

Regulations.(MMR) The first opinion, from attorney Edward A. Corcoran, of the law firm Brennan, Steil, Basting & MacDougall, S.C., supported the validity of the regulations. (Appendix B). The second legal opinion, came from attorney Roderick Matthews, J.D.(Jurist Doctor). Matthews is currently a University of Wisconsin-Madison Law School professor of real estate law and land use law. He is also a former Dane County (Madison) Executive and Dane County Board Chairman. Matthews also supported the validity of the regulations (MMR).(Appendix B). These two opinions were gathered with resources provided by Four Rivers Headwaters, Inc., a Cleveland Township based community organization funded by contributions from area residents.(Appendix C)

January 9, '97:

Interim zoning was adopted by a motion and a second by the two supervisors present. (The chairman was not in attendance). (Appendix A). A hearing was scheduled for February 20, 1997, to hear testimony on the permit application.

January 27, '97:

Six men were nominated at the Town caucus to fill the three Town board positions (three of the six nominated are incumbent board members). The nominations were clearly divided along pro-mining and pro-environmental lines. The nominees are:

Chairman:	Jerry Bowman (incumbent) John Kariger
1st Supervisor:	Fred Vance (incumbent) Richard Shong
2nd Supervisor:	David Duerkop (incumbent) Lawrence Scholze

February 13, '97:

Interim zoning, having been properly noticed, was re-adopted by a 2-1 vote. Chairman, Jerry Bowman cast the dissenting vote.

At the request of a constituent, Supervisor Fred Vance invited discussion on the possibility of a candidate forum prior to the April elections. Supervisors Fred Vance and David Duerkop and candidate for chairman John Kariger indicated a willingness to participate. Chairman Jerry Bowman declined. (The other two candidates for board position, Lawrence Scholze and Richard Shong, were not in attendance, however, Chairman Bowman offered his opinion that they would also decline). No decision was made.

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C. Mining Impact Committee Activity

1. Formation and Purpose of Committee

May 9, '96

The Mining Impact Committee was formed by Town Chairman, Jerry Bowman, by resolution and seconded by Fred Vance, with the appointment of John Kariger as chairman, followed by requests for volunteers to join the committee. The following four citizens volunteered: Marie Anderson, Robert Bourke, Rebecca Clark and Bruce Thayer.

Discussion at the May 16th organizational meeting identified the Impact Committee's mission as two-fold:

1. To achieve an understanding of the issues involved in metallic sulfide mining
2. To assist the community and the Town Board in understanding the issues.

Simply put: Get educated—educate others. Discussion of this mission established a statement of purpose: Gather a file of as much relevant information as possible, organize it, study it, summarize it and submit a report.

Because of the scope of such a report and the length of time needed for a volunteer task force to adequately review the prodigious quantity of printed information available and complete a report, and because of the immediacy of the need to provide information to the community, it became apparent that another format would be necessary if the committee were to achieve its goal. Hence, a series of Informational Meetings was planned. These meetings would continue the educational process started when the Town Board arranged for Mr. Tom Evans to speak on the issue of the DNR permitting process. The committee's task, therefore, evolved to include:

1. Collect and review information
2. Make information available to others:
 - (a) Create a Summary Report
 - (b) Arrange public Informational Meetings
 - (c) Provide opportunity for periodic reports, discussion and exchange of information at the regular monthly meetings

2. Monthly Meeting Highlights

At the June 13, '96 meeting, 4 of the 5 committee members signed a recommendation to the Town Board to adopt the revised Metallic Mining Regulations ordinance. (Anderson, Bourke, Kariger, and Thayer signed; Clark did not sign.)

It was noted at the August 8, '96 meeting, that the Impact Committee had not yet received a copy of Flambeau/Kennecott's application for exploration permit dated July 9, '96. The chairman submitted and reviewed a five page draft outline for the Impact Committee Report.

At the Nov. 14, '96 meeting, the chairman reported receiving two legal opinions that uphold the validity of the Town's Metallic Mining Regulations ordinance from Edward Corcoran and Roderick Mathews. (Appendix B)

At the Dec. 12, '96 meeting, the chairman acknowledged the Dec. 10th resignation of committee member Rebecca Clark. Ms. Clark cited health problems, an anti-mining bias on the part of the committee, and personal ostracization for her resignation. Chairman Kariger expressed his regrets that Ms. Clark was experiencing health problems and that she had felt ostracized, but he affirmed the committee members' rights to their opinions on the issue of mining in this community.

At the February 13, '97 meeting, the committee invited a brainstorming session for those in attendance to identify their areas of concern to be addressed at the hearing, with a focus on exploration.

Informational Meetings

1. 04/01/96 Tom Evans, Wis. Geological and Natural History Survey, author of An Overview of Metallic Mineral Regulation in Wisconsin;
topic--DNR's regulatory role and the permitting process.
2. 05/13/96 Tom Myatt, Flambeau Mining Co. general manager,
topic--Mining at Ladysmith; plans and activity in west-central Wisconsin
3. 06/17/96 Ron Hennings, hydrogeologist with the Wisconsin Geological and Natural History Survey-UW Ext.,
topic--groundwater
4. 07/11/96 Mike Orgeman, attorney with a specialization in municipal law
topic--municipal authority; legal aspects of land use controls
5. 08/17/96 Archie Wilson, DNR North-central District Office, Rhinelander,
topic--DNR regulatory process
6. 09/19/96 Dave Anderson, Wisconsin Resources Protection Council, Crandon Chapter,
topic--environmental risks and local-control issues

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7. 10/17/96 Tom Myatt, general manager, Flambeau Mining Co., and panel of Rusk Co. and Ladysmith officials;
topic--mining and its impact on Rusk County
8. 11/21/96 Tim Tynan, resource economist; author: Economic Development in Rusk County;
topic--socioeconomic impacts of mining

D. Citizen Response and Activity

Just as opinion on this issue ranges widely, citizen response and involvement ranges widely from one end of the spectrum to the other. There are those who have attended virtually every meeting, sought further information, and actively discussed the issues with others, and there are those who still respond, "What mining???" The Impact Committee members have been heartened to see the attendance at the Informational Meetings gradually but steadily increase over the months, from 15-20 at some of the earlier meetings to 35-45 at the later meetings. It has been encouraging to see that progress has been made toward the goal of an informed public. And it's been humbling to see the distance yet to go. Those citizens who have become more actively involved have done so, as would be expected, on both sides of the issue--pro-mining and anti-mining. Some are actively encouraging the development of any mining potential the region offers; others are actively discouraging such heavy industrialization in favor of the agricultural/residential character and potential of the Township. Following are some of the ways in which citizens have responded.

As early as March, a small group of people deeply concerned about the environmental risks came together around that and other related issues. In August, as their membership increased, they formed Four Rivers Headwaters, Inc. The mission they established: to increase public awareness of the risks associated with sulfide mining--environmental, social, and economic, and to preserve and protect the unique character and environmental quality of the area. Toward that end the group has sponsored a series of ads in local newspapers, distributed literature and video tapes, and provided yard signs for those who wish to express their opposition to sulfide mining in this rural community. They have established a network with organizations statewide which are pursuing similar goals.

Some citizens have responded by involvement with Northern Thunder, west-central Wisconsin's environmental organization of long standing, headquartered in Eau Claire. This involvement has led to the publication of a newsletter, "Headwaters Mining Update", a supplement to Northern Thunder's regular newsletter.

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II. THE BASIC MINING PROCESS

Other citizens have responded by establishing a close association with Flambeau/Kennecott Mining Co., providing networking between the company and the community. They have faithfully attended meetings on behalf of those citizens and leaseholders whose goal is to inform the public about the economic benefits that mining could bring to the community.

Some citizens have responded by writing letters to the editors of local newspapers describing either the pros or cons of mining, exercising their rights in this free society to freedom of speech.

Others, certainly a very small minority, have responded by vandalizing, destroying, and stealing "Say No to Sulfide Mining" yard signs, infringing on their neighbor's right to freedom of speech.

Ninety-six citizens responded in September by signing a petition to the Town Board. The petition was presented to the Board at the September 12 meeting, and was tabled with no comment. The petition read:

We the undersigned residents of Cleveland Township hereby request that the Town Board not take any action on the Flambeau Mining Company's exploration application until the Mining Impact Committee has filed its report on the mining issue, public hearings have taken place, and a referendum has been held on the issue.

An unfortunate and yet very real response to this issue has been the divisiveness it has generated, in some instances pitting neighbor against neighbor in a classic struggle over individual rights and freedoms. Sadly, that can be expected in situations such as this where feelings run so strong and deep. Though this seems almost too obvious to mention, it is included here as an important part of the history of the issue of sulfide mining in our community.

Happily, the same concerns and tensions that have resulted in fragmentation of community bonds have, at the same time, created new bonds within the community. A new awareness of and respect for our neighbors exists. And this, too, is part of the record, part of the history of the year Flambeau Mining Company came to the Town of Cleveland.

In closing this section on the history of the mining issue in the Town of Cleveland, it seems appropriate to add a hope that this community will find within itself the inner reserves and strength to resist the forces that would fragment us. We should dedicate ourselves to creating a strong, peaceful community for ourselves, our neighbors, and those who will come after us.



Metallic mining is the process by which various metals are removed from the ground. Commonly removed metals include copper, gold, lead, silver, and zinc. These minerals are most frequently not found in a pure form, but are fused to sulfur, forming sulfide compounds. Mining of these metals is referred to as metallic sulfide mining. Examination of the earth for metals is performed by the processes of exploration and prospecting. The processes generally used to remove metals from the earth are deep-shaft mining and open-pit mining.

This section of the report will first define and then describe techniques for exploration, prospecting, mining, and reclamation.

A. Exploration

The term "exploration" is used differently depending on the setting. When speaking informally, specific technical definitions are usually not needed. It should be noted that technical definitions become critical when legal issues are involved. Wisconsin Statute (§144.81(2)) defines exploration as:

...the on-site geologic examination from the surface of an area by core, rotary, percussion or other drilling, where the diameter of the hole does not exceed 18 inches, for the purpose of searching for metallic minerals or establishing the nature of a known metallic mineral deposit, and includes associated activities such as clearing and preparing sites or constructing roads for drilling.

The Town of Cleveland Metallic Mining Regulations (MMR) (Appendix b) uses the same definition for exploration as in the Wisconsin Statute with the addition of: "For the purposes of the definition of exploration, geological examination does not include drill holes constructed for the purpose of collecting soil samples or for determining radioactivity by means of placement of radiation-sensitive devices".

Exploration can be accomplished by physical (geophysical) and/or chemical (geochemical) methods. Airborne magnetometry (developed in World War II to detect submarines) and its variations are examples of modern geophysical mineral exploration. Aircraft and satellites can be used to carry magnetometry equipment to aid in the detection of mineral deposits. Geochemical exploration has become increasingly important since the 1960s due to the development of rapid and inexpensive instrumental techniques, especially atomic absorption, for determining trace amounts of several metals in large numbers of samples. Geochemical exploration is used to find trace amounts of various metals in stream sediments just as prospectors of old used pans to trace gold to the mother lode. Soils, plants, waters, and rocks also are analyzed for trace amounts of metals in hopes of finding concealed ore deposits.

Geochemical and geophysical irregularities (anomalies) are commonly checked by ground geophysical techniques. In most cases, a combination of geochemical and geophysical techniques are necessary to verify and to evaluate the discovery of a deposit.

Once a potential ore deposit has been discovered, its size (tonnage) and grade (tenor) must be determined to decide whether it is economical to mine. Ultimately this involves extensive sampling of the deposit by drill holes. If the ore deposit (reserve) appears to be sufficient, additional engineering, marketing, and other feasibility studies are conducted (i.e. environmental, economic, and social). The results of these studies help determine whether the deposit is economically feasible to mine. (Grolier, 1996).

B. Prospecting

The term "prospecting" is also used differently depending on the setting. When speaking informally, specific technical definitions are usually not needed. According to Wisconsin Statute and the Town of Cleveland Metallic Mining Regulation (MMR), "prospecting" is defined as:

"Prospecting" means engaging in the examination of an area for the purpose of determining the quality and quantity of minerals, other than for exploration but including the obtaining of an ore sample, by such physical means as excavating, trenching, construction of shafts, ramps and tunnels and other means, other than for exploration, which the department, by rule, identifies, and the production of prospecting refuse and other associated activities (1996).

Wisconsin Statutes require a permit application with an environmental impact study (EIS) for all prospecting activities. Submitting the application and preparing the EIS is very expensive, time-consuming, and complicated. Since modern-day geochemical and geophysical exploration yields specific and detailed information on the quality and quantity of an ore body, prospecting is usually impractical and seldom done.

C. Mining

According to Wisconsin Statutes and the Town of Cleveland MMR, "mining" is defined as: "the process in the mining of metallic minerals other than exploration or prospecting, including commercial extraction, agglomeration, beneficiation, construction of roads, removal of overburden and the production of refuse."

Of the various types of mining typically found throughout the world, the two most common are deep-shaft and open-pit. The type of mine constructed depends on the depth and orientation (direction) of the substance to be mined. Ore deposits that are deep, narrow, and vertically situated are best mined by the deep-shaft method. Ore deposits that are relatively close to the surface, broad, and horizontally situated are best mined by the open-pit method.

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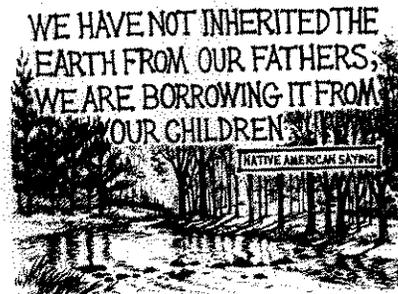
Open-pit mining, mostly for gold, is increasing throughout the West. During the past fifteen years, there has been a tenfold increase in gold extracted by mining (from 1 million ounces to 11 million ounces). This new rush is driven by rising prices for the metal and new technology, like cyanide heap-leaching, which enables mines to extract microscopic amounts of gold, yet creates extraordinary volumes of hazardous waste material (Dobbs, 1996).

D. Reclamation

As noted in a description of the sulfide-mining process in the Masinaigan Supplement (1996):

Reclamation, the last mining operation, is defined as the rehabilitation and restoration of the mining site to a condition as close as possible to its original pre-mining state. The goal is to eliminate, minimize, or mitigate physical or chemical environmental threats.

The Supplement also notes that while most reclamation consists of the removal of all mining support structures, and the replanting and stabilization of the mine site, there is no single way to accomplish reclamation. Reclamation at each site will be different, and the choice of reclamation process will depend on many factors, including: climate, physical features of the site, state laws, and the technical and economic feasibility of the reclamation project



III. CASE STUDIES

This section will first look, in more detail, at two examples of how mining is accomplished depending on how the orebody is situated in the ground and how deep the deposit. Secondly we will briefly review a number of mines that appear to be operating safely and finally we will look at some recent modern mine failures.

A. Deep-Shaft Mining: The Proposed "Crandon Mine"

The lead mines of Southern Wisconsin and the proposed zinc-copper mine site near Crandon, Wisconsin (Crandon mine) are examples of shaft mining. The following excerpts from the 280-page Crandon Mining Company (CMC) Mine Permit Application (CMC, 1995) are presented to describe the scope of a deep-shaft mine.

a. Location and Land Holdings

In the project area and its vicinity, CMC holds about 2,200 acres of surface land in fee, has agreements for purchase of approximately an additional 1,800 acres, and has easements on about another 10 acres. This acreage includes the area needed for the construction of the plant site and Tailings Management Area (TMA) facilities, the railspur corridor to the existing rail line, the common corridor for the access road, power line, pipeline waste water discharge and the buffer area around these sites.

