analysis is meant to provide a higher awareness of the hidden motivations in others and ourselves and, therefore, enable us to solve concrete problems - not by
providing unequivocal answers, but by making us ask ontological and epistemological questions" (University of Texas, n.d.).

As all sources are necessarily “inaccurate, incomplete, distorted or tainted” (Hannam, 2006, p. 191), numerous pieces of rhetoric were used to overcome some of these possible inaccuracies, inconsistencies, and inherent textual deficiencies. For example, eight Kennecott community newsletters (2003-2006) and 20 Kennecott informational advertisements, as well as pamphlets, editorials, newsletters, press packets, and websites from both Kennecott and other organizations were used. Since such a large number of documents were used, it was important to code them for data organization, reduction, and analysis. Coding is a method used to categorize and organize textual data in order to help discover patterns, trends, and understand underlying meanings and messages found in texts (Cope, 2005, p. 447). The coding technique was also used to analyze the transcriptions from the semi-structured interviews and the focus group session. A copy of the document used for the coding process is presented in Appendix B.

Geographic Information Systems

A geographic information system was very useful to further analyze the mineral leasing in the Upper Peninsula and display maps of the varied case studies from other regions of the world. Available map layers from the Michigan Center for Geographic Information (http://www.michigan.gov/cgi), Save the Wild UP (http://www.savethewildup.org/), and National Atlas (http://www.nationalatlas.gov/) were used in order to explore and map mineral rights ownership in the Upper Peninsula of Michigan. However, these data are very limited due to a policy of confidentiality of
the State of Michigan that protects corporations from competition with other mining companies; furthermore, the perpetual exchange of these rights makes it difficult to determine which corporation owns a specific plot at any given time.

**Comparative Analysis**

Finally an extensive review of prior research on the State of Wisconsin focusing on strategies used by multinational corporations and grassroots organizations was necessary as an analytical lens to view the Eagle Project. This process was important to identify patterns and trends in public relations strategies used by mining corporations and grassroots organizations to determine the role Wisconsin's anti-sulfide mining movements and extensive mineral exploration has played in the case of Michigan's Eagle Project.

**Summary**

This chapter described the methods and theories used in the study to examine public relations strategies used by the Kennecott Eagle Minerals Corporation to manage public opposition and try to gain public acceptance to open a proposed mine in Marquette County, Michigan. The following chapter presents the findings of the focus group, interviews, literature review, discourse analysis, and comparative analysis of the struggles between mining corporations and citizens in the State of Michigan.
CHAPTER 5

THE EAGLE PROJECT

Introduction to the Eagle Project

Controversies abound when mines are proposed and can be attributed to the inherently destructive nature of mining, as outlined in Chapter Two of this thesis. Land, air, water and, as a result, living things, have been sacrificed to mining around the world in the name of human consumption and economic rationalization. Out of necessity, due to this destructive nature, corporations have developed public relations strategies to garner public and regulatory approval for their projects. This study explored the public relations strategies used by Kennecott in an attempt to acquire approval for the Eagle Project on the Yellow Dog Plains in Michigan. To this end, it was necessary to answer the following questions: 1) what tactics have grassroots organizations used to counter Kennecott’s project on the Yellow Dog Plains, 2) has Kennecott used public relations strategies to outmaneuver environmental policies and the rights of citizens, and 3) what did Kennecott learn in Wisconsin that was applied in the State of Michigan? This study revealed multiple themes. First of all, the focus group session and a discourse analysis of grassroots rhetoric highlighted a list of concerns driving the anti-sulfide mining movement, as well as possible grassroots tactics used to oppose the Eagle Project. Grassroots tactics to oppose the Eagle Project included correspondence with members of the grassroots movement against the Flambeau and Crandon mines in Wisconsin; public
outreach and education utilizing commercials, the Internet, parades, and demonstrations; and finally litigation and data collection. These grassroots tactics support that the movement has a strong underlying SPIN structure, a characteristic of other grassroots movements, as suggested by Gerlach (1999). In order to counter public opposition and obtain approval for the Eagle Project, Kennecott participated in secret and extensive mineral exploration, used negotiation and lobbying strategies to weaken legislation, used persuasive rhetoric and mass media campaigns, and risk assessment tactics. Finally, Kennecott's experiences with the anti-mining movement in Wisconsin assisted the company in preparing for the anti-mining movement in Michigan, resulting in weaker mining legislation and weaker local township authority.

The Midcontinent Rift

The fracturing of the earth's crust approximately one billion years ago led to a geologic formation called the Midcontinent Rift. Today, this rift extends over 2,500 kilometers from the State of Kansas, northward through the Eastern Upper Peninsula of Michigan, and then trending south through Lower Michigan to Ann Arbor (figure 9). In recent years, scientists have discovered many similarities between the metallic mineral-rich Voisey Bay formation (Canada), Noril'sk formation (Russia), and the Midcontinent Rift (United States) (US Geological Survey, 1998). Rich mineral deposits such as nickel, copper, iron-oxide-copper-gold and sulfide deposits are frequently found in rift formations and are assumed to also reside in the Midcontinent Rift (Prime Meridian Resources Corporation, 2007). Due to the potential of rich mineral deposits in the
Midcontinent Rift and an escalating global demand for metals, mining companies such as Kennecott, have been turning to the Upper Midwest for exploration.

Figure 9. The Midcontinent Rift

Kennecott Eagle Minerals Corporation

The Kennecott Eagle Minerals Corporation (KEMC) is a subsidiary of multi-national corporation Rio Tinto (Anglo-Australian). Rio Tinto was referenced earlier, in Chapter Two and Three, due to their current exploration in Madagascar, their involvement with the Grasberg Mine in West Papua, and the Flambeau Mine, in Wisconsin. KEMC has named its current project the Eagle Project. They have completed environmental baseline studies in an area of the Escanaba River State Forest called the Yellow Dog Plains and have recently been granted permits from State agencies to begin mining in Michigan, under Michigan’s new sulfide mining legislation. The company is currently awaiting the results of contested case hearings, and for an underground injection permit from the United States Environmental Protection Agency (USEPA). This sudden mining boom, headed by Kennecott’s Eagle Project, caught the
State of Michigan without applicable legislation governing nonferrous metallic sulfide mining.

Michigan’s Metallic Sulfide Mining Legislation

The Resource Conservation and Recovery Act (RCRA 1976) authorized the Environmental Protection Agency jurisdiction over the transportation, generation, storage, and disposal of hazardous waste. However, due to the passing of the Bevill Amendment by the US Congress in 1980 the waste from the mining industry became exempt under the RCRA (Schultz, 2006). This exemption, in addition to an antiquated 1872 federal mining law, left individual states the responsibility to enact their own rules and regulations for mining (Schultz, 2006). The Michigan Department of Environmental Quality (MDEQ) was the agency responsible for writing new legislation for metallic sulfide mining in Michigan.

Prior to 2004, Michigan had no regulations for nonferrous metallic mineral mining. In March of 2004, due to increasing exploration of metallic sulfide ore bodies and pressure from citizens and environmental groups (Michigan Department of Environmental Quality, 2007, p. 30), the MDEQ created a workgroup to develop a statute to regulate nonferrous metallic mineral mining. The Act was passed and became effective on December 27, 2004. A similar work group was convened to develop rules to accompany the new statute.

The Joint Committee of Administrative Rules approved the rules on February 1, 2006. Now, under the new act, a mining corporation must provide mining, reclamation, environmental protection, and contingency plans, as well as financial assurance. If
Kennecott’s project is approved, it will set precedent under the new legislation for other mining corporations that are awaiting participation in Upper Michigan’s anticipated mining boom.

The Eagle Project

Kennecott’s Eagle Project (figure 10), as proposed, would be a small, valuable, underground nickel mine. The body of ore is a sulfide body composed of 3.6% copper (approximately 250 million pounds) and 3.1% nickel (approximately 300 million pounds) (Kennecott, 2007). The deposit also contains small amounts of cobalt, platinum, palladium, and gold. The ore is said to be worth between five and thirteen billion dollars (Yellow Dog Watershed Preserve, 2007). If opened, the Eagle Project would be the only primary nickel mine in the US. The company claims the mine will operate for approximately 5 to 7 years and employ nearly 100 direct workers (75% local) and 300-500 indirect workers, such as construction workers and truck drivers (Kennecott, 2007). The ore body is located in Michigamme Township, Marquette County, 25 miles north of the City of Marquette, and only about 10 miles from the small town of Big Bay (population 265). Its location relative to Lake Superior, the Yellow Dog River, the Salmon Trout River, a major aquifer, and the Yellow Dog Plains makes the proposed mine a contentious local issue.
The Yellow Dog Plains

The Yellow Dog Plains are glacial outwash found in the Escanaba River State Forest and the Michigamme Highlands. The plains consist of a glacial moraine that rises to 1,340 feet above sea level (Rydholm, 2007). The land cover on the plains is largely Jack Pine forests and locally-prized wild blueberries. Much of the plains are unprotected but surrounded by many state, federal, and private preservation areas. These include the McCormick Tract Wilderness Area, Huron Islands, the Willow Creek and Braastad Memorial Michigan Nature Preserves, and a 20,000-acre, privately owned Nature Reserve Area called the Huron Mountain Club (Albert, 1995) (figure 11). The Yellow Dog Plains were logged lasting through the 20th century. Today there is no commercial development and only a few seasonal roads and logging trails to provide access. There
are no power or phone lines, and very few permanent settlements. The plains are home to two important watersheds (figure 10) named after the Salmon Trout and the Yellow Dog rivers (four miles of the Yellow Dog River is a federally recognized wild and scenic river). This area sees subzero temperatures between December and March due to its northern and continental location as well as its elevation. The plains have been considered an "ecological island," in reference to its uniquely cold climate and flora and fauna more commonly found in boreal regions hundreds of miles to the north (Robinson, 1980). The Michigamme Highlands are home to a variety of wildlife, such as moose, wolf, black bear, and spruce grouse, as well as more rare creatures like the endemic coaster brook trout, blue northern butterfly, marten, and merlin (Albert, 1995). In all, the Yellow Dog Plains have been considered culturally and economically significant to the surrounding communities for many years.

Figure 11. Kennecott’s Eagle Project in Reference to the McCormick Tract, the Huron Mountain Club and KBIC (Source: Scott Bouma, Save The Wild UP)
Grassroots Opposition to the Eagle Project

Between 2002 and 2003, citizens of Big Bay witnessed increased traffic on the Yellow Dog Plains and soon became aware of Kennecott’s exploration in the region. Approached by geologists and Kennecott officials, concerning private land and mineral rights ownership, citizens began asking questions and spreading the news among their communities (Focus group, personal communication, 2007). Early in the movement, when Kennecott was first noticed on the Yellow Dog Plains, the company was invited to give a presentation in Big Bay (August 5, 2003) to explain their presence and exploration. Initially, Kennecott agreed to hold the presentation, but having found out that 100 people would be in attendance, decided it was too many people for them to manage and cancelled the day before the planned presentation (Focus group, personal communication, 2007). Instead, “Kennecott elected to advise all of the nearby communities of its activities simultaneously” through a newsletter “rather than a few people at the August 5th meeting in Big Bay” (Kennecott Exploration Company (KEX), 2003, p. 4). This promptly sparked distrust among the citizens of Big Bay (Focus group, personal communication, 2007).

Eventually, Kennecott agreed to a meeting with members of some of the opposition groups. According to some participants, Kennecott arrived and tried to bribe them with money that might be needed to deal with the “cutthroats,” a misguided reference to an endemic trout found in the Salmon Trout River on the Yellow Dog Plains—actually called a *coaster brook trout* (Focus group, personal communication, 2007). The community understood the company’s cancellation, bribe, and lack of
knowledge about the coaster brook trout as a sign of arrogance and disregard for the local people and the meeting sparked one of the first protests on October 20, 2003 (figure 12) (Focus group, personal communication, 2007). These events contributed to an early distrust of the mining corporation and were among a host of concerns specified during the focus group session. A discourse analysis of grassroots rhetoric included concerns for the tourism industry and recreational lands; sacred, religious, and cultural beliefs and rights; the intrinsic dangers of metallic sulfide mining to the environment, freshwater resources, and human health; a new mining boom; as well as concerns the MDEQ has aligned itself with Kennecott.

Figure 12. First Protest Against the Eagle Project, Big Bay, MI 2003 (Source: Northwoods Wilderness Recovery)
Tourism and Recreation

Due to the unique nature of the Yellow Dog Plains, the region is viewed as an economic, recreational, and spiritual gem to many citizens in Michigan. Recreational activities on the plains include blueberry picking, guided waterfall tours and hikes, snowmobiling, fishing, off road vehicle (ORV) trail riding, and hunting (Industrial Economics Incorporated (IEc), 2005, p.3). Such recreational activities are not only culturally important but also economically significant as snowmobiling, ORV use, hunting, fishing, and guided tours alone on the plains bring in $1.2 million annually (IEc, 2005, p. 10). Furthermore, gathering of non-timber forest products (NTFPs) is critical to the livelihood and households of residents in Michigan’s UP (Emery, 2001, p. 129); for this reason, it was not surprising that blueberry picking and harvesting of culturally significant and medicinal plants from the Yellow Dog Plains was a predominant concern for local residents, including the Keweenaw Bay Indian Community. In the Upper Peninsula, alone, at least 139 different NTFPs are harvested for non-market and marketable needs (Emery, 2001, p. 127). Kennecott has not studied the importance of NTFPs or recreation to the local economy in their environmental assessment. Nothing in Kennecott’s application refers to a potential impact on recreational activities. Some citizens see this as especially careless when considering that Kennecott was granted approval by the Michigan Department of Natural Resources (MDNR), on February 7, 2008, to lease and fence off 120 acres of publicly-owned state lands for 35 years for the company’s mine facilities and mine portal (Michigan Department of Natural Resources, 2008). The MDNR approval sets precedent for the future regulation of Michigan’s public
lands. However, the Yellow Dog Watershed Preserve, National Wildlife Federation, Keweenaw Bay Indian Community, and the Huron Mountain Club plan to contest the MDNR’s decision in an Ingham County Circuit Court. The petitioners are seeking a reversal of the land lease, claiming that the approval violates the Michigan Environmental Protection Act, the Michigan Revised Judiciary Act, and the public trust doctrine (Halley et al., 2008).

