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Public participation in Michigan mining policy : the Kennecott Eagle Project case

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PUBLIC PARTICIPATION IN MICHIGAN MINING POLICY: THE KENNECOTT
EAGLE PROJECT CASE

By

Andrew C. Orthober

A THESIS

Submitted in partial fulfillment of the requirements for the degree of

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2012

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This thesis “Public Participation in Michigan Mining Policy: The Kennecott Eagle Project Case,” is hereby approved in partial fulfillment of the requirements for the Degree of MASTER OF SCIENCE IN ENVIRONMENTAL POLICY.

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Abstract

Public participation is an important component of Michigan's Part 632 Nonferrous Mining law and is identified by researchers as important to decision-making processes. The Kennecott Eagle Project, which is located near Marquette, Michigan, is the first mine permitted under Michigan's new mining regulation, and this research examines how public participation is structured in regulations, how the permitting process occurred during the permitting of the Eagle Project, and how participants in the permitting process perceived their participation. To understand these issues, this research implemented a review of existing mining policy and public participation policy literature, examination of documents related to the Kennecott Eagle Project and completion of semi-structured, ethnographic interviews with participants in the decision-making process. Interviewees identified issues with the structure of participation, the technical nature of the permitting process, concerns about the Michigan Department of Environmental Quality's (DEQ) handling of mine permitting, and trust among participants. This research found that the permitting of the Kennecott Eagle Mine progressed as structured by regulation and collected technical input on the mine permit application, but did not meet the expectations of some participants who opposed the project. Findings from this research indicated that current mining regulation in Michigan is resilient to public opposition, there is need for more transparency from the Michigan DEQ during the permitting process, and current participatory structures limit the opportunities for some stakeholder groups to influence decision-making.

Chapter 1: Introduction

The Upper Peninsula of Michigan is the site of the Kennecott Eagle Mine, the first of a new generation of mines extracting nonferrous minerals in the area. In reaction to interest in new mining activity in the state, Michigan developed a new mining regulation to address environmental impacts of new mines that were previously not regulated by the state. An important component of the new regulation is a structure for incorporating public input into decision-making. The Kennecott Eagle Mine is the first mine to be permitted using the new mining regulations, so it provides an opportunity to understand how the public participation structures worked in practice.

Extraction of mineral resources is necessary for meeting demands for materials necessary for supporting production of goods. Despite the need for mineral resources for production, extraction leads to environmental, social, and economic changes to communities near mining operations. Because of the potential negative impacts, communities near mining development have an interest in decisions about mining.

The actual environmental impacts resulting from mining depends on the type of mining that is occurring, the length of operations, and site characteristics such as ecosystems and hydrological factors. Water pollution resulting from mining operations can include surface erosion from site runoff, and acidification and increased levels of dissolved metals as a result of acid rock drainage. Other environmental impacts of mining include air pollution from operations, risk of subsidence of underground mines, and alteration of landscapes resulting from surface development. Habitat changes can impact ecosystems, potentially altering plant and animal populations near mines.

Socioeconomic impacts also vary depending on conditions in local communities and the length and type of operations, but there are potential costs and benefits to different stakeholders within communities. Despite the extraction of minerals occurring in a community, mining companies and investors located outside of the community typically realize the primary economic benefit of mining. Mining creates opportunities for local economic development through job creation at the mine, contracting with other businesses in the community, and increased taxes to governments. Negative impacts to communities include demographic changes and potentially economic dependence on mining activity. Economic growth can be accompanied by economic decline after completion of mining, which has been described as the boom-bust cycle that occurs with mining and other industries (Viega et al. 2001).

Potential environmental and socioeconomic impacts lead to interest from the public and to organization of groups both supporting and opposing new mining projects because citizens near proposed operations attempt to influence decisions that affect them. Unlike other industries, mineral development is limited to where minerals are available in economically viable quantities, meaning that mining companies do not always have the ability to move to areas with more public support. Communication in the form of social networking and online connectivity contribute to the extent and organization of public interest and increases pressure on regulatory agencies for accommodating public input.

As the impacts of mining on the environment and communities are increasingly being recognized and understood, there is more public interest in where and how new mines are developed and operated. Regulation of mining and inclusion of public input is recognized as crucial for mitigating the negative impacts of mining on communities and

their surrounding landscapes and ultimately contributing to the sustainability of the mining industry. Including public input in the decision-making process allows incorporation of local knowledge and opinion into permitting decisions from local citizens, but participation also creates opportunities for educating the public about the responsibilities of regulators and mining companies throughout the lifetime of mining operations. Researchers argue that effective public participation programs can improve decision-making and increase support for agency decisions.

Interested citizens groups also create other opportunities for participation outside formal processes structured by regulation. These opportunities can include protests, ceremonies, informational meetings, and outreach to the public and other interest groups with the intent of gaining public interest and influencing decisions. Mining companies also create opportunities for public participation that are not required by regulation in attempts to build public support for plans through informational meetings, public presence in communities, and advisory groups. Mining company public outreach efforts are often a result of corporate social responsibility goals to increase shareholder value and maintain positive public opinion to ensure the ability for future mineral development.

Despite the long history of mining in the United States, until recently mining was largely unregulated and left mining waste and polluted water bodies to be cleaned up long after mining activities were completed. Mining in the United States is regulated under a combination of state and federal policies that began in the 1960s and 1970s. Many of the policies that apply to mining include opportunities for public participation through public hearings during the decision-making processes, through both federal and state laws.

Evaluating public participation is important for understanding how the public is able to influence plans and decisions that impact their communities and landscapes.

The Upper Peninsula of Michigan has been the site of both iron and copper mining since the mid-1800s. Although iron is still being mined at the Cleveland Cliffs Iron Company managed Empire and Tilden mines in Marquette County, the last copper mine was closed in White Pine in 1997. However, there is new interest in nonferrous metallic mining development in the region from several companies. With the potential for new mine development in the future, evaluation of current permitting structures should be a priority for the understanding of regulators, industry, and the public as the next mining projects are being approached.

As a result of increased exploration and interest in mining in the Upper Peninsula, Michigan promulgated a new mining law specific to nonferrous mining in 2004. *Part 632, Nonferrous Metallic Mining Regulation*, of the Natural Resources and Environmental Protection Act of 1994 (Part 632), is intended to work with other federal and state laws to regulate nonferrous mining in Michigan. Iron mining was already regulated under *Part 631, Metallic Mine Reclamation Regulations*, which is also part of the Natural Resources and Environmental Protection Act of 1994. Part 632 was created as a result of the realization of the lack of existing regulation of nonferrous mining and the potential impacts that new mines could have on Michigan's environment. Part 632 was developed through a consensus process that brought various stakeholders together in drafting the new law in order to create a new statute that incorporated concern for environmental protection while simultaneously allowing mining development in Michigan. The act was passed on December 27, 2004 (Boyd 2004). Creation of rules for

the new law, which utilized a process that involved various stakeholders, was completed on February 2, 2006 (State of Michigan 2006).

Kennecott discovered the Eagle ore body in northeast Marquette County in 2002 and evaluation of the potential for mineral development began in 2004. In 2006, after Part 632 was promulgated, Kennecott Eagle Minerals applied for the necessary permits in order to mine the Eagle deposit (Kennecott Eagle Minerals 2012a). The site of the Eagle Project is in Michigamme Township, approximately 25 miles west of the city of Marquette. Over the planned seven to eight year span of production, the Eagle Mine is expected to produce 300 million pounds of nickel and 250 million pounds of copper from the underground mine, and would be the only primary nickel mine operating in the United States (Kennecott Eagle Minerals 2012b). Kennecott owns or leases 1,600 acres in Marquette County, and approximately 120 acres will be developed for the Eagle Project (Kennecott Eagle Minerals 2012c).

The mine site is located near the Salmon Trout and Yellowdog Rivers on the Yellowdog Plains, with extraction occurring directly underneath the Salmon Trout River. The mine and the rivers are located on the Yellowdog Plains, a sandy glacial till outwash home to a variety of plants and wildlife (Albert 1995). Despite being the location of commercial forestry, the Yellowdog Plains is recognized by many people as being unique and unspoiled by industrial development. Located near the portal is a rock outcrop, known as Eagle Rock, which is a site held sacred by Anishinaabe (Ojibwe) people.

Potential environmental impacts and degradation of the sacred Eagle Rock are the main sources of concern about the mine project from opposition groups and have been points of conflict between citizen opposition groups, Kennecott, and the Michigan DEQ.

The Salmon Trout River, which flows from the Yellowdog Plains into Lake Superior through land owned by the private Huron Mountain Club, is one of the last remaining spawning habitats for the coaster brook trout in Lake Superior, and is the only known river on the south shore of Lake Superior used for spawning. If the river is impacted by pollution or subsidence, there could be degradation of the aquatic and surrounding terrestrial ecology of the river and to the spawning habitat necessary for coaster brook trout. The Eagle ore body is a reactive sulfide ore that has the potential to create acid rock drainage if proper precautions and treatment does not take place.

The proposed mine generated interest from the Marquette area, and controversy about whether the mine was in the best interest of the area has been ongoing since the mine was proposed. Some of the opposition groups that have developed in response to the Kennecott Eagle Project include: Save the Wild UP, the Yellowdog Watershed Preserve, the Eagle Alliance, and Students Against Sulfide Mining. These groups joined established groups such as the Huron Mountain Club, the National Wildlife Federation, and the Keweenaw Bay Indian Community (KBIC) in opposition of the Eagle mine project. Some of these groups organized specifically in opposition to this mine and mineral development in the area, while others are impacted by certain aspects of the project and oppose the project as a result. Citizens for Responsible Mining is another citizen group that was developed, and supports the responsible development of mineral resources in Michigan.

The mine is going to be developed by Kennecott Eagle Minerals, which is a subsidiary of Rio Tinto, a London based mining company involved in many types of mining globally. Rio Tinto is one of the largest mining companies in the world and has

been in existence for over 100 years and currently operates in North and South America, Africa, Europe and Australia extracting iron, coal, uranium, diamonds, gold, silver, copper, nickel, and aluminum (Rio Tinto 2012). Rio Tinto operated the now reclaimed Flambeau Mine near Ladysmith, Wisconsin.

The Kennecott Eagle Project was the first mine to complete the permit application process under Michigan's Part 632 Mining law and the interest that this project drew from local communities created a lot of public attention and involvement as a result of the potential impacts. Because of this, it is an important case for analyzing how the process occurred, which allows for understanding how the public participation components of the new regulation worked in practice. The permitting process for the Kennecott Eagle Project, even though it presents unique concerns and challenges that may not be present for other mining projects, provides an important opportunity for regulators, mining companies, interest groups and other participants to learn about the process and future approaches to participation. Experiences during participatory processes are important to understand because they influence the trust of the public in regulatory agency decisions and the likelihood of participation in future decision-making processes. With other mine exploration occurring and permit applications being submitted, the Kennecott Eagle Project provides a baseline for the permitting of upcoming projects.

There are two goals for this research: 1) to identify the opportunities for participation as they occurred during the permitting of the Kennecott Eagle Project and 2) to understand the perceptions of participants of their role in the permitting process. The conclusions and lessons learned from this case study have the potential to improve public

participation in upcoming mining projects that will be permitted under Part 632 in Michigan. By using semi-structured ethnographic interviews of participants and documentary research of resources related to this project, this research provides insights into the perception of participation and the opportunities for participation leading to the permitting of the Kennecott Eagle Project.

Outline of Thesis

The remainder of this thesis will introduce information necessary to understand public participation in Michigan mining policy and the participatory experiences from permitting the Kennecott Eagle Project. Chapter Two includes literature review and history of federal mining regulations, public participation policy, the importance of public participation to decision-making and existing public participation research. The background of current mining and public participation policies will provide a context for understanding the participatory process for the Kennecott Eagle Mine. Chapter Three describes research methods used in this project and how these methods were implemented in order to understand the experiences of those who participated in the Part 632 process. Chapter Four outlines the opportunities for public participation as they are defined by Part 632 regulations, and the opportunities for public participation as they occurred in the Kennecott Eagle Project case. Chapter Five explores how participants viewed their involvement and experiences in the permitting of the Eagle Project, and includes the issues identified by different stakeholder groups about how the permitting for the Kennecott Eagle Project occurred. Chapter Six includes conclusions about the effectiveness of public participation as observed through the Kennecott Eagle Project

based on stakeholder interviews, opportunities for improvement in incorporating public participation in the future, and opportunities for future research.

Chapter 2: Literature Review

Mining and public participation policies in the United States vary by the location of the mine to be developed and the specific type of mining that is taking place. Regulation of mining is the responsibility of states, but impacts of mining are also subject to federal environmental laws applicable to mining and other polluting industries. Regulation of mining creates the framework for citizens to participate in mining decision-making and typically provides opportunities for stakeholders to provide input into decisions that affect them. Research on the importance and effectiveness of public participation indicates that there are benefits and drawbacks to participation as structured by current regulations. Both mining policy and public participation in environmental decision-making have been a focus of some social science researchers because of the impacts that these policies have on communities, the mining industry, and regulators.

Federal and State Mining Regulation

Regulation of mining in the United States occurs through a combination of federal and state laws specific to certain impacts of mining. Mining companies must create plans for operation and reclamation that satisfies regulations intended to facilitate development while minimizing environmental impacts. Rather than being regulated by the impacts of a mining project as a whole, mine development is regulated through fragmented policies primarily based on expected impacts to air, water bodies, flora and fauna. Complicated regulations create challenges for mining companies trying to operate, as well as

regulators responsible for implementing laws, and other stakeholders attempting to be involved in decision-making.

Mining laws in the United States originated in land and mineral ownership rules in mining districts during the nineteenth century. Mining communities that developed around mineral rushes created rules to prevent mineral ownership conflicts. In 1866, the United States enacted the Mining Law of 1866 based on the local claim laws that had been in place in mining districts prior to federal regulation (Bakken 2008). The General Mining Law of 1872 was enacted to govern access to mineral resources on federal lands, primarily in the western United States, by creating a framework for individuals and corporations to make claims on federally controlled mineral deposits. Similar to the Homestead Act of 1862, the General Mining Law of 1872 was intended to make federally controlled resources available for development in order to encourage western expansion.

The General Mining Law of 1872 still regulates today's access to non-fuel hardrock mineral resources on public federal lands, despite various amendments and attempts to modernize the law. Exemptions to the General Mining Law of 1872 and regulations for specific types of mining have been made for resources such as coal and other fuels regulated through the 1920 Minerals Leasing Act and the Surface Mining Control and Reclamation Act of 1977 (Richardson 2003).

Environmental impacts of mining are not regulated under the General Mining Law of 1872, as this law only applies to access to mineral resources on federal lands. Policies regulating specific environmental impacts of mining activities, regardless of where the mine is located include the Clean Air Act, the Federal Water Pollution Control Act (Clean Water Act), and the Safe Drinking Water Act. Also applicable to the mining

industry are the Endangered Species Act, the Toxic Substance Control Act, and the Comprehensive Environmental Response Compensation and Liability Act (National Research Council 1999; Flynn 2005; Humphries 2008). These federal environmental regulations apply to mining as well as other development that result in environmental impacts.

Agencies responsible for the regulation of mining also vary depending on the regulation and the location of the mine. The Bureau of Land Management (BLM) and the United States Forest Service (USFS) are responsible for overseeing the General Mining Law of 1872 to mines on federal lands. The Environmental Protection Agency (EPA) regulates the air and water quality impacts of mining, the United States Fish and Wildlife Service (FWS) is responsible for threatened and endangered species, and the United States Army Corps of Engineers (USACE) regulates projects that impact navigable waterways.

States are also responsible for the regulation of mining and environmental protection, contributing to the fragmentation of regulators and policies. Regulatory approaches vary by state, but typically create requirements for operations and reclamation and coordinate with federal regulations for environmental protection (McElfish et al. 1996). State regulations create standards and requirements for reclamation and financial assurance to ensure reclamation and cleanup if the mining company becomes unable to continue operation (Flynn 2005). Differing approaches to regulation have resulted in some states having more or less stringent mining regulations. For example, Montana has created regulations banning the use of cyanide in mining and Wisconsin has regulations that require mining companies to prove the environmental safety of practices they plan to

implement using examples from other mines (Flynn 2005). A National Research Council (1999) study found that

Mining, its impacts on other resources and uses, and the regulatory structure are related matters that require balance and reason when dealing with the potentially competing interests of protection of the environment, production of minerals and metals and employment for society, and associated federal and state statutory responsibilities (2).

The competing interests described are also potential sources of conflict among those impacted by mining development.

Part of the challenge of developing mining regulation is creating regulations that apply to changing mining technologies, environmental concerns, social interests, and economic conditions. The National Research Council (1999) study also found that “Technology, social values, the economy, and scientific understanding change continually” (10). With competing interests among stakeholders as well as a changing regulatory environment, the National Research Council report went on to say that “Portions of the public and the mining industry have little confidence in the propriety or fairness of the regulatory and permitting system. Some members of the public perceive that regulators work too closely with the companies and permit operations without sufficient environmental safeguards” (10). Potential mining development, competing stakeholder interests, complicated regulations, and distrust of regulators and mining companies has the potential to generate conflict around new mine projects.

Mining companies recognize the importance of social issues that mining creates and the importance of having a ‘social license to operate’ in addition to meeting regulatory requirements. Much of the literature about the impacts of mining on communities is related to the relationships that mining companies have with the

communities where they operate. Through corporate social responsibility initiatives, mining companies invest resources in developing public relations strategies, community involvement, and transparency plans to inform and develop the support of communities that may influence future development (MMSD 2002; Ali 2003; Jenkins and Yakovleva 2006). Campbell and Roberts (2010) explain how the public participation part of the decision-making process for mining projects is complicated because of entrenched support and opposition, with each side unlikely to change position and focused on convincing stakeholders in the middle. Ali (2003) explains that opponents to mining projects often see company-implemented participation initiatives as ineffective in impacting projects.