CMC also has an agreement to purchase approximately 100 acres of land in Shawano and Oconto Counties, on which it plans to locate a replacement wetland. Additionally, CMC will be obtaining approximately 37 miles of pipeline easements for the proposed waste water discharge pipeline from the plant site to the Wisconsin River near Rhineland, Wisconsin.

b. Description of Facilities

The plant surface facilities will be located in the area adjacent to the main production shaft. The layout of these facilities will require an area of about 128 acres. The principal structures at the plant site will be the 65 foot tall mine headframe, hoist and compressor room, coarse ore storage, the concentrator building, and the services building. The latter will house the surface shops, warehouse, offices and change room facilities. In addition, the project site will include the freshwater make-up and potable water facilities, electrical substation, and ancillary buildings.

A waste water treatment plant will be provided to treat excess mine waters that cannot be used on site. This water will be treated to meet water quality standards [Federal maximum contaminate levels] and discharged to the Wisconsin River.

Two temporary storage pads will be constructed to the north of the headframe for the independent storage of about 1,050,000 tons of pre-production ore and waste rock. The ore will be processed after the mill start-up period. Type I waste rock will be used as construction aggregate. Type II waste will be used as rip rap within the Tailings Management Area (TMA).

A 115 kv overhead electrical transmission line, a six inch natural gas pipeline, and a telephone link will be provided by connection to local utilities. Process water will be recycled from the tailings basin. Potable water will be supplied from a well located immediately southwest of the plant site. Facility sanitary waste water will be treated on-site and the effluent pumped to the Tailings Management Area (TMA) along with the mill tailings. The TMA facility, southeast of the plant site, will cover 355 acres over 90 feet deep, and will consist of four tailings cells constructed and reclaimed in stages during the life of the operation.

c. General Mining Overview

The principal mining method will be mechanized blast hole open-stopping with delayed backfill. This proven system allows efficient and selective mining at relatively high production rates. The mine plan is based on an ore production rate of 5,500 tpd [tons per day], resulting in an annual ore production of approximately 2,000,000 tons.

Access to the mine will be through the 22- to 26-foot diameter central services and production shaft [entrance and exhaust air]. A second shaft will be sunk on the eastern end of the ore body [16-19 foot air intake]. During the development phase of the mine, this east ventilation shaft will be used to hoist waste rock from the mine. A third shaft will be excavated in the last year of the construction period to provide additional ventilation as the mine extends to the west. When completed, this shaft will serve as the primary exhaust point for mine air.

The ventilation air requirements for the 5,500 tpd operation are estimated to be 700,000 cubic feet per minute (cfm). The ventilation needs were determined for active working areas, such as production locations and development headings, as well as air volumes required for other areas of mine activities, including the crusher area and the mobile equipment shop.

Utilities will consist of underground power, compressed air and communications. Electrical power will be distributed underground using a 13.8 kv main system.

Substations located on the various levels will step the power down to 4160 V or other voltages, as needed. Emergency power will be provided and connected to certain emergency equipment, (typically main ventilation fans, dewatering pumps, and the emergency hoist). The compressed air requirements may be satisfied by the use of portable compressors located on the mining levels where necessary.

Electric, pneumatic, diesel, and electric/hydraulic equipment will be used underground to achieve design production rates. Broken ore will be transferred to an underground crusher. During normal mine operations, rock crushed to eight inches, or less, will be conveyed from the crusher chamber to the production shaft for hoisting to the surface. Skips will hoist the ore and discharge into an enclosed bin attached to the production headframe. Ore material from the bin will be transferred by belt conveyor to the ore storage stockpile. During the production period, approximately one-half of the development waste rock will remain underground and will be dumped directly into the mined-out stopes. The other half will be hoisted to the surface.

The mill will operate 24 hours per day, for 365 days per year, while the mine will operate on either a five-day or seven-day-per-week schedule.

The coarser fraction of the mill tailings will be slurried back into the mine to fill the mined-out stopes. Cement will be added to the tailings as needed to provide strength. The cemented backfill will provide ground support and allow maximum extraction from the ore body. An underground maintenance shop will be constructed adjacent to the ramp which interconnects each mining horizon. Most major repairs and routine servicing of equipment will be performed in this shop. A refueling station will be sited adjacent to this maintenance shop. In addition to the underground workings, the mine surface facilities will include a headframe/collar house, hoist room/compressor house and ventilation facilities.

Four major groups of waste materials will potentially be generated during the development and operation of the mine. Those materials include: overburden, waste rock, tailings and waste water treatment and reclaim pond solids[sludge]. A discussion of the generation and characterization of these materials follows.

Overburden wastes will be produced during the construction of the mine and its facilities. This type of material is generally sand, sandstone, clay, limestone, and topsoil. These materials will be used for construction and reclamation of the site.

Waste rock[rock without sufficient metal content to be of economic interest] will be generated during the preproduction and operational phases of the mine. The waste rock that will be generated during the preproduction phase will be brought to the surface. It will then be used for construction purposes in an application where it will not be in

direct contact with vehicular traffic or placed in a controlled facility, depending upon the results of leaching studies performed on these materials.

It is expected that most of the preproduction waste rock will not produce acidic drainage and will leach only minute quantities of substances. Such waste rock will be referred to as Type I waste rock throughout the remainder of this report. Some of the preproduction waste rock is expected to have the potential to produce acidic drainage and/or will leach greater quantities of substances. Such waste rock will be referred to as Type II waste rock throughout the remainder of this report.

Type II waste rock will likely be generated during mine development and operating phases of the project. This material will be mainly generated during the development of the stope accesses. Type II waste rock generated during mine development will be transported to the surface and stored in a lined facility. During operations, a portion of the type II waste rock will remain underground as backfill.

At full production, approximately 2,200 tons per day of tailings will be pumped to the Tailings Management Area (TMA). Such wastes will be pumped to the TMA along with the mill tailings and septic system wastes.

d. Reclamation

Upon completion of mining, reclamation activities will continue in accordance with Wisconsin Statute §144.875, which requires that the operator notify the DNR [Wisconsin Department of Natural Resources] and commence stabilization of the mining site. Reclamation of the site will occur on an ongoing basis from construction through the operating phase.

Final reclamation of the plant site will begin upon completion of mining and ore-processing. Some equipment and material from the mine will be brought to surface. That which is left underground will be drained of oils and lubricants. Accesses to the underground mine will be plugged with reinforced concrete. Surface facilities may be converted to other uses where possible. If not, they will be removed. The site will be graded and revegetated. After final reclamation, the area will be used for forestry and recreation.

Table 1 (on next page) shows the estimated monthly minimum and maximum consumption in tons of the various chemicals used to concentrate the ore at the proposed Crandon Mine. Some of these are highly toxic chemicals and will end up in the TMA.

B. Open-Pit Mining: The "Flambeau Mine"

Flambeau Mining Company (Flambeau Mine) located near Ladysmith, Wisconsin is the site of the newest open-pit mine in the state (scheduled to cease operation in February of 1997). It has been described as the smallest and richest open pit mine in the world.

During the 1920s, open-pit mines became more economical to develop and operate than deep-shaft mines. Open-pit mining companies such as Kennecott and Phelps-Dodge gained a competitive advantage over deep-shaft mining companies such as Anaconda (Montana) (Dobb, 1966). While Flambeau Mining Company [Kennecott] has had a long history of open-pit mining, they have repeatedly indicated the most likely scenario for a mine in the Town of Cleveland would be a deep-shaft mine.

To address the scope of an open-pit mine, the following are excerpts from the Final Environmental Impact Statement-Flambeau Mine, March 1990 for the Flambeau mine:

a. Location and Land Holdings

The open pit at its maximum extent would be 32 acres in size and involves removing the enriched upper 150-200 feet of the orebody. It would be approximately 2,600 feet long, 550 feet wide, and would be excavated to a maximum depth of 225 feet. The southeast corner of the pit would be 140 feet from the high water mark of Flambeau River. Kennecott owns over 2,500 acres in the Town of Grant, including most of the land in Section 9, T34N, R6W. The 181 acre mine site is completely owned by Kennecott, including both the surface and mineral rights.

b. Description of Facilities

The key features of the project include the open pit, haul road, ore crusher, stockpiles for ore, topsoil, and waste rock; settling ponds; rail spur, wastewater treatment plant, and administrative/maintenance buildings. The size and quality of the narrow, steeply dipping deposit has been defined by drilling over 100 core holes into the orebody from the surface. Kennecott originally proposed in the mid-1970's to mine the orebody using a combination of open pit and underground mining techniques. The original proposal included ore concentrating facilities and permanent surface disposal of mineral wastes rather than backfilling the pit at the end of the project.

c. General Mining Overview

In accordance with the Local Agreement, blasting and rail shipping operations would be conducted during daylight hours Monday through Saturday only. Mining activities are currently planned to occur one shift per day, five day[s] per week. Removal of the soils, glacial overburden, bedrock and highly weathered ore would be performed by bulldozers or other mechanical equipment. Blasting would be used where the ore and waste rock is less weathered and cannot be mechanically ripped.

The blasting schedule would vary depending on the phase of the project, but would vary from one blast/day to one blast/week. Under the Local Agreement, all other mining operations (e.g. construction and reclamation) are allowed during three eight hour shifts, 365 days per year.

The deposit could have been mined by sinking a shaft or decline near the center of the deposit and extracting ore to a depth of approximately 225 feet below the surface. This approach would be very expensive, has greater risk to workers, would result in less complete ore removal, and would be more difficult to backfill compared with the open pit method. Flambeau Mining Co. would probably not proceed with the project if this approach was dictated.

d. Chemical Processing

The Local Agreement did not allow any on site processing of material to take place.

e. Reclamation

Upon completion of mining, the pit would be sequentially backfilled with the stockpiled waste materials. The sequence of backfilling would begin with the placement of high sulfur waste rock in the bottom of the pit. Lime would be added at the rate of 2.5 lbs./ton of high sulfur waste to reduce the formation of acid and groundwater contamination. About 1540 tons of lime would be required.

The liners and over-lying drainage blankets and piping from the ore crushing, ore stockpile, ore loadout, high sulfur waste rock stockpile, rail spur and runoff pond areas would be placed in the pit with the high sulfur waste material. Base material from the ore haul road would be excavated to a depth sufficient to remove material contaminated by acids and heavy metals from the waste rock and ore.

Backfilling of the high sulfur waste would be followed by the placement of low sulfur waste rock and then the highly weathered bedrock (saprolite) from the low sulfur waste rock stockpile. Sandstone and then glacial till would be placed over the weathered bedrock, and finally the area would be topsoiled and revegetated. Flambeau Mining Company proposes to mound material approximately six feet above the original elevation to allow for setting.

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



C. Examples of environmentally responsible mines.

Crandon Mining Company commissioned a study in the Fall of 1995 to determine the extent and degree of environmental awareness and sensitivity in mining and processing operations and to locate examples of environmentally responsible operations in a sulfide ore environment. Hundreds of potential sites were screened followed by telephone contacts with corporate and mine site environmental directors and managers, and with various state and federal regulatory agencies. Over the course of several months more than 150 telephone conversations were able to document that environmentally responsible mining is taking place. (Todd and Struhsacker, 1996) Their report lists the following sulfide mines:

The Henderson Mine and Mill - Empire, Colorado. This underground molybdenum sulfide mine and mill have maintained a spotless environmental compliance record since 1979 when operations commenced

McLaughlin Mine - Lower Lake, California. An open-pit gold mine with tailings area, has operated since 1985 without environmental harm.

Cannon Mine - Wenatchee, Washington. An underground mine with tailings area, operated from 1985 to 1994 and is in the final stages of reclamation.

Viburnum Mine No. 27 - Viburnum, Missouri. An underground lead, zinc, and copper mine with tailings area, which operated from 1969 to 1978.

Stillwater Mine - Nye, Montana. An underground platinum-palladium mine with tailings area. Operating since 1987, the mine has maintained a clean environmental record.

Flambeau Mine - Ladysmith, Wisconsin. An open-pit copper-gold mine. This operation started in 1993 and will be completed in early 1997. Upon completion the open pit will be backfilled and restored to premining conditions.

D. Examples of modern mines that failed to protect the environment.

To list all the failures of mining companies to protect our environment would certainly exceed the scope of this report. We will only scratch the surface in relating just a few of the more recent tailings dam and mine waste impoundment failures. The Mineral Policy Center, in compiling the list from which these examples are taken, interviewed key regulatory and design experts, and reviewed numerous government documents, independent reports, and newspaper articles. (Grover, 1996).

Pinto Valley Mine: Miami, Arizona, 1972-present.

Impoundment failures in 1989 and 1991 released an estimated 96,000 gallons of tailings and associated waste into nearby Pinto Creek. As a

consequence, the EPA cited the company for violations of the Clean Water Act and ordered the company to take precautionary measures aimed at preventing future discharge. The company did not respond quickly enough, however, to prevent the overflow failure of a tailings impoundment in 1993 which washed hundreds of tons of tailings into Pinto Creek. Heavy flooding has been blamed for the tailings release as well as the breach of a nearby, waste water containment pond.

Grey Eagle Mine: Siskiyou County, California 1982-1988.

Cyanide laden waste water was discovered seeping through a subsurface crack beneath the tailings impoundment in 1983. Further investigation revealed that the impoundment was leaking at a rate of 400 gallons per minute (gpm).

Copper Cliffs Mine: Seven Devils Mining District, Idaho, 1971-1985

Repeated overtopping of the Copper Cliffs tailings impoundment resulted in substantial discharge of tailings to nearby Mann and Indian Creeks. The mine's operator reported 3 distinct incidents of overtopping during the fall of 1973 alone. A fourth overflow incident in 1974 resulted in the loss of 6,000 cubic meters of tailings to the creeks below. Stream contamination persisted even after the impoundment was abandoned in 1985. A mine waste dump failed in 1989, causing 1-2 acre feet of waste water in the impoundment to spill.

Pony Mill: Pony, Montana, 1990-?

In January 1995, cyanide was discovered in community drinking water wells. The cyanide was leaking from the mill's waste pond, located directly above the Town of Pony. The mill had been recently abandoned by the company. The cyanide leaching was the result of leaking waste pond liners, and was compounded by the fact that the mill was located on a hill directly above the town and community wells. Residents had warned of the potential problem in 1989.

Brewer Gold Mine: Jefferson, South Carolina, 1977-?

Heavy rains during the fall of 1990 resulted in the breach of a waste water containment pond at the mine. Although the impoundment was constructed with a double synthetic liner and leak detection equipment, it did not withstand erosion caused by steadily rising water. Authorities believe that erosion significantly weakened the impoundment's holding capacity and eventually led to the breach. Over 10 million gallons of cyanide laden waste water spilled into the Lynches

River. A study conducted by the State of South Carolina concluded that nearly 11,000 fish died in the days following this incident.

Mercur Mine: Tooele, Utah, 1988-present

Company officials discovered a seep in the mine's tailings impoundment during April of 1988. The company neglected to report the leak to state regulators, however, until its presence was brought to the state's attention by numerous citizen complaints. Instead, the Company constructed a lined catchment pond in an attempt to retain the seepage on the mine property. One year later, in April 1989, a leak in the new pond's liner occurred. In February 1992, 250,000 gallons of cyanide laden waste water overtopped a reclamation pond at the site.

Gilt Edge Mine: Deadwood, South Dakota, 1988-present.

Heavy rains during the spring of 1995 caused a waste water containment pond at the mine to overflow. Although the pond was designed to withstand a 100 year storm, its emergency pump was unable to handle the sudden influx of rain water.

Harmony Gold Mine: Virginia, Orange Free State, South Africa, ?-present.