Treaty Rights

The nearest indigenous tribe, the Keweenaw Bay Indian Community (KBIC), (descendants of the first inhabitants in the Great Lakes Region, named the Anishinaabe, also known as the “Chippewa”, or “Ojibwe”) have ceded territorial rights to the land that encompasses the Yellow Dog Plains. Ceded territories were created in the 1800s when the US government traded the Anishinaabe money and school lessons for large tracts of their land (Great Lakes Indian Fish & Wildlife Commission, 2006, p. 3). The tribe was allowed to maintain their hunting, fishing, and gathering rights to their lands sold to the US (p.3). These hunting and fishing rights were recognized, in Michigan, with the signing of treaties in 1836 and 1842 (p. 3). As in the Wisconsin anti-sulfide mining movement (mentioned in Chapter Three), treaty rights have been upheld in some court cases (p. 4). In July of 2004, KBIC adopted a resolution against all sulfide mining in the State of Michigan (LaFernier, personal communication, 2007). The former president of KBIC, Susan LaFernier, is concerned for and proud of the tribe’s treaty rights:
The Tribal Council’s position on the mining issue has not changed since the adoption of our resolution in July of 2004 ... The L’Anse Indian Reservation and the Ceded Territories, which includes the Yellow Dog Plains, is the homeland of my people and U.P.’s people. The treaties entered into by our ancestors in 1842 guaranteed our homeland, with the right to hunt, fish, and gather—rights which we are determined to preserve and protect for at least the next seven generations (SWUP, n.d.).

Kennecott’s project threatens the rights of the tribe to access their hunting and gathering lands as well as a sacred ceremonial site. Kennecott has proposed to locate their mine portal within a geologic formation known to locals as Eagle Rock. Eagle Rock contains possible burial sites, but the project manager, Jon Cherry, claims the company will allow the tribe occasional visits to Eagle Rock (Lam, 2007). Kennecott has already defiled the sacred site and offended the local tribe. According to former president LaFernier, “We are also saddened and angry that our sacred Eagle Rock now has orange marking paint on it, trees have been cut down, and other mining preparations are already being made by Kennecott” (Save The Wild UP, n.d.).

In an attempt to protect their sacred site, KBIC applied for a permit from the MDNR to use Eagle Rock and the surrounding area for “traditional ceremonial use” (National Wildlife Federation, 2007, p. 12). The MDNR denied KBIC the permit for three reasons: 1) “Current DNR policy states that use permits may be issued when the duration of the use of the Department-administered property is one (1) year or less”; 2) “The DNR does not typically issue open-ended permits for use at any time of the applicant’s choosing since the desired use may conflict with other users”; and 3) “The DNR cannot thoroughly evaluate potential impacts to the resources the desired uses may have. The DNR is also unable to determine, based on your application, whether the
desired use will conflict with other approved uses and activities in the vicinity” (National Wildlife Federation, 2007, p. 12-13). The National Wildlife Federation (2007) outlined the irony and contradictions involved in the decision to not grant KBIC’s land use permit but to allow a corporation such as Kennecott a land use permit to 
mine on public lands for decades (p. 13). Even though Kennecott’s archaeologists found no archaeological significance, KBIC’s tribal historic preservation officer, Summer Cohen, has researched the area and found that there is an oral history concerning a trickster spirit on Eagle Rock as well as unmarked ancestral burial sites (McWhirter, 2006). According to Cohen, “From what we know, people have long gone there to make offerings and have ceremonies” (McWhirter, 2006). In addition to concerns for gathering rights and sacred places, KBIC is also troubled with the inherent dangers of sulfide mining to the region’s freshwater resources.

Risks of Sulfide Mining

Environmental organizations, tribes, and other local citizens are largely concerned because of the ore body’s sulfide content, which is capable of producing acid mine drainage (AMD) and damaging the abundant freshwater resources on the plains and surrounding areas. Due to the hydrologic sensitivity of the area, many citizens are also concerned for their drinking water and the health of Lake Superior. For example, an aquifer that supplies water to numerous rivers and streams lies below the Yellow Dog Plains (Rydholm, 2007). To add to this site’s sensitivity, the ore body is situated beneath the Salmon Trout River; this is of particular concern in relation to mine stability as well as the health of the freshwater ecosystem. The Yellow Dog Plains are essential to local
water systems; according to Mayer, Grubb, and Thiemann (2004), "We can conceptualize the Yellow Dog Plains region as the "lungs" of the two watersheds, in that development in this region could have the most impact on the overall water quality and flow characteristics of the watershed" (p. 17). Another issue of concern with this water-rich area is that the Salmon Trout River is home to an endemic species of trout called the coaster brook trout (Slavelinus fontinalis). The Michigan DNR considers the Salmon Trout River as, "the only location for natural reproduction of coaster brook trout in Michigan" (2005). These trout are potadromous, living most of their lives in Lake Superior, but spawning in rivers and streams (Michigan Department of Natural Resources, 2005). If the mine were to collapse it could be life threatening to miners, the coaster brook trout, and also cause AMD.

There are a number of other possible sources of AMD. First of all, the development period of the Eagle Project poses significant risks. During this stage of the project, at least 400,000 tons of rock will be stored on the surface (for approximately 7 years) in a Temporary Development Rock Storage Area (TDRSA) (Kennecott, 2007). When enough ore is extracted out of the underground mine the development rock will eventually be used as backfill. This practice is highly dependent on fallible technology (supported by the technological failures around the world discussed in Chapter Two) to prevent acid mine drainage, including liner systems and water treatment plants. The backfill process leaves further room for potential acid mine drainage, as Kennecott plans to reintroduce the development rock back into the mine after closure, mix the aggregate
with cement and limestone to neutralize the acid generation, and eventually submerge the
mine shafts and development rock in groundwater (Sainsbury, 2007, p. 18).

Kennecott’s Transportation Routes

The routes in which the ore will be transported are also avenues for AMD. However, Kennecott’s application does not contain solid information about the locations, monitoring, and impacts of transportation routes, leaving yet another opportunity for the production of acid mine drainage and again keeping the public in the dark. Trucks leaving the underground mine will be loaded with ore. Although the trucks will be covered and washed, there is still a potential for accidents no matter what the transportation route will be. If a truck transporting ore wrecks and spills, this could leave nearby streams at risk for sulfuric acid contamination. Instead of disclosing a definitive transportation plan, Kennecott representatives had tentatively said they would use local roads, “but are actively looking for a new route” (Cherry, personal communication, January, 2007).

Only after Kennecott received its permit approvals from the MDEQ and the MDNR, the company announced it was considering building a new road south of the mine, would be bringing in power lines instead of diesel generators, and would possibly use an old processing facility for milling their ore before it is shipped to Sudbury, Ontario. At this date, Kennecott has stated that they will not be processing their ore on site; instead, ore will be trucked to a railhead, milled in Humboldt, and then shipped along some route across the Upper Peninsula and into Canada. Although Kennecott has received its state agency permits, exact transportation routes have not been disclosed to
the public. There is also a potential of acid mine drainage from railroad accidents and sites where loading and unloading of ores will take place. Although the MDEQ defines a mining permit as governing, “the construction, operation, closure, postclosure monitoring, reclamation, and any necessary remediation of the Eagle Project mine workings, aggregate backfill surface facility, vent shaft, main project surface facilities, and the prevention of environmental contamination from the transportation of ore or waste rock outside the mining area” (Michigan Department of Environmental Quality, 2007, p. 8, emphasis added), Kennecott has supplied little to no public information in this regard. Frustration and concern for information involving transportation safety has been a common concern expressed by the public. The following statement is from a concerned citizen, landowner, and local historian who owns land near the possible mine site:

There has been no explanation as to what roads or routes they will use to transport this dangerous product. No one has told us how they plan to protect the transfer points, loading and unloading. If by rail, will they use the same cars that now haul pellets which spill from them for miles [meaning pellets from local iron ore mines], but this sulfide ore could contaminate streams and forests all along the route for miles (Rydholm, 2007).

The dangers of AMD are even more disconcerting when considering that Kennecott is only the first of a flood of mining corporations looking to do business in Michigan’s Upper Peninsula.

A Possible Mining District

Further causes of alarm for UP and Michigan residents are the potential impacts a budding sulfide and uranium mining district could have on Michigan’s Upper Peninsula. On November 30, 2007 the Sydney Morning Herald (Australia) reported that, at an
investor meeting, Rio Tinto Copper CEO, Bret Clayton, said, “In 10 years' time, Rio Tinto could rank in the top-10 nickel producers globally,” and that “At Eagle we are also focused on six further adjacent prospects, which may give us the potential to extend the mine life beyond 30 years at its current scheduled production rate”. Rio Tinto did not issue a press release concerning the six new prospects until December 17, 2007, shortly after Kennecott received its MDEQ mining permits on December 14, 2007. Kennecott did not publicly mention the six new prospects until after a local nonprofit organization, Northwoods Wilderness Recovery (Caplett, Dec. 2007), reported the six new projects on December 17, 2007. Local UP television station, WLUC TV-6 finally reported on December 20, 2007 that project manager Jon Cherry confirmed the other 6 sites are within 50 miles of the Eagle Project—nearly three weeks after Bret Clayton’s statement about the new projects. News of these six possible projects along with announcements of plans for a new milling facility, a new road south of the mine, as well as power lines exemplifies Kennecott’s lack of transparency and a strategy to wait to announce controversial initiatives until after necessary permits are secured.

The other mining companies currently exploring include: Bitterroot Resources (Canada), Prime Meridian Resources (Canada), Cameco (Canada), as well as other companies and their subsidiaries (figure 13). These corporations have purchased or leased hundreds of thousands of acres of mineral rights. The risks of metallic sulfide mining and uranium mining are dangerous, especially in water-rich areas found throughout the UP. Water can serve as a transport system for these hazardous materials, as evidenced by the Church Rock incident and the Baia Mare Mine spill. The difficulties
inherent in the site selection of any sulfide or uranium mine are compounded in the UP as the region contains 1700 miles of Great Lakes shoreline, 1200 miles of rivers and streams, 4300 inland lakes, and numerous wetlands (Upper Peninsula, 2007). The dangers are even further compounded when more mines are proposed. Other potential mine sites carry similar risks as the Yellow Dog Plains.

Figure 13. Sulfide Mining and Uranium Mining Exploration in the Upper Peninsula of Michigan (Source: Scott Bouma, Save The Wild UP, 2008)

Another example of a prospective mine in a water-rich area similar to the Eagle Project is the Aquila Resources Corporation’s high-grade zinc gold ore body called the Back Forty Project. This prospect lies near Menominee, just east of the Township of Stephenson. The proposed mine, like the Eagle Project, lies within a water-rich environment. The mine, if opened, would be located near the Shakey Lakes Savanna, an
area also known for its Native American cultural significance (Northwoods Wilderness Recovery, 2005, p. 3).

In addition to Aquila’s proposed project, another mining corporation, Prime Meridian Resources (Canada), has announced it would begin drilling near the proposed Eagle Mine site (Pepin, 2007). Optimistic statements and press releases by mining corporations support the possibility that a uranium and sulfide mining boom may take place in Michigan’s Upper Peninsula. Mining companies are currently monitoring the development of the Kennecott Eagle Project and are very confident about the development of a new metallic mining industry in Michigan’s Upper Peninsula. Their optimism is exemplified in the following statements, “The current political environment concerning environmentally responsible metallic mining is considered favorable in the states of Minnesota and Michigan, particularly the Upper Peninsula (UP)” (Dematties, Munroe, & Rowell, 2006, p. 82). Michigan’s newly passed legislation also does not appear to be much of an obstacle for a possible mining district. According to Aquila Resources, “Environmentally protective, yet well defined, permitting regulations in the State of Michigan provide a concise framework for development of the state’s mineral resources, and we are encouraged by the recent progress that Kennecott has made towards permitting the Eagle Deposit” (Nones, 2007). This industry-friendly legislation, Kennecott’s lack of transparency regarding a new road and use of a local milling facility, its multiple prospects beyond the Eagle Project, and ignorance regarding KBIC’s sacred Eagle Rock have contributed to a general distrust of both the state government and KEMC among citizens and grassroots organizations.
The public's distrust was compounded when the Michigan Department of Environmental Quality did not disclose important documents to the public. Kennecott applied for a permit on February 22, 2006 (only about three weeks after the approval of the new mining legislation). On March 10, 2006 the MDEQ decided the application was administratively complete. The MDEQ then gave preliminary approval of the application on January 9, 2007. Despite earlier indications of final approval, on March 1, 2007, the MDEQ revoked the permit application as information surfaced regarding a MDEQ-commissioned study concerning the structure of the mine that was suppressed from the public record.

Not only was Kennecott's application riddled with missing and inaccurate information; including a lack of transportation routes, fire escape plans, and controls for acid mine drainage (National Wildlife Federation, 2007); the application process was fraught with mistakes and problems. The buried report addressed the risks of subsidence and the overall stability of the mine (Sainsbury, 2006). In the report the author (funded by the MDEQ), Sainsbury, explains that rock mechanics can be very subjective as it is difficult to determine the characteristics of a rock mass (p. 15). He further reports that Kennecott's "analysis techniques to assess the Eagle crown pillar do not reflect industry best practice" (p. 11). Sainsbury discusses that a fault plane intersects the Eagle Project and that similar faults caused the subsidence of the Athens Mine (June 19, 1932), once located 20 miles from the Kennecott Project (p.11). The head of the mining team for the MDEQ's Office of Geological Survey in Gwinn, Joe Maki, was held accountable for not
including the report in the public record. The MDEQ hired Dr. Donald Inman, president of EcoLogic Ltd. and former DNR official, to investigate the buried reports. The internal investigation found only a lack of training and poor judgment, but as can be seen by Inman’s report, the findings were highly subjective:

"Mr. Maki was a take charge person. He is a person with a significant sense of responsibilities reflected in his interview responses. "This was my baby" was how he referred to his responsibilities for the Kennecott application . . . In both the coordinating and FOIA processes, he also related that he did not want to bother his superiors with details, because they also were extremely busy, and had their own contentious and controversial issues . . . Mr. Maki was very impressive during the interview, and seemed very honest and persuasive . . . In addition he showed a good deal of remorse regarding his disposition of the Sainsbury documents; and in retrospect would have listed them on the MDEQ website" (Inman, 2007, p. 4 & 5).