Despite the regulatory challenges of a constantly evolving industry, authors recognize that incorporating community interests is important to the sustainability of mining operations and the mining industry (Hilson 2002). Viega et al. (2001) states that:

A sustainable mining community is one that lasts through the closure of the mine and beyond... The challenge for any mining company is to engage in an equitable partnership with the associated community and thus leave a lasting legacy of sustainability and well-being in the community, avoiding environmental degradation and social dislocation (192).

New projects face the challenge of meeting regulatory requirements and social interests while still developing economically viable new mines. Because of the relationships between mining companies, regulatory agencies, indigenous groups, economic factors and politics, Ballard and Banks (2003) see mining communities as opportunities for research of environmental conflicts, although many are not studied.

Mining regulation is complicated for all stakeholders attempting to influence decisions that potentially affect them. Since mining is regulated through a variety of

environmental laws, communities have various opportunities to provide input to different aspects of a project, but they face challenges of limited resources in comparison to mining companies opening new mines.

Public Participation Policy

Public interest in environmental decisions related to mining has resulted in regulators, mining companies, and citizen groups creating opportunities to incorporate public input in the decision-making process. The level of public involvement in decision-making process varies depending on the project, but many projects share similar opportunities for citizens to participate in the regulatory process.

The framework for public participation in mining decision-making originates in various federal regulations intended to improve transparency and incorporate public input into the decisions of government agencies. Most environmental regulations at both the federal and state levels incorporate participation structures originating in other policies.

Public participation regulation in the United States began with the Administrative Procedures Act (APA) of 1946 that introduced structured processes for agencies to follow during rulemaking and requires public notification, opportunities for comment on proposed rules, and record of rules and procedures. The administrative structure is a key part of many public participation regulations today (Krimsky 1984; Beierle and Cayford 2002; National Research Council 2008).

The introduction of public participation principles into federal decisions affecting the environment began with the National Environmental Policy Act (NEPA) of 1969. This act requires any federal agency decisions for projects or policies to complete an

environmental impact statement (EIS) that includes baseline conditions, expected environmental impacts, and possible alternatives. This law also introduced opportunity for public input about environmental impact statements through public hearings in order to incorporate public knowledge and avoid overlooking information that the public may provide insight into (Halvorsen 2006; National Research Council 2008). Since NEPA, states have also adopted similar structures for state agency decisions.

The Freedom of Information Act (FOIA) of 1966 is another key piece of participatory regulation, as it provides the public with transparency into federal decisions. This act allows public access to government agency documents by allowing anyone to make a FOIA request for information from federal agencies, with some exemptions such as in cases of national security (National Research Council 2008). States have also adopted their own FOIA rules for access to information from state agencies.

Since the environmental movement and the expansion of public participation policies in the United States, there has been a lot of discussion about the importance of public participation in decision-making and how to make participatory processes effective. Along with this, research has questioned how to evaluate public participation procedures and outcomes since projects and experiences are unique and metrics used to measure the ‘effectiveness’ of participation vary between stakeholders. Contentious environmental decisions, such as many mining projects, create challenging conditions for incorporating citizens into the decision-making process.

Public participation in decision-making can take many forms depending on the specific policy requirements of a decision, and can include structures such as public hearings, public forums, workshops, focus groups, and taskforces (Creighton 2005).

Richardson and Razzaque (2006) point out that public participation in decision-making can be done many ways: “It can occur through education, information dissemination, advisory or review boards, public advocacy, public hearings and submissions, and even litigation”(165). Public participation can also take the form of activity outside the permitting process if the process does not incorporate citizens’ concerns. Individuals and interest groups may organize and attempt to influence decisions outside regulated participation opportunities by disseminating information, creating outreach programs, or protesting (National Research Council 2008). Switzer (2001) points out that environmental interest groups form in response to regulations or specific project proposals and act within “policy windows” provided where access to the decision-making process is available (134).

The form of public participation commonly used in environmental decision-making, and the method used in mine permitting in Michigan, is the public hearing process. Hearings usually consist of an information session introducing the project or policy being considered. After the introduction, participants have an opportunity to address a table of regulators who listen to oral comments. Participants present their comments about the proposed decision, and these comments are transcribed and collected after the hearings are complete. Time limits for comment can vary depending on allotted time for the meetings, expected participation, or requirements of policies.

Benefits of public participation include the opportunity to provide information to decision-makers, cooperate with other stakeholders to make decisions, and allow the public to influence decisions that impact them (Senecah 2004; Creighton 2005; National Research Council 2008). Incorporation of information and suggestions from the public

not only informs decisions made, but may also lead to increased support for agency decisions and trust in future actions (Creighton 2005). The ability to influence decisions and the perceived fairness of decision-making processes are important for effective participation (Halvorsen, 2006). Public participation in decision-making is also considered to be important for creating sustainable development that balances social, economic, and environmental needs through input from the public (Richardson and Razzaque 2006).

Public participation can also create some challenges for regulators as well as other stakeholders in environmental decision-making processes. Often, environmental decisions present complex and technical planning that may be challenging for involved participants who may lack technical expertise, leading to dismissal of comments and frustration from participants who do not feel like their interests were heard (Webler and Renn, 1995; Senecah 2004; Simmons 2007). O’Faircheallaigh (2010) explains that public participation can be helpful for filling gaps in information during planning, “But the political reality is that officials refuse to share decision-making power, public participation may be seen as tokenistic, and the public quickly becomes cynical and withdraws”(25). Senecah (2004) explains that, “Another significant consequence of the incongruence between expectations and experience has been increased public frustration, disillusionment, skepticism, and anger as traditional forums unfold”(19). When agencies implement public participation structures, it is important to do so with clear expectations of both agency officials and the public, and also observe the process critically throughout (Chess 2000). Another critique of public participation is that it can lead to more drawn

out and expensive decision-making processes, especially for contentious issues with entrenched opinions (National Research Council 2008).

Analyzing the effectiveness of participation programs is challenging since different stakeholders are likely to have different measures of success. Senecah (2004) points out that for some stakeholders, effective public participation may simply be meeting the requirements of regulations: “If your vantage point is administrative, effective certainly means that you fulfilled the agency’s legal mandate and kept it out of court” (18). Participants are likely to have different expectations, especially for decisions that impact their communities. In order to understand the differences between theory and practice of public participation, numerous researchers have proposed approaches to public participation analysis with the goal of understanding the success of participatory programs. Senecah (2004) proposes a practical theory—which she calls the “trinity of voice” for analyzing participation based on trust in processes based on evaluation of access to the decision-making process, standing of individuals within the process, and influence on decisions perceived by participants. Beierle (1999) suggests using “social goals” such as public education, incorporation of public values, increasing substantive quality of decisions, generation of trust in decision-makers, reducing conflict, and using cost-effective approaches to decision-making.

Researchers have also recognized gaps in understanding of participatory processes that are important to understand to improve decision-making processes. Halvorsen (2006) recognized a gap in researchers’ understanding of how public participation impacts and the relationships between decision-makers and citizen participants. Developing an understanding of where participatory processes fall short is

necessary before improvements can be made (Hendry 2004). Senecah (2004) suggests that further research can attempt to improve assessment of public participation, and suggests the “trinity of voice” theory as an evaluation tool. Other researchers suggest pursuit of new methods for incorporating public participation in order to use public input more effectively, and balance it with scientific information (Beierle 1999; Konisky and Beierle 2001).

The importance of public participation for improving decision-making, combined with the presence of components for participation in many environmental policies necessitates further investigations of how it works in practice. For this research, Michigan’s new Part 632 mining law and the controversial nature of the first mine permitted provide an opportunity to learn about how participation works in practice with this case. Research for this thesis focuses on answering two main research questions: 1) How did the participatory process work in practice compared to how it is structured by regulations; and 2) How did experiences and perceptions of the participatory process vary between participants? Understanding how participants perceived their involvement in the Part 632 decision-making process for the Kennecott Eagle Mine provides another example of how mining regulation and public participation are implemented and allows an opportunity to evaluate the effectiveness of current strategies.

Chapter 3: Research Design and Methods

In order to understand the public participation process and perception of those involved, this research utilized qualitative social science methods. The Kennecott Eagle Project is a unique case because it is the first mine to be permitted under Michigan's Part 632 mining law. Because at the time of this research the Eagle Project is the only mine that has completed Michigan's permitting process, a single case study approach to research was appropriate. Single case study research allows exploration of a unique case, for which there are not cases to compare, and can be used as a basis for comparison in further research (Yin 1989). To answer the research questions, research combined approaches of a review of mining policies and public participation processes, a document review of sources related to the Kennecott Eagle Project permitting, and semi-structured ethnographic interviews with 17 individuals who were involved in the participation process.

Documentary research consisted of compiling news articles, Kennecott and interest group press releases and websites, and DEQ documentation of the process in order to construct a timeline of events that led to the permitting of this mine, and is included in Appendix D. The timeline includes key actions during the history of the Kennecott Eagle Project from various citizen groups, the mining company, and regulatory agencies. This information also allowed perceptions of events from different stakeholder viewpoints to be compared, since descriptions and rhetoric about similar events varied depending on the source of information. Including documents from various sources also provided some insight into the sources of debate and conflict, reasons for variation in opportunities for participation from the structure created by regulation, and

causes for events that occurred. Documentary research also provided an opportunity to identify interviewees based on their involvement during the permitting process.

Interviewees were identified through their involvement with different organizations or agencies and through presence in news articles during the permitting process. In order to find a balance of participants, categories were constructed based on the approach to involvement of the individual. Categories included citizen group representatives, government representatives, and mining company representatives. Within each of these main categories, the individual's involvement could be further broken down depending on the group they were representing. As shown in Table 3.1, within the three categories of involvement, participants were broken down further depending on their specific affiliations or approaches. For each group, a list of potential interviewees was constructed and interviews were requested.

From the initial list of people identified through documentary research, potential interviewees were prioritized based on how long they were involved, how active their involvement was, or whether they were involved in any unique approaches to participation. The goal for selecting interviewees was to include those who had been involved and active throughout the permitting process for the Kennecott Eagle Mine and have representation from individuals in each of the categories of stakeholders.

Table 3.1: Interview Categories

Breakdown of how interviewees identified their approach to participation and their affiliated stakeholder groups.

Type of Stakeholder	Approach to Participation	Number of Interviews
Citizen Group Representatives	Opposition	6
	Neutral	2
	Support	1
Government Representatives	Tribal Government	3
	Local Government	2
	State Government	1
Kennecott Representatives		2

Potential interviewees were first contacted by email with a brief explanation of the project and a request for scheduling an interview. If no response was received after one week, a follow-up email was sent reminding the interviewee of the request and the intent of the project. All interviewees responded to either the initial or follow-up email and communication and organization of interviews was handled by email or by phone, whichever the interviewee preferred. Email was chosen as a primary means of initial contact because email addresses were more readily available than phone contact for the majority of participants. Because of the controversial nature of this topic, participation and responses in interviews are confidential as described in the consent for interview form in Appendix A. A list of interviews can be found attached in Appendix B.

Project approval from the Internal Review Board was received on November 18, 2011 for project M0833 and is attached as Appendix A. Interviews took place between January and March 2012, and took place in various locations in Houghton, Baraga and

Marquette Counties, at locations of the interviewee's request. Locations included offices, public libraries, coffee shops, and in one case, the interviewee's home. All interviews were done in person and all except one were recorded on a digital voice recorder and later transcribed. Interview lengths varied from 40 minutes to one hour and 45 minutes.

A semi-structured, open-ended interview approach allowed flexibility in the questions asked as well as in the answers that were provided. Interviewees could be asked to expand on brief responses or topics that may have been unique or unexpected (Schensul et al. 1999). The interviews were structured in three categories of questions with some questions that were unique to different groups of interviewees. Interview questions for the different groups are included in Appendix B. Categories of interview questions included: 1) background to the individual's participation, 2) access to information during the permitting process, and 3) perception of the individual's involvement in the permitting process. Interviewees were first asked about their connection to the Upper Peninsula in order to understand some of their background and connection to the project area, issues or impacts of interest related to the project, then were asked specifically how they participated in the process. Questions in the second section focused on sources of information about the project and mining in general and the perceived ability of participants to understand that information. This section also asked about interactions that the individual might have had with the DEQ or Kennecott. The final section included questions on what expectations the interviewee had for their role in the permitting process, if they would change how they participated based on what they experienced, and how they would change public participation if they could. The final question that was asked to all interviewees is how they saw overall public perception of

the mining project and how they thought that was impacted by existing and historic mining activity in the area.

After interviews were completed, they were fully transcribed and coded using an open-coding method (Emerson et al. 1995). Transcripts were sent to interviewees who were given the option to edit any errors and reminded that their participation and responses remain confidential. Despite the option to edit, no interviewees took the opportunity to make changes. Coding was done by comparing interviews and looking for trends in responses from different interviewees. Categories began as the three categories of questions that were asked and were broken down further and compiled with other responses in order to identify patterns of themes in responses for analysis (Emerson et al. 1995). After responses were compiled into basic categories such as type of involvement, access to information from the DEQ, access to information from Kennecott, perception of involvement, and perception of public opinion, common themes within these categories were written in the margins to allow for easy identification. For example, within the perception of participation category, themes identified included time limits, trust, and type of communication.

During interviews, many participants expressed concern about confidentiality and initial hesitation they had about participation in this research project. It was obvious during interviewing that the length and controversy of the Kennecott Eagle Project has fatigued some individuals who have been most involved and led to concern about how their input was to be used and portrayed. Some interviewees mentioned hesitation that they had about participating in interviews. Concerns were alleviated in most cases after further explanation of the project and presentation of the confidentiality statement in the

interview consent form. Many interviewees began interactions by questioning my possible affiliations with other groups and opinions on the project, and were assured that I have only viewed this from a research perspective and have not been involved. After completion of an interview, many participants mentioned how they enjoyed the reflection on the entire permitting process that interview questions gave them.

Chapter 4: Public Participation in Michigan Mining Policy

Mining in Michigan is regulated based on the environmental impacts that are expected to occur as a result of mine development and closure. Part 632 creates a clear structure and timeline for mine permit decisions to be made, and includes requirements for public hearings and comment. The permitting process that occurred for the Kennecott Eagle Project varied from the structure and timeline outlined by Part 632 and included more opportunities for participation.

Mine permitting under Part 632 begins with submission of a mining permit application to the Michigan DEQ from the mining company, and at this point time limits begin for actions by the DEQ. If, at any point, the department requests more information from the company, time limits can be put on hold until the information requested from the company by the DEQ is received.

The first action that is required from the department is a decision within 14 days of whether the permit application is administratively complete, which means that “an application for a mining permit under this part that is determined by the DEQ to contain all of the documents and information required under this part and any rules promulgated under this part” (State of Michigan 2006). Included in with the Part 632 mining application, completed and submitted by the mining company, is an environmental impact assessment, a list of other state and federal permits that are anticipated to be required for operation, and mining, reclamation, and environmental protection plans for the mine (State of Michigan 2006).

Within 42 days of the decision of completeness of the application, the DEQ must hold a public meeting about the application. The meeting must take place in the county

of the proposed mining project, and notice including information on where applications can be reviewed must be given at least 14 days prior to the scheduled meeting. This meeting allows for the project to be introduced to the public and for questions about the proposed project to be answered. There is also an opportunity for the public to give comment on the permit application. For 28 days following this meeting, the DEQ accepts written public comment about the project.

After the 28 day written comment period ends, the DEQ must come to a proposed decision of whether to grant or deny a mining permit. The DEQ must also issue a response document to the oral and written public comments received during comment periods. At this time the DEQ must also schedule a public hearing on the proposed decision with at least 14 days but not more than 28 days notice.

After the public hearing takes place, at which the public has the opportunity to provide comments on the proposed decision, another 28 day written comment period takes place. When the comment period closes, the DEQ must compile and respond to written and oral comments. Within 28 days of the closing of the comment period, the DEQ makes a final decision to grant or deny the mining permit. If the structure outlined in Part 632 is followed exactly and without any delays, it is possible for the DEQ to grant a mining permit as little as six months after the permit had been applied for.

If at any point in the process the DEQ requests additional information for the mining permit application from the mining company, time is stopped until that information is received. If the DEQ reaches a proposed or final decision to deny a mining permit, they must provide a report to the mining company with reasons for denial.

The following table outlines the time periods during permitting that are created by Part 632.

Table 4.1: Part 632 Mine Permitting Timeline
 Timeline of mine permitting if following Part 632 structures.

Elapsed Time	Action
Day 1	Application Submission
By Day 15 (Maximum 2 weeks after submission)	DEQ determination whether administratively complete
By Day 57 (Maximum 48 days after administratively complete, minimum 14 days notice)	Public meeting on application and acceptance of written public comment**
By Day 85 (28 days after public meeting)	End acceptance of written public comment
By Day 113 (Maximum 28 days after end of comment period)	Proposed DEQ decision to grant or deny mining permit
By Day 127-141 (14-28 days hearing notice)	Public hearing on proposed decision and acceptance of written public comment
By Day 155-169 (28 days after public hearing)	End acceptance of written public comment
By Day 183-197 (Maximum of 28 days after end of comment period)	Written DEQ decision to grant or deny mining permit

An issued mining permit is not in effect until the mining company receives all other necessary permits for operation. Examples of additional state permits that may be required as part of the Natural Resources and Environmental Protection Act include Michigan Air Use Permit and Groundwater Discharge Permit. Permitting processes for permits from the state of Michigan can be consolidated into a single process, but if multiple permitting processes are consolidated, permitting is no longer required to follow the Part 632 timelines in order to allow for review of all applicable permits.