On February 22, 1994, 14 people were killed when a tailings dam collapsed during a heavy rainstorm. Rainwater runoff overtopped the tailings dam wall for over two hours before causing it to collapse. The dam failure sent a 6 foot high wall of tailings and mud crashing down into a mine worker housing complex. The massive spill traveled over 3 miles.

IV. IMPACTS OF SULFIDE MINING

Industrial development brings a variety of changes to a community. Widespread concern about the long-term effects of industrial technology and its bi-products on the planet began during the mid-1960s. The United Nations Conference on the Human Environment held in Stockholm in 1972 placed a series of environmental issues on the official agendas of national governments around the world (Markert, 1993). From these beginnings, a vast number of national, state and local agencies, and concerned people have attempted to address the impacts of industrial and commercial development. An attempt to generate a comprehensive list of the critical areas of concern would be challenging and beyond the scope of this report. The more immediate and serious matters concerning the Town of Cleveland (Town) dictate the content of this report.

Section IV will address the potential impact of sulfide mining in three separate areas of concern: economic, environmental and social. A series of references to recent scientific studies, governmental reports, and case studies (relating actual events at mine sites in other areas of the country) will be used to illustrate potential impacts that face the Town.

A. Economic

Predicting economic impacts of a mine on a nearby community is complicated and is, by its very nature, laden with uncertainties. The predictions used to assess economic impacts can be referred to as "shots in the dark". The margin of error commonly reaches average levels of 100 percent (Murdock, Leistritz, & Hamm, 1985). The main reasons for this high margin are the lack of accurate data for exact employment, poor or inadequate baseline data, and assessing areas of impact which cross the jurisdictional borders of communities with different decision-making powers.

1. Job Creation

The need for good paying jobs through commercial and industrial development seems to be a concern of many residents of the Township. An analysis of the County-wide Survey (CedarCorp, 1996) indicates that of all county residents who responded:

- 65% feel that the local/county government should do more to bring good-paying jobs to our area.
- 49% stated that financial incentives were needed for new/existing industrial and commercial development in the community/area.
- 47% and 52% felt that the community should encourage more commercial and industrial development respectively.

Further analysis of the survey indicates that of all Town of Cleveland (Town) residents who responded:

- 38% felt that industrial development should not be encouraged in the outlying areas.
- 46% felt that only light industry and manufacturing that does not cause pollution should be allowed in Jackson County.

Mining operations provide good paying jobs for mine employees whether local residents or persons moving to the area (Tynan, 1996). The number of people employed also depends on the type of mine operation: deep-shaft or open-pit. A deep-shaft mine generally requires more workers than an open-pit mine. Richard Green (1991), notes:

The most salient economic characteristic of the mining industry is that it produces a lot of added value, manifesting itself in high wages - higher than any other major industry classification in Wisconsin. For every dollar produced by the zinc and copper mine industry, nearly fifty cents goes to labor employed in the industry. Wages paid by other industries that provide products to the mining industry add another forty cents to labor indirectly. Conservatively, each mine job creates at least one other local, non-mining job [source of information not indicated].

For purposes of illustrating local job creation, let us assume that a mine proposal for the Town would closely resemble the proposal for Crandon, Wisconsin (Crandon, 1995). The Crandon proposal indicates the need for approximately 600 workers. If all 400 residents of the Town were employed at a local mine, 200 workers from out of Town would still be needed. Since it is unlikely that all Town residents would seek mining employment, the benefits of job creation would be primarily realized by persons outside the Town. Should the mine proposal for the Town more closely resemble Flambeau Mining Company at Ladysmith, Wisconsin, only 40-75 workers would be needed. In a "Local Agreement" a Township can mandate that a percentage of the employees be from the local area (EIS-Flambeau Mine, 1990).

Further research (Tynan, 1996) reveals that the business of mining is very aggressive, speculative, and competitive. A mining company lives and dies by the market price of minerals, available technology, and a labor pool which can be hired and increased virtually overnight. Due to the enormous amount of overhead expense, a mining operation strictly controls production based on the market price of the metal being mined. When metal prices are high, production has to increase and when they fall, it must slow down. A must for a successful mining operation is to have a labor pool which they can draw from, or add to, quickly. This means quick hiring and quick layoffs. Tynan adds

that it is in the best interests of a mining company that no other stable, well-paying, long-term employer move into the area to compete for the labor market.

2. Infrastructure

The addition of a large business to a community often requires expansion and development of a variety of supporting services (infrastructure). These services include housing, schools, social services, health-care facilities, roads, utilities, and transportation (Tynan, 1996). This section will address the impact of the addition of a large business on a community's infrastructure.

A small community will normally experience a rapid increase in population--especially of young, single men and young families with the introduction of a mining operation (Tynan, 1996). Increase in population results in an immediate need for additional homes, rental units, and classrooms. The need for social services and health-care services increases as well. Tynan's research indicates that meeting these needs may be difficult until revenues from the mine start coming back to the affected communities from net proceeds tax payments. The net proceeds tax is paid by mine operators to the state which has set up the Local Mining Impacts Fund Board. This Board then distributes the payments to communities affected by mining development. (see Table 3 on the next page).

Depending on the scale of a mining operation, additional power supplies to the area would be indicated. The electric company servicing the mine site would probably need to build a new transmission line to supply requirements. Adding another large scale user to the company's system may impact the control periods that apply to those who use electrically-based primary heating systems. Increasing the number or duration of control periods causes users to rely more on backup systems, resulting in increased costs to heat and cool their homes.

Again, depending on the scale of operations, increased wear and tear on roads leading to the mine and transportation facilities (ex: railroad access) may occur. New roads may need to be built and existing roads may require more frequent maintenance (resurfacing, repair, and plowing). Communities must continue maintenance and upkeep on existing infrastructure, regardless of income generation. Businesses often raise prices in the area to offset some losses and municipalities often raise taxes to pay for unemployment and other community costs.

3. Economic Development

The increase in population during mining operation often draws outside entrepreneurs (secondary businesses) to the local communities, which leads to increased competition with local, established businesses. In response, local firms face an increase in labor costs, which trickles down to local residents and generally increases the local cost of living throughout the duration of the project (Murdock, 1985).

Every dollar that an industry brings into a community is said to circulate several times within the community. This is referred to as the "multiplier effect". The secondary circulation of dollars is factored into economic impact predictions.

Much of the economic impact on a community depends largely on the existing local economy before the arrival of the mine. A diverse local economy will be less likely to overadapt (to specialize too finely) or become dependent on the mine, perhaps the greatest risk to a community. A weak existing economy in need of an economic boom to create jobs and alleviate poverty may not pursue any economic diversity essential for long-term stability.

After overadaptation has occurred, the closure of the mine is often economically and socially devastating for the local communities. Most mines are short-lived, encouraging a short-run outlook best expressed today in the hundreds of ghost towns that lie between the Great Plains and the Pacific Ocean (Dobb, 1996). The period after mine closure is commonly referred to as the "bust phase" of the mining industry cycle.

The bust phase of mining is more than just the opposite of a boom. If it were just the opposite, people would leave, buildings would be torn down and property taxes would fall and the town would merely go back to the way it was before the mine. During the bust phase, unemployment is greater in mining towns than in non-mining towns (Tynan, 1996).

Unemployment is measured by the ratio of those **looking for work** to those **able to work but not working**. If the workforce in a community stays the same and people lose jobs, unemployment rises. This can be offset by reducing the workforce, or adding job opportunities. Because mine workers remain in the area when they are laid off, the county and state pay unemployment benefits to mine workers for an indefinite period of time.

The two main reasons workers do not leave the mining community are: anticipation of another boom or inability to leave. Mortgages and lack of income make moving difficult and it is easier to rely on the mine reopening than relocation. If the bust phase lasts longer than six months, excess workers in the area represent a labor surplus. Wages are reduced by local employers. When per capita income growth slows down, the

burden of inflation is multiplied. Businesses respond to the bust phase of mining in the same manner and for the same reasons.

In a bust, any secondary business growth is halted because owners were relying on the multiplier effect for steady income. It is often the case that businesses completely unrelated to mining go "out-of-business" when mining operations slow down. As businesses close and workers are laid off, the local community becomes financially drained. People do not leave the community, buildings are not torn down, the tax burden rises, and cost of living expenses climbs (Tynan, 1996).

4. Property Values

Property values can go up or down depending on the distance to the mine site. Some current property owners have expressed their intent to move if a mine were to be developed next to them. These same people may find it difficult to find buyers at current market values. Those properties far enough away to have minimal impact will likely see property values rise as outside mine workers look for housing close to work. Those who remain in the community may see property taxes rise, primarily to pay for increased services and school additions.

Land speculation often drives the value of property faster than the per capita income which can cause local property tax burdens to increase. This form of inflation is mostly felt by senior citizens and others living on fixed incomes. Hyperinflation is a concentrated increase in the cost of living over a period of time in a particular area. For example, home purchases in mining towns during boom periods cost as much as 50% higher than the same home during bust phases or in communities 20 miles away (Tynan, 1996).

Governmental units are reluctant to use mine revenues for property tax reductions due to the short term nature of mining. Usually these revenues are targeted for economic development or for discretionary spending, like a new town hall or a library or extensions to an airport runway. Most of these local revenues will end up in the hands of the county, who will in all probability, use it to promote economic development in and around Black River Falls. As an example of revenue distribution, Rusk County data is presented in Table 3. (see next page) (document passed out at informational meeting 10/17/96)

An analysis of the economic picture from Rusk County shows that of all the profit earned by Flambeau Mining Co., only about five cents of every dollar came back to the local governmental bodies. They in turn used that money primarily to retain jobs that might have been lost due to possible relocation of existing businesses (Tynan, 1996).

Rusk County Development
Projects Funded by or Aided by
Mining Revenues

	Net Proceeds Tax		Other		Private Industry	Total
	Leg. ^a	MILIE	Grant			
Fritz Avenue Renovation and Expansion	\$315,000	\$586,000	\$450,000			\$1,551,000
Business Development Incubator Building	600,000					600,000
Ladysmith Rusk County Enterprise Center	560,000		840,000			1,400,000
Conwed Relocation & Weather Shield Expansion		2,872,000			\$3,585,000 ^b	6,457,000
Rusk County Forest Industry Park	53,000	479,000	750,000 ^c			1,282,000
West Lake Enterprise Center	125,000				125,000	250,000
Rusk County Airport Expansion & Modernization	600,000	526,000	2,400,000			3,526,000
Rusk County Visitors Center	80,000		145,000			225,000
Rusk County Community Library	500,000				500,000 ^d	1,000,000
Totals	\$3,073,000	\$4,463,000	\$4,585,000		\$4,210,000	\$16,291,000

A - Includes first dollar payment to local communities from net proceeds taxes and supplemental guaranteed payments to the local community.

G - Grant Application submitted award decision pending

F - Donation from the Flambeau Mining Company

P - Proposed equipment investment by Conwed and Weather Shield.

Jobs retained and created by the above list is estimated at 500 to 550

Table 3

Rusk County's tax levy will increase 5.5 percent next year. As reported in the November 14, 1996 edition of the Eau Claire Leader-Telegram, County Auditor Marilyn Kulibert said that the increases in the budget are attributed to the courthouse construction project under way in Ladysmith and the use of mining proceeds for a number of economic development projects.

Property assessors must consider the time and expense of repairing or replacing a contaminated well or water supply when assessing the market value of real property. According to the DNR, assessors must consider the "environmental impairment" of the property value due to the presence of a solid or hazardous waste disposal facility (PUBL-WR-281-96REV).

B. Environmental

An environmental analysis is the process of carrying out a comprehensive study and review of a broad range of environmental features such as topography, hydrology, geology, and cultural status for a specified land area (Markert, 1993). The intent of the environmental section of this report is to familiarize readers with several environmental impacts that must be considered prior to introduction of sulfide mining into the community.

Mining's potential threats to the ecosystems have been recognized for centuries. In the world's first mining textbook, Georgius Agricola observed in 1556 AD:

The strongest argument of the detractors is that the fields are devastated by mining operations... the woods and groves are cut down, for there is need of an endless amount of wood for timbers, machines and the smelting of metals. And when the woods and groves are felled, then are exterminated the beasts and birds, very many of which furnish a pleasant and agreeable food for man. Further, when the ores are washed, the water which has been used poisons the brooks and streams, and either destroys the fish or drives them away (Masinaigan, 1996).

1. Site preparation

The example of the Flambeau mine in Ladysmith, Wisconsin illustrates how a site is prepared prior to mine construction. A 1990 Department of Natural Resources (DNR) report describes the impact of clearing, grubbing, and earth moving construction:

The initial clearing and grubbing of the site would remove trees and other vegetation from much of the project site. This would create a more open view of the site and would temporarily replace vegetative land with exposed earth. The waste rock and topsoil stockpiles would be the most visible of the project facilities. Since the stockpiles would be increasing and then decreasing in size over the course of the project, the visibility of the piles would vary accordingly. The rail spur and rail operations would be visible from various areas in the Township

depending on where the spur is located. Nighttime operations would cause additional aesthetic impacts. Stray light from the operations would make the mine site much more visible. A sufficient number of successfully transplanted trees could be effective in screening much of the mine operation during daylight hours but would have little effect on nighttime light pollution.

2. Site Remediation

Metallic sulfide mining creates large quantities of dangerous waste. For example, each ton of copper ore only yields about 8-10 pounds of copper, leaving 1,990 pounds of tailings. (Masinaigan 1996) Site remediation is the process of controlling the spread of pollution. Due to volume of waste material that must be isolated from the environment the issue of protecting ground and surface water is of prime importance.

In relation to groundwater protection, in Publication WR-281-96 REV, the

DNR notes:

There is no single best approach to groundwater protection because local situations vary, however, one theme should provide the basis for any groundwater planning effort. Groundwater management should emphasize prevention and protection of groundwater contamination, not remedial action because most forms of remedial actions are extremely expensive and usually not completely effective".

In reviewing the minutes from a Natural Resources' board meeting (December, 1994), a series of comments give further insight into the site reclamation process. Larry Lynch, DNR Mine Reclamation Unit hydrogeologist, was challenged by mining critics to "find a metallic [sulfide] mine that had been built, operated, and closed with no problems".

Unable to find an example of a problem-free mine, Lynch said in the 1995 report, A Technical Overview of Mining in Wisconsin: "There really aren't any we can point to that have been operated without a problem."

Further commenting on groundwater protection, the DNR warns in their report: "technologies available to prevent pollution from metallic [sulfide] mining wastes - like those that would be produced by Exxon's proposed copper - zinc mine near Crandon Wisconsin - remain largely untested."

Further review of documents revealed that officials with Crandon Mining Company said they "...agreed with the conclusions of the DNR report". Dick Diotte, a company spokesman, did go on to add that "even though there are no examples of metallic [sulfide] mines that have been successfully contained, there are metallic [sulfide] mines in operation that are operating without major pollution problems". And Don Moe, technical permitting manager for Crandon Mining, added "...there are also many examples of other

types of mines, including coal mines, which also produce acid drainage, that have safely disposed of wastes".

Lynch pointed out in the report that while there are mines in operation that are using new waste disposal technologies (including the earthen covers, plastic barriers and treatment processes proposed by Exxon at Crandon), there is not enough data on the technologies to reach any conclusions about their effectiveness. "There are no ideal metallic [sulfide] mining sites which can be pointed to as the model approach in preventing acidic drainage industry-wide" Lynch concluded in the report.

a. Waste Disposal Technology

The August 5, 1995, issue of the Wisconsin State Journal quoted hydrogeologist Lynch in a discussion of current waste disposal technologies and pollution:

The response of the mining industry has been slow, and implementation of better design and operational constraints has only recently become widely accepted and practiced. In spite of these improvements, there are still examples of failed projects in terms of environmental protection. Foremost among these is the Summitville Mine project in Colorado where a project using generally current control technology still resulted in substantial acidic drainage and related problems.