In his investigation, Inman (2007) also found the MDEQ was unable to properly direct the Mining Application Review Team for two reasons; 1) Kennecott submitted their application (over 7,000 pages) within only three weeks of the new legislation and 2) that Part 632 did not allot the MDEQ enough time to review the application (p. 3). The time frame deficiency may not have been a problem had the MDEQ listened to representatives of the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) who discussed the detriment of short time constraints at the public hearings in 2005: “Any process that doesn’t permit sufficient time is poor policy and will result in poor decision making for the citizens and, in the end, Michigan” (Michigan Department of Environmental Quality, 2005, p.12). According to another representative, “Unless the DEQ can throw several dozen highly qualified, well trained and well coordinated staff at a review on a moment’s notice, it is clear the timelines available for permit review,
especially for completeness, are unreasonable. With the current timeline in place, it is
difficult for me to conclude the MDEQ could possibly implement a comprehensive
metallic mine permitting process” (Mackin, 2005). The MDEQ ignoring citizen’s
corns at public hearings was a common theme throughout the focus group session.
Some of the citizens’ apprehension stemmed from time limits at public hearings and
inattentive MDEQ staff that were obligated to oversee the hearings. In fact, at one public
hearing the MDEQ staff walked away from participating citizens while they were talking
(Buchsbaum et al, 2007, p.3). National environmental organizations, small local
grassroots organizations, and the Huron Mountain Club recently questioned the MDEQ’s
suppression of information, treatment of citizens at public hearings, and cozy relationship
with the Kennecott Eagle Minerals Corporation (Buchsbaum et. al, 2007). In a letter to
Director Chester they questioned Kennecott’s job offers to MDEQ personnel in the
Office of Geological Survey; conflicts of interest in the MDEQ’s selection of outside
consultation (e.g., HCltasca lists both Rio Tinto and the Michigan MDEQ as clients); and
the incompleteness and denial of FOIA requests (Buchsbaum et al, 2007).

To further highlight a pattern of such behavior, the MDEQ allowed Kennecott to
install a display promoting their mine at a public hearing. Finally, the MDEQ’s Office of
Geological Survey is funded through tax revenues from metallic mineral mining, sand
dune mining, and the extraction of oil and gas, contributing to the public’s perception of
the MDEQ as a rogue agency. Since the MDEQ was split from the MDNR in 1995, the
agency has been criticized for weighing economic development above natural resources
protection and the general public. In fact, a survey of MDEQ employees found that 79%
believed that ordinary citizens had less access to and influence on the MDEQ than industry (Public Employees for Environmental Responsibility, 1998, p. 2). As mentioned in Chapter Two, when citizens are not given a proper platform to speak and feel their government representatives have aligned themselves with mining corporations, they often utilize different strategies to increase their ability to have a meaningful effect on the process.

Grassroots Tactics

Grassroots organizations have used a multitude of strategies to try to remedy their concerns and fears. Tactics have included petitions, parades, protests, participation in public hearings, letter campaigns and other methods of public outreach and education, correspondence with members of the grassroots movement against the Flambeau and Crandon mines in Wisconsin; and finally litigation and data collection. An overall strong dynamic of the grassroots movement, quite similar to Gerlach’s SPIN model, helped lend strength to the anti-sulfide mining movement as well.

The Eagle Project and Gerlach’s SPIN Model

The history and action of the entire grassroots coalition against Kennecott’s Eagle Project (and sulfide mining in general) is very supportive of Gerlach’s SPIN model and similar to Wisconsin’s anti-sulfide mining grassroots movements against the Crandon and Flambeau projects as well. One of the first grassroots organizations to develop against the Eagle Project was the Eagle Alliance. The Eagle Alliance first developed in 2003 in response to the “mining and exploration taking place in the watersheds and wild areas in Michigan’s Upper Peninsula” (Eagle Alliance, 2003). Supportive of Gerlach’s SPIN
model, the Eagle Alliance was an “integrated network” consisting of a motley association of concerned citizens, hunting and fishing interests, landowners, university professors, students, and local and national environmental organizations such as the Yellow Dog Watershed Preserve, the National Wildlife Federation, Sierra Club, Trout Unlimited, Big Bay Sportsmen’s Club, Northwoods Wilderness Recovery, Environmental Students Organization, and the Crandon Mine Coalition (Wisconsin) (Eagle Alliance, 2003, p. 1). The Eagle Alliance was originally opposed to “sulfide ore mining in Michigan” and one of its early goals was to “establish a stricter legislative requirement on sulfide mining as Wisconsin did” (Eagle Alliance, 2003, p. 1). The organization’s mission statement read, “We will protect the Upper Peninsula from unsustainable development, degradation and dangerous contamination with public awareness and legislative change” (Eagle Alliance, 2003, p. 1). As Gerlach’s model suggests the coalition members shared rhetoric, information, and took action together through the Eagle Alliance. Moreover, in further support of Gerlach’s model, segmentary and diverse grassroots organizations often divide and a number of conflicts contributed to the division of the Eagle Alliance. Two prominent arguments arose between coalition members—many thought the organization should not be against all sulfide mining in Michigan but instead only on the Yellow Dog Plains and on a case-by-case basis, and some members of the coalition were no longer interested in creating legislation similar to Wisconsin’s. However, as Gerlach’s research suggested (1999, p. 296), this division may have made it more difficult for Kennecott to control and contain its opposition—allowing for a stronger grassroots campaign. In further support, Gerlach (1999) explains, “Just as one movement group is ready and able
to take over the functions of another when it is no longer viable, so can a group disavow another if the latter’s actions put the former at risk, or copy another if its actions prove successful” (p. 17). Since 2003, coalitions have merged, divided, developed, and died. Although unity and solidarity are very important in a movement, it is important to understand that many people, who may not ordinarily have come together, will have differing ideas. If an organization decides to divide in a different direction that does not necessarily mean that the movement will soon fail. Many, small organizations can use their own methods and yet work together within a bigger coalition for a common goal. It is of course important that they try to support one another’s efforts. A number of organizations today stand opposed to the Eagle Project and many to all sulfide mining in Michigan. Local groups include: Northwoods Wilderness Recovery, the Yellow Dog Watershed Preserve, Physicians Opposed to Sulfide Mining, Students Against Sulfide Mining, Save The Wild UP, Land Owners Opposed to Sulfide Mining, Concerned Citizens of Marquette, The 550/510 Coalition, Concerned Citizens of Big Bay, Keepers of the Water, Yellow Dog Summer, and the Friends of the Land of Keweenaw. This network of organizations has used a number of tactics, including correspondence with members of the anti-mining movement in Wisconsin.

Correspondence with Wisconsin

The grassroots organizations look admirably upon Wisconsin’s campaigns against the Flambeau and Crandon Mine and many citizens of Michigan consider Wisconsin’s triumph over the Crandon Mine as a “bright light” (Focus group, personal communication, 2007). For example, Wisconsin’s metallic sulfide mining moratorium
played a role in the Eagle Alliance’s early mission. Information from Wisconsin also proved to be important later when Kennecott lauded the Flambeau Mine as a successful sulfide mine. Many organizations and citizens, including tribal members, met with Wisconsin’s anti-sulfide mining organizations and researched their precedent-setting anti-sulfide mining movements on the Internet early in the fight (Focus group, personal communication, 2007; LaFernier, personal communication, 2007). One of the major themes from the focus group session was how influential Wisconsin was for the grassroots organizations, one participant for example stated:

One of the biggest things was the contacting of Wisconsin, I mean once you find out the issues you are dealing with and you start, you know perusing into it, and you enter in “sulfide mining” [to the Google search engine on the Internet] and you see key words like, “we did this in Flambeau and Ladysmith”, you go to Flambeau and Ladysmith. You say, okay Kennecott was there, what happened? That was the first trip I made was to see Roscoe [Churchill] and Ladysmith, and to really get the feel for it. I walked away with packs and packs and packs of information from the Wisconsin folks of, “Okay always make sure you do this, and make sure you do that, and keep it simple, and don’t get involved in large groups that are going to become too cumbersome.”

This correspondence with citizens in the State of Wisconsin afforded the grassroots organizations a preview of what to expect from the mining industry and provided innovative and tested ideas for public outreach and education.

Public Outreach

According to Wisconsinite and “internationally known critic of sulfide mining”, author, activist, professor, and filmmaker, Al Gedicks, information and activism are the community’s best allies against development (Pence, 2005). The grassroots movement against the Eagle Project has certainly used public outreach in their campaign to stop the
proposed mine. A recent front page article in the Sunday issue of the Detroit Free Press entitled, "Buried Treasure" (Lam, 2007), and nearly 4,000 comments on Kennecott's application received by the MDEQ (Pepin, 2007 (Nov.)) exemplify the progress of the movement in reaching out to the public—a positive measure of success, considering the campaign first started out with a small vocal group and a few anti-sulfide mining bumper stickers. The movement has been strengthened by such public outreach mechanisms as marching in parades, hanging billboards, sending mass mailings throughout the county, community education forums, petitions, and rallies.

For example, Concerned Citizens of Big Bay collected signatures opposing sulfide mining on the Yellow Dog Plains, including close to 400 of the 500 registered voters in Powell Township (Concerned Citizens of Big Bay (CCBB), 2006). The grassroots organization has also gathered 3,000 signatures in support of an independent 3rd party hydrological study by the United States Geological Survey (USGS) on the Yellow Dog Plains (a request that has never come to fruition) (CCBB, 2006). Landowners Opposed to Sulfide Mining also used petitions signed by 210 landowners near the mine to show their opposition to the Eagle Project; the petitions were mailed to public representatives.

One public outreach tactic heavily influenced by Wisconsin included a demonstration called Connecting Water Connecting People (CWCP) that was held on August 6, 2005 and sponsored by Northwoods Wilderness Recovery (figure 14). Organizers intended for the event to bring awareness of the threats sulfide mining poses to the Great Lakes as well as to highlight how connected communities are by water
resources. The demonstration was similar to Wisconsin’s canoe flotilla demonstrations but more closely related to the Wolf Watershed Educational Project (discussed in Chapter Three). CWCP consisted of a 300 mile journey by kayak and foot from Lake Superior, in Marquette, Michigan, to the proposed mine site on the Yellow Dog Plains, through the McCormick Tract Wilderness Area, to the proposed mine site in Menominee, and finally Lake Michigan. Forums were held along the way in the towns of Marquette, Big Bay, Michigamme, Republic, and Norway. According to Northwoods Wilderness Recovery’s Outreach Coordinator, “We want to inspire dialogue, especially if this is the beginning of a new type of mining district that we have not experienced here” (Mackin, 2005).

Figure 14. Connecting Water Connecting People Route (Source: Northwoods Wilderness Recovery, 2005)
Another demonstration was held in Lansing on December 7, 2005. Save The Wild UP bussed UP residents to Lansing and organized a rally prior to the final public hearing on the new sulfide mining legislation. The rally was made up of about 60 UP residents and KBIC tribal members who gathered on the steps of the State of Michigan Capitol Building. President of KBIC, at the time of the event, Susan LaFernier, spoke and KBIC members played drums, while other participants held signs opposing the mine on the Yellow Dog Plains. The rally ended with a water ceremony in which participants poured water from the Yellow Dog Plains onto the base of the capitol building’s Christmas tree, a tree harvested from the Upper Peninsula. Participants spoke to the governor’s Environmental Policy advisor as well as other public representatives.

Furthermore, locals have painted their barns (figure 15), hung signs at their businesses, held letter writing campaigns, developed highly informative websites (e.g. savethewildup.org, northwoodswild.org, nosulfidemine.com), declared Eagle Rock a pilgrimage site, held water ceremonies, participated in parades (figure 16) and protests, and marched on the Yellow Dog Plains. All of these public outreach strategies have helped to build a larger coalition reaching out across the UP and into Lower Michigan. This is an important strategy when considering the Upper Peninsula contains only 3% of Michigan’s population. In Wisconsin, when the company planned to dump wastewater in the Wolf River, threatening the drinking water of the City of Appleton, the opposition strengthened in numbers (Pence, 2005). For this reason, public outreach and organization is a key method used by grassroots organizations and, alongside litigation, has proven integral both in stalling approval of Kennecott’s application and in allotting more time
with which to build a stronger grassroots coalition. Grassroots organizations have also been monitoring and collecting water quality data and intensely studying Kennecott’s application in order to prepare for more successful litigation.

Figure 15. Painted Barn, Big Bay, 2007

Figure 16. Earth Day Parade (Source: Northwoods Wilderness Recovery, 2004)

Litigation: Stalling the Process

In May of 2006, The Keweenaw Bay Indian Community (KBIC), Huron Mountain Club (HMC), and the Yellow Dog Watershed Preserve (YDWP) challenged the MDEQ’s determination that Kennecott’s permit application was complete, thus stalling the MDEQ’s decision about whether to permit the mine. The challenge was supported by the mining statute’s definition of “administratively complete”, meaning an application for a mine permit “is determined by the department to contain all of the documents and information required under this part and any rules promulgated under this part” (Nonferrous Metallic Mineral Mining, PART 632, Sect. 63201). According to YDWP, HMC, and KBIC the application was inadequate and incomplete when presented to the public, which legally maintains a right to review a complete application. The application
was missing or contained fraudulent data concerning groundwater, hydrogeological data, surface water levels and discharge rates data, groundwater and surface water quality data, meteorological data, terrestrial flora and fauna data, transportation plans and impacts, as well as 91 other deficiencies pointed out by the MDEQ (Pepin, 2006 (May)). The State Office of Administrative Hearings and Rules (SOAHR) denied the original challenge, so KBIC, HMC, and YDWP appealed the decision. Eventually, (June, 22, 2006) the appeal judge, Manderfield of the Ingham County Circuit Court, ordered SOAHR to hold a hearing as to whether Kennecott’s application was complete and enjoined the MDEQ from further consideration of approval of Kennecott’s application. The tactic of stalling permit processes can be very threatening to industry, not only because it helps build stronger opposition, but also contributes to shareholder dissatisfaction due to the possibilities of decreased capital returns. Evidence of this threat can be seen in the following quotation by the Michigan Manufacturers Association:

Projects in the manufacturing sector often propose to invest hundreds of millions of dollars in capital assets. Like all investors, manufacturers are seeking the greatest amount of return in the shortest period of time. Permit process delays diminish the rate of return on investment capital. In an increasingly fast paced global economy, investment capital is very nimble. If Michigan’s permit processes are fraught with delays and the uncertainty of third party challenges at every interim stage in a permit review process, job creating projects will not likely seek Michigan as a location for that capital investment. This added level of uncertainty and delay is simply not acceptable (Pepin, 2006).

On September 15, 2006, the MDEQ took Ingham’s ruling to the Michigan Court of Appeals and it was overruled, as YDWP, HMC, and KBIC were unable to support that they held legal standing by being directly affected by the MDEQ’s original decision (Pepin, 2006, (May)). Jon Cherry, project manager, criticized the grassroots tactic of
litigation by referring to it as a “cloud”: “We are extremely pleased with the ruling today by the Michigan Court of Appeals, as it allows the MDEQ to continue reviewing our permit application, out from under the cloud of litigation,” Jon Cherry (Associated Press, 2006). Despite losing their case, the plaintiffs were allotted time to consider an appeal to the Michigan Supreme Court—delaying approval of the application for an additional 42 days. Despite the outcome of litigation, such cases serve to hold up permit processes and enable grassroots movements to build coalitions through the utilization of other tactics. Mining corporations need to get the greatest return in the shortest amount of time. This is why it is important for corporations to hold the MDEQ to strict deadlines (a contentious issue during the writing of the rules and regulations for nonferrous metallic mineral writing), such as those in Part 632 that seemingly did not allow the Michigan Department of Environmental Quality enough time to properly oversee Kennecott’s application.