Another opportunity for public participation allowed through the Part 632 mining law are contested case hearings. According to Rule 602, (1) of Part 632, “Any person who is aggrieved by an order, action, or inaction of the department or by the issuance,

denial, revocation, termination, or amendment of a mining permit under Part 632 of the act may file a petition for a contested case hearing with the department” (State of Michigan 2006). The contested case hearing process begins when a party petitions for a contested case hearing. If the parties are unable to come to a decision, the case is then presented to an administrative law judge at a hearing. The hearing process includes collections of testimony regarding the case that informs a proposed decision from an administrative law judge, which is given to the director of the DEQ for final approval. After the final decision, parties can have the decision appealed in circuit court (Department of Environmental Quality 2007a).

Mine permitting in Michigan occurs without federal involvement in Clean Air Act and Clean Water Act permitting, since Michigan was granted federal authority for administering these laws. Other federal laws, such as the Endangered Species Act, and the Safe Drinking Water Act may also apply to the impacts of a proposed mine, and would require applications to go through NEPA and National Historic Preservation Act review processes as a result of the federal decision, creating additional opportunities for public comments.

There are also specific considerations that federal and state governments must give to tribes impacted by mining. The state is responsible for notifying all affected tribes in the state of Michigan of actions during the permitting process such as notice of public hearings or proposed decisions. The U.S. Environmental Protection Agency (EPA) also provides consultation to tribal governments on projects that may impact tribal lands and resources. Tribes can request meetings with their regional EPA representatives

about issues related to a project that may impact tribal resources, even if the EPA is not the decision-making agency (Interview 14 2012).

Information about the mining project is provided to the public at hearings and also made available at a public location near the proposed mine. Part 632 requires that notice of public hearings include information about the project, locations where permit applications can be viewed, a list of other pending permits, and the location of the public hearing. Access to information not provided by the DEQ or federal agencies can be requested through Freedom of Information Act Requests (FOIA). Any individual can make a FOIA request by asking an agency for specific information, including the specific agency and details about the information that is being sought. This can be an important and effective way for maintaining open access to public agency information and actions during a permitting process, but also requires time for requests for information to be fulfilled (Michigan Legislative Website 2012). FOIA requests to the Michigan DEQ must be replied to within five days after the DEQ receives the request, but extra time to disperse the requested information can be taken depending on the length of the documents requested, and the locations of the information. If FOIA requests are not specific enough about the information being requested, the process can also take more time as the request is clarified (Michigan Legislative Website 2012).

Participation in Permitting the Kennecott Eagle Project

The Kennecott Eagle Project is a nickel and copper mine located in northern Michigan in Michigamme Township in Marquette County. During the planned six to eight years of operation, Kennecott expects to extract 300 million pounds of nickel and 250 million

pounds of copper from an underground mine. The Eagle ore body is a sulfide ore, meaning that there is the potential for acid rock drainage if ore comes into contact with air and water. Because of this, Kennecott plans to prevent water from the mine site from coming into contact with surface or underground water bodies until wastewater is treated. As mining is completed, the mine will be backfilled and eventually the portal will be sealed and the site will be reclaimed with native vegetation. Surface facilities at the mine site cover approximately 120 acres of the 1600 acres that Kennecott controls in the area. The ore that is extracted from the Eagle Mine will be transported by truck to the Humboldt Mill for benefaction before being hauled by train to Sudbury, Ontario for further refining. Initially, Kennecott planned to ship ores directly to Sudbury, but decided to reclaim the former iron mill for processing. During development of the mine, Kennecott expects to create approximately 500 construction jobs, while the mine will employ approximately 200 during operation. Kennecott created a goal of 75 percent local employment for the jobs that it creates (Kennecott Eagle Minerals 2012c).

Kennecott's Eagle Mine faced opposition from local groups as soon as the company began discussions of developing the mine. Opposition to the project by environmental groups developed as a result of the proximity of the mine to the Salmon Trout River and Lake Superior, as well as the location of the mine in an area without current industrial development. Additional opposition by tribal groups and local citizens resulted from the mine's location at Eagle Rock and development compromising the cultural value of the site. Interest in the environmental and cultural impacts of the new mine resulted in public interest and scrutiny of the project and the permitting process that occurred.

The permit application for the Kennecott Eagle Mine is approximately 8,000- pages in length and contains detailed information about mining plans, surface and underground development, reclamation plans, monitoring plans, and analysis of current site conditions. Kennecott submitted a separate mining permit application for the Humboldt Mill. The permit application begins with a brief summary of the site, plans for mining, and expected impacts. The majority of the application document consists of appendices of detailed site plans, engineering drawings, design analysis and modeling, and monitoring plans (Kennecott Minerals' Permit Application 2006).

Despite the structures for public participation through mine permitting and FOIA that are created by regulations, variations occur when the policies are implemented. The timeline for the Kennecott Eagle Project permitting and the opportunities for public participation varied from those structured by Part 632. The deviation is a result of combined public hearing processes for multiple permits, unique circumstances and events that occurred during this permitting process, and the Eagle Project being the first mine permitted under Part 632 regulations.

From the time when the permit application was received by the DEQ to when the DEQ issued its decision to grant the mining permit, 660 days had elapsed, almost a year and half longer than required by Part 632. In addition to this, the most recent contested case hearing decision related to the DEQ's issuance of the mining permit was in November of 2011, nearly four years after the DEQ issued the mining permit. A detailed timeline of events related to the permitting of the Kennecott Eagle Project can be found attached in Appendix D and includes major actions by the DEQ, the EPA, Kennecott, and various stakeholder groups.

The permit application process began when Kennecott submitted the permit application for the Eagle Mine on February 22, 2006, shortly after Part 632 rules were accepted on February 1, 2006. As required by Part 632, the Michigan DEQ determined that the application was not administratively complete on March 8, 2006 and requested additional information from Kennecott. On March 10, 2006, the DEQ received the information that was necessary to make the application administratively complete. Application materials were made available online on the DEQ's website and in print at the Peter White Public Library in Marquette, the Powell and Michigamme Township Halls, the Michigan DEQ Upper Peninsula Office in Gwinn, and also in Lansing (Department of Environmental Quality 2012b).

The first public hearing on the application for the proposed Kennecott Eagle Mine was held on April 18, 2006 at Northern Michigan University in Marquette, Michigan.

One participant recounted the structure of the first public hearing in an online article:

The sessions were divided into two parts. The first was a two-hour informal session where members of the DEQ staff reviewing the permit application made themselves available for questions and comments. The second part was a scheduled 90-minute public comment session where concerned citizens could sign up and give a 90-second comment to DEQ officials (Soldan 2006).

Written comments, through email or letters, were accepted after this public meeting until May 16, 2006, which is the 28-day period that is required by Part 632.

After closure of the written comment period, the DEQ requested information from Kennecott on 91 points and released the compiled list of public comment and agency responses on June 21, 2006 (Department of Environmental Quality and Department of Natural Resources 2007). A letter was sent to Kennecott Eagle Project Manager Jon Cherry from the DEQ which requested clarifications on figures calculated by Kennecott,

creation of plans for monitoring and modeling that were not included in the original application, and requests for more information about impacts that were not included or explained in the application (Department of Environmental Quality and Department of Natural Resources 2007). However, the DEQ was required by Judge Paula Manderfield to stop further permitting actions until a case contesting the DEQ decision that the permit application was administratively complete was decided by an administrative law judge. This decision was the result of an appeal of a May 2006 decision from the Michigan State Office of Administrative Hearings and Rules (SOAHR) that denied a petition from the KBIC, the Huron Mountain Club, and the Yellowdog Watershed Preserve claiming that the permit application was not administratively complete despite the DEQ's decision (Keweenaw Bay Indian Community Newsletter 2006).

Michigan Appeals Court overturned the lower court's request for the DEQ to stop permitting because the plaintiffs failed to show how they were impacted by the DEQ decision to grant the mining permit (Resource Exploration Inc. 2008). Permitting activity began again on October 27, 2006, and at this time, Kennecott submitted a waiver of permit processing time that allowed for an extended review process, and also submitted responses to the 91 requests for additional information. The DEQ extended the deadline for the proposed decision until December 26, 2006 to allow for public comment on the additional information requested by the DEQ and submitted by Kennecott. Kennecott's waiver and the DEQ's extension of decision time was done to allow for consideration of new information and coordination of the permitting processes for the Air Use Permit required by DEQ rules for new air emissions sources and Groundwater Discharge Permit

required by DEQ rules requiring treatment of water from operations prior to discharge for operation of the Eagle Project (Department of Environmental Quality 2007b).

On January 9, 2007, the DEQ proposed a decision to grant the mining permit and scheduled public hearings for March 2007. The hearings were opportunities to comment on the Part 632 mining permit, as well as an Air Use Permit, DEQ Groundwater Discharge Permit, the DNR Surface Lease of state owned land at the mine site, as well as the mine reclamation plan. Public hearings were scheduled in Lansing and the Marquette area and written public comment was to be accepted for 28 days following the public hearings.

The proposed decision to grant the mining permit was withdrawn on March 1, 2007 and public hearings were postponed after it was discovered that the DEQ did not make two consultant's reports public and available for review (Department of Environmental Quality and Department of Natural Resources 2007). The reports from Dr. Sainsbury of Itasca Consulting Group were critical of the calculations used in Kennecott's permit application and the structural integrity of the mine design, and were not made available for public review (Anderson 2007). A review of the DEQ's handling of these reports was completed by Dr. Donald Inman, who concluded that there was no intent to mislead the public with the mishandling of the reports by the DEQ (Pepin 2007).

The DEQ made the reports public on March 19, 2007 and reinstated their proposed decision to grant the mining permit on July 30, 2007. Public hearings on the proposed decision were rescheduled for September 10, 2007 at Northern Michigan University; Forsyth Township on September 11, 12, and 13; and Lansing on September 19. The multiple hearings and varied locations were a result of public suggestions for

flexibility in hearings to encourage participation (Interview 13, 2012). After the public hearings allowed for oral comment, a written public comment period on the DEQ Mining Permit, the DNR Surface and Mineral Leases, the DEQ Air Use Permit, and the DEQ Groundwater Discharge Permit was open until October 17, 2007.

To encourage public input, participants had four options for submitting comment at this time including oral comments at a public hearing, written comment submitted at a public hearing, written comment submitted by mail, or written comment submitted by email to the DEQ. The DEQ notice of public hearing also detailed how the public hearings were structured, and explained how participants needed to complete an attendance card if they wished to speak and would be limited to five minute comments. DEQ staff would also be present and available to answer questions about the permit application or the DEQ decision (Department of Environmental Quality and Department of Natural Resources 2007).

Following the public comment period on the proposed DEQ decision to grant the permit, the DEQ approved the series of permits on December 14, 2007 and released responses to public comment. The DEQ determined that the mining permit application met the standards set by regulations after consideration of public comments and permit review by DEQ personnel and consultants. The press release notification of the DEQ's decision stated:

The Department of Environmental Quality announced today its decision to approve a series of permits to the Kennecott Eagle Minerals Company to conduct mining operations at the proposed Eagle Project Mine near Marquette. The department's decision follows a period of extensive review by the DEQ of public comments and supporting information to determine whether Kennecott's proposal met the strict standards contained within Michigan's air quality, groundwater, and

mining laws. The DEQ is required to make its decision based solely on whether a proposal meets those standards (McCann 2007).

After the permit was granted, on December 21, 2007 the KBIC, the Huron Mountain Club, the Yellow Dog Watershed Preserve and the National Wildlife Federation filed a contested case over the granting of the mining permit by the DEQ claiming that the proposed mine, as permitted, would result in environmental pollution and degradation (State Office of Administrative Hearings and Rules 2007). The same four groups filed lawsuits in Ingham County Circuit Court against the DNR over a decision to grant a Surface Use Lease on February 7, 2007 and the DEQ decision to grant the Air Use Permit. On April 28, 2008 testimony began for the contested case heard by Administrative Law Judge Richard Patterson. Testimony continued until August 6, 2008 and included 44 witnesses and 476 new exhibits (State Office of Administrative Hearings and Rules 2007). Closing arguments were submitted on October 15, 2008 and a decision in favor of the DEQ action to grant the mining permit was given August 18, 2009 after nearly a year of review. The proposal for decision upheld the DEQ's issuance of permits, but also suggested it was necessary to alter mine plans to protect Eagle Rock from disruption (Bourdieu 2009). The DEQ issued its final decision to grant the mining permit on January 14, 2010, without addressing the impacts to Eagle Rock, and an appeal of the decision to grant the permit was filed by the four groups who filed the original contested case in March of 2010. Ingham County Circuit Court Judge Paula Manderfield heard the appeal and refused delay of Kennecott mining activity on September 15, 2011 and later affirmed the DEQ's decision to grant the mining permit on November 23, 2011 (Pepin 2011a).

Along with the DEQ process, Kennecott Eagle Minerals also submitted a permit application for an Underground Injection Control Permit under the Safe Drinking Water Act on April 27, 2007 after the EPA required a permit for the planned industrial wastewater infiltration system used for underground disposal of treated industrial wastewater. However, the permit application was withdrawn by Kennecott in March 2010 and the Michigan DEQ and the EPA approved a design change by Kennecott in July 2010, determining that the permit was not required with design changes that no longer utilized subsurface wastewater disposal techniques. Other plans for the Kennecott Eagle Project, such as a sanitary waste disposal system for the site's septic system and mine backfill injection wells were approved by rule by the EPA, meaning they must comply with federal regulations but do not require permits (Environmental Protection Agency 2012).

The Underground Injection Control Permit that was applied for was the only permit application that was handled by a federal agency because air and water quality permitting is the responsibility of the state of Michigan, although the EPA did provide consultation to the DEQ for Clean Air Act and Clean Water Act programs and to the KBIC. As a result, the Kennecott Eagle Project was not subject to the National Environmental Protection Act or National Historic Preservation Act reviews and the participatory processes structured through these regulations. If Kennecott had not withdrawn the Underground Injection Permit that had been applied for, the decision to grant or deny the permit would have been subject to an environmental impact statement and public review process. Kennecott also determined that there would not be any adverse impacts to any threatened and endangered species by development of the mine,

so the United States Fish and Wildlife Service was not involved past confirming that there were no anticipated impacts.

Although the Eagle Project was still in an appeals process of the original contested case of DEQ granting a mining permit for the Kennecott Eagle Project, underground blasting at the mine site began in September 2011 after Judge Manderfield denied a request to stop excavation at the Eagle Project site (Pepin 2011b). Since the permitting of the Eagle Project, there have also been opportunities for public participation around other mining related activities such as the permitting of the Humboldt Mill, and more recently, the proposed development of County Road 595 that goes from the mine to the mill. The proposed county road project had a public hearing about the project was held February 21, 2012.

The Humboldt mill required four permits from the DEQ, which also used consolidated hearings and comment periods for the required permits which included an Air Use Permit for operation of the mill, a National Pollutant Discharge Elimination System permit for disposal of treated wastewater into surface waters, a Nonferrous Metallic Mining Permit for operation and reclamation of the site, and a Part 301 for storage of tailings (Department of Environmental Quality 2012c). Permitting for the Humboldt Mill project began when the DEQ received a Part 632 permit application on December 26, 2008 and permits were granted to Kennecott on February 9, 2010. The DEQ held a public meeting on the project on January 22, 2009, and another on the proposed decision to grant the series of permits on December 1, 2009 (Department of Environmental Quality 2012c).

The permitting process for the Kennecott Eagle Project and related projects such as the Humboldt Mill and County Road 595 have been ongoing for six years. During this time, the DEQ held a public hearing after receiving the permit application and a series of four public hearings for the proposed decisions Kennecott Eagle Project Permits, two hearings for permits for the Kennecott Humboldt Mine, and so far one public hearing for County Road 595. Each of these hearings was followed by at least a 28-day period that the DEQ accepted written public comments, with an additional written comment period for the Eagle Project after new information was received.

Other Opportunities for Participation

Opportunities for public involvement were also developed by Kennecott and citizen groups outside of the regulatory process in order to present information and facilitate discussion of the project and its potential impacts. The specific reason for each action varied depending on the goals of the organizer, but events have occurred throughout Kennecott's presence in the area. Kennecott attempted to have a presence in the community to build support for the Eagle Project and inform the public as the project progressed, a corporate social responsibility strategy described by Jenkins and Yakovleva (2006), as well as Himley (2010). Opponents of the mine also tried to create opportunities to influence decisions outside of the permitting process and utilized various approaches to increasing public awareness of the project and developed strategies to attempt to influence decisions. Over the history of this project, there have been many attempts to create opportunities for citizens to impact the decision-making process.

Kennecott organized community outreach in the area in order to inform the public and develop support for the project. Strategies included holding public meetings, having a presence at community events, answering questions from the public, and sponsoring community events. One ongoing public involvement strategy undertaken by Kennecott is the 'community advisory group' (CAG) that was created in 2004 and met approximately quarterly during the permitting process. This group is made up of environmental, community, government, and education representatives from the community who identified by Kennecott and invited to participate. CAG meetings were also open for the public to attend. Groups involved with the CAG were representatives from Michigamme and Powell Townships, Trout Unlimited, Michigan Technological University, Northern Michigan University, the City of Marquette, Marquette County, Michigan United Conservation Clubs, National Wildlife Federation, Superior Watershed Partnership, Lake Superior Community Partnership, Michigan DEQ and DNR, Marquette County Soil Conservation District, UP Construction Council, and the State Representative of the 109th district (Campbell & Roberts 2010 p. 215). The CAG was eventually replaced by a transportation committee as the project progressed and the need for collecting input on the project was more focused on transportation issues between the mine and the mill for processing (Interview 11 2012). In order to understand public opinion and views of the Eagle Project, Kennecott also hired researchers to study the views on mining of people who do not identify themselves strongly as opposing or supporting the mine (Ferrarini and Siles 2010).