David W. Blowes, Ph.D. (DNR consultant) in a July 26, 1995 letter to Ms. Laura Sutherland (Office of the Public Intervenor), commented on waste management area cover systems, corporate liability, and protection of the people of Wisconsin:

The warranty life of synthetic material used in the cover system is typically 50 years. This is sufficient warranty to protect the Crandon Mining Co. during the 40 year long-term site management period following mine closure, but it is not sufficient to protect the people of Wisconsin in the following decades and centuries. It seems further, from the meetings I have attended, that it is the assumption of the Crandon Mining Co. and the DNR, that the people of the state of Wisconsin will cover these costs. I am not confident that the people of Wisconsin are aware of the magnitude of the financial liability being assumed under their name.

According to Reece (1995), liner technology is frequently used at mine sites:

...to hold mineral-processing fluids, whether cyanide-solutions or heavy-metal-bearing slurries of ground rock. Before a 'heap' of gold-bearing-ore is stacked to be leached with cyanide, a liner goes under the

heap to keep the solution in place. Where cyanide solution is stored in a pond before it is pumped over the ore, a liner forms the bottom of the pool. When slurries of processed ground rock are dumped in tailings ponds, liners are used at the bottom of the ponds (or should be) to keep toxins from leaching into the underlying soil. All liners leak. That is the most important thing to understand about the liners used in heap-leach mining technology. The only difference among them is some have leaked and others will leak.

Liner technology, whether for heap-leaching or long-term storage of waste material is problematic. Reece goes on to note that liners leak for three major reasons:

...improper design, defective manufacturing, and careless installation. The synthetic material used for liners is produced in a process that turns it out in enormous sheets. Typically, the sheets are 20 to 30 feet wide and can be 1,000 feet long. Some manufacturers even offer sheets that are 120 feet wide. Quality control is key, for moisture and foreign matter can produce tiny pinholes in the sheeting. For example, faulty settings can lead to stress points where a liner is too thin in some places and too thick in others. Shipping and handling offer their own problems. Rolls of liners can be punctured or torn if improperly stored. Dragging a roll or panel will cause damage that requires special repairs. Storage before installation is also critical. Liner material can be damaged or contaminated by dirt, rain, and exposure to ultraviolet radiation from sunlight.

Proper installation is required to insure that the (liner) functions as designed, as an EPA study on liner performance succinctly said. Even though a liner is 1/16th inch of tough plastic it can be damaged during installation so that it will leak. The most obvious place for this to happen is at the seams. The rolls of material are joined with a chemical or heat process. There are miles of seams in a liner that covers tens of acres. Each point is a possible leak.

If the weather is too hot or too cold, the seams may be faulty. Dust, dirt, moisture also affect the quality of the seams. And, of course, workers can damage the liner by dropping sharp tools on it. Especially damaging is driving heavy equipment on a liner before it is protected by the heap.

Reece also notes: **MURPHY'S LAW "If something can go wrong, it will"**.

The photograph below illustrates what happens when modern impoundment designs fail to anticipate the extremes of nature.



b. Soil Structure

Another factor to consider in site remediation is the change in structure of the ground at the remediation location. Removing topsoil and other materials reduces the area's ability to filter any contaminants, while the operation of heavy equipment and illegal waste disposal increases the likelihood of a release. Groundwater flow changes can also occur in these situations (DNR PUBL-WR-281-96REV).

c. Chemical Emission

Traditional manufacturing industries are required to release a report estimating their toxic chemical emissions on a yearly basis. Mining operations are exempt from the key section of the EPA's Toxic Release Inventory (TRI) (section 313). Using information from the Emergency

Planning and Community Right-to-Know Act (EPCRA), The National Wildlife Federation reveals to the public the EPA's Toxic Release Inventory (TRI) for one mine which mistakenly filed a report. (Table 4 below). The premise of the EPCRA is that people have a fundamental right to know what harmful chemicals are being used and released into their environment.

Kennecott Copper Toxic Chemical Releases 1987
(all figures in pounds)

Toxic Chemical Released	To Land	To Air	To Water	To All Media
Copper and copper compounds	130,000,000	63,900	7,900	130,071,800
Arsenic compounds	8,300,000	8,150	1,400	8,309,550
Barium compounds	6,900,000	9,150	250	6,909,400
Zinc compounds	5,600,000	5,150	3,200	5,608,350
Chromium compounds	4,100,000	9,850	250	4,110,100
Lead and lead compounds	3,300,000	12,250	250	3,312,500
Sulfuric acid	28,000	188,800	0	216,800
Cadmium compounds	125,000	500	250	125,750
Hydrochloric acid	4,500	0	0	4,500
Cresol (mixed isomers)	250	250	250	750
Chlorine	0	250	0	250
TOTALS FOR FACILITY:	158,357,750	298,250	13,750	158,669,750

Note: Toxic chemical releases for 1987 inadvertently reported to EPA by Kennecott Copper, operator of the nation's largest copper mine. TRI reporting is not currently required from mining facilities, and Kennecott discontinued reporting most of these releases in 1988. Kennecott's 1987 toxic releases were among the largest of the more than 35,000 industrial facilities that filed TRI reports with EPA.

Source: National Wildlife Federation

TABLE 4

3. Groundwater

Groundwater is defined as water beneath the surface of the ground in a saturated zone. An aquifer is a rock or soil formation that can store or transmit water efficiently. According to Wisconsin Department of Natural Resources:

The state's groundwater reserves are held in thick, permeable layers of soil and rock. These layers are our four principal aquifers: the sand and gravel aquifer, the eastern dolomite aquifer, the sandstone and dolomite aquifer, and the crystalline bedrock aquifer (PUBL-WR-224-89).

The sandstone and dolomite aquifer is the principal bedrock aquifer for western portions of Wisconsin. In Cleveland Township the aquifer is contained in sand and loosely cemented sandstone, which is highly porous and water moves through it easily. The crystalline bedrock aquifer underlies the whole state.

This part of Section IV will present: the water cycle as described by the DNR, the impact of sulfide mining on groundwater at mining sites around the country, and groundwater cleanup as described by the DNR.

a. The Water Cycle

The water cycle describes the path that water takes from first hitting the earth as rain to its reformation as clouds. The DNR summarizes the cycle in PUBL-WR-224-89:

Water might be called our most recycled resource. The water you showered in this morning, for example may have contained the same water molecules that caused a dinosaur's hide to glisten in the prehistoric sun or carried the Nina, Pinta, and Santa Maria across the Atlantic. The distribution of the earth's total supply of water changes in time and space but the quantity has remained constant.

Uneven water distribution is governed by a phenomenon known as the hydrologic cycle, which is kept in motion by solar energy and gravity.

Pick a bursting cloud as the start of the cycle. As the rain it sheds falls to earth, some flows downhill as runoff into a stream, lake or ocean. Some evaporates; some is taken up by plants. The rest trickles down through surface soil and rock formations, traveling through pore spaces and open cracks. This water eventually reaches the top of a water-saturated layer of soil or rock called the water table. The water contained in the saturated layer below the water table is called groundwater.

Groundwater seeps from upland to lowland areas and is released, or discharged, in lakes, ponds, streams and wetlands - low places where the water table meets the land surface. The sun releases energy, causing evaporation from surface waters. The process that returns water to the atmosphere from water and land surfaces and by the activity of plants is called evapotranspiration. When water vapor accumulates in the atmosphere and clouds begin to form, the hydrologic cycle begins anew.

All groundwater moves through the earth at various rates. Rate of movement depends on the geology of the land. Groundwater will move more quickly through sandy rock, like what is found in Cleveland Township, than through clay or solid bedrock. Anything that changes the composition of the rock through which water moves will change the rate of water movement. If the rock is broken up (as in the mining process), water movement will speed up. If the rock is compacted (as seen in soil compaction in mine site surface remediation), water movement will slow down.

b. Sulfide Mining and Groundwater

Sulfide mining is a complex process. Ore is taken from deep below the surface of the earth and is broken into small particles by blasting and crushing. While methods for extraction vary, crushed material is usually combined with a number of toxic and hazardous chemicals including sodium cyanide and sodium dichromate.

Extraction yields metals and leaves waste tailings. When tailings combine with air and groundwater or rain, a sulfuric acid solution is left behind. This acid dissolves significant amounts of heavy metals present, including arsenic, mercury, lead, and cadmium.

According to McKee and Wolfe (1966), groundwater may flow as little as 10 feet per year, and this rate only exceeds one mile per year in coarse material and fissures. First, this means that pollution being added to the ground at one point may not affect the quality of water supply wells at nearby points for many years, or at more distant points for decades. Consequently, no complaints are registered, and no one may be aware of the damage being done. Second, when pollution is finally discovered, or when the quality of water supplies is degraded, the damage cannot be repaired, or otherwise rectified merely by stopping the pollution. Purification by leaching and dilution will require a longer time than the period of the original pollution.

c. Exploratory Drill Holes

Mining exploration poses a number of ecosystem threats. Drilling operations may penetrate multiple aquifers. This can cause water from different aquifers to mix, changing water chemistry. Aquifer elevations may also change, causing wells to go dry. Drilling sludge, the material ground up and brought to the surface during drilling, may contain sulfide ore, heavy metals and other contaminants.

DNR publication PUBL-WR-281-96REV states that approximately 1,400 accidental or intentional spills of hazardous materials were reported in Wisconsin in 1994 and an unknown number of additional spills and illegal dumpings go unreported. The number of hazardous spills indicates existing preventative controls are not working to the degree necessary to protect groundwater.

The Royal Commission of Inquiry into Uranium Mining (British Columbia, 1979) citing possible dangers of drilling large numbers of holes in one area, said: "A potential hazard is that drill holes will disrupt the pattern of groundwater flow, causing compositional change in the water and leading to contamination of a water supply previously unaffected".

Dr. Robert F. Woollard (1979), addressing the Commission further noted:

If one expands that drill hole into a large pattern of drill holes over an extended area, it is not at all difficult to conceive of significant surface and ground water contamination and this may have particular significance in areas such as the China Creek deposit which are in the water shed for the human water supply of a town.

Merely capping the drill holes with cement is hardly a substitute for close monitoring in such potentially sensitive areas. It is naive indeed to believe that continued large expenditures in the area of exploration will not result in continued and perhaps effective pressure at very high political levels to ensure that the results of that exploration can be manifested in mining, milling facilities and the rest of the chain that flows therefrom.

Therefore, although we appreciate the desire of the Commission to isolate this aspect for the purposes of discussion, we must not lose sight of the fact that it is inextricably tied to the later stages and the dangers of the later stages are an integral part of the hazards associated with exploration. Although an optimistic general public may be forgiven for their naiveté in isolating exploration from mining, the Commission cannot afford this luxury and society in general cannot afford your indulgence in it.

Dr. Paul Robinson of New Mexico (1980), testified before the Minnesota House Committee on Environment and Natural Resources in December of 1979. He described New Mexico's experience with uranium exploration, showing it is possible for exploratory holes to serve as pipes for underground water. Water traveling along these holes could become contaminated with radioactive material.

In Pierre, South Dakota, the Division of Conservation (1980) noted:

"Bacterial action was found in one mineral exploration hole south of Liermosa and another lacked the required subsurface fill material," say state officials. Division of Conservation, surface mining program, land management specialist, Steve Stampfli, said: "A continuous plug is crucial in closing off aquifers penetrated by the drilling." He went on to explain: "Water of undesirable quality could be pressured from deeper formations

through an unplugged drill hole to contaminate better quality water in the upper level sands."

Different contamination problems were experienced at exploratory drilling sites in Wyoming. In a technical report by geohydrologist Tom Rediske (Montana, 1979) the following problems were noted:

- (1) well hole abandonment (many of the holes drilled in Wyoming are not plugged and even if every hole was plugged properly, at least 10 percent do not seal);
- (2) well holes that are not plugged, which have been drilled into an artesian aquifer and are now leaking, causing bogs in which livestock losses are occurring;
- (3) artesian aquifer, and especially perched aquifer, water levels, have dropped consistently;
- (4) many sites are not reclaimed;
- (5) co-mingling of ground water aquifers;
- (6) exploratory holes that are being drilled and not reported;
- (7) domestic water wells drying up completely.

d. Groundwater Contamination

In describing threats to groundwater, the Wisconsin Natural Resources Magazine (1989) states:

"You name it-gasoline, fertilizer, paint thinner, bug spray (or cyanide-based substances in the case of sulfide mining)- if it's used or abused by people or companies in large enough quantities and dissolves in water or soaks through the soil, it's capable of showing up in Wisconsin's groundwater at some time or place."

The DNR goes on to say that handling contaminants once they are introduced into the groundwater is a large task. Cleanup costs at EPA Superfund Sites (a site identified as so threatening to health, safety and welfare that federal taxpayers' dollars are allotted to its cleanup) can range into the tens of millions of dollars and beyond. The United States Forest Service has identified acid drainage from mine sites as the most difficult and costly reclamation problem with sulfide mining operations (U.S. Forest Service, 1993).

The largest EPA Superfund site, is located at the Summit Valley mining district in Butte, Montana (Dobb, 1996). Serving as an example of the worst case of environmental degradation due to irresponsible mining and illustrating what happens without strict regulatory controls, we will look at the Berkley Pit Mine

through the eyes of a resident of Butte, Montana. The Berkeley Pit ceased operations in 1982. In describing the 1 mile wide, 1.5 miles long, and 1/4 mile deep open-pit copper mine, Dobb states:

The Berkeley Pit was excavated in one generation, the dozens of underground mines that surround it in five or so, but the aftereffects of these engineering feats will be felt for hundreds of generations, until the next ice age or geologic cataclysm, a perpetual problem in need of a perpetual solution. Just as there is no foreseeable end to the flow of toxic water, there is, under the EPA remedy, no end to the production of toxic sludge.

Given present market conditions and the state of excavation technology, the restoration of large, hard-rock strip mines is prohibitively expensive, so it is simply not done. When mining was discontinued at the Berkeley Pit copper mine in 1982, the pumps which removed the groundwater were shut off. Water then filled the mineworks which mixes with the sulfur which is in the bedrock.

Dobb continues his discussion of water problems within the Berkeley pit and surrounding area by noting that:

Today, 28 billion gallons of hazardous and toxic water fills the Pit and is rising daily. Barring major geologic changes, water will also continue to enter the Pit and mineworks through the fractured and mined-out bedrock. This toxic water threatens to enter the alluvial aquifer beneath Summit Valley which includes at least one-half of Butte's 33,386 residents.

The bedrock aquifer, lying some distance below the alluvial aquifer, contains highly elevated levels of arsenic, lead, and cadmium, as well as copper. No successful method is available to control the migration of groundwater through bedrock, much less purifying it. The cost of even trying to do so is estimated between \$7 and \$10 billion dollars. For all practical purposes, the bedrock aquifer is beyond repair.

It is also noted that surface water in the local river basin is contaminated as well:

Rainfall becomes contaminated runoff that eventually works itself to the streams. Six million cubic yards of toxic-metal sediment rests at the bottom of Milltown Reservoir, behind the dam. Flooding sometimes occurs, but local officials fear the effects of a major flood if one should happen.

The entire floodplain around the Summit Valley mining district in Butte, Montana is on the federal Superfund list and is the largest such site in the country.

Mining of nonmetallic and metallic minerals can impair groundwater quality and quantity. Gravel pit or mine operation typically involves lowering the water table for materials extraction. As revealed in the following section, mining companies around the country have made substantial errors in predicting how much water will be removed.