The citizens of the Upper Peninsula have made great strides to protect their water from dangerous mining processes. The battle against the proposed Eagle Mine is one of many to come as numerous corporations explore throughout the UP, Minnesota, and northern Wisconsin. The opposition has garnered public support throughout the State of Michigan and continues to educate the public about the dangers of sulfide mining and about a possible mining district in the UP, a difficult process considering Kennecott’s public relations strategies used to acquire public approval and counter the opposition. However, many citizens see Kennecott’s public relations strategies, such as commercials and newsletters, as a sign of success, for example a representative of Land Owners Opposed to Sulfide Mining (LOOSM) said, “Even the PR that Kennecott does, when I
see a Kennecott commercial I’m encouraged because they are spending money because they know we can still stop them. If we couldn’t stop them then they wouldn’t spend the money” (Focus group, personal communication, 2007).

Kennecott’s Public Relations Strategies

Secret Purchasing of Mineral Rights

Kennecott is no exception to the covert mineral exploration discussed in Chapter Two (figure 17). Since 1994, the company purchased and leased over 600,000 mineral rights in Michigan’s Upper Peninsula from the Ford Motor Company, a number of landowners, and the State of Michigan (Yellow Dog Watershed Preserve (YDWP), 2007). As was previously mentioned, corporations argue the need for secrecy in order to protect themselves from competition; an additional reason for secrecy is that it can be costly for a mining company if the public is fully informed about the true worth of mineral rights (Gedicks, & Clokey, 1982, p. 3). For example, when mining corporations make deals with surface and mineral rights owners about their mineral rights the owners are not allowed to share this information; according to Eagle Project Manager Jon Cherry, “There’s confidentiality clauses in there. And the main reason for that is for competitive business practices . . . Then there’s legal recourse that can be taken if they breach that confidentiality” (personal communication, 2007).

Kennecott’s public relations strategies consist not only of the secret purchasing of mineral rights, but also pressuring individuals to sell those rights. Provoked by phone calls and visits from mining officials, concerned citizens contacted national environmental organizations, such as the Sierra Club and National Wildlife Federation,
reporting they had been pressured to sell their mineral rights (Roberson, personal communication, 2007; Environmental Lawyer, personal communication, 2007; Focus group, personal communication, 2007). According to Project Manager Jon Cherry (2007):

We did contact a lot of people that had mineral rights and we asked them if they were interested in selling. Either call them on the phone or knock on the door. I mean you have to talk to them one way or another. Right? Sometimes when they didn’t answer the phone or we couldn’t find them we’d have someone go and knock on the door and ask them if they were interested and get into a conversation, and what I can tell you is those that were interested in selling their minerals they were treated very fairly. The arrangements that were made, we don’t disclose the financial terms of those agreements, but they were more than fairly compensated for those (personal communication, 2007).

Figure 17. Kennecott Mineral Rights, Northern Marquette County
(Source: Scott Bouma, Save The Wild UP, & Northwoods Wilderness Recovery)
Negotiation Strategies

Kennecott's parent company, Rio Tinto, is one of the largest corporations in the world and, like other mining corporations, Kennecott has ample resources to hire specialists, consultants, and lawyers to execute its public relations strategies and assist in finalizing approval of the Eagle Project. Kennecott's hired specialists include government lobbyists, public sector consultants for public outreach, legal council, and marketing and resource professionals for media and public relations (Kennecott, 2007b, p. 3). For example, Kennecott Minerals is a client of Governmental Consultant Services, a governmental lobbyist group and one of the top spenders in the State of Michigan (Meltzer, 2008). A corporation's vast resources can often disproportionately influence local, state, and federal officials and regulatory processes in general. In stark contrast, a common theme from the focus group session was that participants in the opposition movement expressed feelings of frustration because they lacked ample resources to oppose Kennecott's mine—being that many of them had full time jobs and families, in addition to protecting their land and water. In order to utilize public relations resources most efficiently, mining corporations must participate in or create situations where oppositional organizations and citizens, local, state, and federal public representatives are more susceptible to their public relations strategies including consensus processes, community advisory groups, utilization of gifting tactics, and closed-door meetings with local authorities. Research has shown these methods, used to maintain open lines of communication, can effectively neutralize local opposition.
(Deegan, 2001, p.35; Gedicks, 1993, p. 93) and encourage laws and regulations that are favorable to the mining industry (Lerbinger, 2006, p.6).

Consensus Processes

In March, 2004, a Mining Work Group, convened by the MDEQ, drafted legislation that was incorporated into Part 632 under Michigan’s Natural Resources and Environmental Protection Act (Michigan Natural Resources and Environmental Protection Act 451, 1994). The group consisted of environmental organizations, mining corporations and other industry and manufacturing representatives, local university officials, the Keweenaw Bay Indian Community, and various citizens, and township liaisons. Shortly after the rules were drafted, a similar work group was convened to promulgate rules to help define part 632. The rules, although hailed as a consensus-based process, have been a point of contention between mining corporations and state representatives and citizens in Michigan.

Kennecott was able to forge a number of relationships, and therefore maintain an open line of communication with municipalities, the MDEQ, other mining representatives, politicians, and environmental organizations by participating in the consensus process for the writing of Michigan’s Metallic Sulfide Mining Legislation and the corresponding rules (a strategy also used in the State of Wisconsin). Kennecott highlights the importance of these relationships in their community plan:

... active participation on a multi-stakeholder Mine Work Group and relationships formed with public/governmental relations specialists, supportive state representatives, and politicians alike aided in bringing a crucial piece of legislation, Part 632, to the State House for approval (Kennecott, 2006, p. 8-9).
The consensus processes required participants to negotiate legislative language with the mining corporation that would govern sulfide mining instead of allowing a community to unequivocally ban sulfide mining or require demonstration mechanisms like Wisconsin's metallic sulfide mining legislation. The MDEQ would not consider Wisconsin's legislation, a fact made evident during the first group meeting (May, 2004):

Mr. Pruss stated the MDEQ does not support a prohibition or moratorium on sulfide mining. The MDEQ wants a complete, comprehensive regulatory regimen that will insure the protection of the environment the public seeks. (MDEQ, 2004 p. 3).

The MDEQ's failure to even consider the merits and shortcomings of a mining "moratorium" may have been influenced by apprehension over the possibility of being sued for takings. "Takings" refers to the Fifth Amendment in which the government cannot seize property or lower the value of property without compensation. Kennecott's lawyer consistently referred to takings law and alluded to the potential for costly lawsuits during the rules process.

This threat of takings is an example of a negotiation strategy corporations employ during the consensus processes to weaken legislation in their favor. One specific example commonly referred to by Kennecott's lawyer was a case in Michigan involving the Nordhouse Dunes. During Michigan's Engler administration in 1995 the DNR refused to permit the Miller Brothers Company's application to drill for oil in the protected wilderness area. The State settled to pay the company $94 million (setting a precedent for the most money ever granted from a state in a takings suit) (Schneider, 1997). Kennecott's legal team neglected to explain that, in the Miller Brother's case,
Governor Engler negotiated a settlement before the Court of Appeals decided to even consider the compensation and before an appeal could be made, essentially gifting the company millions of dollars (Echeverria, 2000). The takings threat is a first-class pressure tactic often used by large corporations, as local and state governments and agencies, as well as grassroots organizations rarely can afford such compensation.

Industry’s influence on the Michigan legislation is apparent in its lack of site selection criteria and elimination of local government authority (Schultz, 2006)—means that could be used to prevent a potential mine project. Without site selection criteria, a mining corporation can potentially mine just about anywhere in Michigan, regardless of site sensitivity. Furthermore, this lack of selection criteria diminishes the power of the MDEQ to deny a permit without being sued for takings. In addition to a lack of site selection criteria the legislation also constrains local government authority to control mining within their jurisdiction, according to Part 632:

(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 [Part 632]. 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. However, such ordinances, regulations, or resolutions shall be reasonable in accommodating customary nonferrous metallic mineral mining operations (Nonferrous Metallic Mineral Mining, Part 632, p. 6).

Thus local authorities cannot enact resolutions and moratoriums that “duplicate, contradict, or conflict with the statute” or do not accommodate “nonferrous metallic
mineral mining operations"—leaving municipalities with very little control. KBIC was one of the first to recognize the rules would not be adequate, a concern supported by KBIC's former president Susan LaFernier's following statement:

Our community agreed to participate with the work group in the hope that by incorporating effective and thorough scientific and procedural protections into the proposed rules and assisting in the development of stringent regulatory oversight mechanisms, the degradation to the environment and risks to human health that is likely to result from sulfide mining would be reduced. After reviewing the final draft of the proposed rules, the community has concluded that this goal will not be accomplished (Susan LaFernier, Dec. 7, 2005).

Although Michigan did not previously have legislation governing metallic sulfide mining and the new legislation at least requires an Environmental Impact Assessment; mine reclamation, environmental protection, and contingency plans; and some financial assurance, the law has been weakened in favor of the mining corporation, disenfranchising local governments and leaving unique lands susceptible to destruction. Kennecott's participation in writing the rules to govern their own project has disproportionately influenced and weakened the new legislation. The consensus process is one example of a mining company's strategy to keep lines of communication open with environmental coalitions, thus diluting their opposition. Another similar method is the Community Advisory Group.

Community Advisory Group

In October 2004 Kennecott assembled a Community Advisory Group (CAG) with the intention of providing "the opportunity to establish lines of communication with members of the community to address some of the more important environmental, social, and economic issues pertaining to the Eagle Project on a focused and formal basis"
This group, like the consensus process, expanded Kennecott's access to influential community members. The group included representatives of local counties, cities, and townships, some environmental organizations, local universities, the MDEQ, and the MDNR—all selected by Kennecott. Kennecott allowed the general public to attend the advisory group meetings, but only those representatives chosen by Kennecott were allowed to ask questions and participate in discussions or debate. At the first meeting, Kennecott instructed participants that the “Advisory Group members shall not disclose any confidential or proprietary information without written consent from Kennecott Minerals” (Kennecott, 2004, p. 4). Although Kennecott defined the CAG as a “community outreach activity” (Kennecott, 2007 (b)) many citizens felt they were not given a platform to participate, ask questions, or request information at the CAG (Focus group, personal communication, 2007). Although Kennecott stated, “We understand that without endorsement from the local community we have no sustainable basis to develop and operate a mine” (Kennecott Exploration Company, August, 2003), the corporation did not provide an avenue for citizens to approve or disapprove of the Eagle Project or a method to measure whether Kennecott has the endorsement of the local community. The company only offered a “minimized impact and post closure vision” (Saari, 2004), and allowed the general public to pose questions to CAG members and Kennecott representatives during bathroom breaks.

This is a common strategy in which, according to Herz et al. (2007), “host communities are often relegated to observer status” (p. 5). Consultation processes must address the reasons behind the opposition to achieve consent for a project, as
"consultations that do not resolve a community’s reasons for opposition or achieve consent will provide little assurance against potentially costly and disruptive conflict” (Herz et al., 2007, p. 47).

KBIC proved to be an obstacle to Kennecott’s strategy of neutralizing the opposition through open lines of communication. KBIC representatives felt little reason to correspond with Kennecott after passing a resolution in opposition to sulfide mining and did not meet with Kennecott or participate in the Community Advisory Group (personal communication, 2007). Thus, KBIC avoided co-optation of their oppositional energies, effectively creating their own platform for stopping the mine instead of implying consent through negotiations and compromises.

Back Door Meetings and Gifting

Kennecott’s gifting strategies are the source of municipal battles in Powell Township, one of the nearest communities to the proposed mine. In 2006, a group called the Committee for Cooperative, Open and Respectful Government formed to recall the Powell Township Supervisor, Vincent Bevins. Wording on the recall petition included, “Mr. Bevins will not disclose all communication contacts he has had with Kennecott Mineral Officials” (Diem, 2006). One of Kennecott’s gifts included a sign, donated to Powell Township’s fire department, and accepted without township committee approval (Focus group, personal communication, 2007). In fact gifting has been so contentious in Powell Township the community is considering setting up a Gifting Committee to determine the proper township protocol for acceptance or denial of donations and gifts. Citizens at the focus group also shared their concerns about how Kennecott burrowed
into their community and divided it with the gifting of a defibrillator to the local emergency service:

... the justification that some of the emergency folks had to deal with—this is life and death, we have to do what we have to do ... I mean it was just getting to a heart string situation ... they really go to these folks by saying this is your life, this is your job, you will be able to save lives because I do this. If you don't take this gift you know the next guy may be your mother ... so that was just real interesting how they did that and the emotions that came out of it were so evident (Yellow Dog Watershed Preserve, Focus group, personal communication, 2007).

I had to say I couldn't support it at all, but I probably am a great candidate for the use of that defibrillator, you know, but you know hey part of living in Big Bay is knowing that you have to get to Marquette for any major care (Concerned Citizens of Big Bay, Focus group, personal communication, 2007).

In addition to the defibrillator, Kennecott made some minor donations to the community such as a donating $1,000 (Mining Journal, 2007) to Pigs-n-Heat, a local fundraiser and fire relief fund hockey tournament, and also made a financial contribution and volunteered time to the United Way, in 2006 (Jon Cherry, personal communication, 2007; Kennecott, 2007).

Risk Assessment

"In Gaelic there is no word for contamination unless you want to call it drunk."
~Chauncey Moran, Yellow Dog Watershed Preserve (Michigan, 2005, p. 5)

Kennecott has used the risk assessment tactic to try to get the Eagle Project approved, admitting in the company's application that several alterations to the environment will occur, but justifying that some quantity of pollution is safe and therefore the economic benefits of the project outweigh the risks. For instance, the MDEQ granted Kennecott a permit to “discharge 504,000 gallons per day, 184,000,000 gallons per year, of process wastewater from the Eagle Project Mine Wastewater
Treatment System . . . to the groundwater of the State of Michigan in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit” (Michigan Department of Environmental Quality, Dec., 2007). In other words, on December 14, 2007 the MDEQ gave Kennecott a permit to pollute Michigan’s groundwater. Despite permits granted by the MDNR and MDEQ, Kennecott cannot proceed with their mine project until they obtain an Underground Injection Control Permit from the Environmental Protection Agency which has jurisdiction when a project could potentially harm drinking water.