In 2011, Kennecott also opened a storefront in downtown Marquette they refer to as the 'Community Information Center'. This location has regular open hours and

provides the public with a location in downtown Marquette where they can talk to Kennecott employees about current stages of the Eagle Project, view plans and models of the project and ore body, and learn about Rio Tinto's worldwide operations. Information is presented in a variety of ways including models of the mine site, interactive screens, aerial photographs, toys and mining safety equipment for children, and a large map of Rio Tinto's global operations. There are resources available that are specific to the Eagle Mine and Humboldt Mill Projects, as well as more general information about mining and Rio Tinto. The information center has a Kennecott employee available to answer questions, and contact information of other Kennecott employees if a person has more specific questions. Kennecott organized public tours to the Eagle Project site in summer of 2011, and plans to coordinate more during the summer of 2012 (Interview 12 2012).

Prior to the permit application submission, Kennecott held informational meetings in the area around the mine site to clarify confusion and rumors that were building in the area in the absence of a mining permit application and company presence. These meetings continued throughout the permitting process and during decision-making regarding the Humboldt Mill (Interview 9 2012; Interview 11 2012). Kennecott held a series of public forums in spring of 2011 in Humboldt Township, Ishpeming, Marquette, and Big Bay to provide updates of their projects and to answer questions from the public (Pepin 2011c).

Citizen groups that organized in opposition to the proposed mine's environmental, cultural, and social impacts became active as it became clear that Kennecott showed interest in developing the Eagle Mine. Some citizens saw the mine as a threat to the nature of the area where the mine was going to be developed, and became very active in

attempting to stop development. Environmental interest groups created some of their own outreach and education programs in order to reach out to a larger group of people regarding the Kennecott Eagle Mine and its potential impacts. Opposition groups used three main strategies in order to try to influence decisions including generating public information and outreach programs, hiring consultants in order to participate effectively in the structure of permitting created by regulation, and organizing public demonstrations.

The first strategy used by citizen groups attempted to share information about the potential impacts of mining and actions community members began soon after Kennecott expressed interest in developing the Eagle Mine. Environmental groups began collaborating with one another, generating websites with general mining and project information, sending newsletters, and giving public presentations. One local government representative mentioned that they were approached by an environmental group interested in presenting about the mining project before Kennecott (Interview 9 2012). Newsletters, websites and blog posts were updated and distributed by groups such as Save the Wild UP, Headwaters News, and the Yellowdog Watershed Preserve.

The second approach by citizen groups was to collect information in order to effectively participate in the permitting process as structured by Part 632. Opposition groups often worked together in order to best utilize limited financial resources. For example, groups hired consultants with expertise in various aspects of the mining project such as rock mechanics, mine engineering, geology, and hydrology to review the permit application and prepare comments for the groups to present to the DEQ (Interview 5 2012). Some groups coordinated their hiring of outside experts in order to minimize

overlap between groups, and to generate technical comments for the public hearings and comment periods on all aspects of the mine permit application.

As the permitting process went on, opposition groups utilized a third approach to try to influence decision-making for the Eagle Project through public displays. For example, a group of people from environmental interest groups and the KBIC attended a Rio Tinto shareholder meeting in April of 2008 to express concerns about the Eagle Project, and impacts to Eagle Rock in particular. A protest at the mine site was organized in April of 2010, and included a camp at Eagle Rock where a small group stayed until they were eventually asked to leave and two individuals were arrested when they refused (Soroka 2010). Other protests, rallies, and gatherings were organized in Marquette in order to influence public opinion about mining in an effort to gain support for efforts to stop the mine's development.

In October of 2009, there was an attempt to create a ballot initiative opposing mining in sulfide ores in Michigan, organized by local environmental groups. To create a ballot initiative, the groups would have had to collect 304,000 signatures, but ultimately the project did not move forward due to the costs of the effort (Save the Wild UP 2009).

During the six years since permitting began for the Kennecott Eagle Project, there have been many opportunities for public participation in different forms. The permitting process as structured by Part 632 provided opportunities for the public to comment directly to the DEQ, the agency responsible for making the decision. Outside of the permitting process there were also opportunities for the public to gain information and provide feedback directly to Kennecott, who had the ability to use the information to inform their mining plan and make changes. Opposition groups also created their own

opportunities through participation through information and outreach programs, hiring of technical experts to inform their participation in the DEQ's permitting process, and organization of activities in attempts to influence decisions outside of the structures provided by the DEQ or Kennecott.

Chapter 5: Perceptions of Participation

Stakeholder interviews focused on two main questions about participants' perceptions of the public participation process during the permitting of the Kennecott Eagle Mine:

- 1) How did the participatory process work in practice compared to how it is structured by regulations and
- 2) How did the experiences and perceptions of the participatory process vary among participants?

Interviews with individuals who were involved throughout the permitting process for the Kennecott Eagle mine provided insight into how public participation works from the perspective of different stakeholders, and highlights some common areas where participants identified challenges with the process as it is structured by the newly created Part 632 mining regulations.

Stakeholders in the permitting of the Kennecott Eagle Mine had many opportunities to participate through the permitting structure created by regulations, as well as outside of the formal structure through opportunities created by citizen groups and Kennecott. The perceptions of involvement in the participatory process varied depending on the interviewee, but four themes emerged about how stakeholders observed participation in the permitting of the Kennecott Eagle Project. These themes included challenges with the structure of participation, technical comment requirements making participation more complicated for citizen groups, varying opinions about the effectiveness of the DEQ's handling of public participation, and finally that a lack of trust

by individuals for other stakeholder groups which discouraged effective communication and cooperation.

A complete list of interview questions for each group of interviewees is included in appendix B. The first section of interview questions focused on the interviewee's background, connection to the area where the mine was located, and how the individual was involved in the permitting process. Interviewees came from a variety of backgrounds, but most shared a connection to the Upper Peninsula. All of the interviewees have either been in the area for a long period of time, or were originally from the Upper Peninsula and returned after living somewhere else. This indicates that most participants have a strong connection to the area and share strong interest in the decisions that will affect it. Many described the Yellowdog Plains as an area without development that they wanted to see remain 'pristine'. All of the interviewees participated in different ways; some attended nearly every event related to this project since the process began, some were involved as regulators or elected officials, and others had limited participation in the permitting process but participated actively through citizen's groups or Kennecott.

The second category of questions was related to access to information for the participant, and included questions about expertise in mining, Kennecott and DEQ responses to requests for information, and whether people sought assistance in understanding information related to the Eagle Project. This section of questions also indicated a broad range of experiences for participants. Some interviewees participated as experts in a field related to the mining project, while others knew nothing about mining prior to becoming involved with this project. As a result of their participation,

many interviewees explained that they spent significant amounts of time learning about mining to become more involved in the decision making process and become more knowledgeable about the impacts of mining. Interviewees also had varying experiences with accessing information from Kennecott and the DEQ.

Some stakeholders explained that they only had access to the information that was available in the permit application, despite requesting information from Kennecott and the DEQ, and participated using that information. Other participants explained that their questions were responded to from both the DEQ and Kennecott, and they had sufficient access to information. Citizen group representatives also explained how they approached and implemented different strategies for accessing information, such as utilizing FOIA requests to gain access to some information from the DEQ. Among interviewees there was not agreement that there was sufficient access to information in order for a participant to be informed; some stated that if people availed themselves to information, everything they needed to participate was available, while others said that they felt that they did not have the same access to information as other stakeholders, limiting their ability to participate.

The final category of questions from the interviews focused on the experiences and expectations that participants had for the permitting process for the Kennecott Eagle Project. The range of responses for these questions also varied between satisfaction with how the process and participation was handled, with others identifying what they recognized as flaws in the way the public was able to participate and influence mine permitting decisions that were made.

After completion of the semi-structured ethnographic interviews and coding the responses to the categories of questions asked, there were four themes that emerged in participant's responses. The first theme is that the structure of participation varied from participant's expectations of the process. The second theme was that the technical nature of the comments collected during the Part 632 permitting process limited the ability of citizens to participate. Responses to comments and the DEQ's handling of the permitting process led to participants seeking different strategies for participation and was a third theme that was mentioned by many interviewees. The final theme identified was the issue of trust between participants in the process that contributed to participant's concerns and impacted participant's opinions about participation.

Challenges with the Structure of Participation

The structure of public participation through Part 632 was an area of concern for many interviewees due to limitations of the structure of public hearings, as well as how participation in the permitting process allowed stakeholder concerns to be addressed. Most participants recognized some limitations of the process prior to their participation, but were still involved in the permitting of the Kennecott Eagle Mine through the DEQ's permitting because it was the only formal opportunity for the public to be involved.

Despite the structure and timeline for decision-making provided by Part 632, most stakeholders understood going into the permitting process that it was likely to take longer than required by regulation. One interviewee pointed out that at the beginning of the process participants were unsure of how long permitting would take under the previously unimplemented Part 632 regulations:

Our statute gives [the DEQ] about six and a half months if you follow it to the letter. That was a new statute, we hadn't done it yet, so to be able to anticipate how long it was going to be, we didn't have any idea (Interview 13 2012).

Some participants not only understood that the actual structure would vary, but expressed that it was important that permitting was not rushed:

So this process didn't follow the normal timeframe, nor should it. What is it, an 8,000-page application? For a new mine, for a new law, and it is going to take longer and we are okay with that. It is not something you can rush through (Interview 11 2012).

Another interviewee explained that the process for the Eagle Mine would impact mine permitting in the future, and therefore needed to proceed carefully:

It shouldn't be fast, every decision that is made sets a precedent for what comes after, so we know that as we go through this process that the way we do something, the way we approach something sets a precedent. The way the DEQ decided on anything. You need to take your time, we may be talking about fifty years of industry that we are affecting, or more (Interview 12 2012).

So although permitting took longer than required by Part 632, going into the process participants recognized the importance of the first mine permitted under the new law.

Although the participants interviewed recognized that permitting would vary from how the Part 632 structured the decision-making process, many citizen group representatives felt like that the opportunities to be involved in the permitting process did not allow their concerns to be heard and their participation had little impact. When asked about how they viewed the structure of participation allowed through Part 632, one citizen group representative explained that they saw a difference between participation as structured by regulation and effectively incorporating that participation into decision-making:

Well, adequate opportunity for participation, sure, people can go and submit comments and go give testimony at a hearing. Do I think there is adequate

opportunity for the public to actually influence decision-making? Absolutely not (Interview 5 2012).

This interviewee went on to explain that the nature of the one-way communication at public hearings contributed to this concern, and that a lack of dialogue was not an effective means of coming to decisions. Some participants in public hearings saw them as an opportunity for the public to 'vent' and generate emotional responses from other participants was common for many interviewees who were opponents of the mining project. As one interviewee explained how they approached their participation after learning about how the process worked:

I think I learned very quickly that it is not really about, those public hearings are not really about influencing the DEQ's decision because they already have their minds made up. It is really, and other people that I have talked to that have been involved in this process too feel exactly the same way, that is more about that media attention that you get. This is an opportunity that you get that you have a microphone and you have the news there to voice your concerns to the general public... So I guess my expectation in going to these things is to have a voice that hopefully inspires other people (Interview 17 2012).

Another interviewee expressed similar ideas about public hearings and the perception that participation did little to influence decisions through the DEQ:

As far as the permitting process goes, I felt like the public hearings weren't effective, I felt like no one was listening to us, I felt like it was a way to let the public vent rather than a way to really listen to us. Because especially if you just didn't want the mine, if you had given enough evidence, there is no way to say no in that process. There was absolutely no way to say no (Interview 6 2012).

These responses indicates how some interviewees described their attitudes towards public hearings, and the perceived effectiveness of participation in a process in which they felt decisions had already been made, allowing no opportunities for the public to decide that a mine should not be developed.

Organized citizen groups recognized the limitations of the impacts of their participation on decision-making, and as a result explored alternative methods for influencing decisions. One citizen group representative explained how public participation structures for mine permitting impacted actions that groups took outside of the permitting process:

I think frustration from the public hearings maybe brought on more rallies and protests and things like that, but nothing out of hand. I think we dug our heels in knowing that the DEQ is only going to do so much. They were approving permits and we knew we were in trouble and I think we were always searching for ways to connect with people (Interview 3 2012).

Not only did this interviewee mention that their participation had limited impacts on decisions that were made, they went on to explain how they saw their input in the permitting process impacting decisions:

They really just used that [input] to go back to the company and say ‘look, this is what so-and-so thinks should happen, this is the kind of change that Mr. Scientist wants to change’ and they used people’s testimony to beef up the permit. The company came back with amendments to the permit that they [DEQ] okayed, and basically a direct result of what people wanted or were concerned about, or worried about, and testified about. I don’t even know if that is standard practice, but it was just disappointing (Interview 3 2012).

This interviewee, and others, anticipated the input that opponents provided about possible deficiencies in the permit application as a means to stop the mine from being developed. They were disappointed that identifying flaws did not stop the mine from being permitted, and instead that the comments were being used to improve the mining permit and plan. Given that public input was intended to be used to improve the mining permit and minimize environmental impacts, negative perceptions of permit changes resulting from input indicates misunderstanding of the permitting process and the goals of opponents to stop development rather than simply minimizing impacts.

As citizen group representatives recognized the limitations of their impacts through public participation, they began exploring other options to influence decision-making. One approach from opposition groups attempted to stop development of the mine by requesting intervention from Governor Rick Snyder, “[Our group] felt like we needed to make it a moral decision. The governor had to be given a choice, that this mine was going to be a poison” (Interview 7 2012). Other approaches were implemented after the mine was permitted, For example, various groups organized protests in Marquette and at the mine site to protest development of the site. As one interviewee pointed out:

We really met often as a coalition to decide strategy. You know the state of Michigan, the DEQ, okayed the permits, now what do we do? So aside from the litigation, we just kept up our steam, we just try to get the information out there, we try to get them involved, and we try to get them to understand what is really going on with the possible expansion of a mining district in the UP and what that means for everybody (Interview 5 2012).

Opposition groups maintained efforts to develop methods to stop the mine throughout decision-making and even after permits were issued.

A Kennecott representative saw the public participation process and the input and concerns that were presented as beneficial to planning, but also recognized similar concerns as other participants:

I think that there were a lot of people that spoke in opposition and said their piece. But there was a lot of good information that came out of it that we were able to take back. What I do think, and I don’t know how anyone would solve this problem, but I do think that the public felt unheard. I do. I think that in most public hearings in that whole process they felt like they were going there and speaking and they had to do their part but they really felt like no one was really listening. I think the public felt that way, and I think they thought the DEQ was sitting there thinking ‘let’s just get this over with’ and not paying attention (Interview 12 2012).

Kennecott recognized that the public was unsatisfied with opportunities for participation during permitting, and the company created additional opportunities to incorporate public input in the development of the Eagle Mine through its CAG. The importance of information received through the CAG and how the information was used to change plans was explained in an interview with a Kennecott representative, “The mill, the power, the new road concept, all concepts the community brought to us. Those weren’t originally thought of by the company and those came up through the CAG” (Interview 12 2012). Not everyone was supportive of the CAG and how it was operated, and criticized the process for giving the illusion of incorporating public input:

They brought in their consultants to man those meetings, they were all PR guys that knew what to say and what not to say. But it didn’t take very long before those meetings, instead of being exchanges, became one way. So they got to a point where they would no longer take questions, that the meetings became more or less a for-your-information kind of meeting. It would be a monologue from them to us, out in the audience, of what they are doing. And questions and comments were not acceptable anymore (Interview 10 2012).

Interviewees discussed the importance of having a “social license to operate in addition to the technical permits that are required” (Interview 12 2012). One Kennecott representative explained how the company approached the community:

It is up to us to communicate effectively to the community. How do we do that? There is a variety of ways, whether it is presentations to local groups, newsletters, commercials, focus group engagements, creating the community advisory group. And forming those relationships in the communities so people understand who we are, what we are, what we have done at other projects, how do the communities at other projects feel about us (Interview 12 2012).

Communication with affected communities and their elected representatives began soon after intentions to develop the Eagle Mine were clear (Interview 9 2012).

Another issue which the opponents of the mine observed about the permitting process for the Eagle Mine was that it was focused on specific aspects of the project, specifically the contents of the permit application, not the cumulative impacts of mining on the Upper Peninsula or Lake Superior. Many citizen group representatives were not only active in the permitting of the Kennecott Eagle Mine, but were also active in permitting of the Humboldt Mill and County Road 595, indicating that it was not necessarily the mine alone that caused their concern, rather the combined impacts that mining activities would have on the area. One opponent of the mine explained the concern goes beyond the impacts of mining specifically, and there was no opportunity to express that formally:

I think one thing that some people have a problem with is the fact that people really aren't against mining; they are against trashing the environment. And this whole idea of opposing the mine is not so much based in mining as mining, it is based on the fact that this has a potential risk and that the risk is large and that the risk involves things like Lake Superior and the Great Lakes and it involves the recognition there are already mercury fish advisories for all of the fish in the Great Lakes. And the question of if we want to add nickel to that, do we want to add copper to that, do we want to add other metals that are toxic. No, it is a matter of being opposed to environmental degradation; it is not opposing mining (Interview 10 2012).

This interviewee captured what other opponents described, that their concerns go beyond whether the Kennecott Eagle Mine can meet all of the environmental regulatory requirements, and are related to potentially cumulative environmental risks not captured in mine permitting as structured by Part 632.