(1). Effect on Water Sources

Water is contained within the earth in aquifers fed by rain and snowfall. Wells tap into aquifers. Groundwater flowing into a mine site is called "seepage". Any large-scale removal of water from an aquifer can lower the level of water of lakes, ponds and streams fed by the aquifer or the level of water in wells. This is known as "draw-down". Knowing the volume and rate of water seeping into a mine site is important in predicting the impact of the draw-down on users of water. Example: if the draw-down is significant, a well-owner may need to dig a deeper well.

The Final Environmental Impact Statement for the Flambeau Mine (prepared before mining operation began) presented a model showing that the average annual pit inflow (groundwater flowing into mine) increases over time as the pit is excavated. It was noted that:

While the maximum instantaneous inflow rates would occur during the initial overburden removal, maximum annual pit inflow occurs at the end of mining when somewhere between 75-175 gallons per minute will be entering the pit.

Flambeau Mine engineering studies, stated that **probable** water inflow (which would require treatment) would be around **125 gallons per minute**. In a document published in 1996, (Site Tour VI) mining officials stated: the average **actual** amount of water treated was **500,000 gallons per day**. By simple arithmetic, the actual water inflow is **347 gallons per minute** or **2.78 times more than predicted**.

In another example of miscalculating water flow rates: The Environmental Impact Statement (Final EIS, Betze Project, 1991) on the Betze mine, near Elko Nevada, was based on a projected annual average use of water (dewatering) rate of approximately **30,000 gallons per minute**.

The 1993 projected dewatering rate was calculated to be less than **11,000 gallons per minute**. As of February 1993, however,

Barrick [Goldstrike Mines Inc.] was dewatering at a rate of approximately 60,000 to 65,000 gallons per minute, Environmental Analysis p. 2-7 -- more than twice the rate on which the original environmental analysis was based and nearly 6 times the rate calculated for the year 1993. In the original Betze Environmental Impact Statement (EIS), dewatering was considered to affect less than 100 square miles. The new EIS estimate indicates more than 500 square miles will be affected.

In the examples above, the draw-down of water sources surrounding actual mine sites was underestimated or understated in pre-mining impact statements prepared by mining officials.

Computer modeling presented by the Crandon Mining Company projects minimal effects on lake and stream levels adjacent to the proposed mine site and that all private water supplies will be fully protected. Rodney Harrill, President of Crandon Mining Company was quoted by the Eau Claire Leader-Telegram (December, 4, 1996) as saying the Crandon Mine: "has committed to deepen or replace all wells affected."

But as reported on by the Eau Claire Leader Telegram on January 12, 1997, the Crandon Mining Co. has failed to substantiate its claim that operating an underground mine in Forest County would not significantly reduce water levels in nearby streams and lakes, state environmental regulators say. One DNR official said in a letter to the company that, unless some of the questions state regulators have about the project are answered, he would have substantial concerns about their claims.

Possible errors in the company's 1995 computer analysis also could prevent regulators from accurately predicting changes in water levels at Mole Lake, west of the mine site, according to the letter and accompanying report by DNR hydrogeologist Christopher Carlson.

4. Flora and Fauna

The way in which acid drainage is produced is well known. Pyrite and other sulfide minerals are exposed to air and water in the mining process. The air and water oxidize the sulfide minerals, releasing sulfuric acid and sulfates. Acid drainage contains a range of metals including arsenic, cadmium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc. Flows of acid drainage can create large, toxic, metal-bearing sediments in streams. Flows are characterized by readily visible brightly colored streaks (red, purple, and orange).

When acid mine and metal-containing drainage enters a stream, the fish and other stream organisms are often depleted in a relatively short period of time. Copper ions are especially lethal to fish, but not to mammals. Highly acidified or cyanide-containing water is lethal to birds and other mammals.

Some of the land leased in Cleveland Township by the mining company contains wetlands. These wetlands are the source headwaters for the north and south branches of the Buffalo River. All of the area in Section 20 is a primary recharge zone for the underlying aquifer. The flora and fauna using the wetlands, water from the aquifer, and settling ponds that might be needed for a mine, are at risk from the effects of acid mine drainage.

The potential for adverse effects on flora and fauna near a sulfide mine site is noted in the following additional case studies:

a. Alligator Ridge Gold Mine: Kennecott Corporation

The Real Mining News (1991) reported that Kennecott Corporation pleaded guilty in March 1990 in a Reno Nevada courtroom to violating federal law in connection with the deaths of more than 1400 birds at its Alligator Ridge gold mine. The company was forced to pay a \$40,000 fine and \$50,000 in restitution. Government officials say that more than 6700 birds have died in cyanide-tainted tailings ponds across the state since the cyanide leaching process came into widespread use in 1985. Bird deaths in the tailings ponds are not the only problem associated with the cyanide leaching process. In 1988 alone, Nevada experienced eight spills of cyanide which averaged 400,000 gallons each. Nine million gallons of the poison spilled into one Montana river in 1983. The Nevada Division of Wildlife has recorded the deaths of thousands of birds and other wildlife including, fox and whole herds of deer that have tasted of the cyanide leaching ponds at gold mines in their state (TBS, 1996).

b. Philippines: Marcopper Mining Corporation

The Wall Street Journal (1996) reported that the Philippine Justice Department filed criminal charges against three former officers of Marcopper Mining Corporation in a huge waste spill that damaged two rivers. In March of 1996, a drainage tunnel problem sent millions of tons of liquefied mining waste into the rivers and Marinduque island endangering wildlife and residents along the rivers and island.

c. **Summitville, Colorado: Galactic Resources**

A small mining company called Galactic Resources in 1985 announced to the people of Summitville Colorado that it had discovered a huge gold deposit in the nearby hills. The company promised to turn Summitville into a mining empire and said the mine will provide hundreds of jobs and pump millions of dollars into the area's shaky economy. The company also told residents not to worry about any environmental dangers (such as what might happen if the mine's cyanide wastes should happen to reach the nearby Alamosa River). Galactic Resources, assured Summitville residents over and over that its waste pond, reinforced with a synthetic heap leach liner wouldn't leak.

Bob Zaleski (1994) reported that review of company records revealed that the liner began leaking several days after the mine opened in 1986. In 1992, the company went bankrupt and left behind \$20 million in unpaid bills and millions of gallons of contaminated water some of which filtered into the Alamosa River affecting 17 miles of wildlife habitat to the point that fishing was unproductive. Zaleski went on to quote the Environmental Protection Agency as estimating cleanup costs at about \$100 million.

d. **Georgetown, Guyana Mine Site**

As reported by the Wisconsin State Journal (Wilkinson 1995), large numbers of dead fish and hogs floated down Guyana's biggest river, victims of a cyanide waste spill when more than 325 million gallons soaked into the Essequibo River. The Health Ministry banned people from catching and eating fish, shrimp and other marine life and told farmers not to let their animals drink from the river. It occurred when the retaining wall of a holding pond broke, initially dumping 15.7 million gallons an hour of cyanide-tainted water into the Omai River, which feeds the larger Essequibo River. The concentration of cyanide in the spilling water was diluted from 15 parts per million, six days later, to around 3 parts per million. Cyanide can be fatal in concentrations above 2 parts per million. This was the second accident in three months at the mine, which began operation in January 1993.

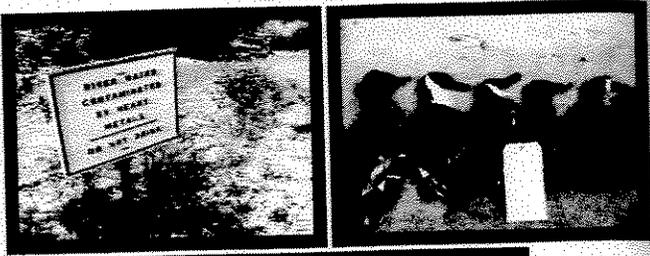
e. **Montana: Pegasus Gold Inc.**

The Pegasus Gold Inc. mine site in Montana, which began operations in 1979, has been plagued by numerous environmental problems, including cyanide spills, acid mine drainage, liner rips, wildlife deaths and un-permitted mining activities (Brackett, 1996). On July 22, 1996 the company agreed to pay up to \$32 million to upgrade its mine wastewater management and treatment facility, \$1 million to the Fort Belknap Indian Reservation, \$2 million in civil penalties for 22 federal and state clean water violations and \$1.7 million for supplemental environmental projects.

f. **Berkeley Pit: Butte, Montana**

Berkeley Pit, an open pit copper mine at Butte, Montana, contains a 600 acre lake. The lake reeks of sulfur and is acidic enough to liquefy a motorboat's propeller. The water is poisoned with copper, cadmium, and arsenic. At least 342 snow geese died by stopping at the Pit during their migration, it is unknown how many more were undiscovered or attempted to continue on with their journey. Autopsies of the geese revealed that the oral cavity, trachea, gizzard, intestines, and esophagus were lined with burns and festering sores (Dobb, 1996).

The pictures on the following page were electronically captured from a recent video produced by the Nation Wildlife Federation. The first picture represents what happened to the Alamosa River when their liner leaked and 17 miles of river were contaminated. The next three show examples of wildlife killed from visits to tailings ponds. The last shows the stark contrast between soil contaminated and lifeless by mining and distant uncontaminated vegetation.



IMAGES CAPTURED FROM A RECENT VIDEO
PRODUCED BY THE NATIONAL WILDLIFE FEDERATION

5. Noise Effects

According to the Grolier Encyclopedia, although the frequency (pitch) of noise may be of major importance, most noise sources are measured in terms of intensity, or strength of the sound field. The standard unit, one decibel (dB), is the amount of sound that is just audible to the average human. The decibel scale is somewhat misleading because it is logarithmic rather than linear; for example, a noise source measuring 70 dB is 10 times as loud as a source measuring 60 dB and 100 times as loud as a source reading 50 dB.

At one mile away, blasting is a major concern with noise levels of 114 dB. Even at approximately 2 miles from a blast site, the sound level would be at 109 dB. As reported in the Final Environmental Impact Statement-Flambeau Mine, the United States Department of Housing and Urban Development has determined that decibel levels over 75 are clearly unacceptable in residential areas.

Judgments of whether or not environmental sounds are noises are subjective, but Grolier Encyclopedia notes that unwanted sounds can precipitate severe psychological effects. Although little hard information is available on the psychological side effects of increased noise levels, many researchers attribute increased irritability, lower productivity, decreased tolerance levels, increased incidence of ulcers, migraine headaches, fatigue, and allergic responses to continued exposures to high-level noises in the workplace and the general environment.

The Final Environmental Impact Statement-Flambeau Mine goes on to note that Wisconsin regulations allow peak particle velocities (vibrations) of up to 2.0 inches per second at the nearest structure at blast vibrations 40 Hz or greater. The report states that while it is unlikely that this level of vibration would occur due to the amount of explosives required, it is possible that detectable or disturbing levels might occur, especially during the early phases of construction.

6. Visual Effects

Industrial development requires a substantial amount of lighting for security purposes. Since the Town of Cleveland is primarily rural and at some distance from any city or town, nighttime security lighting would likely interfere with viewing of elements seen in the night sky, specifically, the stars and northern lights.

A sufficient number of successfully transplanted trees could be effective in screening much of the mine operation during daylight hours but would have little effect

during nighttime hours. Stray light from the operations would make the mine site visible to nearby residents.

7. Air Quality

The Final Environmental Impact Statement-Flambeau Mine indicated the dust emissions were expected to reach a maximum of 53 tons per year, even with dust suppression controls. See also TRI chart (Table 4)

C. Social

The prospect of a mining operation coming to an area is often perceived to be positive for the community as a whole. A recognized drawback is the influx of newcomers and their perceived detrimental impact on the small community. In depressed communities, crime, alcoholism and urban decline are nearly always present. This is even more prevalent in mining communities where the financial climate can go from good to sour overnight. This rapid change can cause increased frustrations among all citizens (Tynan, 1996).

Sociologists have historically been interested in what happens when rural areas become more urbanized or densely populated. A community where everybody knows everybody else goes through drastic changes when a large number of migrants enter the area. People no longer feel as they once did about the community because they do not have the same interpersonal ties that they once had (Tynan, 1996).

A study examining twenty-three communities that experienced rapid growth showed that the crime rate increased at a 3.6:1 ratio to population growth (Frueudenburg & Jones, 1992). The increase in crime has economic consequences as well, because communities experiencing substantially more crime must hire more police to formally control what was once controlled through informal channels in smaller areas.

Additionally, a sense of fatalism appears to pervade rapid growth communities affecting long-term residents. As the construction and operation of a mine begins, a "there's nothing we can do about it" sentiment appears to prevail. This fatalistic view of the incoming mine creates a sense of loss of control over the community as a whole and personal feelings of isolation and autonomy (Tynan, 1996).

The threat of lawsuits against communities that oppose mining further intimidates residents as seen in the case of Rusk County (Gedicks, 1993):

Kennecott had anticipated the possibility of continued resistance from both Rusk County, where Roscoe Churchill (an outspoken anti-mining activist and retired school principal) was vice-chair of the board, and the Town of Grant, which had passed a mining moratorium by a two thirds vote in 1982.

If an agreement cannot be worked out which would provide for local approval requirements, two options were stated in the company's strategy paper. "These are either to have the entire parcel annexed by the city or to initiate litigation challenging the existing local law."

If Ladysmith were to annex the mine site--located in the Town of Grant just south of the city--it would deprive Grant of any tax proceeds from the mine. At the very beginning of the negotiating committee's deliberations, William Thiel, the lawyer for the committee, reminded committee members that Kennecott's lawyers were ready to submit a petition to annex the entire Kennecott properties to the city of Ladysmith. And if the annexation threat were not sufficient to compel the committee to reach an agreement acceptable to Kennecott, Thiel told the committee that Kennecott probably would have legal grounds to sue if they didn't alter tough local zoning laws. Thiel said the company could claim: "deprivation of economic use of its property if mining were not allowed". Ladysmith Mayor Martin Reynolds acknowledged the intimidating effect of such a threat: "Any time you've got a small city and an economically poor county, the threat of a big-time lawsuit is always scary."

In the Town of Nashville, Wisconsin, the Town and members of the local zoning committee had a lawsuit filed against them for denying a conditional use permit to explore in their township by BHP Minerals International, Inc. "A judgment awarding money may become a lien against any real estate you own now or in the future, and may also be enforced by garnishment or seizure of property." As a result, the board of adjustment was quick to overturn the decision of the zoning committee and the case was dropped. (BHP v. Town of Nashville, 1996)

The rural area becomes a target for speculators of every kind. Land is often cheap in rural areas and many types of businesses sprout up with little overhead costs. Since the businessmen and new workers are "immigrants", the area gains anonymity or simply more strangers. Land and home purchases cause a major environmental change as infrastructures are built with as little overhead as possible and often with little concern with the local atmosphere. Those used to doing business in mining communities rarely think of permanent, long term stays.

There is strong indication that the residents of the Town of Cleveland desire to protect productive agricultural lands and preserve the area's rural quality of life. The preliminary results of the County-wide Survey indicate that the responding households in the Town of Cleveland wish to protect productive farmland (83%), use zoning to protect scenic areas (54%), and maintain the farming appearance of the County (81%)(CedarCorp, 1996).

V. REGULATORY ENVIRONMENT

Many industrial and community leaders grimace at the mention of regulation or regulatory agencies. These topics often bring to mind endless government bureaucracy, production delays, and increased company expenditures directed toward legal compliance (Markert, 1993). The process of sifting through the literature and governmental documents concerning regulation in the mining industry can be frustrating. A sense of confusion pervades many of the issues which sometimes appear straightforward on the surface. Section IV will address federal, state, and local issues pertinent to the regulation of sulfide mining.