Risk assessment is an essential strategy used to justify permitting potential hazards and pollution. It is necessary to allow some pollution if a mine is permitted because mines are inevitably destructive, unavoidably requiring disruption of the earth’s crust and permanently altering the landscape. Contention erupts when deciding exactly how much pollution is too much or what amount is significant (O’Brien, 2001, p. 117), as some citizens see any alteration, especially to unique, wild, or pristine places, as pollution. A local Marquette citizen, Jon Saari, clearly explained this dilemma at a public hearing on the rules:

I would like to address the destructiveness of mining from a land use perspective. This destructiveness is the root of our regulatory problems, for no human activity disturbs earth like mining activity except perhaps warfare. Mining cannot proceed without impairment and destruction. And in the case of sulfide mining, probably not without pollution either. Mining locations are lands sacrificed by the human community for other supposedly more valuable purposes . . . So let’s talk straight and call destruction destruction, because that is what we are permitting (Michigan Department of Environmental Quality, 2005, p. 48).
The process of sulfide mining provides an interesting challenge to risk assessment as a public relations strategy, because there is an ongoing debate as to whether sulfide mining can even occur using current technology without leaching heavy metals or acid mine drainage into water resources. In Wisconsin, as explained in chapter three, the legislation governing nonferrous metallic sulfide mining obligates a mining company to provide an example of a mine that operated for 10 years and was closed for 10 years without contaminating ground or surface waters with AMD or heavy metal discharges. Currently, no company has met this demonstration standard. Once again, a debate arises when defining pollution. For example, Kennecott has hailed the Flambeau Mine in Wisconsin as a successful metallic sulfide mine in order to appease the local community, near the Eagle Project, concerning the risks of AMD and heavy metal contamination claiming:

Kennecott Minerals is the company that successfully designed, operated and reclaimed a sulfide mineral mine while protecting the environment from adverse impact . . . The result has been positive: water quality analysis of the Flambeau River, both upstream and downstream of the mine site is consistent and unaffected by the mine. While water chemistry in the mine’s backfill pit is different, it is within a range that it is protective of the surrounding environment, as demonstrated by the water quality in the Flambeau River (emphasis added, Kennecott, 2007).

In the above passage, Kennecott admits to some contamination; however; they claim the contamination is “within a range that it is protective of the environment”—an example that corporations assume some pollution, or risk, is safe and they are able to determine the safe amount based on their standard. Although Kennecott uses the Flambeau Mine as an example of a successful sulfide mine, many disagree.
Based on data from the Wisconsin Department of Natural Resources heavy metal concentrations are now found in sediment and crayfish in the Flambeau River downstream from the mine. The quandary over whether the mine is contaminating the river is reflected in Kennecott’s attempt to obtain a Certificate of Completion from Wisconsin, certification recognizing that the Flambeau Mine was successfully reclaimed. Although Kennecott alleged they had not exceeded permitted levels of contamination (Kennecott, 2007), in January of 2007 when Kennecott applied for a Certificate of Completion they only received their Certificate of Completion for 149 acres of the mine site, excluding 32 acres where the mine buildings were located, with the requirement that Kennecott must continue to monitor the site for five more years, testing for contaminated crayfish and walleye and pollutants such as sulfate, copper, iron, and manganese in the Flambeau River (State of Wisconsin Division of Hearings and Appeals, 2007; Pepin, 2007, June). Today, the Flambeau Mine has been used as an example of both a successful mine by industry and an unsuccessful mine by those who oppose the Eagle Project. This is an example of risk assessment and the dilemma of defining what is safe pollution, or is there a safe amount of pollution? Kennecott’s use of media campaigns and ads have aided the company in projecting the image that some destruction of the earth is necessary in order to create jobs and that sulfide mining and environmental protection can coincide.

Mass Media Campaigns and Corporate Rhetoric

One of Kennecott’s strategies is to control their public image through mass media campaigns, such as commercials, newsletters, and repetitious messages. Kennecott has
aired at least 12, separately-themed, commercials on the local WLUC TV-6 television station. It has been difficult for grassroots organizations to compete with such heavy advertising; in fact—creating an even greater challenge for grassroots organizations—an employee of the local television station, WLUC TV-6 has, openly expressed support for the State’s approval of Kennecott’s permits: “Here at TV-6 we’re encouraged the MDEQ has announced preliminary approval on Kennecott’s series of permits, as it is the first test of the new Michigan Nonferrous Metallic Mineral Mining rules; and we trust there will be a positive outcome” (Van Sluyters, 2006). A discourse analysis of Kennecott’s newsletters and commercials highlighted a number of reoccurring themes, including “The Eagle Project is a done deal”, “Mining is our heritage”, “Mining is good for the economy” and “We’re open, honest, and transparent and keep our promises.”

One of Kennecott’s more challenging messages for grassroots opposition to combat, was that mining would be good for the local economy and bring much needed jobs to the Upper Peninsula and Marquette County. To continue to propagate this message beyond the commercials and newsletters, Vince Bevins, Powell Township’s Supervisor, held an “Economic Business Meeting” on March 3, 2008 in Big Bay. At the meeting Jon Cherry said “I wouldn’t leave any rock unturned as far as opportunities go” and the hosts continued to discuss how citizens could capitalize on the mine by opening tire shops, gas stations, laundry mats, as well as lodging and catering services for mine workers. No matter the viability of the jobs offered, it is difficult for citizens to argue against any development that might bring a job to an economically depressed region.
Another challenging message used to counter attack the local opposition movement was that “Mining is our heritage” (see Table 1)—rhetoric that invoked a history of iron mining in the Upper Peninsula. Some organizations countered that metallic sulfide mining was different from the UP’s traditional iron mining. For example, a brochure from Save the Wild UP presented an image of an iron mining truck and smelter saying, “Iron Mining: Our Heritage, Sulfide Mining: No”.

That local groups have continued to build a large coalition of mining opposition in the UP is impressive, considering the largest private employer is an iron mining company, Cleveland Cliffs International that employs 1,500 workers. Kennecott’s mining heritage messages and other rhetoric carry great power when considering that television commercials reach a large audience and people are often inadvertently exposed to the messages (Lerbinger, 2006, p. 38). Similar to other mining advertisements (Andersen, 2000, p. 202), Kennecott used images of the natural environment as well as local UP pride to connect images of their corporation with feelings associated with the environment and the Upper Peninsula. For example, the commercials displayed images of deer running through open fields, Lake Superior, rivers and streams, freighters, and downtown Marquette. Kennecott chose these certain messages and repeated them, creating their own image, and controlling perceptions of their corporation. One example of Kennecott’s attempt to control their image occurred during an interview with the project manager. In the interview, Jon Cherry often answered using the same repetitious rhetoric:
Researcher: ... how do you plan when you come to a community to deal with the public . . . ?

Jon Cherry: ... the first thing, and what we do with everything we do, is we're open, honest, and transparent in all of our communications . . . And part of our overall corporate philosophy is contained in, “The Way We Work”. It’s [about our] a social, environmental, and community responsibilities. But a big piece of that is having open, honest, and transparent communication in everything that we do.

Researcher: When you came to Marquette, I know there has been a bit of public opposition . . . was it expected? Is it more here than usual, or in other places?

Jon Cherry: I'd have to say this is pretty typical. And just in my experience . . . there’s a lot of people that . . . they’re just unsure of change, uncomfortable with change and they are not as familiar with the mining industry or mining processes that are involved, and it’s incumbent upon the company to be open, honest, and transparent and help everyone to understand exactly what we're doing. Again provide them all the information they need so they can make whatever opinions they want to make.

Researcher: I’ve read a lot about your public opposition in Wisconsin . . . was there anything that Kennecott learned from that public opposition, when you came to the Upper Peninsula?

Jon Cherry: Some of it, yes, I mean a lot of it has to do with keeping your promises, if you are committed to do something, and said you’re going to do something, you need to follow through and do that. We believe we did that in Wisconsin . . . I think that [an economic report on the Flambeau Mine] tells you yeah we kept our promises, we kept our commitment and so what we learned there again is that you be very transparent in everything that you do you make the commitments and you follow through with the commitments.

Like other global mining companies, Kennecott has used similar strategies in obtaining permission for their Eagle Project to counter public opposition.
Table 1
It is our heritage!

"Kennecott looks forward to joining other mining leaders in the area as we continue to provide the resources needed to advance technologies and products that we use in our daily lives and the world depends on" (Kennecott, 2007).

“The mining industry is an important part of the UP economy and history” (Kennecott, 2007).

“The mining industry has been an important part of our economy for more than 150 years providing jobs and security for Michigan families” (Kennecott, 2007).

“We are proud of our ancestors who worked in mines and developed the quality of life we have as a result of their tremendous efforts” (Kennecott, 2007).

“Mining has been a crucial aspect of the development and heritage of MI’s Upper Peninsula. Early on, Finnish, Cornish, Italian, Irish, and other immigrants settled in the U.P. to help mine the rich deposits of copper and iron. We at Kennecott are committed to reinvigorate this rich heritage in a manner that respects the health of humans and wildlife” (Kennecott, 2005).

“Because of the rich history of mining in the UP, many residents have a wealth of information on mining practices, but for some people their first exposure to hard rock mining was the Flintstones. Fred Flintstone and Barney Rubble worked at the state quarry in the town of bedrock, digging huge holes in the ground to extract metals” (Kennecott, 2005).
Kennecott Learns from Wisconsin

Kennecott learned important lessons from its involvement in the State of Wisconsin—the power of corporate influence on State legislation and the need to control local government authority. When Kennecott came to Michigan, they helped facilitate a similar consensus process, much like the one in Wisconsin, and once again helped write their own legislation. Although, in Wisconsin, mining legislation eventually evolved into a moratorium, state officials precluded this possibility during Michigan's consensus process, as the agency made it quite clear that a moratorium would not be a consideration in the beginning. Not only was Wisconsin's demonstration requirements excluded from Part 632, but so was local government authority. In Wisconsin, local authority helped stall Kennecott multiple times, once from getting its mine site rezoned from agriculture/residential to industrial (Kennecott, 2007, p. 39), a second time the citizens of the Township of Grant passed a resolution to deny Kennecott a permit to mine until Wisconsin's mining legislation was in place (Churchill, 2007, p. 114-115), and a third setback for Kennecott included a moratorium on mining and exploration in Grant (Churchill, 2007, p. 201). Kennecott convinced the legislature to pass the Local Agreement Law in the State of Wisconsin to combat the problems associated with the local governments. Similarly, in Michigan, Kennecott attacked local government authority in the early stages of the Mine Work Group for nonferrous metallic mineral mining in Michigan. Today, as Part 632 stands, local government authority over mining has been removed and placed in the hands of the MDEQ (Part 632, p. 6).
CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

Whether or not a mining corporation owns the land where a mine is proposed, a large-scale mining project nearly always affects surrounding communities economically and/or environmentally. For these reasons, citizens should have the right to a platform to grant or deny consent of a mine. Furthermore, citizens and local governments should be aware of the public relations tactics they may encounter when a mining corporation comes to their community as well as possible grassroots tactics that can be used to oppose a project. To that end, information from this research project, as well as the following conclusions and recommendations, supplement information currently available to communities and local governments—allowing for more informed, proactive decisions to be made. Although the findings and recommendations are directed toward the general public, government officials and environmental agencies, as well as corporations, should also consider the following information and recommendations.

As mining corporations locate potential projects around the globe, communities hear the refrain of job creation, necessary progress, sustainable development, and needed metals. The mines eventually close, leaving polluted air, water, land, and socially-broken communities in their wake. Unfortunately, despite the lofty rhetoric, a mining corporation’s bottom-line is to take the least risk to make a profit, not to provide communities with often much-needed social support services. Expressed philanthropic intentions of providing the world with jobs and necessary metals are merely public relations tactics, utilized to garner approval of projects and, simply, to make money. An
explanation that the modern world needs metals and jobs is not enough to convince a skeptical public. The trade offs are often viewed as being far too great, as evidenced by the devastating design flaws of the Baia Mare Mine (Romania); public health problems and poisoned livestock in Church Rock, New Mexico (US); a negatively affected fishing industry in Vancouver, Canada; corrupt government and corporate alignments in West Papua, Indonesia; environmental degradation in Greater Sudbury (Ontario, Canada); and the thousands of miles of polluted rivers and streams throughout the western United States. Historically, the rights of local citizens to a clean environment and sustainable economy have not being adequately and equitably represented.

Indeed, people need jobs and depend on metals to fulfill current consumptive habits—as exemplified by over consumption in the US and increasing development in India and China. These societal shortcomings are certainly no excuse for further destruction of the environment. Worldwide, communities have been exposed to hazardous materials, failed technologies, improper waste disposal, and unregulated mine projects. While there must be a global effort to limit consumption, through the reuse, reduction, and recycling of metals, mining corporations and governments must be held accountable for their actions in the meantime.

Mining, in and of itself, is unsustainable by definition and alternatives to mining must be a priority. Once the ore is removed from the earth it can never be excavated again. Why are mining corporations exploring some of the last remaining remote places on Earth, such as Fort Dauphine, Madagascar, encroaching onto indigenous and public lands, and mining lower grade ore bodies? This is not only because mining corporations
have to go where the ore body is but, in part, because most of the easily accessible ore bodies have already been consumed and can never be replaced. Finding alternatives to mining and decreasing consumption are challenging goals that will certainly take some time and in the mean time the effects of mining must be minimized.

Mining is not only unsustainable, but many techniques are highly dangerous, as they require companies to handle large amounts of waste products. Uranium mining is naturally radioactive and gold mining typically requires the use of large amounts of hazardous cyanide solutions. In addition, the dangers of mining metals are compounded when the metals are found in a sulfide ore body—exposing watersheds to possible acid mine drainage and heavy metal contamination.

Due to these environmental hazards, citizens are uniting to challenge mining operations around the world. Gerlach's (1999) research of grassroots movements, in the 1960s, highlighted a flexible, thus adaptable, structure that underlies grassroots movements. Gerlach titled this structure a "segmentary, polycentric, integrated, network" (SPIN). The decentralized SPIN structure makes it difficult for more hierarchically-organized mining corporations to control public opposition, in part, because it involves networking with other organizations, regionally and throughout the world, and facilitates innovative and multifaceted legal, political, direct action, and marketing tactics. United and well-organized citizens can be a major threat to mining corporations. Governments and corporations can face considerable financial losses if they do not adequately address the concerns of the local opposition and allow a platform for stakeholders to grant or
refuse a project. Losses include costly delays of mine projects, concessions, litigation, and harmful publicity for projects.