There are different reasons that many participants perceived the participatory process as lacking in public influence, but many interviewees expressed that they observed a difference in the ability to participate and the ability to influence decisions.

The interviewee's role seemed to impact how they perceived participation, with those who opposed the project expressing more discontent with the process than those who may have supported or been involved in some other way.

Participation and Technical Comments

One of the main differences between opportunities for public participation and public expectations of the process was the technical nature of comments accepted during the public hearings and written comment periods. The intent of the public hearings and comment periods were to gain feedback on the contents of the permit application, not general comment and opinion about the project. If the permit application met the requirements of the law, the result is the approval of a mining permit from the DEQ. Another challenge created by the technical nature of comments is that it limited the ability of citizens to participate, since it required technical expertise in order to effectively participate.

Some interviewees mentioned nontechnical arguments such as social changes to local communities, impacts to the general nature of the location of the mine site and Lake Superior, as well as arguments about cultural impacts of development near Eagle Rock that did not fit into the structure of the law as interpreted by the DEQ. When asked about how they saw participation, one KBIC representative said:

It sort of lacks a human element to what they [the DEQ] are doing. It is very technical, and I think the technical applications themselves are inaccessible to the public. I think it needs to have more of a human element or a community element incorporating values other than stringent technical review process that they say they follow, but then they don't even follow their own technical rules (Interview 17 2012).

This interviewee's response indicates that although there is a participatory structure created by regulation that focuses on specific environmental impact requirements for a mine to be permitted, participants recognized other impacts they considered important but had no formal opportunity to address. Another interviewee explained that they wished there was an opportunity to make a moral argument about why mine development may not be in the best interest of the community, but there was no opportunity in the current participatory structure, requiring efforts outside of mine permitting (Interview 7 2012).

Stakeholders had differences in opinions about how the process worked for incorporating participant's concerns. When asked about whether the process allowed adequate consideration of public concern, a Kennecott representative mentioned public understanding and acceptance of the goals of the permitting process as an important factor in understanding participation:

I heard that [concerns were not adequately addressed], that was kind of an overarching theme of the participation process but it gets down to the expectation of what the permitting process is for. Back to that it is not there to stop a project; it is just there to make sure that the project, when it is moving forward, can be regulated under the law (Interview 11 2012).

One citizen group representative commented on participants providing non-technical comments and how they fit into the decision-making process. This participant explained the need for balance between consideration of environmental impacts described by science, and moral or value-based arguments citizens had:

I understand, there is nothing wrong with people being concerned and loving a lifestyle and an area, it is very natural. It is one of the things that drives environmental conduct in the world, given the research we have done. And it should be taken into account, but it is how you take it into account and the extent of how you weigh it against science. If they [the opposition] had taken this argument straight up and said it is not over the science, but it is over the passion,

that I think would be a better position and I think the company would work with that (Interview 4 2012).

These responses indicate that they recognize the importance of nontechnical arguments about development, but the way that Part 632 structures the public hearing process does not allow those arguments to be addressed.

Expectations of how to participate going into the permitting process varied among participants, especially opponents who may not have participated in a public hearing process prior to the permitting of the Eagle Mine. Participants who may not have initially been connected to citizen groups when they became involved in permitting generally viewed public hearings as an opportunity to provide public opinion about the project. One interviewee described how attendance at public hearings was generally dominated by mine opponents, but they were often not making technical arguments or comments:

Out of the 300 people in the first public meeting, let's say 90 people got up and spoke, I don't remember how many it was, I would have to say that only about two percent of them got up and talked about technical things. People either got up, well at the one at Northern most of them got up and said 'I think the DEQ should deny this permit, it is bad for the environment. I think it is going to destroy tourism. I think it is going to do this, this, this, and this.' So there is nothing to respond to there because it is not part of our statutory requirement (Interview 13 2012).

The perception from participants that opinions did not matter to the DEQ was a major source of discontent, and an issue some stakeholders had with the participatory process as structured by Part 632. Even though not all interviewees were initially part of a citizen group when they began participating, many aligned themselves with various groups as the permitting process went on.

Interviewees who were representatives of a well established environmental or local interest group generally understood the technical nature of the comments that would

be accepted during public hearings. To prepare for participation in the permitting process, groups sought experts to comment on the mining application. One interviewee explains how their citizen group approached participation:

[We were] always calling on experts. Always. And trying to find the person who knows, like what did you do or what did you do about this or how do we talk about this problem. Here is what the DEQ is doing, is there anyone we can talk to that knows anything about dealing with it. It has been a constant searching of help and trying to reach out and get help and trying to make sense of all of this (Interview 3 2012).

Another interviewee explained how groups worked together hiring consultants to help identify deficiencies in the mining permit application after it became clear that the major groups opposing the mine were the National Wildlife Federation, the Huron Mountain Club, and the KBIC (Interview 10 2012). Another citizen group representative went further in explaining how groups worked together to prepare for commenting in the permitting process:

Early on I think it was that we were trying to feel each other out and see who was going to do what because all of the groups have limited resources and we didn't want to be doing things redundantly. So if I knew that the KBIC was going to focus on cultural issues, then that was one thing that I didn't need to find experts to deal with, I didn't need to spend a lot of time on that. So early on we figured out who would be responsible for reviewing different portions of the application, we submitted technical comments, very substantial technical comments on all aspects of the program. We hired expert witnesses, sometimes together, sometimes separately, but we all sort of put our resources together in order to have the best review that we could manage (Interview 5 2012).

Although some groups understood the permitting process and the structure of the public participation, participants who did not have access to the resources necessary to hire experts were left to prepare themselves to participate, which resulted in different access to expertise depending on the financial resources they have available. One interviewee explained how they felt while participating early in the decision-making

process, “I felt like the government [the DEQ] wasn’t listening to us because we weren’t experts. We were just curious citizens trying to figure out what is going on” (Interview 6 2012). Given that many participants were involved during the permitting process in addition to meeting the needs of their families and work, many were left relying on internet resources that were available to them and relying on sound bites to inform their participation:

I mean most people don’t know that [specifics of mining plans] or have the time or inclination even to go researching that type of thing, so they are just sort of left relying on sound bites and snippets out of the news, which is usually not very helpful, I would say (Interview 5 2012).

Most interviewees agreed that the information necessary to participate was available in the mining permit application, but the 8,000-page document was not understood by all participants. The Kennecott Eagle Mine Permit Application is filled with complex information about site plans and expected impacts, which makes review during comment periods challenging. Even if an individual were to avail themselves to researching the mining permit application, they faced timelines for decision-making and commenting that many felt were rushed, a sentiment described by a DEQ representative:

So let’s say someone decides that he wants to review the application. I am not the only one reviewing this application [for the DEQ]. We have a team of twelve people, so for someone to review this application by himself you are absolutely right, you aren’t going to be able to do it in the however many months we get to make our decision to review that. You probably don’t, but we can’t change the timeframe because it is driven by the legislators through how our laws are made. We did not make that timeline, I did not make that timeline, but we have to follow it. Do I agree the public can review? Possibly not, they may not. An individual that doesn’t know anything about mining to review a 10,000-page document and absorb it and comprehend it, no you aren’t going to be able to (Interview 13 2012).

A citizen group representative explained how they saw the general public's ability to participate:

They would have to find the time themselves. How long is long enough for a comment period or what have you. Now, your average Joe on the street does not have the wherewithal to read through a permit, they just don't. I mean what does this word mean, what is this? I mean they don't have the framework, and that is one of the problems we have in general in permitting and in law in this country. There is a great need for people to be able to translate that, in an unbiased fashion, to other folks (Interview 4 2012).

The idea that there is a need for accessible information for the general public participants that allows them to participate was an idea presented by all stakeholder groups. Part of the struggle for those attempting to participate is that they are faced with identifying reliable sources of information while both opponents and proponents of mining are presenting information that promotes a certain agenda.

One interviewee pointed out that the length of the permit application and limited review time make some participants reliant on sound bites for information:

I think most people are stuck relying on newspaper articles, TV news articles, those sorts of resources, I mean most people don't have time to go really figure out how acid mine drainage works or what the heck is horizontal stress anyway and what is the big deal about it. I mean most people don't know that or have the time or inclination even to go researching that type of thing so they are just sort of left relying on sound bites and snippets out of the news, which is usually not very helpful, I would say, by and large (Interview 5 2012).

This observation also points to a challenge for access to information created by the structure of participation. Even if a person would like to participate, they rely on others providing information for comments, which does not necessarily help inform the decision-making process.

The technical nature of mine permitting process created challenges for participants as well as decision-makers and contributed to issues that participants

identified with the permitting process. The ability to effectively participate in the permitting process required a level of technical expertise that not all participants had access to, especially within permitting timelines. Despite efforts to participate in the permitting process by giving technical comments, not all participants were satisfied with how comments were used in decision-making.

DEQ Handling of Participation

Many interviewees described issues with the structure of participation, timelines of permitting, and the technical nature of comments. Others saw the participatory process as defined by Part 632 as adequate for accepting public comment, but identified the handling of the process by the DEQ as problematic. Interviewees recognized that there were differences between the expectations of the role of the DEQ and what participants experienced during permitting.

When asked about whether the permitting process allowed adequate opportunity for participation, one KBIC representative stated:

You know it does, on paper, but just like the regulations themselves, the public participation is only as good as the DEQ wants it to be. And there are so many instances where they would answer to comments in very general, nonspecific ways and wouldn't provide follow up (Interview 10 2012).

The interviewee did not specify what was not addressed, but went on to explain how they saw the DEQ interpreted the law related to public participation during permitting of the Eagle Project:

In their execution of Part 632 which are the regulations that they are supposed to be following. Like I said, there is always interpretations with regulations. Regulators are in the position to make those interpretations, and they can swing

that interpretation in a pretty wide range of final decisions. And I think they abused their discretion (Interview 10 2012).

The observation that the DEQ had some flexibility through interpretation of Part 632 was common among many opponents of the Kennecott Eagle Project, and represented how some participants viewed DEQ responsibilities to the public and handling of environmental permitting.

The goals and responsibilities of the DEQ are important to understand when considering expectations for public participation and experiences in the process. A Kennecott representative observed that people may be misunderstanding the goals of the DEQ and environmental permitting in general:

I think though that people just have this idea that the Department of Environmental Quality is there to protect the environment and the only way to protect the environment is to not let anything happen. And they forget that you have to have this balance in there and that you can have both, you can have economic growth and you can still protect the environment and that is the balance that you try to strike. I think that is what people miss, they think that when you hear environmental they just think environment, they go to the extreme, and they forget that there is a balance (Interview 12 2012).

This response also points out the limitations that regulations place on decision-makers and the balance required between environmental protection and development. The idea that some participants had an image of the DEQ having a responsibility for environmental protection was reflected in responses many opponents of the Kennecott Eagle Project, but none mentioned that they also have a responsibility for facilitating responsible development of resources.

There were more opportunities for public participation in the permitting of the Kennecott Eagle Mine than are outlined by Michigan's Part 632 mining law, but many participants were still not satisfied with how they were able to participate and how the

information that they presented was used to influence decisions. One interviewee described the DEQ's decision to permit the Kennecott Eagle Mine as "fraudulent" (Interview 2 2012). Another participant did not see the DEQ as acting in the public's interest through actions during the permitting process:

Oh the DEQ was just terrible, I feel like they were really terrible. I feel like they lost their patience with us, they weren't open, they wouldn't meet with me... they would tell us one thing at the table and would say it is going to be this way and the next day we would come and they had decided something else (Interview 6 2012).

When asked about how the DEQ handled public participation during permitting, one interviewee said, "They were worse than the company. They just held some public meetings and hearings as required by law" (Interview 5 2012). The structure that is part of the regulation is the structure that must be used and there is limited flexibility for the DEQ to change public participation.

Technical comments were an issue that was recognized by many interviewees, and groups made efforts to participate in the permitting process by providing technical comments. Even when technical comments were made, participants were not always satisfied with the responses to comments provided by the DEQ. There were multiple reasons for this that were given by citizen group representatives that included limited resources of the decision-making agency and a large volume of comments, and a disinterest from the DEQ about the importance of public participation in decision-making. A citizen group representative saw the responses to public comment as a reflection of DEQ attitudes toward participation:

The written responses were, they often seemed to be pre-formulated to get to a preconceived notion of what they answer to the inquiry would be. I personally have never felt like the public comment has ever been really taken seriously by

the DEQ nor that it has ever changed anything about this project. It's something they have to do, it is a checklist that they have to get through (Interview 5 2012).

Another citizen group representative described the response to the comments from outside consultants, and questioned the DEQ's ability to review the lengthy public comments in short time periods before decisions had to be made:

The comments, of course, are to the state of Michigan. They are during the public comment period, the date on there was the closing date of comments on the Eagle Mine, October 17, 2007. It was shortly after this that the state, I mean it seems like they didn't even have time to read our comments, they issued the permit to Kennecott (Interview 10 2012).

Despite efforts to participate in the structure that was available, not all participants were satisfied with how public input was taken into account during decision-making. A state agency representative mentioned the discrepancy between how people participated and the goal of the participatory process:

Did we address the comments the way the commenter wanted? Maybe not. But if they made a technical comment, even however quasi-technical it was, if it was even a hint of technical, we tried to respond to it and I think we did a good job of that. You can't, sometimes when you are reading public comments, you can't read into what they are trying to say. Sometimes you might be a novice with scientific information so you are trying to get your point across, which when we are reading it we may not quite understand it. So we have to try to interpret what they may be saying (Interview 13 2012).

This response explains the challenges faced by agencies working with a participatory process requiring technical input and public participants who were attempting to influence decision-making without a technical background.

When asked about access to information, many opponents of the Eagle Mine mentioned that they did not trust that the DEQ was sharing the information that they had, so groups relied on FOIA requests to ensure transparency from the DEQ. One citizen group representative said, "I think a lot of it [information about the Eagle Project] we had

to dig up, we had to FOIA. We had to find out how the inner workings of the DEQ were happening” (Interview 3 2012). Opponents were also concerned that, for the Eagle Project, the DEQ was the sole agency responsible for issuing permits to operate the mine. Many interviewees expressed that more direct federal involvement in the permitting process would have improved decision-making. One interviewee explained views on the lack of federal agency involvement:

Michigan has been delegated all of the authority for all of the programs that it needs to give this mine complete permission to operate. That’s a big responsibility, and again I don’t think the state of Michigan is up to fulfilling those responsibilities... All sorts of federal requirements fall away. So again, the public is left with a real feeling that they are not getting their say because federal agencies are not here, the EPA, the Corps of Engineers, the Fish and Wildlife Service, these people are not here to make sure it is done right. Michigan and Kennecott have made sure that the federal people don’t get involved, so it increases this distrust that they have got something to hid and that the state and the mining company want to keep the state and the federal people out of the picture (Interview 10 2012).

Even though federal agencies were present to consult the state on certain impacts, some participants in the permitting process would have liked more direct federal involvement in decision-making because they did not trust the DEQ’s handling of permitting.

Participant’s expectations of DEQ actions varied from what was observed during the permitting of the Kennecott Eagle Project, indicating that there is a need for more clarity and communication of the DEQ’s permitting goals, as well as the limitations of participation through current mining regulations.

Stakeholder Trust

A theme present in the responses of many interviewees reflected mistrust of other stakeholders participating in the process, which degraded the ability to communicate and

participate as well as the likelihood of future participation. Mistrust was not just an issue for citizens and their views of Kennecott and the DEQ; the DEQ and Kennecott also faced issues of trust with participants that they interacted with. Events throughout the history of permitting of the Kennecott Eagle Project led to a breakdown of trust between stakeholders in the decision-making process.

Kennecott, a large mining company that came into a small community with intentions to extract resources, faced challenges in gaining the trust of local opposition from the beginning. Some interviewees explained that the idea of a large company investing large amounts of money in the community in order to generate profits for a company located elsewhere was not an entity that the community should welcome so openly. One interviewee explained that they have not trusted Kennecott's actions from the beginning, and they did not fully trust the DEQ's actions or the permitting process either:

I just inherently don't trust what comes from the company, which is probably one of the number one flaws with the Part 632 regulations with how the mining company gets to create their own environmental impact assessment and study, because reviewing it is just very difficult. I just don't really trust it, you know, trust the process (Interview 17 2012).

This response shows how some interviewees thought that Kennecott possibly had too much control in how the mine they intended to develop would be regulated. Another citizen group representative does not think that the benefits that Kennecott has claimed that the community will receive will be realized in the way they were promised:

The mining company has always claimed transparency, but it was very quickly that we found out that they were not. In fact, you know, what they have talked about in this community and promised and have planned, I think the community is going to find out that not all of that crap is going to happen. It is going to come around and bite them in the bud, that they have trusted this major company to do

what they say they are going to do. Their plans change all the time, and a lot of it is based on money (Interview 3 2012).

Whether this interviewee's suspicions are correct will not be known until the mine is operated and eventually closed, but this response is representative of how many opponents of the Eagle Mine viewed Kennecott's presence in the community. Another stakeholder describes a different perspective on Kennecott's actions and presence in the community, "We maintain a presence on their advisory board, we have good relationships with them. They have wanted to reach out into the community, we are working more with Kennecott now because we are concerned" (Interview 4 2012). This interviewee went on to describe how Kennecott has been responsive to the local interest group's concerns and that they trust Kennecott to meet the promises that the company makes.