A. Federal

On the national level, House and Senate conservative legislators have attempted to cut the budget of the Environmental Protection Agency during the last year. Budget restrictions would limit the ability of the EPA to enforce virtually all pollution laws including The Clean Air Act and The Clean Water Act. In addition, the United States Congress has been attempting to weaken the 1990 Superfund Law. As an example, one bill would effectively absolve corporate polluters of their responsibility for cleaning-up about 75 percent of the approximate 1,200 sites on the federal Superfund list (Dobb, 1996).

Some mining companies use expensive public relations campaigns to promote a positive image in local communities, but their actions may be quite different behind the scenes. For instance, the Atlantic Richland Company (ARCO) is currently liable for much of the contamination at the Summit Valley copper mining Superfund site. In local publications and advertisements, ARCO refers to themselves as a "partner in responsible reclamation". But at the same time, ARCO has been lobbying for changes to the Superfund Law which would allow them to walk away from Montana without spending another dollar on reclamation (Dobb, 1996).

B. State

The State of Wisconsin has a number of statutes pertaining to metallic mining. The DNR has authority to enforce Wisconsin statutes by creating administrative rules pertaining to metallic mining. Statutes are laws that can only be changed by an act of the Legislature. Administrative rules can be changed by the agency that created the rule.

Wisconsin §70.37 and §144.025 are of particular importance when addressing the impacts of sulfide mining and DNR mission:

§70.37 (net proceeds) The activity of mining metalliferous minerals creates additional costs to the state and municipalities for highways, sewers, schools and other

improvements which are necessary to accommodate the development of a metalliferous mining industry.

The activity of mining metalliferous minerals has a permanent and often damaging effect on the environment of the state.

The activity of mining metalliferous minerals significantly alters the quality of life in communities directly affected by mining.

As the size of a mining operation increases, the cost to the state and municipalities to support the operation increases, as does the damage to the environment. Furthermore, as the size of a mining operation increases, the person mining metalliferous minerals benefits from economies of scale in the mining operation.

§144.025 Statement of policy and purpose. The department of natural resources shall serve as the central unit of state government to protect, maintain and improve the quality and management of the waters of the state; and "it is the express policy of the state to mobilize governmental effort and resources at all levels, state, federal and local, allocating such effort and resources to accomplish the greatest result for the people of the state as a whole.

Wisconsin legislators recognize that metallic mining poses threats to the environment and the DNR must preserve and manage Wisconsin's natural resources, including natural resources potentially impacted by proposed mining operations for the protection of Wisconsin citizens. Administration of a mining project would be the responsibility of the DNR. It is assumed that any cost incurred by the DNR would be covered by the mine operator as per existing state law.

Enforcement of local regulations related to mining activities would presumably be covered by any negotiated payments from the mine operator.

The DNR's actions since the inception of metallic mining operations in the late 1960's could accurately be described as promoting metallic mining, rather than extending protection to the state's natural environment (ECCOLA, 1996):

The record will show that they arise from a pro-mining bias that is not limited to a few unrelated incidents or statements. Rather, the DNR has demonstrated a long-term, comprehensive bias that is evident not only in documents but, more importantly, in its actions.

This bias can be characterized in several ways: (1) The DNR has used sanguine assumptions and predictions about the capability of unproven technologies to successfully prevent pollution; (2) The department has, in some cases, been party to the weakening of important water quality laws; (3) The DNR failed to fully disclose the potential impacts of mining plans in the environmental review process; (4) Lastly, the DNR has not actively promoted public involvement in the environmental review process.

The future of Wisconsin's major river systems, numerous lakes, streams, wetlands and aquifers is riding on the DNR's ability to follow through on its claim that only "environmentally safe" mines will be permitted. The DNR is asking the public to place enormous trust in its ability to be the first organization in the world to prevent the acid

mine drainage and groundwater pollution that, so far, have been inevitably linked with metallic sulfide mines.

If other states like Colorado, California, and Montana as well as the federal government have not been able to prevent these irreparable pollution problems, how can the DNR claim that it can prevent mining pollution where other more experienced agencies have failed? Can the DNR base its confidence on experience, better expertise, or more stringent laws? Or are its claims just hubris?

With the multinational mining industry keenly interested in the outcome of the permitting process for Exxon's proposed Crandon/Mole Lake mine, it is imperative that the DNR recognize its pro-mining bias and work to eliminate it as quickly as possible.

A hearing examiner issued permits for the Flambeau copper mine (January, 1991) after DNR's studies claimed that "no threatened or endangered species are known to exist at the mine site". In June, 1991, two endangered mussels (the purple wartyback and the bullhead) were discovered in the Flambeau River next to the mine site. Meanwhile an internal DNR memo revealed that **agency scientists were aware during the permitting process that endangered resources were probably present at the mine site.** DNR officials chose not to act on that knowledge (Gedicks, 1994).

Gedicks notes additional testimony from Glenn Miller, the DNR diver who discovered the purple wartyback mussel while surveying the Flambeau River for an unrelated dam relicensing application. Miller testified that he was:

...prohibited by his DNR superiors from surveying the Flambeau River to determine possible damage to the endangered species from sediments that washed into the river after the failure of the mining company's erosion control system in September 1991.

This is not the picture of an agency that is simply upholding the law. Quite to the contrary, Gedicks states, this is an agency that deliberately subverted the law by not performing studies that were required by the law and then trying to cover up its mistakes by failing to do a scientifically valid study of the endangered species and preventing their own staff from doing studies that might have revealed mining company responsibility for the destruction of habitat critical to the survival of endangered species.

Over the past 17 years Kennecott and Exxon have successfully rewritten Wisconsin's mining laws in their favor (Muskie, 1994). Prior to 1981 the Wisconsin DNR had a non-degradation policy for groundwater. Kennecott and Exxon argued that a non-degradation standard for ground water would prevent them from mining in northern Wisconsin. Corporate lawyers rewrote the regulations so that mining companies need only meet federal maximum contamination levels for drinking water. Despite massive public opposition during public hearings, the new standards were adopted by the Natural Resources Board in 1982.

The federal General Accounting Office (GAO, 1988) later issued a report **warning** states that using federal drinking water standards for groundwater protection would result in **massive groundwater contamination problems.**

Other environmental laws are riddled with variances and exemptions designed for and by the mining industry. For Example, DNR regulations were changed to allow the use of wetlands for disposal and storage of mine waste. In issuing the permit for the Ladysmith copper mine, the hearing examiner granted Kennecott/RTZ six variances, including permission to construct a mine less than 300 feet from a river (Gedicks, 1994).

C. Local

There are regulatory options available to protect the health, safety, and welfare of local citizens. These include regulatory ordinances, zoning ordinances which require permits, and public flogging. Note: The DNR is not given express statutory authority to contravene (override) local zoning ordinance (Nelson v. DNR, 1979).

1. Regulatory Ordinances

Regulatory ordinances provide for control, at the local level, of any activity that a municipality feels may impact the health, safety or welfare of its citizens. Land use regulations typically address concerns about activities that are not specific to any particular area in a municipality. Septic system regulations would be an example of a land use regulation in that it requires certain conditions be met, (like the distance between a well and a septic system be maintained at 50 feet minimum).

By issuing permits, local officials can regulate activities or contamination sources that threaten groundwater. A permit system or ordinance could address potential groundwater problems such as on-site waste disposal systems (PUBL-WR-281-96REV). (SEE APPENDIX A).

2. Zoning and Planning

Zoning is defined as an area or region considered separate or distinct because of its particular use or features. Zoning regulations divide a settled area into zones where, for example, only commercial enterprises may be located or only single-family homes may be built on specified minimum lot sizes. Nonconforming buildings and uses that existed before passage of the zoning law may usually continue to exist, although some zoning ordinances require their elimination after a specified period of time. In the United States

zoning is a local prerogative, although the power to zone--as well as all other powers held by cities and local communities--is conveyed by the state. Zoning boards are government bodies in cities and communities; zoning boards of appeal exist to decide on exceptions or variances in zone use (Grolier, 1996).

Zoning is an issue that is being looked at by local governments as a way to have a greater say in what changes take place within their jurisdictions. Zoning is a plan that designates certain areas of a municipality for specific land use purposes. There are many forms of zoning, but all require permits to be obtained if a given land use is to be changed. Some zoning ordinances dictate how buildings are to be built, where, and on how much land area. Other forms of zoning only deal with the primary use of land such as residential, agricultural, or industrial. One example where zoning was used to restrict mining exploration (Antigo Daily Journal, 1996):

Following the recommendation of the Water and Land Use Planning Committee, the Langlade County Board of Supervisors Denied a petition by Zavco Inc. to rezone land in the Town of Rolling from forestry to a metallic mining exploration overlay district. The vote was 19-2. The Rolling Town board, which unanimously voted against the rezone proposal has veto powers in the event the board supported the zone change.

The main advantage of limited forms of zoning is the provision for local input if major changes are proposed to any specific area. In the absence of zoning, any type of land use activity can take place without public awareness until it is well underway and an opportunity for public input is lost.

The main disadvantage of most zoning is the need for additional tax levies. The amount of levy is directly proportional to the level of complexity the zoning ordinance is written. A simple zoning plan can be produced and administered at a very reasonable cost. Simple zoning can provide a degree of local control over community changes affecting the character of an area.

Residents of the Town have mixed feelings regarding zoning and planning as evidenced by the high percentages of "don't know" responses (CedarCorp, 1996). Responses may indicate unfamiliarity with zoning and planning concepts. It should be pointed out that the survey never specifically asks whether zoning or planning is needed for the Town of Cleveland.

The Jackson County Survey taken in 1996 showed that residents had mixed feeling regarding planning and zoning. Only 21% of respondents felt that all towns and villages in Jackson County should be zoned. Yet, 54% of respondents felt that zoning should be used to protect scenic areas and vistas. Another 81% indicated their strong desire to protect productive farmlands. A majority, 57%, indicated that the County should be actively involved in land development planning and regulation (CedarCorp, 1996).

VI. RECOMMENDATIONS

By unanimous decision, The Town of Cleveland Mining Impact Committee recommends to the Town of Cleveland Board of Supervisors that:

1. Exploration for metallic minerals should not be allowed for the following reasons:

- a. Exploration seriously jeopardizes the existing aquifer.
- b. Successful exploration will lead to the erosion of local control as moneyed interests overwhelm the democratic process with even more expensive public relations campaigns and threats of lawsuits to accomplish their goals.
- c. Successful exploration could lead to the possible contamination of the sole source of the community's water supply due to the sheer number of holes that will be required to fully identify the quality and quantity of an ore body.
- d. Successful exploration will lead to the complete alteration of the current quality and character of the community through the influx of speculators and job seekers.
- e. Successful exploration will lead to mining which has historically had numerous negative impacts on many communities.

2. Metallic sulfide mining should not be allowed given the following:

- a. Metallic sulfide mining poses significant threats to the environment due to the lack of trustworthy regulatory oversight.
- b. Metallic sulfide mining will cause the displacement of otherwise unwilling property owners to create the necessary buffer zone around the mine site.
- c. Metallic sulfide mining will cause a significant population turnover. A large percentage of the population would leave, if they were able, once the area ceased to be the un-industrialized, unspoiled, serene rural surroundings they chose to live in. There would likely be a change in absentee land owners from those who bought for the love of the land and a peaceful place to visit, to those who would speculate and drive up land values around the mine site.
- d. Metallic sulfide mining will negatively impact the quality of life for those who remain, especially those on fixed incomes due to the inflation which typically accompanies mining development and those unable to relocate due to the lowering of land values in areas further from the mine site.
- e. Metallic sulfide mining will remove valuable farmland from production.

3. The community should develop a basic land use plan that preserves the unique character and quality of Cleveland Township without infringing on the rights of ordinary citizens to pursue opportunities to develop their property as long as it fulfills the vision of that plan.

4. The Town Board should institute regulations that improve and protect the waters of the Town.

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APPENDIX A

THE TOWN OF CLEVELAND METALLIC MINING REGULATIONS AND INTERIM ZONING ORDINANCE

TOWN BOARD RESOLUTION ADOPTING METALLIC MINING REGULATIONS

TOWN OF CLEVELAND BOARD OF SUPERVISORS

RESOLUTION NO. 1

The Town Board of Supervisors make the following findings:

WHEREAS, the Board of Supervisors of the Town of Cleveland has the obligation to protect the health, safety and general welfare of its people; and

WHEREAS, the Board of Supervisors of the Town of Cleveland was granted village powers by its electors at its annual meeting of 1994, pursuant to Section 60.10(2)(c) of Wisconsin Statutes; and

WHEREAS, The Town Board, having been granted village powers, has the right to exercise the same powers as are granted to a Village Board under Section 61.34(1) of Wisconsin Statutes (dated 1993-1994); and

WHEREAS, these powers include the right of the Town Board to act for the government in good order of the town, for health, safety, welfare and convenience of the public; and

WHEREAS, The Town Board of Supervisors may carry out its power into effect by, in part, license, regulation and other necessary means; and

WHEREAS, the intent of the Town of Cleveland Metallic Mining Regulations are to promote and protect the health, safety and general welfare of the people of the town by regulating metallic mining exploration, prospecting and/or mining.

NOW, THEREFORE, IT IS HEREBY RESOLVED THAT THE BOARD OF SUPERVISORS OF THE TOWN OF CLEVELAND DOES ADOPT THE TOWN OF CLEVELAND METALLIC MINING REGULATIONS DATED 6-13, 1996 IN ORDER TO PROTECT THE HEALTH, SAFETY AND GENERAL WELFARE OF ITS PEOPLE.

Be it further resolved that a copy of this Resolution shall be placed on file with the Town Clerk.

Dated this 13 day of June, 1996.

Tommy Bowen Town Chairman Paul C. ... Town Supervisor

George ... Town Clerk David R. ... Town Supervisor

TOWN OF CLEVELAND
METALLIC MINING REGULATIONS

INTRODUCTION.

In order to achieve the objectives outlined in the Wisconsin Statutes, the Board of Supervisors for the Town of Cleveland (Town) ordains the following mining regulations.

These regulations are adopted to promote and protect the health, safety and general welfare of the citizens of the Town. Specifically, these regulations are designed to conserve natural resources and to protect the environment.

Section 1 PURPOSE AND DEFINITIONS.

1.1 PURPOSE.

The Purpose of these regulations is to establish a licensing and/or permitting procedure and to establish minimum standards for metallic mineral exploration, prospecting and/or mining.

1.2 DEFINITIONS.

1. "Town" means the Town of Cleveland Township 24N Range 5W in Jackson County, State of Wisconsin.
2. "Exploration" means the on-site geological examination from the surface of an area by core, rotary, percussion or other drilling where the diameter of the hole does not exceed 18 inches, for the purpose of searching for metallic minerals or establishing the nature of a known metallic mineral deposit and includes associated activities such as clearing and preparing sites or constructing roads for drilling. For the purposes of the definition of exploration, geological examination does not include drill holes constructed for the purpose of collecting soil samples or for determining radioactivity by means of placement of radiation-sensitive devices.
3. "Prospecting" means engaging in the examination of an area for the purpose of determining the quality and quantity of minerals, other than for exploration but including the obtaining of an ore sample, by such physical means as excavation, trenching, construction of shafts, ramps, tunnels, pits and the production of refuse and other associated activities.
4. "Mining" or "mining operation" means all or part of the process in the mining of metallic minerals other than for exploration or prospecting, including commercial extraction, agglomeration, beneficiation, construction of roads, removal of overburden and the production of

refuse.