However, opposing a mine can be exceptionally dangerous for some citizens, as well as expensive and time intensive. Mining corporations typically have more financial resources than citizens, causing an imbalance in specialized expertise and influence over governments and representatives. A literature review of corporate public relations strategies highlighted by both critics and proponents of mining corporations revealed a pattern of public relations strategies employed by mining corporations around the globe. These strategies have been categorized for this study and include negotiation strategies; secret purchasing of mineral rights; the use of science and risk assessments to rationalize hazardous materials; and persuasive rhetoric. Exploration of existing research of the sulfide mining campaigns that took place in Wisconsin further supported the four categories of public relations strategies used by mining corporations to oppose grassroots opposition and get their mining operations approved.

The public relations strategies used in the State of Wisconsin have been well researched and published by authors such as Al Gedicks, Roscoe Churchill, Laura Furtman, and Walter Bresette and Rick Whaley. The research for this thesis relied heavily on the above authors’ works in order to compare the Eagle Project in Michigan to the mining projects in Wisconsin. In Wisconsin, well-organized, persistent, multicultural, multiclass, efficient, and effective grassroots organizations developed to oppose the Flambeau Mine and the Crandon Mine. The most successful defense mechanisms were the utilization of democratic rights to write moratoriums, resolutions,
and utilize local zoning authorities; as well as collaboration between tribes and environmental organizations to build an effective multicultural movement. Although Kennecott was able to open and operate their Flambeau Mine, grassroots organizations prevented BHP Billiton and other mining companies from opening another sulfide mine in Crandon, Wisconsin. Another successful milestone of the extensive grassroots efforts to stop sulfide mining in Wisconsin included the passing of a state “moratorium” against sulfide mining. BHP eventually sold the mineral rights to the Mole Lake Chippewa, effectively preventing the Crandon Mine from ever opening.

This study was conducted to examine the public relations strategies used in Michigan by the Kennecott Eagle Minerals Corporation in its attempt to open a metallic sulfide mine, called the Eagle Project, in the Upper Peninsula of Michigan. This research was also conducted to gather, compile, and provide free information to citizens and communities, with the ultimate goal of informed decision-making and community preparedness. Specific research questions included: 1) what tactics have grassroots organizations used to counter Kennecott’s project on the Yellow Dog Plains, 2) has Kennecott used public relations strategies to outmaneuver environmental policies and the rights of citizens, and 3) what did Kennecott learn, in Wisconsin, that was applied in the State of Michigan?

A review of local grassroots rhetoric, participant observation, interviews, and a focus group session supported the idea that locals were concerned for the protection of the tourism industry and recreational lands (particularly on the yellow Dog Plains); felt their sacred, religious, and cultural beliefs and democratic rights were in danger; held
little faith in the sulfide mining process because of the intrinsic dangers of such a mining
technique; worried about the cumulative risks of a new mining boom, especially to
freshwater resources and human health; and finally carried a strong sense of distrust of
the MDEQ and Kennecott.

Grassroots tactics to oppose the Eagle Project included correspondence with
groups in Wisconsin; public outreach and education utilizing commercial advertising, the
Internet, parades, and demonstrations; and finally litigation and data collection. In
response to the public’s outcry, Kennecott reacted with public relations strategies similar
to those used by mining corporations in the State of Wisconsin and throughout the world.

In order to counteract public opposition and get the Eagle Project approved, the
Kennecott Eagle Minerals Corporation used negotiation strategies to weaken Michigan’s
incipient sulfide mining legislation (Part 632); bribed local communities and
governments; used persuasive rhetoric and mass media campaigns to control their image
as an environmentally friendly corporation, a part of the UP’s heritage, and a source for
needed jobs; and used risk assessment techniques to claim that some pollution of the
State’s groundwater was an acceptable risk. The anti-mining movements in Wisconsin
heavily influenced Kennecott’s public relations strategies in Michigan. Based on its
experience in Wisconsin, Kennecott ensured an influence on state legislation and an
ability to control and contain local government authority. Kennecott helped to facilitate a
consensus process, similar to Wisconsin’s, and helped write legislation regulating its
potential projects. In Michigan’s case, Kennecott and the State also ensured, during the
consensus process, that a “moratorium” was not a possibility. Not only was Wisconsin’s
demonstration requirement excluded from Part 632, but so was local government authority over most mining activities. Local government authority regarding nonferrous metallic sulfide mining in Michigan has been stripped and placed in the hands of the MDEQ (Part 632, p. 6). These issues have yet to be examined to support informed decision-making by Michigan’s Department of Environmental Quality, Michigan’s Department of Natural Resources, and the governor of Michigan.

The current anti-sulfide mining movement, in Michigan, found much of its strength in Wisconsin’s influence and education and much of its weakness in industry-friendly state agencies. The State needs to revisit the MDEQ and MDNR’s expressed constitutional mandate to protect the public trust, if the agencies are going to continue to facilitate corporation’s projects over the heads of the general public. The MDEQ allowing Kennecott to promote their mine at public hearings and walking away from citizens at public hearings should not go unresolved. A number of employees of the MDEQ have themselves suggested that the MDEQ is representing big business, instead of the general public (Public Employees for Environmental Responsibility, 1998). Most mining corporations have plenty of public relations and capital resources, already allowing an unbalanced advantage over most local citizens. It is the environment and the people who need representation. So far, Kennecott has yet to open a metallic sulfide mine in the State of Michigan. If the company does not have local approval and pushes its mine through regardless, both the State and local governments risk significant financial losses.
Based on the findings of this research, procuring consent from a community should be the first step citizens require a company or government to take before exploration or a mine project takes place. As suggested by Herz et al. (2007), the consent must be free, prior, and informed. It is important that citizens also demand adequate information and enough time to make an informed decision for their community. Adequate information should include whether a specific mining technique has been proven successful, a demonstration mechanism similar to Wisconsin's moratorium. It is recommended that citizens encourage local and state governments, as well as mining corporations, to adopt a set of principles similar to Herz's six principles of "information, inclusiveness, dialogue, legal recognition, monitoring and evaluation" and corporate buy-in" discussed in Chapter Two (Herz et al., 2007, p. 48-49). It is important for governments and corporations to realize that to some citizens, any pollution is unacceptable, because to some, a consent to mine is consent to pollute and disturb the land. Consent should not be expected, as some communities may decide that a mining project is not well-suited to their community or lifestyle—a decision that should be recognized by governments and corporations. A "no mine" option will be more of a possibility if "consent first" mechanisms are in place.

Moreover, as mining corporations typically have better access to experts and capital; lines of communication can leave a community or local officials susceptible to negotiations and compromises. As a safeguard, communities should protect their local authority—this was an important component in Wisconsin and a major loss for the State of Michigan. Also, as evidenced in Wisconsin and Michigan, networking is a key
component to proper decision making. Mass protests and rallies have been very successful. They can grow in size with public outreach, education, and litigation. Today, in Esquel, Argentina, opposition groups are setting precedent as their Supreme Court has recently ruled to allow local communities to ban open pit mining and the use of cyanide in processing, despite national law.

Citizens pose great risks to mining corporations, as poor reputations and poor business practices can be crippling. Corporations and governments must have the approval of local citizens. As silence can be misconstrued as implied consent, citizens must speak up. Industry’s insatiable hunger for profit and the danger in handling large amounts of hazardous materials is becoming increasingly apparent to communities around the world that are challenging unsafe mining projects. Mining is a global issue and, as evidenced by examples in Wisconsin and Michigan, it is important that citizens unite beyond borders and boundaries and contact other communities that have faced similar situations in order to strengthen the movement to protect indigenous lands and public commons, citizen’s rights to clean air, clean water, and clean communities. Citizens may lack the monetary and expert resources of a mining corporation, but well-organized, united citizens are a proven, effective grassroots tactic with a glorious history.
Appendix A

Questions for the Focus Group Session
January 4, 2007

Question 1: When did you first hear about the Eagle Project? Why did you get involved? Why were you concerned?

Question 2: How have community relations with Kennecott been? For instance, public meetings? Positive/Negative?

Question 3: What influence has the Wisconsin movement had on the Michigan opposition? What advice would you give to a community facing a potential mine?
Appendix B
An Example of Coding

<table>
<thead>
<tr>
<th>Text</th>
<th>In Vivo Codes/Description</th>
<th>Analytic Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCBB: The defibrillator sounds like such an insignificant issue, but it will show you at what length Kennecott will burrow into a community and split it</td>
<td>A Kennecott Strategy negotiation tactic</td>
<td>Gifting</td>
</tr>
<tr>
<td>LOOSM: Powell, Michigamme, Champion. When we tried to organize landowners of local camps Kennecott has already divided us.</td>
<td>Strategy to divide communities, to stifle local opposition? A possible strategy to look into. Look into this more as a possible strategy.</td>
<td>Divide</td>
</tr>
<tr>
<td>510/550 coalition: The public is the last to know.</td>
<td>A Kennecott strategy to control opposition.</td>
<td>Information</td>
</tr>
</tbody>
</table>

Source: Focus Group Session

Possible Codes

- Negotiation
- Gifting
- Consensus
- Backdoor
- Mineral Rights
- Risk Assessment
- Media Campaign
- Persuasive Rhetoric
- Community Concern
- History
Appendix C

Transcription of Interview with Jon Cherry
(Kennecott Eagle Project Manager) February, 2007

Please note: Transcriptions of other semi-structured interviews are not included, as this is the only interview in which additional approval was granted for all of Jon Cherry’s statements.

Jon Cherry: No, No I don’t think so.

Teresa: Okay think it’s all pretty clear and straightforward?

Jon Cherry: Yep, yep.

Teresa: All right, okay so first if we could talk about, if you could just talk about your public relations strategies you. I read your communities plan a little. I read through that so how you plan when you come to a community to deal with the public or...

Jon Cherry: Sure, the first thing and what we do with everything we do is we’re open, honest, and transparent in all of our communications. We have a document, I don’t know if you’ve seen it or read it before but it’s called the way we work and it’s referenced in our communities plan I believe. Kennecott is a member company of the Rio Tinto group; it is one of the largest mining companies in the world. We belong to that. And part of our overall corporate philosophy is contained in the way we work. It’s a social, environmental and community responsibilities. But a big piece of that is having open honest and transparent communication in everything that we do.

Teresa: I probably should have said, most of the questions I’ll ask you deal with your communities plan that I read over. There’s a few questions about the project itself (Jon: Okay) and the rest obviously is about public relations. (Jon: Sure) Okay? First of all in your 2006 communities plan one of your main objectives was to encourage resource education, mineral resource education, (Jon Cherry: Correct) and job skills training and financial support for institutions. The universities I think NMU, MIU were on there, the school districts; you had something else on there, oh the international union of operating engineers (Jon Cherry: Yes). So my question is could you give me some examples of how you have approached this objective?

Jon Cherry: Sure, we, in the early stages of a project like this, one of the most important things to do is to get important factual information out for everyone so they can make whatever decision they need to make or give their opinion of the project. And so we do a lot of different things, we do a number of presentations to schools, to universities, to
construction trade councils, to basically anyone that is interested. We do, depending on the month, anywhere from five to ten of these educational type presentations and depending on which group we are talking to design that presentation to either focus more on the environment or the economics or the skills and training or the science and research behind what we do.

Teresa: Okay, okay. I know I saw, I think in your communities plan it talked about United Way (Jon Cherry: Yes) and other organizations as well

Jon Cherry: Yes, yes there's kind of another component. There's a, we believe that coming into a community we want to be an active member of that community and there's different ways you can do that. Some people come in and just start writing checks. That's not what we have done. We're not interested in doing that. What we're more interested in doing is becoming an active member in the community and so although we do fund some charitable organizations after some fairly tough review and scrutiny, but we do a lot of in kind service. We have people sit on boards and participate in, like the United Way we for example we have some, we provide staff time to sit on some of their advisory boards to help manage part of their program.

Teresa: Do they approach you? And ask or...?

Jon Cherry: Yeah.

Teresa: That's the way it works? Okay yeah I noticed your ad at the hockey rink the other day too (Jon Cherry: Yes) at Northern. Yeah, okay about the money that's spent on public relations. In your report, or your communities plan it included a total of, in 2005, a total of 50,000 dollars?

Jon Cherry: That's about right.

Teresa: And it said that in this plan drill site reclamation was included and I was wondering how that particular project fits into your scheme of public relations.

Jon Cherry: Recreation for exploration projects is a very important part of it because the land that Kennecott privately owns that we do exploration on or state land that we have a mineral lease to explore on. That land is open to the public and when we come in to explore in there, we like to come in explore and get out and reclaim that land as quickly as we can and return that land to the use it was being used for before. So that's a big part of insuring that land is still usable for the community.

Teresa: Okay so some of the 50,000 dollars is the money that was spent for reclamation.
**Jon Cherry:** No our reclamation money is just. Is separate. One, part of that 50,000 dollars is educating the public or sharing with them these presentations and we have done a series now of about 18 television commercials. Part of that is explaining what we do on the reclamation process.

**Teresa:** Okay, also in your communities plan you mention a three party agreement facilitated in Wisconsin, and I was, I am not aware of what that consisted of.

**Jon Cherry:** We operated a mine over in Wisconsin in the mid 90s called the Flambeau Mine. And part of what we had over there was a three party agreement; let me go get a drink here really quick 6:06.

**Jon Cherry:** Okay, in Wisconsin we had a three party agreement, it was a voluntary agreement between the mining company the township and the county where certain expectations from each were all discussed and agreed up front prior to the initiation of mining activities. Now that was a little different circumstance than what we’re doing here because part of the royalty system that was paid over in Wisconsin. That plan was put together to specifically describe how that money was going to be dispersed and managed in the communities. We’re in a different type of royalty structure in Michigan. That component isn’t needed. But we have sat down with the representatives from the surrounding communities. We’ve had discussions about emergency medical services, how those will be approached, infrastructure needs, those kinds of things. So we sat down and we’ve had discussions with them about that. Now whether that actually comes together in the form of some type of three party agreements, four party agreements or if we have individual ones with each, each of the communities. We’re working towards that.

**Teresa:** Okay, okay. When you came to Marquette, I know there has been a bit of public opposition, but is this, was it expected, is it more here than usual or in other places?

**Jon Cherry:** I’d have to say this is pretty typical. And just in my experience it’s a, there’s a lot of people that are a, they’re just unsure of change, uncomfortable with change and they are not as familiar with the mining industry or mining processes that are involved and it’s incumbent upon the company to be open honest and transparent and help everyone to understand exactly what we’re doing. Again provide them all the information they need so they can make whatever opinions they want to make.