Some interviewees thought that Kennecott could have been more successful in gaining community trust early in the project if there had been more transparency in their actions. One stakeholder explained how Kennecott's reputation and intentions were seen by some citizen groups, "Kennecott, because they were not transparent with their information, the suspicion that they did not have a viable mine plan just grew and grew and festered over the years and that is kind of the mindset everybody got into" (Interview 10 2012). Another interviewee explained how they viewed Kennecott's early actions in the development of the Eagle Mine:

The problem, and this is something I have told the company to its face, and I think they agree, is that this was botched from the beginning in terms of public outreach. When Kennecott Exploration came in here... they are field operatives, they are not trained to do this outreach. And so what happened initially is that you would see the rigs going around to do some of the exploratory drilling, etcetera, etcetera, and they didn't have much public presence other than those

trucks that were out there and maybe informal communication... Interestingly enough, there wasn't any groundswell of opposition to those folks being here for two or three years looking for stuff, flying over and everything like that. But once they identified that we have a high-grade nickel deposit here, that is when opposition started forming... as soon as people started seeing that there was a potential for development out there on the Yellowdog Plains, folks were really concerned (Interview 4 2012).

The idea that the lack of engagement that Kennecott has had with the public early in the project contributed to opposition was an idea presented by mining opponents and supporters, as well as the company itself.

Distrust among stakeholders in the decision-making process of the Kennecott Eagle Mine goes past the general distrust of a large company coming into a small community. Some interviewees identified distrust as growing during the creation of the Part 632 mining regulations that would apply to the Eagle Mine. Some participants saw Kennecott's presence in the rule making process as detracting from the strength of the law that was being developed. A KBIC representative pointed out the issues with having mining companies involved with the creation of Part 632:

I guess I have problems with the regulations being formed by regulators sitting down and talking about, or with, the regulated. In other words, when you bring Kennecott to the table, which is where they were, they were on this committee, putting together regulations that would govern them in their mining operations. There were some things that they said fine, this is great, this is environmentally sensitive and this is stuff we're going to do and we approve of. But there are a lot of things that they would not budge on (Interview 10 2012).

This response shows how some participants, especially opponents of the Kennecott Eagle Project, were not confident with Michigan's Part 632 regulations from the start, which impacted how they viewed their involvement during the permitting of the Eagle Mine. Other stakeholders, such as the mining company, the DEQ, and other supporters of the mining project viewed the collaborative process to create Part 632 as beneficial, and

thought that having all stakeholders involved in the process resulted in a stringent mining law. One government representative said:

It's the strictest [mining] law I know that exists on this, and there has been ample opportunity for input from all concerns. Even [environmental groups] were involved in the writing of Part 632, and the tribes had a representative there too, so it wasn't just a one-sided deal when the law was written (Interview 9 2012).

Regardless of whether the collaborative origins of Part 632 resulted in a more environmentally protective mining law, many interviewees saw this point in the history of the Kennecott Eagle process as the start of distrust for other stakeholders.

Another event, the mishandling by the DEQ of the Sainsbury report that was critical of the calculations Kennecott used to determine mine stability, contributed to distrust of some participants in the process and was also an event that led to more opportunities for public comment. Even though a report by Dr. Inman that examined the DEQ's actions found that the suppression was not intentional or done to mislead the public, some interviewees questioned the potential that this was not the only example. One citizen group representative explained how the handling of the Sainsbury report hurt participation and decision-making and made participants question whether this was the only example of DEQ mishandling information:

You just wonder how many times things like that happened and if we had had that information earlier in the process it certainly would have been helpful because by that point they were already to a proposed approval of the project. Even though there was this report that the DEQ had and nobody else, well the company had it and the DEQ had it, but none of us had it despite our FOIA requests for those exact items (Interview 5 2012).

Some participants in the permitting process were already unhappy with how the DEQ was handling public participation prior to the discovery of the report that was critical of

the mine design, and felt like this event confirmed their suspicions (Interview 3 2012; Interview 5 2012; Interview 10 2012; Interview 17 2012).

Distrust in the Kennecott Eagle Project also came as a result of a form of public participation that is part of the Part 632 mining law. Contested case hearings were identified by mining company representatives as limiting to communication between the public and the company. One interviewee mentioned being afraid of their words being misrepresented if captured on video, especially with the potential for online sharing of that information. A Kennecott representative commented on how contested cases impacted their public outreach, “After we filed the application and went to court and then you are afraid. You don’t know what you can say, you just feel like you have to watch your step while you are waiting for that to go through court” (Interview 12 2012). This interviewee went on to explain that when scrutiny of the mining project was so intense, Kennecott representatives had to be careful about how transparent they could be over the long process leading to the permitting of the mine, due to concerns about public pressure if plans changed from something discussed earlier. Another Kennecott representative expressed similar perceptions:

The communications from the company were limited at times because of the litigation, and that really impacts the project and how you communicate. So that steered the whole project for a number of years, was the litigation. If you are out there talking about the project you are careful about what you say because of Youtube and Facebook and all of the instant data. So the company has to be very careful about that because there are always people out there to harm you, and they are not afraid to use things that aren’t factual, and they will certainly embellish the truth and embellish false information and it is hard to constantly fight that (Interview 11 2012).

This response displays how opportunities for the public to be involved in permitting, in this case through contested case hearings or lawsuits, takes away from other public

engagement strategies that the company may have implemented to be more transparent in their actions. An event early in the development of the Eagle Project likely impacted the relationship between Kennecott and some opposition groups:

The [citizen group] invited the folks from Utah, home office of Kennecott, to come out and have a talk about their concerns... And this was before permitting and the creation of the law. Those folks fly in and say 'yeah, we will sit down and talk to you,' they bring them into an office in Big Bay, sit down and have a nice cordial little discussion. The meeting is over, they get up to walk out and there is a protest going on outside with local media. They were set up for that. That is not a way to build a good relationship... You have people say one thing that they want to work with you, but they are sticking a knife in your back otherwise. That is not a good way to build relationships and we know that just as people. So I might disagree with some of the tactics that have been used here, but I understand the sentiment (Interview 4 2012).

This interviewee's response describes an event that likely led to the concerns about how Kennecott representatives cautiously approached engaging with the public as the project moved forward.

Another event that seems to be a source of distrust by participants is the perceived conflict of interest of former state employees being hired by Kennecott. At least two individuals represented different state agencies prior to taking different roles with Kennecott as the Eagle Project progressed. Some people identified the ability for individuals to be working for the state to begin working for Kennecott as "frustrating" and a "conflict of interest" and as a result degrading to participant's trust in decision-makers and the company (Interview 3 2012; Interview 6 2012; Interview 17 2012; Caplett 2008).

Regardless of the cause of the breakdown of trust or dissatisfaction with the permitting process, it got to the point where some people felt like they were being personally attacked by stakeholders with different opinions. One local government

representative said, “I found over the years with some groups in many settings that if you don’t agree with them, they get mean. You can’t believe the names I have been called” (Interview 15 2012).

Breakdown of trust and respect for other participants negatively impacts communication, which is crucial to participation and permitting processes. One interviewee explained how they saw trust among stakeholders in general, and how the unwillingness for some to trust others involved in the process contributed to more division:

I get the sense that there are some forces out there in society, even here in some of our small organizations, that wouldn’t trust anything that the state or the company had to say. It is all a lie. They won’t trust any of it, and for a variety of reasons, maybe some good reasons. In which case it is true people don’t respond to facts, they respond to the framing of facts and the values that flow from that. I don’t think that’s been a real problem for most people. At least on paper it isn’t, but it is a problem in that some people don’t avail themselves of it or they will rely on what their gatekeepers tell them is coming in. Because you can go online and you can find lots of stuff on this project. You can go into state and federal documents and you can find lots of stuff on this project. People are busy, people don’t have time to do that. They want it in the sound bite and they want to trust their neighbor to tell them what the story is (Interview 4 2012).

This interviewee’s view is that distrust among participants contributes to division among different stakeholder groups, which is perpetuated as different groups sharing and accepting information among people that have similar views.

Regardless of whether the source of distrust is exclusively a result of the unknown interests of a large mining company, or whether specific events during the permitting of the Eagle Mine contributed to distrust among stakeholders, the distrust that was present limited the ability for stakeholder groups to work together.

Chapter 6: Discussion and Conclusion

Stakeholder interviews and documentary research focused on answering two research questions in order to understand public participation in mine permitting in Michigan. The following research questions were explored:

- 1) How did the participatory process progress in practice compare to how it is structured by regulations and
- 2) How did experiences and perceptions of the participatory process vary between participants?

Understanding these two aspects of the public participation experience in Michigan provides insight into the effectiveness of public participation that is a component of Michigan's Part 632 mining law. The permitting process for the Kennecott Eagle Project provided an interesting case for exploring how and why permitting deviated from the structure for permitting that is outlined in Part 632 for reasons that included mishandling of documents by the DEQ, contested case hearings from opponents of the Eagle Mine project, and the coordination of multiple permits into a consolidated public hearing process.

Stakeholder interviews uncovered four main themes that were common topics with varying perception among different groups. These themes included challenges with the structure of public participation, a limited ability to participate due to the technical nature of the permitting process, differing opinion of how well the DEQ handled public participation, and distrust among participants that limited communication. This research identified three important findings from these four themes about public participation in Michigan's mining policy.

First, the permitting process under Part 632 is resistant to public opposition and favors mine development. Comments provided during the public participation process are incorporated into a response to public comment documents prepared by the DEQ. If the comment is not addressed in the permit application, the DEQ can request clarification from the mining company and the mining company then has the opportunity to respond to the requested clarifications and address any concerns. In this respect, the public participation process identifies potential gaps to address in permit applications, rather than question the desirability of a mine plan, a downfall in the structure of the permitting process that frustrated many interviewees.

This finding reflects research of Susan Senecah's (2004) idea that effective participation must allow participants to perceive an influence on decisions that were made. If participants do not recognize their input as having influence on decision-making, they are likely to become frustrated with the process and regulators and pursue alternative ways to influence decisions. In the case of the Kennecott Eagle Mine, nearly all participants that were interviewed were dissatisfied with the influence that they had and would have preferred to be involved in discussion of decisions that had not already been made, rather than providing feedback on a complete plan to develop a mine. The permitting of the Kennecott Eagle mine showed many participants that there was a difference between the ability to participate, and the ability to influence decisions, a major reason many were active outside of the permitting process. Overall, the permitting process was more effective for the applicants since it improved their plans with seemingly little risk to the further development of the mine.

Improving the influence of the public within the permitting process is limited by the structure of current regulation, as the public hearings and application process are outlined in Part 632. Efforts by the DEQ could help the participants' understanding of the goals of a public hearing, but allowing more public influence would require regulatory change by lawmakers.

A second finding is that there is a need to improve upon the transparency of the DEQ and its actions. Through these interviews, it was clear that not all participants in the process understood that their participation was to improve the mining permit application. Most participants were disappointed that despite the evidence they provided that was critical of the mine application, the information was not effective in stopping the mine from development. Actions by the DEQ, such as not releasing reports, did not satisfy participants who expected the DEQ to be working in the public's best interest.

Different interviewees that represented Kennecott, local governments, mine supporters and mine opponents mentioned lack of clarity of permitting and DEQ goals as a source of distrust of the DEQ by participants. Many suggested that if the DEQ was more encouraging and receptive of participation, while at the same time being clearer about exactly what the goals were, participants would have been more satisfied with how the permitting process occurred. This reflects the findings of a 1999 publication by the National Research Council that the public has little confidence in the fairness of the permitting process, and that in some cases the public thinks that the regulators work too closely with mining companies. Although some responsibility falls on participants to be informed about the process they are participating in, building transparency of DEQ actions through clear communication of agency and permitting goals, increased access to

DEQ expertise, and improved responses to public comments are actions that can be taken to increase public trust in regulators and may improve opinion of the DEQ's handling of public participation with future projects. Avoiding the mishandling of information, such as the delayed release of the Sainsbury report, would also help regulators to avoid losing the confidence of the public.

Third, public participation is not inclusive and accessible for all stakeholders affected by a mining project. Effective comment on permit applications requires technical expertise within short timeframes for review and comment. Regardless of the nature of an individual's concern with a mine project, unless the comment fits within the scope of a permit application, there is no formal opportunity for consideration of that concern. In the Kennecott Eagle case, some opponents of the project recognized this and sought technical experts to inform their participation in the permitting process, however this alternative is not available to members of the public who lack the resources necessary to hire consultants.

Despite the difficulty some participants faced in trying to be involved in the technical process, combined with potentially misunderstanding the goals of the permitting process, stakeholders participated in the permitting process because it was the only formal opportunity that was available. As Switzer (2001) pointed out, interest groups participated in the permitting process because it was a "policy window" in decision-making that was available to them. Discontent with the structure of regulation also likely contributed to the actions of some opponent groups outside of the permitting process, due to the perceived lack of influence on decisions experienced by participants described by Senecah (2004). According to Senecah, successful participation allows

access to the decision-making process, standing of individuals participating, and the ability of participants to influence decisions. In the case of the Kennecott Eagle Project permitting, most participants did not experience these factors, and were not satisfied with the participatory process.

Similar to other issues with the permitting process, the issue of participants' ability to participate is limited by existing regulation. Potential improvements could attempt to change new participants' expectations of their involvement in the permitting process, and could be accomplished by educating participants. In addition to this, providing more access by the public to DEQ expertise could help participants inform themselves about the issues, and lessen their challenge of building a technical expertise within short participation windows. This may also increase the public's confidence in the DEQ's actions and decisions.

Limitations of Research

The research into participants' experiences in the permitting of the Kennecott Eagle Mine has limitations. The sample size of 17 participants that were interviewed was small, and could have included more interviews from different stakeholder groups in order to better identify trends within specific groups. The interviewees also had to be willing to be involved in this research, and some who were most involved during permitting were unwilling to be participate in an interview, while others had moved away from the area or had moved on from focusing on the Eagle Project.

The perspective of the interviewees, who were asked to reflect on a process that was completed and resulted in the permitting of the Eagle Mine, was likely influenced by

whether the interviewee saw the outcome as positive or negative. Those who were strong opponents through the process may reflect on the participatory process in a more negative fashion than if the outcome would have been favorable to them. The same is true for the mine supporters; if the mine had not been permitted because of public participation, they would likely view the permitting process more critically.

Despite its limitations, this research has confirmed the findings of other researchers of mining and public participation policy and identified issues with mining policy that are worth further research. The small, focused nature of the interviews for this project uncovered interesting findings that may not have been identified through other research methods, and would be worth pursuing on a larger scale and with future projects.

Opportunities for Future Research

This research provides a baseline for how public participation was viewed by participants after being involved in the mining project that was the first to be issued a permit under Part 632, and provides an opportunity for comparison to experiences in future mining projects. Comparing the experiences of the Eagle Project with other mine permitting would help to identify whether issues during the permitting of the Eagle Project were the result of it being the first mine permitted under a new law, or whether they are patterns present in other permitting processes. Another potential approach would be to more closely look at one stakeholder group, for example regulators, opposition groups, or mining company representatives to understand whether individuals

with similar approaches to participation are sharing similar experiences and views of participation.

One interesting future research opportunity would be to collect information about participant's expectations and experiences as a permitting process progresses. This approach would allow observation of how specific outcomes and events may lead to changes in perceptions and how conflict evolves throughout the decision-making process. Incorporating survey methods could use larger sample sizes, which would allow more clear identification of trends among participants.

Conclusion

Public participation during the permitting process for the Kennecott Eagle Project provides an interesting baseline for future mine permitting under Michigan's Part 632 mining law. Lessons learned from this example will provide an opportunity for public participants, mining companies, and decision-makers in future mining decisions with lessons of how public participation worked in practice. With more mine development likely to occur in the future, it is important to understand how to incorporate public input into decision-making. Each mine permitted provides an example for all stakeholders to learn from, even though different projects present unique issues. Researching the Kennecott Eagle Project has shown that public participation in mine decision-making in Michigan has room for improvement, but possible change is limited by existing regulations that structure public participation. While the upcoming projects may not be as controversial or generate the public interest that the Eagle Project did, incorporating a public participation process that improves decision-making is important.

Since many environmental regulations incorporate similar public hearing processes as Michigan's Part 632 mining regulation, this research contributes to the existing literature about the effectiveness of current participatory structures. Public hearings can help to inform decision-making, but many participants want the public to have more opportunities to influence decisions that impact them. Until structures change, it is likely that many environmental decisions will be met with controversy from the impacted public, who will continue to explore options to have their concerns and opinions heard.