5. "Mining waste" means any refuse, sludge, or other discarded material, including solid, liquid, semi-solid or contained gaseous material, resulting from metallic mineral prospecting or mining, or from the cleaning or preparation of minerals during prospecting or mining operations. Typical mining waste include, but are not limited to, tailings, waste rock, mine overburden and waste sludges. Mining waste does not include topsoil and mine overburden not disposed of in the waste site, but placed in a facility permitted under Chapter NR 131 or Chapter NR 132 (dated October, 1985) Wisconsin Administrative Code, to be returned to the mine site or used in the reclamation process, and does not include merchantable by-products.
6. "Air Pollution" means the presence in the atmosphere of one or more air contaminants in such quantities and of such duration as is or tends to be injurious to human health or welfare, animal or plant life, or property, or would unreasonably interfere with the enjoyment of life or property.

Section 2 METALLIC MINING EXPLORATION.

2.1 PURPOSE.

The Town of Cleveland has a reputation and historic tradition as a highly scenic, primarily agricultural and residential community. Metallic mining exploration may have a negative impact on the environmental character and quality of the community. It is the purpose and intent of this regulation to preserve natural resources; to protect the quality of the waters of the State of Wisconsin, Jackson County, and the Town of Cleveland; and to protect and promote the health, safety and welfare of the people to the extent practical, by minimizing the adverse effects associated with metallic mining exploration.

2.2 PERMIT REQUIRED.

No person, firm, corporation or organization shall conduct any metallic mining exploration within the Town of Cleveland without first obtaining a permit under this section and paying the required fee therefore.

2.3 STANDARDS.

(a) An application for a metallic mining exploration permit shall be made to the Cleveland Town Board of Supervisors and shall contain a description of all significant aspects of the exploration, a description of all significant conditions within the

exploration area and an analysis of all significant impacts on the surrounding areas. The application shall contain:

1. Easements to surface rights or use of the lands.
2. A legal description of the lands.
3. A topographical map, outlining the lands to be explored. Contour interval to be specified by the town.
4. An exploration license issued by the Wisconsin Department of Natural Resources pursuant to NR 130.06 (dated October, 1985), Wisconsin Administrative Code.

(b) The applicant shall provide an exploration plan and a reclamation plan which shall describe the phases of the exploration and reclamation in accordance with NR 130.06 (dated October, 1985), Wisconsin Administrative Code.

(c) The application shall be accompanied by:

1. A non-refundable application fee of \$500.
2. A bond, payable to the town, of \$10,000 conditioned on faithful performance of the provisions of these regulations. Said bond shall be subject to the same conditions for the town as for the state as listed in NR 130.05(b) 1,2,3,4.
3. A certificate of insurance certifying that the explorer has in force a liability insurance policy issued by an insurance company authorized to do business in this state covering all exploration of the explorer in this town and affording personal injury and property damage protection in a total amount deemed adequate by the town, but not less than \$100,000.
4. A copy of the applicant's most recent annual report and Form 10-K as filed with the Securities & Exchange Commission. If these are not available, the applicant shall submit a report of the applicant's current assets and liabilities or other necessary data to establish the applicant is competent to conduct exploration in this town.

(d) An explorer wishing to renew an exploration permit shall file an annual renewal application with the town. The renewal application shall be accompanied by the following:

1. A fee of \$300 for the exploration permit renewal.
2. A bond, payable to the town, of \$10,000, conditioned upon faithful performance of the provisions of these regulations, said bond shall be subject to the same conditions for the town as for the state as listed in NR 130.05(b) 1,2,3,4 (dated October, 1985), Wisconsin Administrative Code.
3. A certificate of insurance certifying that the explorer has in force a liability insurance policy issued by an

insurance company authorized to do business in this state, covering all exploration of the explorer in this town, and affording personal injury and property damage protection in a total amount deemed adequate by the town, but not less than \$100,000.

4. A copy of the applicant's most recent annual report and Form 10-K as filed with the Securities & Exchange Commission. If these are not available, the applicant shall submit a report of the applicant's current assets and liabilities or other necessary data to establish that the applicant is competent to conduct exploration in this town.

(e) All conditions of the application shall be subject to Chapter NR 130 (dated October, 1985), Wisconsin Administrative Code as applicable. In the event that any of these conditions differ from the conditions in these regulations, the more restrictive conditions shall apply.

(f) Nothing in these regulations shall be construed to mean that the Town of Cleveland Board of Supervisors shall be required to approve an application for an exploration permit. The town may deny a permit pursuant to NR 130.09 (dated October, 1985) Wisconsin Administrative Code.

(g) The town may also deny a permit based upon any of the following criteria:

1. The effect of the proposed operation on existing roads and traffic movement in terms of adequacy, safety and efficiency.
2. The effect of the proposed operation on drainage, groundwater and surface water quality and supply, and the overall environmental impact of said operation.
3. The possibility of soil erosion as a result of the proposed operation.
4. The degree and effect of dust and noise as a result of the proposed operation.
5. The practical possibility of restoration of the site.
6. The effect of the proposed operation on the natural beauty, character, tax base, land value and land uses in the area.
7. The most suitable ultimate land use for the area with particular consideration for future agricultural and residential use.

Section 3 METALLIC MINERAL PROSPECTING.

3.1 PURPOSE.

The Town of Cleveland has a reputation and historic tradition as a highly scenic, primarily agricultural and residential

community. Metallic mineral prospecting may have a negative impact on the environmental character and quality of the community. It is the purpose and intent of this regulation to preserve natural resources; to protect the quality of the waters of the State of Wisconsin, Jackson County, and the Town of Cleveland; and to protect and promote the health, safety and welfare of the people to the extent practical, by minimizing the adverse effects associated with metallic mineral prospecting.

3.2 PERMIT REQUIRED.

No person, firm, corporation or organization shall conduct any metallic mineral prospecting within the Town of Cleveland without first obtaining a permit under this section and paying the required fee therefore.

3.3 STANDARDS.

(a) An application for a metallic mineral prospecting permit shall be made to the Cleveland Town Board of Supervisors and shall contain a description of all significant aspects of prospecting, a description of all significant conditions within the prospecting area and an analysis of all significant impacts on the surrounding areas. The application shall contain:

1. Easements to surface rights to use of the lands.
2. A legal description of the lands.
3. A topographical map outlining the lands to be prospected. Contour interval to be specified by the town.
4. A prospecting permit issued by the Wisconsin Department of Natural Resources pursuant to NR 131.06 (dated October, 1985), Wisconsin Administrative Code.

(b) The applicant shall provide a prospecting plan in accordance with NR 131.07 (dated October, 1985) Wisconsin Administrative Code. In addition it shall include the following:

1. Use of equipment.
2. Storage and/or stockpiling of materials.
3. Ingress and egress (road, temporary).
4. Protection of groundwater and surface waters.
5. Construction and use of temporary buildings.
6. Cutting of trees and/or removal of other vegetation.

(c) The application shall provide a reclamation plan in accordance with NR 131.08 (dated October, 1985) Wisconsin Administrative Code.

(d) The application shall be accompanied by:

1. A non-refundable application fee of \$5,000.
2. A bond, payable to the town, conditioned upon faithful

performance of all requirements of Chapter 144.80 to 144.9 Wisconsin Statutes (dated 1993-1994) and the provisions of these regulations. Said bond shall be subject to the same conditions for the town as for the state as listed in NR 131.09(2)(a) 1,2,3 (dated October, 1985) Wisconsin Administrative Code. The town may increase the amount of the bond in order to assure adequate financing for the reclamation plan.

3. A certificate of insurance certifying that the prospector has in force a liability insurance policy issued by an insurance company authorized to do business in this state, or in lieu of a certificate of insurance, evidence that the prospector has satisfied state or federal self-insurance requirements covering all prospecting of the prospector in this state and affording personal injury and property damage protection in a total amount deemed adequate by the town, but not less than \$100,000.

(e) No metallic prospecting, nor any prospecting related buildings or structures may be built, operated or maintained within an area where the Wisconsin Department of Natural Resources finds that there would be a probability that prospecting would violate groundwater and/or surface water standards set by the laws of Wisconsin, or any other administrative rules adopted by the Department pertaining to groundwater and surface waters. The groundwater and surface water standards in the Town of Cleveland shall be standards of non-degradation. That is, no activity which results in a degradation of the present quality or quantity of groundwater or surface waters shall be permitted. In the event that any of these standards differ from each other the more restrictive standard shall apply.

(f) All conditions of the application shall be subject to Chapter NR 131 (dated October, 1985) Wisconsin Administrative Code. In the event that any of these conditions differ from the conditions in these regulations, the more restrictive condition shall apply.

(g) Nothing in these regulations shall be construed to mean that the Town of Cleveland Board of Supervisors shall be required to approve an application for metallic mineral prospecting. The town may deny a permit pursuant to NR 131.10 (dated October, 1985) Wisconsin Administrative Code.

(h) The town may also deny a permit based upon any of the following criteria:

1. The effect of the proposed operation on existing roads and traffic movement in terms of adequacy, safety and efficiency.
2. The effect of the proposed operation on drainage, groundwater and surface water quality and supply, and the

- overall environmental impact of said operation.
3. The possibility of soil erosion as a result of the proposed operation.
 4. The degree and effect of dust and noise as a result of the proposed operation.
 5. The practical possibility of restoration of the site.
 6. The effect of the proposed operation on the natural beauty, character, tax base, land value and land uses in the area.
 7. The most suitable ultimate land use for the area with particular consideration for future agricultural and residential use.

3.4 PROHIBITED PRACTICES.

No person, firm, corporation or organization shall do any of the following with or without a permit:

(a) Use land for the placement of a metallic mining waste disposal facility or site within the town.

(b) Use any equipment during prospecting activities causing a violation of standards or regulations promulgated pursuant to Chapter 144, Wisconsin Statutes (dated 1993-1994), or any applicable federal or local air quality standards. In the event any of these standards differ from each other, the strictest standard shall apply.

(c) Use any equipment during prospecting activities which would create an increase in noise levels.

Section 4 METALLIC MINING.

4.1 PURPOSE.

The Town of Cleveland has a reputation and historic tradition as a highly scenic, primarily agricultural and residential community. Metallic mining may have a negative impact on the environmental character and quality of the community. It is the purpose and intent of this regulation to preserve natural resources; to protect the quality of the waters of the State of Wisconsin, Jackson County, and the Town of Cleveland; and to protect and promote the health, safety and welfare of the people to the extent practical, by minimizing the adverse effects associated with metallic mining.

4.2 PERMIT REQUIRED.

No person, firm, corporation or organization shall conduct any metallic mining within the Town of Cleveland without first obtaining a permit under this section and paying the required fee therefore.

4.3 STANDARDS.

(a) An application for a metallic mining permit shall be made to the Cleveland Town Board of Supervisors and shall contain a description of all significant aspects of the mining, a description of all significant impacts on the surrounding area and the following:

1. Proof of ownership.
2. A legal description of the lands.
3. A topographical map, outlining the lands to be used for mining activities. Contour intervals to be specified by the town.
4. A mining permit issued by the Wisconsin Department of Natural Resources pursuant to NR 132.09 (dated October 1985) Wisconsin Administrative Code.

(b) The application shall be accompanied by:

1. A fee of \$50,000 to cover the estimated cost of evaluating the operators' mining permit application. Upon completion of its evaluation, the town shall adjust this fee to reflect the actual cost of evaluation, which shall be paid by the applicant.
2. A bond or other security, payable to the town, conditioned upon faithful performance of all requirements of Chapter 144.80 to 144.94 Wisconsin Statutes (dated 1993-1994) and the provisions of these regulations. Said bond shall be subject to the same conditions for the town as for the state as listed in NR 132.09(2)(a) 1,2,3 (dated October, 1985) Wisconsin Administrative Code.
3. A certificate of insurance certifying that the operator has in force a liability insurance policy issued by an insurance company authorized to do business in this state, or in lieu of a certificate of insurance, evidence that the operator has satisfied state or federal self-insurance requirements covering all mining of the operator in this state and affording personal injury and property damage protection in a total amount deemed adequate by the town, but not less than \$500,000.

(c) The applicant shall provide a mining plan, which shall describe the phases of mining and include:

1. A mining plan in accordance with NR 132.07 (dated October, 1985) Wisconsin Administrative Code.
2. Construction and uses of buildings.
3. Construction and uses of shipping facilities.

(d) The applicant shall provide a reclamation plan which shall include:

1. A reclamation plan in accordance with NR 132.08 (dated October, 1985) Wisconsin Administrative Code.
2. Uses of land after full reclamation.

(e) The applicant shall provide any other pertinent data and necessary information which the town may require in order to properly evaluate the permit application.

(f) The applicant shall fulfill the following requirements before the town may issue a permit:

1. No metallic mining or any mining related buildings or structures may be built, operated or maintained within an area where the Wisconsin Department of Natural Resources finds that there would be a probability that the mining would violate groundwater standards set by the laws of Wisconsin or any other administrative rules adopted by the Department pertaining to groundwater. The groundwater standard of the Town of Cleveland shall be a standard of non-degradation. That is, no activity which results in a degradation of the present quality or quantity of the groundwater shall be permitted. In the event that any of these standards differ from each other, the more restrictive standard shall apply.
2. A comprehensive testing of all wells, public and private, within a five mile radius of the proposed mine site must be performed to establish baseline conditions. This testing must include testing for all metals, including heavy metals, and all elements, including toxic elements. Each owner of a well in the above areas shall be given a copy of the information relevant to his/her well or wells and a copy of the full hydrological studies upon request.

For a period of two (2) years prior to the commencement of the construction of any mine, and during the period of operation of any mine, and for forty (40) years thereafter, an applicant shall monitor on a continuous basis all private and public wells located within five miles of the boundary line of the property of the applicant or any wells that the hydrological study shows should be monitored in order to provide baseline data concerning quantity and quality of water adequate for all purposes, including but not limited to determining the validity of any well damage claim. The well monitoring intervals shall be negotiated at the time of the permit application. This monitoring shall be done by an independent consultant agreeable to both the town and the applicant. That consultant shall employ the split sample technique and shall make samples available upon request to the town or any person or consultant designated by the town to receive such samples.

3. The applicant shall deposit into an interest-bearing

Trust account \$1,000,000.00, or \$5,000.00 (in 1996 dollars) for each well within a five mile radius of the boundary line of the property of the applicant and for each well located in any other area which studies have indicated that there is the possibility of adverse effects from mining related activities. The applicant shall be required to deposit the greater amount; that is, if fewer than 200 wells exist in the above described area the applicant shall be required to deposit \$1,000,000.00; if more than 200 wells exist in the above described area, the applicant shall be required to deposit \$5,000.00 (in 1996 dollars) for each well. This money shall be first used to pay for replacing any contaminated or damaged or depleted wells and/or for providing water to any well owner whose well has been contaminated or damaged or depleted, and whose well is within five (5) miles of the boundary line of the property of the applicant, or within any other area which hydrology studies have indicated can be adversely affected by the mining operation.

Under no circumstances shall the interest bearing trust account fall below \$500,000.00 (in 1996 dollars). It shall be the responsibility of the applicant to maintain this minimum balance.

The original deposit, any additional deposits and other accumulated interest shall remain in the trust account even after any mining operation has been completed and/or discontinued, to be used for replacing any contaminated or damaged wells, the contamination or damaging or depletion of which had not yet developed or been discovered at the time of such completion or discontinuation; and/or for providing water for any well owner whose well has been contaminated or damaged or depleted, the contamination or damaging or depletion of which had not yet developed or been discovered at the time of such completion or discontinuation. In the event that any well in the above described area is contaminated or damaged or depleted the well owner will be provided with water and/or the well owners well will be replaced. The applicant agrees not to object to the disbursement of funds from the trust account for these purposes.