**Teresa:** Okay, part of my thesis is looking how mining companies, particularly I am using the Eagle Project as a case study, but how they relate with this opposition, how they deal with it. So that’s what some of the other questions will be about. Okay? How about public and Native American opposition, how do you deal with it when you come to a community? What kinds of actions do you take or committees?
**Jon Cherry:** The first thing we do is we contact these groups and we ask if we can sit down and talk to them and just first of all let them know that we’re here. We’re in town and this is what we’re up to whether it’s exploration or proposed mining activities. Let them know who we are, what our values are making sure they understand who we are and what we’re about, but more important we want to understand what their needs and concerns about our activities so that we can address those up front from the very beginning of the process.

**Teresa:** Okay, I’ve read a lot about your public opposition in Wisconsin. Did you; was there anything that Kennecott learned from that public opposition when you came to the Upper Peninsula?

**Jon Cherry:** Some of it. Yes, I mean a lot of it has to do with keeping your promises, if you committed to do something and said you are going to do something you need to follow through and do that. We believe we did that in Wisconsin. There’s actually a report that you might be interested in looking at. I can get you the exact reference when we are done here. It was done by an independent third party, it was an economic development group and they did a post mine socioeconomic evaluation.

**Teresa:** Okay yeah Tom Peterson directed me to that.

**Jon Cherry:** Okay and one of the things that you found in there was a long list of survey questions in there and one of them said did Kennecott keep its promises and about 80 or 90% said they did. And about 75% of the people in the area would welcome Kennecott back to do another mine there and I think that that tells you yeah we kept our promises, we kept our commitment and so what we learned there again is that you be very transparent in everything that you do you make the commitments and you follow through with the commitments.

**Teresa:** And that’s carried through to the Eagle Project?

**Jon Cherry:** Yes.

**Teresa:** How about your relations with the tribes, with Native Americans was there anything learned in Wisconsin that you’ve applied when you came to the Eagle Project?

**Jon Cherry:** On the Flambeau project we didn’t have, to my knowledge, I didn’t actually work on the Flambeau project, but to my knowledge there wasn’t a specific tribe that we had interactions with. There is a group that represents several different tribes that there are some interactions with. They had some environmental concerns as other groups did. Same thing, we just engaged them. Made sure that the data is available to everyone to look at. Listen to their concerns and address them where we can.
Teresa: Okay, what’s your opinion currently about the opposition, or the environmental organizations that were opposed, their campaign? Has it been a clean, has it been a fair campaign?

Jon Cherry: That’s an interesting question. I haven’t thought about it that way before. Let’s put it this way, probably the most frustrating thing in their campaigns or their opposition is from my perspective, I don’t think they always tell the full story or they provide misleading information sometimes. So again that’s why we focus on getting all of the factual information out there and putting it out there and letting people make their own opinions and decisions about it. For example one of things that these groups have said from the very beginning is the Flambeau mine is leaking acid into the Flambeau River. Well, it’s not leaking acid into the Flambeau River and we provided the data to everyone to show that. Probably the biggest difference is that they can get away with those kinds of statements where as a mining company you are kind of held to a different standard. You have to be much more careful with what you say and how it’s released and making sure that it’s exactly correct. Bending the truth or not telling all of the story or making misleading statements, which I think they have done in some instances. I just think that mining companies are held to a different standard.

Teresa: A quick question about the Flambeau. I have heard a lot about the leaking of different contaminants into the river. Is it that none has leaked or has it not reached the limit that you are allowed? That’s what I hear from environmental organizations.

Jon Cherry: When we started up on Eagle, the first wave of, because we like to use Flambeau as an example, okay because we think it was a great mine. It has won all kinds of awards. It’s recognized by a lot of people as a really excellent mine. Even the federal government has given it awards for this. And so the first several rounds of back and forth with some of the environmental groups is it’s leaking acid. So we provided the data that said no it’s not leaking acid. And then the next thing they came back with was well okay maybe no it’s not leaking acid but that’s because you have these permit limits that allow you to do all of these kind of things. Well, that’s not true either, what we have is a, there’s a set of standards in the State of Wisconsin that we’re required to meet and we design the mine specifically to those standards and so that’s what we’ve done. And so one of the things that’s frustrating to me is that we met and in many cases succeeded the rules that are out there. And now that we’ve done that and said that we’ve done that and proven that with data and everything. There are some people who are trying to redefine what success actually is. Kind of, I guess the bottom line that I look at is the Flambeau River, our mine was within 140 feet of the Flambeau River. The water quality in the Flambeau River is the same up stream as it is down stream, both during operations and even today at the mine site. Now is the water quality different at the mine site, sure it’s different because we dug a hole in the ground and we filled it back in with rock and that water is slowly coming back up. And so it’s not exactly the same as the background
water quality but it is safe and protective of the environment. And it’s not impacting the river in any way.

**Teresa:** So the wildlife, the water life isn’t being impacted then. Because that’s what I have been told. Is that there have been...

**Jon Cherry:** No the Flambeau River, there has been no impacts to wildlife in the Flambeau River.

**Teresa:** Okay, I did a focus group session with all of the grassroots organizations, the smaller ones—I’m doing interviews with the bigger ones. And a lot of the concern was that the, the Flambeau is much larger than the Salmon Trout, but so will the standards be greater than...?

**Jon Cherry:** Yeah, there’s a little bit of apples and oranges. That was a big open pit. So 180 acres worth of disturbed ground next to a relatively large river; we’re talking about a mine at Eagle that’s six acres in size that’s underneath a river, so there’s no surface exposure to the river what-so-ever. The only, to get to the underground ore body you got to go about three quarters of a mile away to go underground to get to it, so granted yes the Salmon Trout River is smaller up at the site, but so is the mine so are the potential impacts.

**Teresa:** Okay, what do you think the greatest cause is for the public opposition that I have noticed in Marquette?

**Jon Cherry:** The greatest cause for opposition I think is the combination of they don’t want anything developed on the Yellow Dog Plains whether it’s a mine or a lodge or whatever it may be. They just don’t want to see anything developed out there. And then the perceived environmental concerns that they have and we share a lot of those same concerns and that’s why we invest the type of money that we do to build these things and do them right. We spend a lot more money than some other mining companies do in building additional protections in and insuring that we can build this in the best possible way and make it as protective as we can.

**Teresa:** Okay, and what so far has been the greatest obstacle for the Eagle Project?

**Jon Cherry:** The greatest obstacle, on the community relations side?

**Teresa:** Community relations, environmental, in general.

**Jon Cherry:** Probably the greatest challenge is that we came into this process and there was a new law that was created specifically for this mining and we fully supported that law and the challenge was making sure that we put together a design that set the bar high
enough because we are going to be the first ones through this permitting process, and making sure that we did set that bar high enough that not only met the rules but met our own internal standards as well.

**Teresa**: Okay, and how about, is public opposition one of these major obstacles for the Eagle Project?

**Jon Cherry**: I wouldn’t say it’s a major obstacle but it’s a part of the process. We recognize that everyone’s entitled to their opinion and not everyone is going to support the mine. That’s fine, if everyone, you know were all the same it would kind of be a boring place to be right? So we recognize everyone’s opinion that in terms of a major obstacle, it’s one of the key components of the management of the overall process, just like there’s a lot of work and effort that goes in to the engineering, there’s a lot of work and effort that goes into the community relations.

**Teresa**: Is this something being increasingly experienced world wide and nationwide with Rio Tinto worldwide and Kennecott nationwide?

**Jon Cherry**: This is typical worldwide

**Teresa**: Increasing opposition?

**Jon Cherry**: The opposition has been there for some time and this is typical for most projects. And to be honest with you whether it’s a mining project or other industrial project, similar issues apply to different projects and different industries.

**Teresa**: Okay, one major argument against the Eagle Project has been that the jobs are temporary. The League of Conservation Voters, I think I read a quote by them that said these jobs are temporary and that the Eagle Project won’t last more than ten years, but then I talked to the Citizens for Responsible Mining and they said that, they speculate that sulfide mining will be around for a lot longer. They say thirty, forty, fifty years and that it’ll probably replace iron mining. Do you think this is the case?

**Jon Cherry**: I don’t know if it’ll replace iron mining or not, but it’s not uncommon that after you get underground and work on an ore body, very rarely do ore bodies get smaller typically they get longer, you find ore as you get underground. It, related to the short-term nature of the jobs, most small businesses only last three years before they fail. Most people don’t stick with a job more than five years anymore they usually change jobs during that period of time. So to say that ten years is short-term jobs, I’d probably disagree with that. That’s usually at least a third of someone’s career, which is pretty significant. And not only are they, there what I believe are, there not, we can’t say that they are thirty year jobs yet, but that potential is always there. Though probably just as important, these jobs pay well above what the average wage is here in the area.
Teresa: Okay so do you think that Kennecott will probably, that the Eagle Project will last longer than seven years is there a chance of that or more mines will be opened?

Jon Cherry: Two things on that, we would be very pleased if Eagle went longer than the current time frame. What we have that the time frame is based on the amount of ore that is in the ground. So from what ever we have been able to drill from the surface and to find that geometric shape that’s how much we know what we have. Once we get underground we’re going to look for more to see if it’s there and if it’s there then we extend the mine life, so that’s very typical how mining companies will do that. So that’s one way things could extend, another way is that we’re actively exploring other areas in the UP. To see if there’s other deposits out there, and if we found one that had the right economics and we could put the proper environmental design together then yeah we’d like to develop those too.

Teresa: Okay, you had brought up the rules work groups and also during those rules work groups, I was there and it was talked about a sort of resume being included for mining companies, something that considers track record world wide and nation wide. Do you think this would be a fair request, should companies be held accountable for past mistakes or things that are, not your company only but any mining company?

Jon Cherry: Say it again I’m not understanding your question.

Teresa: At the rules work group it was talked about having a sort of resume, gathering information from a mining company as to their previous record, their track record—world wide their parent companies track record. Is that something you think a company should be held accountable for or should be considered in giving or granting a permit?

Jon Cherry: The answer is kind of yes and no. There’s parts of it you should and other parts that are harder to incorporate. Some of the important things to consider are the financial backing of the parent company. When you have a larger parent company with a lot of financial resources that should give a lot of comfort that the resources are there to do it right and to have it be around for a while. Where it gets kind of messy is that it’s not uncommon that mining companies will be purchased and sold between companies and in some instances a large company might buy a small company that may have had a different track record in the past. And they bring that company in and they turn it around and improve things, so whose track record do you then evaluate, which one do you consider at that point? So that’s one aspect of it, now if there’s, I’m the first one to admit that historically mining you know, hasn’t probably had the best track record in the world, but I think over the last probably twenty or thirty years things have changed. And I’d say probably definitely in the last ten to fifteen years it’s really turned the corner and come around.
Teresa: Okay, I’ve heard a lot of rumors and one is that in your environmental impact statement it talks about using 550 and 510 or your amended, for a transportation route. And some people have said that this isn’t going to be the case that you are going to use the Peshekee Grade, all kinds of other alternatives. Is 510 and 550 what you are going to use?

Jon Cherry: What we’ve done is, in the permit application, or in the supplemental information they’ve asked us to describe the transportation route because that isn’t an actual requirement under the mining rules, but because the transportation on public roads is actually regulated by different entities. So they asked us to say what that was so we said that we would go out AAA to 510 to 550 and out to a railhead out west of Marquette. That’s the route that we put in our permit, that’s the route that we intend to use, but we’ve told both our Community Advisory Committee, the public and anyone else that’s out there that we are actively looking for a, an alternate route that would come straight south out of the mine. Originally we did evaluate the Peshekee; we evaluated coming down the 510. We evaluated a lot of different alternatives. The one that ended up in the permit is our designated route, is the AAA 510 and 550. If we can find a route through there, and we’ve found a few alternatives kind of through that corridor that comes straight south out of the mine, from an engineering perspective we know that we could build something in there. The other questions that still need to be dealt with are talking to the landowners in the area to see if they are interested in doing an easement through there and then there is also potential permitting issues to build a road through there so if that happens it would be a little ways off I think.

Teresa: Okay but you don’t think that the transportation route, it’s not under the rules and regulations, it’s not considered or required?

Jon Cherry: The transportation on public roads is regulated by groups other than the DEQ. Like the Michigan Department of Transportation they have all kinds of rules and regulations as to what can and can’t be hauled on the roads. And when you haul it, it has to be labeled and packaged a certain way and those kinds of things.

Teresa: Okay, do they go and send someone out to clean something up if something were to spill?

Jon Cherry: No the company is responsible for that.

Teresa: So the DEQ is not responsible for that, or they wouldn’t have to come out?

Jon Cherry: No I mean if someone spills something, whoever spills something is responsible for it, right [Teresa: Sure]? If, the DOT the Department of Transportation, their rules are making sure that things are transported safely on the public roads. Let’s say if something tips over and spills out there then yes, then the DEQ does become involved.
at that point—just like they would for anything that might get tipped over and spilled on a road.

Teresa: Okay, on your website or in your communities plan it talked about reclaiming your drill sites, that were disturbed through exploration you replanted a thousand red pines, and that the land is now open for hunting and for fishing? If the Eagle Project begins will land still be open for hunting and fishing?

Jon Cherry: Yes they will, but for that area of roughly a hundred acres that we will have to put a fence around for safety reasons so people aren’t running around where heavy equipment is and those kinds of things. But we’ve again, that’s part of our communication with the public is that we own 1600 acres up there, a little over 1600 acres and we’ll leave the majority of that open as it is now.

Teresa: Okay and the hundred acres that are closed off is that all Kennecott owned land or is some of it leased from the state?

Jon Cherry: Some of that is state surface that is leased from the state.

Teresa: Okay so some of the state land will be closed off?

Jon Cherry: Yes that will be the plan.

Teresa: Okay, we kind of spoke about the worldwide concerns, some of the negative track records of mining companies both environmental and political. Safety, labor rights, specifically in respect to Rio Tinto (this is kind of a long question) these concerns they are not only from environmental organizations some of them are from unions—the Construction Forestry Mining and Energy Union, that’s what it was a big wordy name, and also with Rio Tinto and the Bougainville crisis you come across lots of information about that in Papua New Guinea, and then people talk about Kennecott’s Bingham Canyon Mine and Greens Creek Mine. One of your goals in your community plan was to overcome these negative views of sulfide mining, of Kennecott, of Rio Tinto—how have you sought to change this image, what kind of things are you doing—other than your outreach?