Bibliography

- Albert DA [Internet]. 1998. Jamestown (ND): US Department of Agriculture, Forest Service, North Central Forest Experiment Station. Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin: a Working Map and Classification; 1995 [updated 1998 June 3, cited 2012 March 30]. Available from: <http://www.npwrc.usgs.gov/resource/habitat/rlandscp/index.htm>
- Ali SH. 2003. Mining, the Environment, and Indigenous Development Conflicts. Tucson (AZ): The University of Arizona Press.
- Anderson M [Internet]. 2007. Houghton (MI): KeweenawNOW. DEQ Withdraws Proposed Approval for Sulfide Mine Application [updated 2007, cited 2012 March 30]. Available from: http://www.keweenawnow.com/news/deq_sulf_appl_07_03/deq_sulf_app_07_03.htm
- Bakken GM. 2008. The Mining Law of 1872: Past, Politics and Prospects. Albuquerque (NM): University of New Mexico Press.
- Ballard C, Banks G. 2003. Resource Wars: The Anthropology of Mining. *Annual Review of Anthropology*. 32, 287-313.
- Beierle, TC. 1999. Using Social Goals to Evaluate Public Participation. *Policy Studies Review*. 32(3/4): 75-103.
- Beierle TC, Cayford J. 2002. Democracy in Practice: Public Participation in Environmental Decisions. Washington, DC: Resources for the Future.
- Bourdieu M [Internet]. 2009. Houghton (MI): KeweenawNOW. Updated: Judge Upholds DEQ Permits for Mine, Recommending Protection for Eagle Rock. [updated 2009

- August 19, cited 2012 March 28]. Available from: <http://keweenawnow.blogspot.com/2009/08/judge-upholds-deq-permits-for-mine.html>
- Boyd L [Internet]. 2004. Governor Granholm Signs Law to Toughen Michigan's Mining Regulations. [updated 2004 December 27, cited 2012 March 26]. Available from: http://www.michigan.gov/granholm/0,4587,7-168-23442_21974-107023--,00.html
- Campbell G, Roberts M. 2010. Permitting a New Mine: Insights from the Community Debate. *Resources Policy*. 35:210-217.
- Caplett G [Internet]. 2008. Lake Superior Mining News. Revolving Door: Governor Granholm's UP Director Takes Government Relations Job with Rio Tinto; [updated 2008, cited 2012 March 30]. Available from: <http://lakesuperiorminingnews.net/2008/11/03/revolving-door-governor-granholm%E2%80%99s-up-director-takes-government-relations-job-with-rio-tinto/#more-95>
- Chess C. 2000. Evaluating Environmental Public Participation: Methodological Questions. *Journal of Environmental Planning and Management*. 43(6):769-784.
- Creighton JL. 2005. *The Public Participation Handbook: Making Better Decisions through Citizen Involvement*. San Francisco (CA): John Wiley & Sons, Inc.
- Department of Environmental Quality (DEQ) [Internet]. 2007a. Lansing (MI): DEQ. Michigan Department of Environmental Quality. Administrative Hearings. [updated 2007, cited 2012 March 28]. Available from: http://www.michigan.gov/deq/0,4561,7-135-3307_4157---,00.html

Department of Environmental Quality (DEQ) [Internet]. 2007b. Lansing (MI): DEQ.
Michigan Department of Environmental Quality. Proposed Decision Application
for Mining Permit Kennecott Eagle Minerals Company Proposed Eagle Project
Mine. [updated 2007, cited 30 March 2012]. Available from: [www.michigan.gov/
.../PROPOSED _ DECISION _KEP_205478_7.pdf](http://www.michigan.gov/.../PROPOSED_DECISION_KEP_205478_7.pdf)

Department of Environmental Quality (DEQ) [Internet]. 2012a. Lansing (MI): DEQ.
Michigan Department of Environmental Quality. FOIA Information. [updated
2012, cited 2012 March 28]. Available from: [http://www.michigan.gov/deq/
0,4561,7-135-58731-58024--,00.html](http://www.michigan.gov/deq/0,4561,7-135-58731-58024--,00.html)

Department of Environmental Quality (DEQ) [Internet]. 2012b Lansing (MI): DEQ.
Michigan Department of Environmental Quality. Kennecott Eagle Project.
[updated 2012, cited 2012 March 15]. Available from: [http://michigan.gov/deq/
0,1607,7-135-3311_4111_18442-130551--,00.html](http://michigan.gov/deq/0,1607,7-135-3311_4111_18442-130551--,00.html)

Department of Environmental Quality (DEQ) [Internet]. 2012c. Lansing (MI): DEQ.
Michigan Department of Environmental Quality. Kennecott Humboldt Mill.
[updated 2012, cited 2012 March 15]. Available from: [http://www.michigan.gov/
deq/0,1607,7-135-3311_4111_18442-205482--,00.html](http://www.michigan.gov/deq/0,1607,7-135-3311_4111_18442-205482--,00.html)

Department of Environmental Quality and Department of Natural Resources (DEQ and
DNR) [Internet]. 2007. Lansing (MI): DEQ. Michigan Department of
Environmental Quality and Department of Natural Resources. Public Comment
Process for Proposed Kennecott Eagle Project. [updated 2007, cited 2012 March
15]. Available from: [http://michigan.gov/documents/deq/Overarching_KEP_
204117_7.pdf](http://michigan.gov/documents/deq/Overarching_KEP_204117_7.pdf)

- Emerson RM, Fretz RI, Shaw LL. 1995. *Writing Ethnographic Fieldnotes*. Chicago (IL): University of Chicago Press.
- Environmental Protection Agency (EPA) [Internet]. 2012. US Environmental Protection Agency. Kennecott Eagle Mine Project; [cited 2012 March 15]. Available from: from <http://www.epa.gov/r5water/uic/kennecott/index.htm>
- Ferrarini TH, Siles M. 2010. *New Mining in this Community: Select Areas of Marquette and Baraga Counties*.
- Flynn AM. 2005. *Hardrock Mining: State Regulation*. Congressional Research Service Report. No. RL32813.
- Halvorsen KE. 2006. Critical Next Steps in Research on Public Meetings and Environmental Decision-making. *Human Ecology Review*. 13(2):150-160.
- Hendry J. 2004. Decide, Announce, Defend: Turning the NEPA Process into an Advocacy Tool Rather than a Decision-making Tool. In: Depoe SP, Delicath JW, Elsenbeer MFA, editors. *Communication and Public Participation in Environmental Decision-making*. Albany (NY): State University of New York Press, Albany.
- Hilson G. 2002. An Overview of Land Use Conflicts in Mining Communities. *Land Use Policy*. 19: 65-73.
- Himley M. 2010. Global Mining and the Uneasy Neoliberalization of Sustainable Development. *Sustainability*. 2:3270-3290.
- Humphries, M. 2008. *Mining on Federal Lands: Hardrock Minerals*. Congressional Research Service Report. No. RL33908.

Jenkins H, Yakovleva N. 2006. Corporate Social Responsibility in the Mining Industry: Exploring Trends in Social and Environmental Disclosure. *Journal of Cleaner Production*. 14: 271-284.

Keweenaw Bay Indian Community Newsletter (KBIC). 2006 Aug. MDEQ ordered to stop processing Kennecott permit application. *Giikendaam Chiwiikwegamag*: 26.

Kennecott Eagle Minerals [Internet]. 2012a. Rio Tinto. About Us [updated 2012, cited 2012 March 20]. Available from: <http://www.kennecotteagleminerals.com/about-us/>

Kennecott Eagle Minerals [Internet]. 2012b. Rio Tinto. Our Operations: Eagle Mine. [updated 2012, cited 2012 March 20]. Available from: <http://www.kennecott-eagleminerals.com/our-operations/eagle-mine/>

Kennecott Eagle Minerals [Internet]. 2012c. Rio Tinto. Frequently Asked Questions. [updated 2012, cited 2012 March 20]. Available from: <http://www.eagle-project.com/our-company/faq/#q8>

Kennecott Minerals' Permit Applications for a Sulfide Mineral Mine Under the Salmon Trout River [Internet]. 2006. [updated 2006 June 22, cited 2012 March 23]. Available from: www.lic.wisc.edu/glifwc/Kennecott/permitap2/

Krimsky, S. 1984. Beyond technocracy: New routes for citizen involvement in social risk assessment. In: J. Petersen, editor. *Citizen Participation in Science Policy*. Amherst (MA): The University of Massachusetts Press. 43-61.

McCann, R. [Internet] 2007. DEQ announces decision on Kennecott Mine. [updated 2007 Dec 14, cited 2012 March 22]. Available from: http://www.michigan.gov/documents/deq/deq-exe-KEP-PressRelease121407_218609_7.pdf

- McElfish JM, Benstein T, Bass SP, Sheldon E. 1996. Hard Rock Mining: State Approaches to Environmental Protection. Washington, DC: Environmental Law Institute.
- Michigan Legislative Website [Internet]. 2012. Lansing (MI): Freedom of Information Act: Act 442 of 1976. [updated 2009, cited 2012 March 29]. Available from: [http://www.legislature.mi.gov/\(S\(goite045rkhpf455lom0hj3\)\)/mileg.aspx?page=getobject&objectname=mcl-act-442-of-1976](http://www.legislature.mi.gov/(S(goite045rkhpf455lom0hj3))/mileg.aspx?page=getobject&objectname=mcl-act-442-of-1976)
- MMSD Project. 2002. Breaking New Ground: Mining, Minerals, and Sustainable Development. Sterling, VA: Earthscan Publications.
- National Research Council (NRC). 1999. Hardrock Mining on Federal Lands. Washington, DC: National Academies Press.
- National Research Council (NRC). 2008. Public Participation in Environmental Assessment and Decision-making. Washington, DC: National Academies Press.
- O’Faircheallaigh C. 2010. Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making. Environmental Impact Assessment Review. 30:19-27.
- Pepin J [Internet]. 2007. Report in on DEQ. Marquette (MI): The Mining Journal [updated 2007 May 16, cited 2012 March 26]. Available from: http://www.kennecotteagleminerals.com/library/media/MJ_Report%20051607.pdf
- Pepin J [Internet]. 2011a. DEQ’s Kennecott decision affirmed by judge. Marquette (MI): The Mining Journal. [updated 2011 Nov 23, cited 2012 March 26]. Available from: <http://www.miningjournal.net/page/content.detail/id/569386/DEQ-s-Kennecott-decision-affirmed-by-judge.html>

- Pepin J [Internet]. 2011b. Judge denies stay of Kennecott mining operations. Marquette (MI): The Mining Journal. [updated 2011 Sept 14, cited 2012 March 26]. Available from: <http://www.miningjournal.net/page/content.detail/id/566843.html>
- Pepin J [Internet]. 2011c. Mine Debate Continues. Marquette (MI): The Mining Journal. [updated 2011 Apr 22, cited 2012 March 27]. Available from: <http://www.miningjournal.net/page/content.detail/id/561411/Mine-debate-continues.html?nav=5013>
- Resource Exploration, Inc. 2008. An overview of events by which a mineral deposit proceeds from the stage of exploration to production. A report prepared for the Keweenaw Land Association, Limited.
- Richardson R. 2003. Governing western mineral resources: The emergence of collaboration. *Natural Resources Journal*, 43:561-576.
- Richardson, BJ, Razzaque J. 2006. Public Participation in Environmental Decision-making. In: Richardson BJ, and Wood S, editors. *Environmental Law for Sustainability*. Portland (OR): Hart Publishing. p. 165-194.
- Rio Tinto [Internet]. 2012. About us: Group Overview. [updated 2012, cited 2012 March 20]. Available from: http://www.riotinto.com/aboutus/19602_product_overview.asp.
- Save the Wild UP [Internet]. 2009. Ballot Initiative Moves Forward; [updated 2009 cited 2012 March 28]. Available from: <http://savethewildup.org/2009/10/ballot-initiative-moves-forward/>

- Schensul SL, Schensul JJ, LeCompte MD. 1999. Essential Ethnographic Methods: Observations, Interviews, and Questionnaires, Volume 2. Walnut Creek (CA): AltaMira Press.
- Senecah, SL. 2004. The Trinity of Voice: The Role of Practical Theory in Planning and Evaluating the Effectiveness of Environmental Participatory Processes. In: Depoe SP, Delicath JW, Elsenbeer MFA, editors. Communication and Public Participation in Environmental Decision-making. Albany (NY): State University of New York Press, Albany. p.13-33.
- Simmons WM. 2007. Participation and Power: Civic Discourse in Environmental Policy Decisions. Albany (NY): State University of New York Press, Albany.
- Soldan T [Internet]. 2006. DEQ Public Hearing on Sulfide Mining: April 18, 2006 Houghton (MI): KeweenawNOW. [updated 2006 April 25, cited 2012 March 23]. Available from: www.keweenawnow.com/views/ted_soldan_deq_06_04/ted_soldan_deq.htm.
- Soroka B [Internet]. 2010. Two arrested at Kennecott mine site. Marquette (MI): Fox UP TV 6. [updated 2010 May 27, cited 2012 March 25] Available from: <http://www.uppermichiganssource.com/news/story.aspx?id=462798#.T351yo6E47A>
- State Office of Administrative Hearings and Rules [Internet] 2007. Proposal for Decision. Lansing (MI): State of Michigan. File Nos. GW 1810162 and MP 01 2007. [updated 2007, cited 2012 March 21] Available from: www.ecobizport.com/KennecottALJRuling081809.pdf

- State of Michigan [Internet]. 2006. Lansing (MI): DEQ. Michigan's Nonferrous Metallic Mining Regulations. [updated 2006, cited 2012 March 25] Natural Resources and Environmental Protection Act No. 451.632. Available from: [http://www.michigan.gov/documents/deq/DEQ-OGS-metallic-mining Part632_308856_7.pdf](http://www.michigan.gov/documents/deq/DEQ-OGS-metallic-mining_Part632_308856_7.pdf)
- Switzer JV. 2001. Influencing Environmental Policy in Rural Communities: The Environmental Opposition at Work. *Policy Studies Journal*, 29: 128-138.
- Viega MM, Scoble M, McAllister, ML. 2001. Mining with Communities. *Natural Resources Forum*. 25: 191-202.
- Webler T, Renn O. 1995. A Brief Primer on Participation: Philosophy and Practice. In: Renn O, Webler T, Wiedemann P, editors. *Fairness and Competence in Citizen Participation*. Dordrecht (Netherlands): Kluwer Academic Publishers. p. 17-33.
- Yin RK. 1989. *Case Study Research Design and Methods*. Newsbury Park (CA): SAGE Publications, Inc.

Appendix A: IRB Consent Form (Protocol #M0833)

Consent to Participate in Research

Public Participation in Mining Decisions in Michigan: The Eagle Mine

You are being asked to participate in a research study conducted by Andrew Orthober and Dr. Carol MacLennan from the Social Sciences Department at Michigan Technological University as part of thesis research project for obtaining an environmental policy degree. Your participation in this research is entirely voluntary. Please read the information below and ask questions about anything you do not understand, before deciding whether or not to participate.

Purpose of the Study

The purpose of this research project is to understand the experiences of participants in the decision-making process that resulted in the permitting of the Kennecott Eagle Mine in the Upper Peninsula of Michigan. Research is focused on Part 632, Michigan's new nonferrous mineral mining law.

Procedures

You are being asked for an interview for this research because of your involvement in the participatory process for permitting the Kennecott Eagle Mine. Interviewees are identified based on their roles in the participatory process.

If you choose to participate, you will be involved in an interview that will attempt to understand your opinions and perceptions of the public participation process for the Kennecott Eagle Mine decision. You will be asked questions about points in the process that you participated in, information you had access to during the decision-making process, and your perceptions of the process.

This interview will be recorded and may be transcribed. If a transcription is completed, you will be allowed to review the transcript.

Potential Benefits

There will be no direct benefit for you from this study. Your participation in this research will allow you the opportunity to share your experiences and help in developing an understanding about public participation in the Kennecott Eagle Mine decision and Michigan's Part 632 mining law.

The findings of this research will be beneficial for understanding how well current regulations incorporate public participation. The data collected and the conclusions drawn from it have the potential for impacting future mining decisions under Part 632 in Michigan, and potentially impact the understanding of public participation in other places and environmental decisions.

Potential Risks

We do not think there is any risk to you from participating in this research. We will also be keeping your participation, interview tapes, and transcripts confidential and anonymous. Your name will not be associated with any written material that results from this project.

Confidentiality

Your name will not be shared with anyone other than the research team. All of the information collected from you or about you will be kept confidential to the fullest extent allowed by the law. In very rare circumstances, specially authorized university or government officials may be given access to our research records.

Recordings and transcripts will be anonymous and stored on a password-protected computer separately from a list of names accessible only to the research team. Transcripts and any coding from this interview will not include information that will allow for you to be identified. The transcripts will only be shared with you and the research team. Quotes from the transcript may be used in the thesis document, but names and information that will allow for identification will not be included.

Identification of Investigators

If you have any questions or wish to learn about the results of this research study you may request that information by contacting:

Andrew Orthober
Environmental Policy Graduate Student
Michigan Technological University Department of Social Sciences
acorthob@mtu.edu
(612)-719-2911

Carol MacLennan
Professor of Anthropology
Michigan Technological University Department of Social Sciences
camac@mtu.edu
(906)-487-2870

Rights of Research Subjects

The Michigan Tech Review Board has reviewed my request to conduct this project. If you have any concerns about your rights in this study, please contact Joanne Polzien of the Michigan Tech-IRB at 906-487-2902 or email jpolzien@mtu.edu.

By signing this consent form below, you are stating the following:

- The details of this research study have been explained to me including what I am being asked to do and the anticipated risks and benefits;
- I have had an opportunity to have my questions answered;

- I am voluntarily agreeing to participate in the research as described on this form;
- I have been given a copy of this document for my records;
- I understand there is no financial gain for my participation;
- I understand I may ask more questions and that I can withdraw from this study without any penalty at any time with no reason by just saying so. I may request at any time that tapes or transcripts of my participation be destroyed and not used any further

Printed Name of Subject

Signature of Subject

Date

Appendix B: Sample Interview Questions

Environmental Interest Group Representatives

Involvement in Decision-making

1. What is your connection to the Upper Peninsula?
 - a. How did you become involved with _____ group?
 - i. How long have you been involved with this group?
2. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - a. How did you become involved?
 - b. How long were you involved?
 - c. When did you become less involved? Why?
 - d. Were you involved outside of the permitting process?
3. What aspects of the mining project did you consider most important?
 - a. How did you decide what aspects of the mining project were important to address for the Kennecott Eagle Mine?
 - b. How/When did you decide to become involved in the permitting process?
 - i. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - ii. How long were you involved?
 - iii. When did you become less involved? Why?
 - c. Did you reach out to other groups over some issues? How? When?
 - i. When did you decide you should become more involved outside the permitting process? Why?