Jon Cherry: Most of it involves the outreach and letting people know what we’re doing and how we’re doing things. For example out at Bingham Canyon Rio Tinto purchased Kennecott in the late 80s, okay, the majority of the environmental issues out at that property were there before and Rio Tinto ended up purchasing them. Rio Tinto also ended up spending 350 million dollars voluntarily to clean up over hundred years worth of historic mining legacy out there. So yes for the environmental issues yes without a doubt. Were they caused by Rio Tinto? No, Rio Tinto actually purchased most of that liability. And then again voluntarily cleaned that up. So part of what we try to do is get
that message out. Again I think only one side of the equation only presents the issue that hey this is a Kennecott site it’s contaminated. Well it was purchased that way and Rio Tinto cleaned it up. That’s the other side that doesn’t ever get presented. So those are the type of messages that we like to try and get out there. To demonstrate that we’re willing to do what we say we’re going to do.

Teresa: Okay, how about the worldwide human rights concerns?

Jon Cherry: Any ones in particular?

Teresa: Particularly, all the literature I have read it speaks of, well not all of it but much of it, of Papua New Guinea and some of the environmental and human rights issues in Papua New Guinea.

Jon Cherry: I’m not familiar enough with the Papua New Guinea situations to comment one way or another on that one so I don’t know.

Teresa: How about just in general, Rio Tinto? Do you know can you speak for them?

Jon Cherry: Yeah, the, a couple of things something I’d recommend that you should check out is if you go to the Rio Tinto website there’s a document called the way we work. That lays out all of the social and environmental community and governmental. It’s the way we work; that’s the why they call it that. In addition to that, I can’t remember it’s probably been five or six years ago now, but the chairman of Rio Tinto brought together the heads of the largest mining companies of the world and started what was called the sustainable development in mining initiative where as a mining industry, specifically Rio Tinto we evaluate every project now. You start with the economics of the project; if it’s not economic you’re not going to, or you shouldn’t do the project. You have to consider the environmental impacts of the project and be able to address those to the satisfaction of the way we work as well as the local rules and regulations, factor the cost of doing it right into your economics and it still has to make economic sense to do the project. The third part of the sustainable development is the social piece, making sure that the social needs are identified and addressed as part of the overall project. Then the fourth part of it is kind of the governance issues what are the rules of the game, who provides the oversights, making sure that there is a check and balance system in place to do that. That was a formal process that’s been developed in like say the last five to seven years. And it’s never been done in mining like that before. So again those are the kind of things that we like to point to demonstrate, that yeah we’re doing what we think is the right thing.

Teresa: One of the questions also brought up by the land owners at the focus group session was, why the Yellow Dog Plains when there are other ore bodies in the Upper Peninsula that could be...
Jon Cherry: Well, if they could tell me where one of these ore bodies is then I'd be happy to go look at it and evaluate it.

Teresa: Okay, this has been the most probable, the most successful you think that you have found?

Jon Cherry: Well, the Mining's a little different than most other industries. You have to build the mine where the ore body's located. That's where it occurred and that's, the only way you are going to move an ore body is if you mine it. Right and that's what we're interested in doing is moving that and processing it. It's easy for people to say yeah there's other ore bodies out there, but as a company we spend tens of millions of dollars every year looking for these other ore bodies that are out there. On the Yellow Dog Plains or in the Upper Peninsula up here, this is the only nickel ore body as a company that we are aware of. We're actively looking for others, but I can tell you right now that we haven't found any others, but we continue to look for them.

Teresa: There have been some questions about site selection for the new rules and regulations, do you think that there is a place, in the Upper Peninsula and in other states that you work in, there are particular places that shouldn't be mined?

Jon Cherry: Yeah we do say that in some of our documents that we have. There are some places in the world that yeah you probably shouldn't mine. Now the Yellow Dog Plains we do recognize some of the unique aspects of the plains but at the same time we believe we can put a design together that will protect that. If you look at that satellite map on the wall right behind you, if you look at that, the mine sits almost right in the middle. I can show you where the ore body sits, but you can see the area that kind of looks like a checkered board across there, that's the Yellow Dog Plains. That area has been utilized for timber and recreation and things for a number of years. Of that entire area on that picture right there, the Yellow Dog Plains is probably the most, had the most impact from human activity compared to everything else surrounding it.

Teresa: Will the Eagle project be unionized? There have been some questions about unionization and Rio Tinto and Kennecott.

Jon Cherry: That's another I guess mistruth or misrepresentation that's out there. Many of our operations are union operations. There are some that are not. The way that the national labor laws work is I cannot say that it will be or it will not be a union operation. As a company we believe that it's up to the workers to decide if they want to become organized or not. If they do great, that's fine I have absolutely no problem with that.

Teresa: Okay, just real quick you had talked about how Rio Tinto is, you said the third largest mining company?
Jon Cherry: It depends on how you want to count different things, but first or second yeah.

Teresa: Okay, but who are the competitors to Rio Tinto right now?

Jon Cherry: BHP Billiton is probably the, that’s the largest and then others that are out there are going to be Anglo American, CVRD, Extrata.

Teresa: Are they looking in the Upper Peninsula to your knowledge?

Jon Cherry: I’d have to think about that. The reason that I’m hesitating is that many times those larger companies will use Jr. mining companies on behalf of them, and I’m trying to think of the Jr.

Teresa: I’ve noticed a lot of those. I’m a geography major and I do GIS work and I have looked at mineral rights ownership and such and you see a lot of real strange company names and so I was wondering.

Jon Cherry: Yeah, I couldn’t tell you a hundred percent for sure if any of those other majors are out here but looking from the activity from junior explorations that are out here. My guess is that they’re affiliated with some of the larger mining companies, but I don’t know for sure.

Teresa: Okay is that strategic do you think, that they use different names, for their competitors so their competitors don’t know they are here or?

Jon Cherry: Yeah a lot of it is a commercial competitive business practice yeah.

Teresa: Okay how about, I noticed that Kennecott went from Kennecott Minerals, first it was Kennecott Exploration then Kennecott Minerals, and that was just a transition between exploration and...

Jon Cherry: Yeah that’s normally how we do our business. Our Kennecott Exploration guys find it then our Kennecott Minerals will step in and design it and build it.

Teresa: How about where did the Kennecott Eagle Minerals come in to?

Jon Cherry: How that fits in; there’s a handful of Kennecott companies that are kind of sister companies there’s Kennecott Exploration, Kennecott Minerals, Kennecott Utah Copper, Kenneecott Energy are coal mines out in Wyoming. Kennecott Minerals is a company that has a hand full of smaller mines, where Kennecott Utah Copper is one very large mine onto itself. So Kennecott Minerals is the company that owns and operates
Greens Creek Mine in Alaska, Raw Hide in Nevada, operated Flambeau, Ridgeway out in South Carolina. Anyway so this is one, since this, the way we’re set up is Kennecott Minerals owns and operates smaller base metal mines and so this would be another mine within Kennecott Minerals.

**Teresa:** Okay so you kind of take on your own name once you settle into an area?

**Jon Cherry:** Yeah well what it, it depends on the size of the operation. If it’s going to be a very very large mine, a very large operation, it will kind of be a stand alone company whether it’s a Kennecott company or a Rio Tinto company it just depends where they want to slot that in the overall company profile. The smaller mines they’re collected and put together underneath Kennecott Minerals and so we have Kennecott Minerals Greens Creek we have Kennecott Minerals, Kennecott Minerals Eagle, Kennecott Minerals Rawhide, etc. etc.

**Teresa:** I see so it’s kind of like, I’m trying to get the like family lineage chart. Is it Rio Tinto and then Kennecott Minerals Corporation and then all of these you call sister mines?

**Jon Cherry:** Right, essentially yeah. The sister companies to Kennecott Minerals would be Kennecott Exploration or the Kennecott Utah Copper and those are just kind of their own stand alone. Kennecott Minerals has kind of one more level down than those and that’s the handful of the smaller mines. Or like Kennecott Energy is up here with Kennecott Minerals and they have a half dozen coalmines out in Wyoming and Colorado and Montana.

**Teresa:** Two more and I’ll let you go. Okay another thing that was talked about in this focus group session was that, and some of the interviews with the Sierra Club and the National Environmental Protection Group Attorney also said that there were a lot of people that contacted them that said that they were pressured into selling mineral rights to Kennecott. People who called up and said they’re standing on my front porch what do I do. Some people have said that they were, is this true, is this something that’s common with a mining company to apply a little pressure to get mineral rights or?

**Jon Cherry:** I’m not aware that we’ve applied any pressure. We did contact a lot of people that had mineral rights and we asked them if they were interested in selling. Either call them on the phone or knock on the door I mean you have to talk to them one way or another right and sometimes when they didn’t answer the phone or we couldn’t find them we’d have someone go and knock on the door and ask them if they were interested and get into a conversation and what I can tell you is those that were interested in selling their minerals they were treated very fairly. The arrangements that were made; we don’t disclose the financial terms of those agreements but they were more than fairly compensated for those.
Teresa: Are they allowed to share that information? Because I’ve been told by some...

Jon Cherry: No they are not. There’s confidentiality clauses in there. And the main reason for that is for competitive business practices.

Teresa: Okay, and what happens if they do?

Jon Cherry: Then there’s legal recourse that can be taken if they breach that confidentiality.

Teresa: Okay, Finally if you could say—this is kind of the Mr. America question—if you could say one thing to soothe the minds of the public opposition, to assure them of the safety of this Eagle Project, what would you say? What would your quote be?

Jon Cherry: I’ve never had the question presented that way before. I guess what I would say is that we all sat around the table together to come up with the statute and the rules that apply to this type of mining. And we were there in good faith and I want to believe that they were there in good faith to make these rules, which are some of the toughest in the nation for mining, and we were there as part of the process and we agreed to all that and I’m hoping that they, you know will stick by that too. And in the end if you can put a project together that meets those rules and standards then I would hope that everyone would agree that that would be a mine that has great potential of operating and protecting the environment at the same time. And so I guess what I would like to say is you know, I’d like to hope that everyone would live up to the conversations we had when we made those statutes and rules.

Teresa: Okay what about the public, the general public that didn’t participate in the rules?

Jon Cherry: What I’d say to them is that we’re a company that has a good track record in mining. We have the financial resources to do it right; it costs a lot of money to do it properly. Now days a lot of mining companies either don’t have the money or are unwilling to spend it. We are, and not only are we willing to do it and capable of doing it and have the resources to do it, we believe that we have an example over in Flambeau Wisconsin that shows that it can be done and not only can it be done; we were the ones that did it. There’s actually been other mining companies that are taking people and regulators to our mining site to say hey look it can be done.

Teresa: Will Flambeau, do you think Flambeau will open up mining in Wisconsin for you again?

Jon Cherry: Again it gets back to; we would like to use that as an example in Wisconsin
Teresa: Sorry I said one more question.

Jon Cherry: No, no that’s fine. The reason that there hasn’t been a lot of mining going on in Wisconsin is there haven’t been any ore bodies discovered that have been worth submitting a permit for.

Teresa: Okay, that wraps it up, do you have any questions for me?

Jon Cherry: No I think we’re good.
Appendix D

Human Subjects Institutional Review Board Approval

Date: November 2, 2006

To: Chansheng He, Principal Investigator
Teresa Bertossi, Student Investigator for thesis

From: Amy Naugle, Ph.D., Chair
Re: HSIRB Project Number: 06-10-19

This letter will serve as confirmation that your research project entitled “Mining for Public and State Approval: Corporate Strategies for Metallic Sulfide Mining on Michigan’s Yellow Dog Plains” has been approved under the expedited category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: November 2, 2007
Appendix E

Permission Letters

Teresa Bertossi has my permission to use photographs taken by Northwoods Wilderness Recovery in her thesis, "Mining For Public And State Approval: Corporate Strategies For Metallic Sulfide Mining On Michigan's Yellow Dog Plains".

Doug Cornett

March 26, 2008

Teresa Bertossi has my permission to use or reprint my maps in her thesis, entitled: "Mining for Public and State Approval: Corporate Strategies for Metallic Sulfide Mining on Michigan's Yellow Dog Plains".

Thank you,

Scott Bouma
Save The Wild UP
228-4444
BIBLIOGRAPHY


Eagle Alliance. (2003, Nov.). *Wingspa*


Ebel, M., Evangelou, M.W., & Shaeffer, A. Cyanide phytoremediation by water hyacinths (Eichhornia crassipes). *Chemosphere, 66*, 816-823


Ecosystem Management and Restoration Research Program


Kunce, M., Gerking, S., & Morgan, W. (2001). Effects of environmental and land use regulation in the oil and gas industry using the Wyoming checkerboard as an experimental design


Lam, T., (2007, Oct.). Buried treasure: UP stands to make millions off copper and nickel, but new mine could pollute pristine wilderness, Detroit Free Press


Michigan Department of Environmental Quality (Office of Geological Survey).  
(2005, Nov.30). Public hearing In the matter of: Proposed rules under part 632, nonferrous metallic mineral mining, of the natural resources and environmental protection act. recorded by Ruth A. Forgette. CER-3007

Michigan Department of Environmental Quality. (2004, May 3). Work group on regulation of metallic mineral exploration and mining. (St. Ignace, MI)

Michigan Department of Environmental Quality (Office of Geological Survey).  

Michigan Department of Environmental Quality (2007, Dec.). Groundwater Discharge Permit. Permit No. GW1810162. 1-32

http://www.michigan.gov/dnr/0,1607,7-153-10366_46403_46404-130603--,00.html

Michigan Department of Natural Resources. (2008). Metallic mineral mining operations surface use lease. No. L-9742

171


Pence, S. (2007). In the outdoors: Sulfide mining critic speaks at NMU. *Marquette Monthly*


http://www.miningjournal.net/page/content.detail/id/501594. html? av=5006

October 25, 2005

600&en=fba5e5cb626e7d5c&ei=5088&partner=rssnyt&emc=rss

http://www.udel.edu/anthro/neitzel/papuan.pdf

reconstruction and revegetation of industrially stressed lands in the Sudbury area,
Ontario Canada. In Sheeh, Miller, Butler, and Bourdeau (Eds.), *Effects of pollutants at the ecosystem level*. (p. 403-421). John Whiley and Sons Ltd.

http://www.mine.mn/Placer_Stockfile_Esmeralda_Exploration.htm


Schultz, S.A. (2006, May). Between a rock and a hard place: A proposed sulfide mine illustrates the lack of adequate federal and state environmental regulations over hardrock mining and the need to utilize the public trust doctrine. *Vermont journal of environmental law*


Tennessee: Chattanooga Publishing Company

State of Wisconsin Division of Hearings and Appeals (May 2007). Before the State of Wisconsin Division of Hearings and Appeals. Case No. IH-07-05