Access to Information

4. Do you think you had adequate access to information in order to participate in the permitting process?
 - a. What other information would you have liked to have?
 - b. How much did you know about mining prior to becoming involved?
 - c. What sources did you typically get your information about the mining project from?
 - i. What about sources of information about mining in general?
5. Was the information available to you easy to understand?
 - a. Did you seek assistance in order to understand any information?
6. Do you think that Kennecott did enough outside the permitting process to address local concerns? For example, community advisory groups.
 - a. Did they answer questions or provide information to answer questions when requested?
 - b. What about the DEQ, did they provide address local concerns?

Perception of the Permitting Process

7. What were your expectations of your role in the permitting process?
 - a. Were you satisfied with how you were able to participate?

- b. If you could, how would you change participation around mining decisions?
 - c. What do you consider to be adequate for public participation in mine permitting?
- 8. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
- 9. What did you learn about the participatory process from your experiences with this mine?
 - a. Did you change approaches to participation as a result of what you learned as the project progressed?
 - b. Is there anything you would change about how you approached participation for the Kennecott Eagle Project?
- 10. What do you think is the overall public perception of the Eagle Project? Do people support it?
 - a. How do you think the presence of the Empire and Tilden mines nearby impact opinions?
 - b. How do you think the history of mining in the Upper Peninsula impacted opinions?

Kennecott Representatives

Involvement in Decision-making

- 1. What is your position at Kennecott? How long have you been there?
 - a. Could you explain some of what you do for Kennecott?
 - b. What connections do you have to the Upper Peninsula?
- 2. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - a. How long were you involved?
 - b. When did you become less involved?
 - c. Were you involved outside of the formal permitting process?
- 3. Do you have experience working on permitting for other mines?
 - a. Did your experiences at other mines impact your approach to this project in terms of community engagement and impact?
 - b. How does Kennecott see their role in communities where they intend to develop a mine?

Access to Information

- 4. What sort of inquiries did Kennecott receive from the public?
 - a. From government?
 - b. How did Kennecott respond to inquiries from the public about information about the project?
- 5. Did the community advisory group impact decisions that were made?
 - a. How did the community advisory group impact decisions?
 - b. How were members of the community advisory group identified?

Perception of the Permitting Process

6. What were your impressions of public participation during mine permitting?
 - a. Were you satisfied with how the public was able to participate?
 - b. If you could, how would you change participation around mining decisions?
 - c. What did you learn about the participatory process in Michigan?
 - d. Is there anything you would change about your approach to public participation?
 - e. Did you change approaches to public participation as a result of what you learned?
7. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
8. What do you think is the overall public perception of the Eagle Project? Do people support it?
 - a. How did the presence of the Empire and Tilden mines nearby impact opinions?
 - b. How do you think the mining history of the Upper Peninsula influenced opinions?

Local/County Government Representatives

Involvement in Decision-making

1. How long have you been involved with _____ government?
 - a. How did you become involved with _____?
 - b. What are your connections to the Upper Peninsula?
2. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - a. How did you become involved?
 - b. How long were you involved?
 - c. When did you become less involved?
 - d. Were you involved outside of the permitting process?
3. What aspects of the mining project did you consider most important?
 - a. How did you decide what aspects of the mining project were important to address for the Kennecott Eagle Mine?
 - b. How/when did you decide to become involved in the permitting process?
 - i. In what ways were you involved in the permitting of the Kennecott Eagle Mine
 - ii. How long were you involved?
 - iii. When did you become less involved? Why?
 - c. When did you decide that intervention was needed?
 - d. Did you reach out to other groups over some issues? How? When?
 - i. When did you decide you should become more involved outside the permitting process? Why?

Access to Information

4. Did concerned community members approach you outside the mine permitting process to try and address concerns?
 - a. How were you able to respond?
5. How did Kennecott Eagle Minerals incorporate local interests in decision-making?
 - a. Did public officials have a relationship with the company outside permitting?
 - b. Did the company approach the community outside the permitting process? How? When?
 - c. Do you think that Kennecott Eagle Minerals did enough outside the permitting process to address local concerns?
 - d. Do you think the Michigan Department of Environmental Quality address local concerns?
6. Do you think you had adequate access to information in order to participate in the permitting process?
 - a. What other information would you have liked to have?
 - b. How much did you know about mining prior to becoming involved?
 - c. What sources did you typically get your information about the mining project from?
 - i. What about sources of information about mining in general?

Perception of the Permitting Process

7. From your perspective, were local opportunities for public input enough to allow for consideration of local concerns?
 - a. Do you think that the options for local action are adequate for addressing local concerns about mining in the community?
 - b. How could the ability of local governments to address concerns be improved?
 - c. Did the community have meetings to learn about the project?
8. What were your expectations of your role in the permitting process?
 - a. Were you satisfied with how you were able to participate?
 - b. If you could, how would you change participation around mining decisions?
 - c. What do you perceive to be adequate for public participation in mine permitting?
9. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
10. What did you learn about the participatory process from your experiences with this mine?
 - a. Is there anything you would change about how you approached participation?
 - b. Did you change approaches to participation as a result of what you learned?

11. What do you think is the overall public perception of the Eagle Project? Do people support it?
 - a. How do you think the presence of the Empire and Tilden mines nearby impact opinions? Did it impact yours?
 - b. How do you think the history of mining in the Upper Peninsula impacted opinions?

Mine Supporters

Involvement in Decision-making

1. What is your connection to the Upper Peninsula?
 - a. How/When did you become involved with _____ group?
2. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - a. How did you become involved?
 - b. How long were you involved?
 - c. When did you become less involved? Why?
 - d. Were you involved outside of the permitting process?
3. What aspects of the mining project did you consider most important?
 - a. How did you decide what aspects of the mining project were important to address for the Kennecott Eagle Mine?
 - b. How/When did you decide to become involved in the permitting process?
 - i. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - ii. How long were you involved?
 - iii. When did you become less involved? Why?
 - c. Did you reach out to other groups over some issues? How? When? HAVE AN EXAMPLE READY.
 - i. When did you decide you should become more involved outside the permitting process? Why?

Access to Information

4. Do you think you had adequate access to information in order to participate in the permitting process?
 - a. What other information would you have liked to have?
 - b. How much did you know about mining prior to becoming involved?
 - c. Where did you get information about the Eagle Project?
 - i. Where did you get information about mining in general?
5. Was the information available to you easy to understand?
 - a. Did you seek assistance in order to understand any information?
6. Do you think that Kennecott did enough outside the permitting process to address local concerns?
 - a. Did they answer questions or provide information to answer questions when requested?

- b. What about the DEQ, did they provide information that was requested?

Perception of the Permitting Process

7. What were your expectations of your role in the permitting process?
 - a. Were you satisfied with how you were able to participate?
 - b. If you could, how would you change participation around mining decisions?
 - c. What do you perceive to be adequate for public participation in mine permitting?
8. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
9. What did you learn about the participatory process from your experiences with this mine?
 - a. Did you change approaches to participation as a result of what you learned as the project progressed?
 - b. Is there anything you would change about how you approached participation?
10. What do you think is the overall public perception of the Eagle Project? Do people support it?
 - a. How do you think the presence of the Empire and Tilden mines nearby impact opinions?
 - b. How do you think the history of mining in the Upper Peninsula impacted opinions?

KBIC Representatives

1. What is your connection to the Upper Peninsula?
2. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - a. How did you become involved?
 - b. How long were you involved?
 - c. When did you become less involved? Why?
 - d. Were you involved outside of the permitting process?
3. What aspects of the mining project did you consider most important?
 - a. How did you decide what aspects of the mining project were important to address for the Kennecott Eagle Mine?
 - b. How/When did you decide to become involved in the permitting process?
 - i. In what ways were you involved in the permitting of the Kennecott Eagle Mine?
 - ii. How long were you involved?
 - iii. When did you become less involved? Why?
 - c. Did you reach out to other groups over some issues? How? When?
 - i. When did you decide you should become more involved outside the permitting process? Why?

Access to Information

4. Do you think you had adequate access to information in order to participate in the permitting process?
 - a. What other information would you have liked to have?
 - b. How much did you know about mining prior to becoming involved?
 - c. What sources did you typically receive information about the Eagle Project from?
 - i. What about information about mining in general?
5. Was the information available to you easy to understand?
 - a. Did you seek assistance in order to understand any information?
6. Do you think that Kennecott did enough outside the permitting process to address local concerns?
 - a. Did they answer questions or provide information to answer questions when requested?
 - b. What about the Michigan Department of Environmental Quality, did they provide information that was requested?

Perception of the Permitting Process

7. What were your expectations of your role in the permitting process?
 - a. Were you satisfied with how you were able to participate?
 - b. If you could, how would you change participation around mining decisions?
 - c. What do you consider to be adequate for public participation in mine permitting?
8. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
 - a. How do you think consideration of unique issues, such as Eagle Rock, be more effectively addressed in mining policy?
9. What did you learn about the participatory process from your experiences with this mine?
 - a. Did you change approaches to participation as a result of what you learned as the project progressed?
 - b. Is there anything you would change about how you approached participation?
10. What do you think is the overall public perception of the Eagle Project? Do people support it?
 - a. How do you think the presence of the Empire and Tilden mines nearby impact opinions?
 - b. How do you think the history of mining in the Upper Peninsula impacted opinions?

Michigan DEQ Representatives

Involvement in Decision-making

1. What is your position at the Michigan Department of Environmental Quality?
 - a. How long have you been there?
 - b. What connections do you have to the Upper Peninsula?
2. How would you describe the public participation during mine permitting?
 - a. How were you involved?
 - b. What views were most represented through the participatory process?
3. Was the Department of Environmental Quality prepared to accommodate public participation during the permitting process?
 - a. Were there limitations to the DEQ's capacity to accommodate participation?
 - b. Did the DEQ anticipate the length of the permitting process for the Kennecott Eagle Mine?

Access to Information

4. Do you think the Department of Environmental Quality was able to adequately address the concerns of the public about the Kennecott Eagle Project?
 - a. Did participation during permitting progress as expected?
 - b. Do you think you were able to address public concerns adequately?
5. How would you describe the understanding of the involved public of the Kennecott Eagle Project?
 - a. How would you describe the public's understanding of mining in general?
 - b. Do you think that public opinion was impacted by understanding of the project or of mining in general?
 - c. Do you think the availability of information was sufficient to inform the public about the project?

Perception of the Permitting Process

6. From your perspective, does current mining regulation in Michigan allow for adequate opportunities for public participation?
7. Was the Kennecott Eagle Mine process and experience different than other environmental decision-making you have been involved in? How?
 - a. What did you learn about the participatory process from your experience with permitting the Kennecott Eagle Mine?
 - b. What could have been done to improve the participatory process?
 - c. Is the Department of Environmental Quality going to change the way permitting of other mines will be handled? Why/why not?
8. In your opinion, was public opinion in support or opposed to the Kennecott Eagle Mine?
 - a. What issues were people most interested in?
 - b. How do you think the presence of other mines nearby, such as Empire and Tilden, impacted opinions?

Appendix C: Interview Reference List

- A1 - Citizen Group Member
- A2 – Citizen Group Member
- A3 – Citizen Group Member
- A4 – Citizen Group Member
- A5 – Citizen Group Member
- A6 – Citizen Group Member
- A7- Citizen Group Member
- A8 –Citizen Group member
- A9 – Local Government Representative
- A10 – Keweenaw Bay Indian Community Member
- A11 – Mining Company Representative
- A12 – Mining Company Representative
- A13 – State Government Agency Representative
- A14 - Keweenaw Bay Indian Community Member
- A15 –Local Government Representative
- A16 – Citizen Group Member
- A17 – Keweenaw Bay Indian Community Member

Appendix D: Kennecott Eagle Project Permitting Timeline

- August 2003: Kennecott releases press releases to inform the public about the project, indicating that environmental baseline studies, community engagement, and ore body delineation is occurring
- October 20, 2003: The Eagle Alliance organizes protest of Kennecott Eagle Project in Big Bay, Michigan
- August 2004: Kennecott organizes Community Advisory Group
- October 19, 2004: Kennecott holds first Community Advisory Group meeting.
- December 27, 2004: Part 632 Michigan's Nonferrous Metallic Mining Regulations passed by Governor Granholm
- November 29, 2005: First public hearing on new mining rules held in Escanaba, Michigan
- December 6, 2005: Public demonstration against sulfide mining held at Michigan Capitol in Lansing, Michigan.
- February 1, 2006: Part 632 Rules Accepted
- February 22, 2006: DEQ receives Part 632 mining permit application from Kennecott Exploration
- February 23, 2006: The Sierra Club and Huron Mountain Club petition for protection of the coaster brook trout by the U.S. Fish and Wildlife Service under the Endangered Species Act
- March 10, 2006: DEQ determines application is administratively complete after requesting more information
- March 17, 2006: Public Meetings on Kennecott Eagle Project scheduled for April 18, 2006 at Northern Michigan University, Marquette, Michigan
- March 31, 2006- EPA notifies Kennecott of Underground Injection Control Permit
- April 18, 2006: Public meeting held to discuss Kennecott Eagle permit application. Written public comment period begins
- May 2006: Administrative challenge filed with Michigan State Office of Administrative Hearings and Rules
- June 21, 2006: DEQ requests information from Kennecott, comments and responses compiled
- June 23, 2006: Administrative Law Judge Paula Manderfield orders DEQ take no further action until hearing on whether Eagle Project Application was administratively complete
- September 16, 2006: Michigan Court of Appeals overturns lower court decision on Kennecott's application due to standing of plaintiffs
- September 24, 2006: Citizens for Responsible Mining Group created
- October 27, 2006: DEQ receives information requested from Kennecott
- November 14, 2006: DEQ extends decision deadline and provides opportunity for public comment on new information until December 26, 2006

- January 9, 2007: After review and evaluation of permit application and plans, DEQ proposes decision to grant mining permit. Public hearings scheduled for March.
- January 16, 2007: EPA meets with Kennecott to discuss Underground Injection Control Requirements
- February 23, 2007: Kennecott holds meeting to discuss construction phase with contractors
- March 1, 2007: DEQ withdraws proposed decision after two reports were not made available for public review. Scheduled hearings postponed.
- March 23, 2007: EPA requires Kennecott to submit Underground Injection Control Permit Application
- April 27, 2007: EPA receives the requested Underground Injection Control permit application
- May 29, 2007: EPA determines that the Underground Injection Control permit application is complete
- June 14, 2007: KBIC requests EPA consultation related to “traditional cultural property” and NHPA issues
- July 10, 2007: U.S. Fish and Wildlife Services notifies EPA that records do not indicate the presence of federally listed species or critical habitat near project
- July 30, 2007: DEQ reinstates proposed decision to grant permits. Hearings scheduled
- September 10-19, 2007: Public hearings in Marquette, Forsyth Township, and Lansing and written public comment period begins
- October 17, 2007: Public comment period ends
- October 31, 2007: EPA notifies other tribes of NHPA issues and requests information about connection to cultural property in mine project area
- December 13, 2007: EPA meets with KBIC officials
- December 14, 2007: DEQ issues mining permit, air use permit, and groundwater discharge permit to Kennecott Eagle Minerals Company
- December 21, 2007: National Wildlife Federation, Huron Mountain Club, Keweenaw Bay Indian Community, and Yellowdog Watershed Preserve file administrative appeal contesting issuance of permits
- February 7, 2008: Michigan DNR grants surface use lease to Kennecott. National Wildlife Federation, Huron Mountain Club, Keweenaw Bay Indian Community, and Yellowdog Watershed Preserve file administrative appeal challenging granting of lease
- February 22, 2008: Kennecott holds Community Advisory Group meeting that is disrupted by participants
- March 2008: EPA meets with Kennecott Eagle Minerals Company Representatives
- April 28, 2008: Administrative Law Judge Richard Patterson begins hearing testimony related to contested case of permit issuance
- July 18, 2008: EPA sends Kennecott request for additional information
- August, 16, 2008: Conclusion of contested case study testimony collection

- August 18, 2008: Kennecott submits NHPA Section 106 Assessment
- August 21, 2008: Kennecott responds to EPA request for information
- October 15, 2008: Closing arguments of contested case hearing submitted and review begins
- October 22, 2008: EPA holds open house on Kennecott Mine Proposal
- October 30, 2008: EPA requests additional details from Kennecott that are needed for technical evaluation
- November 13, 2008: Case against issuance of Air Use Permit Dismissed by Ingham County Circuit Court Judge Paula Manderfield
- January 2009: EPA meets with KBIC officials
- August 2009: EPA determines project “unlikely to adversely effect” any federally recognized endangered species and requests U.S. Fish and Wildlife Service approval
- August 18, 2009: Judge Richard Patterson releases decision in favor of DEQ granting mining permit
- October 2009: U.S. Fish and Wildlife service concurs with EPA Endangered Species Act decision
- January 14, 2010: Final decision following contested case decision released by DEQ
- March 2010: Kennecott withdraws Underground Injection Control permit application after re-design
- March 2010: Appeal of DEQ decision filed in Washtenaw County court, moved to Ingham County
- May 2010: EPA rule-authorizes mine backfill chutes
- July 1, 2010: EPA determined that Treated Water Infiltration System does not need a Underground Injection Control permit
- April 19, 20, 21, and 26, 2010: Kennecott Eagle Minerals holds series of community forums
- September 15, 2011: Ingham County Circuit Court Judge refused to grant stay to stop mine construction until appeal decided
- November 23, 2011: Judge Paula Manderfield affirmed DEQ decision to grant mining permit
- December 12, 2011: Motion for Michigan Court of Appeals to take up appeal

-Timeline developed using Michigan DEQ Eagle Project website, United States EPA Eagle Project website, news stories from the Marquette Mining Journal, the Keweenaw Now Blog, the Save the Wild UP website, Kennecott Eagle Minerals news archive, KBIC newsletters, and interview responses.