The applicant agrees to the establishment of said trust account at a bank or financial organization mutually agreeable to it and the town and also agrees to the designation of the well fund administrator listed below.

The Cleveland Town Board of Supervisors is designated to supervise the activities of the well fund administrator. It shall also approve of the distribution of moneys from said fund to owners of contaminated, damaged or depleted

wells. In so doing, it shall be empowered to hold meetings for the purpose of ascertaining whether complaints of well damage resulted from the mining operation which has established the particular well fund in question, and it shall also ascertain the amount of such damages and shall authorize the well fund administrator to disburse such amount to the owner and/or to purchase and provide water to the owner.

The Town Clerk shall be designated to administer the trust account on behalf of the town and shall be called the Well Fund Administrator. Said person shall perform his/her responsibilities as a fiduciary on behalf of the town, the well owners and the applicant and shall discharge his/her duties faithfully. Any additional compensation in addition to that prescribed generally for his/her office shall be determined by the Cleveland Town Board of Supervisors. Among the responsibilities which he/she shall pursue shall be the following:

- a. Subject to the approval of well damage claims by the Cleveland Town Board of Supervisors, the administrator shall disburse moneys to replace contaminated, damaged or depleted wells and/or for providing water to well owners.
 - b. On an annual basis in the month of March, the administrator shall issue a report to the Cleveland Town Board of Supervisors as to the status of the fund, distributions made therefrom, interest and principal, which report shall cover the preceding calendar year to and through December 31st thereof.
 - c. Pursuant to Chapter 177, Wis. Stats. (dated 1993-1994), the administrator shall, absent disbursements under (f)3 a. above, during a given calendar year, at least annually contact the bank or financial organization holding the deposit and communicate sufficient information with which to meet the provisions of Sec. 177.02 (1) and (2), Wis. Stats. (dated 1993-1994), and maintain the account on an active status.
 - d. At the conclusion of the period commencing with the time of the initial deposit and ending with the passage of 100 years, the administrator shall disburse all remaining funds in the account to the Town of Cleveland General Fund, for use by the town in such manner or manners as the Town Board of Supervisors deem to be appropriate.
4. No metallic mining or any mining related buildings or

structures may be built, operated or maintained within an area where the Wisconsin Department of Natural Resources finds that there would be a probability that the mining would violate surface water standards set by the laws of Wisconsin or any other administrative rules adopted by the Department pertaining to surface waters. The surface water standard of the Town of Cleveland shall be a standard of non-degradation. That is, no activity which results in a degradation of the present quality or quantity of the surface waters shall be permitted. In the event that any of these standards differ from each other, the more restrictive shall apply.

5. A comprehensive testing of all surface waters (lakes, rivers, streams, springs, ponds, wetlands) must be performed to establish baseline conditions. This testing must include testing for all metals, including heavy metals, and all elements, including toxic elements.
6. No disturbance to wetlands shall occur.
7. No destruction or filling in of a lake bed, lake, river channel or stream channel shall occur.
8. In the event that there is an impairment of groundwater and/or surface waters which results in devaluation of property, the property owner shall be reimbursed by the applicant for an amount not less than two and one-half (2 1/2) times the assessed value of the property. To guarantee that moneys will be available for the necessary reimbursements, the applicant shall post a performance bond of \$25,000,000.00 (in 1996 dollars).
9. The town reserves the right to, at any time, with or without notice, gain access to the mining project in order to obtain water samples for the purpose of compliance monitoring.
10. It shall be the responsibility of the applicant to provide for itself, adequate utilities, roads, drainage, traffic plans and public utilities.
11. The applicant shall submit a comprehensive description of all baseline conditions within the proposed permit area and within the areas of the town expected to be impacted by the activity, including an estimate of such baseline conditions for the project life of the proposed operation if the proposed operation were permitted. Such baseline conditions shall include, but not be limited to the following:
 - a. Groundwater
 - b. Surface waters
 - c. Air quality
 - d. Noise levels
 - e. Wildlife
 - f. Vegetation
 - g. Radioactivity in bedrock, soils, water and/or gases
 - h. Major land use

- i. Visual appearance
 - j. Traffic
 - k. Unique cultures and life styles
 - l. Economic activity
 - m. Utilities, schools, police and fire protection, sewage treatment and other public services
 - n. Housing
 - o. Farm or other domestic animals
 - p. Farm activities on any type of farm
12. The costs of all of the studies are to be at the expense of the applicant. The applicant shall provide the results of these studies to the Town Board of Supervisors. The town reserves the right to have an independent verification of all baseline studies and/or to commission an independent baseline study if the town board of Supervisors deem this to be necessary.

(g) All conditions of the application shall be subject to Chapter NR 132 (dated October, 1985) Wisconsin Administrative Code. In the event that any of these conditions differ from any of the conditions in these regulations, the more restrictive shall apply.

(h) Nothing in these regulations shall be constructed to mean that the Town of Cleveland Board of Supervisors shall be required to approve an application for metallic mineral mining. The town may deny a permit pursuant to NR 132.10 (dated October, 1985) Wisconsin Administrative Code.

(i) The town may also deny a permit based upon any of the following criteria:

1. The effect of the proposed operation on existing roads and traffic movement in terms of adequacy, safety and efficiency.
2. The effect of the proposed operation on drainage, groundwater and surface water quality and supply, and the overall environmental impact of said operation.
3. The possibility of soil erosion as a result of the proposed operation.
4. The degree and effect of dust and noise as a result of the proposed operation.
5. The practical possibility of restoration of the site.
6. The effect of the proposed operation on the natural beauty, character, tax base, land value and land uses in the area.
7. The most suitable ultimate land use for the area with particular consideration for future agricultural and residential use.

(j) The initial grant to carry on mining activities shall be for a specified period. The Town of Cleveland Board of Supervisors shall review the annual reports of review made by the Department of

Natural Resources. If the reports indicate compliance with the provisions of the permit, the permit shall continue. If the Department of Natural Resources requires modification of the applicant's metallic mining permit, which in turn requires modification to the terms of the town permit, the Town of Cleveland Board of Supervisors shall review the permit. Any agent or agents appointed by the Town Board of Supervisors in conjunction with the Department of Natural Resources under NR 132.14 (dated October, 1985) Wisconsin Administrative Code, may enter and make the necessary inspections to insure compliance with the provisions of the permit. Upon the recommendation of the Town of Cleveland Board of Supervisors, the town may extend a permit for additional specified periods of time. Fees for an extension shall be the same as for the initial application.

(k) The Town of Cleveland Board of Supervisors may terminate a permit if any provisions in this Section are not complied with.

(l) No permittee shall sell, lease, assign or transfer in any manner any rights granted under a permit until the succeeding person (whether natural or legal) has complied with all the requirements of the Town of Cleveland Metallic Mining Regulations. At that time, and upon such showing, the town may release the initial permittee from its requirements and transfer the permit to the successor permittee. Before transfer, the town may require posting of bonds by the transferor or transferee in amounts sufficient to cover all reasonably foreseeable damages stemming from mining operations which are not already adequately bonded for under local, state and federal requirements.

(m) A permittee shall provide notice of its intent to permanently terminate all activity at the project site no later than one year before the proposed operation is to terminate. A permittee shall likewise provide notice by the end of each calendar year of any significant changes in the anticipated timing of each major phase of the project as originally reported in its plan of operation submitted pursuant to these regulations. In addition a permittee shall provide notice of any substantial modifications of the mining plan or operations and/or any significant changes in the anticipated timing of the plan.

(n) As part of the mining permit, the mining company must agree not to challenge in court any code, zoning ordinance, regulations or negotiations made as part of the mining permit.

4.4 PROHIBITED PRACTICES.

No person, firm, corporation or organization shall do any of the following with or without a permit:

(a) Construct buildings, structures or equipment in the town for smelting or refining of metallic mineral ores.

APPENDIX B

**LEGAL OPINIONS
CONCERNING THE VALIDITY
OF THE TOWN OF CLEVELAND
METALLIC MINING REGULATIONS**

November 1, 1996

Honorable Town Board
Town of Cleveland
Jerry Bowman, Chairman
N13290 Hill Road
Fairchild, WI 54741

RE: Your Request for Formal Advice -- Status of Resolution Adopting
Metallic Mining Regulations

Dear Chairman Bowman:

At the Town Board meeting of October 14, 1996, I rendered oral advice to the Town Board concerning the status of a Town Board resolution incorporating what is entitled "Metallic Mining Regulations." The issue upon which I issued oral advice and which is the subject of this formal opinion is whether or not the regulation in question is a zoning regulation and, hence, does its method of enactment meet with the minimum requirements of Wisconsin law? In this respect, my understanding is that the Town Board simply considered the "resolution" at a regular Town Board meeting and adopted the same, without any attempt to comply with §§60.62 and 62.23(7), Wis. Stats. Also, the Town Board has been granted village powers under §60.10(2), Wis. Stats. In addition, Jackson County is zoned although the Town of Cleveland has never opted to become a party to County zoning. Please consider the following advice.

DISCUSSION

In addition to the above-stated facts, this opinion is based upon my review of the resolution, a copy of which you have directed to my attention. I would refer your attention to Exhibit "A" to this opinion which contains relevant excerpts from the resolution, deemed by the undersigned to be of importance in analyzing the nature and status of this legislative enactment.

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Prenn & Ricci, S.C.
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Fairchild, WI 54702-1000
Tel: 715-828-8800
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Toll Free: 1-800-828-8800

Not a lawyer
Not a lawyer
Not a lawyer

The specific purpose of this opinion is to advise you as to the status of the regulation in question and whether or not it constitutes zoning. The writer of this opinion has been advised by one or more members of the Town Board that they have been informed by those in favor of the regulation that it is their belief that it merely constitutes a licensing regulation and, hence, is not subject to the legal requirements for the valid enactment and enforcement of zoning regulations at the local level. This information will be taken into account and discussed hereinafter.

McQuillin on Municipal Corporations at §25.10 on the relationship of zoning to other police regulations states that zoning laws are generally an exercise of the police power to advance the public health, safety and welfare. Zoning law is usually differentiated from other local legislation enacted under the police power because it usually contains specifications which apply to all property. In the words of *McQuillin*: "Whether or not a particular law is a zoning measure or an expression of some other phase of the police power usually must be determined by the nature and purpose of the ordinance, its relation to the general plan of zoning in the city, its provisions and the terms used." At §25.53 *McQuillin* analyzes what constitutes a zoning ordinance stating, in part, that the primary intent of a zoning ordinance "is to regulate uses of lands and buildings according to districts, areas or locations." Further:

The question whether or not a particular ordinance is a zoning ordinance or measure may be determined by consideration of the substance of its provisions and terms, and its relation to the general plan of zoning in the city. In essence, a regulation embodying a zoning principle or concept is sufficient to categorize the regulatory measure as a zoning ordinance. (Emphasis supplied.)

There are no Wisconsin cases which develop a "bright line" rule as to what is or is not a zoning ordinance. However, several decisions cited by *McQuillin* from jurisdictions other than Wisconsin are instructive in fleshing out what is a zoning ordinance. In *State ex rel Spiros v. Payne*, 41 A.2d 908 (Conn., 1945), the Supreme Court of Connecticut construed a local ordinance prohibiting the sale of alcoholic beverages in any restaurant located within 300 feet of another restaurant selling liquor. At issue was whether the ordinance constituted a zoning

Please be advised that it is not intent of this opinion letter to discuss, nor during the course of it will any other aspects of the regulation other than whether or not it constitutes a zoning regulation under Wisconsin law be explored. It is the opinion of the undersigned that there are other infirmities with respect to this regulation which should be carefully studied should the advice given herein be followed and an attempt be made to enact a valid and enforceable zoning ordinance.

regulation or, alternatively, an independent police regulation not subject to the same procedural requirements as zoning. The Court concluded that this was, indeed, a zoning regulation, relying in part upon the following explanation of what is zoning:

...Zoning may be defined as a general plan to control and direct the use and development of property in the municipality or a large part of it by dividing it into districts according to the present and potential use of the properties. An ordinance affecting only a single or a few definite areas in the city is not in itself a zoning ordinance, although it designates that area or those areas by reference to their description in the zoning ordinance in effect in the city...

Furthermore, the Court in this case looked carefully at the wording of the regulation and concluded that its provisions were such as are normally found in zoning ordinances. In a Pennsylvania case, *Borough of Edgeworth v. MacLeod*, 456 A.2d 682 (1983), a similar issue was presented to the Court. The Court observed that zoning is generally defined as "the legislative division of community into areas in each of which only certain designated uses of land are permitted." Please note, though, the following language of this Court:

However, the zoning power involves much more than the division of a community into use districts. Under the MPC (*Municipalities Planning Code*)...zoning ordinances may regulate uses of land, size of structures, dimensions of land to be occupied by structures and population density. ...Nothing in that section or any section of the MPC requires a zoning ordinance to create districts. (Emphasis supplied.)

With this in mind the Court then construed the language of the ordinance in question, citing the preamble which read:

WHEREAS it is necessary in order for the Council...to fulfill its obligations under the Pennsylvania Municipalities Planning Code...in order to prevent and eliminate to the fullest extent possible adverse environmental effects of proposed uses of land within its boundaries.

Upon the strength of this language the Court held that the preamble indicates that the ordinance was enacted to regulate land use, one of the primary purposes of zoning regulations. Furthermore, a substantive provision of the ordinance gave power to the Borough to disapprove and thus prevent any land development which would result in:

1. Non-conformity with the goals and objectives of relevant state or federal statutes...or relevant provisions of any municipal ordinance; or
2. A significant number of unacceptable adverse environmental impacts, minimal community benefits, or any combination thereof.

In the words of the Court: "This section clearly vests the Borough's council with the power to control land use far beyond the general concerns of environmental protection. This section strikes us as nearly indistinguishable from a 'conditional use' provision, which is, of course, a traditional zoning device."

While not controlling, these cases are cited for the principles which they embody as to the general criteria against which an ordinance will be judged to determine whether it is, by nature, a zoning regulation.

Proceeding to a review of Wisconsin cases construing zoning authority, please consider the following. In *State ex rel Nagawicka Is. Corp. v. Delafield*, 117 Wis.2d 23 (1983), the Court of Appeals held that a zoning ordinance is a legislative act, subject to judicial scrutiny. Indeed, the zoning of property "is a legitimate municipal device to control land use and obtain orderly community development." p. 27.

In a case involving an analysis of the distinction between subdivision control authority and zoning powers, *Boucher Lincoln-Mercury v. Madison Plan Comm.*, 178 Wis.2d 74 (1993), the Court differentiated between the two as follows:

Subdivision regulations should be distinguished from zoning ordinances. The purpose of zoning is to provide an overall comprehensive plan for land use, while subdivision regulations govern the planning of new streets, standards for plotting new neighborhoods, and the protection of the community from financial loss due to poor development. Thus, while zoning can prohibit certain uses of property for subdivision purposes, [subdivision] regulations are designed to govern the manner in which unrestricted property is developed.

Zoning governs the immediate use of land, while planning restricts transferability and future use, and the power to regulate the subdivision of land is, like zoning, another tool for planning. (Citation omitted.) (Emphasis supplied.) p. 92.

Citing the Attorney General from an opinion at 76 OAG 60 (1987), the Court of Appeals held that the proper test is to determine whether a local regulation could be imposed under the general police power (or other delegated authority) or whether the regulation is zoning "which can only be exercised in conformance with the zoning enabling statutes", as based upon the following analysis:

The more comprehensive the ordinance, the more likely it will be characterized by a court as a zoning ordinance. ... [A]n ordinance [which] constitutes a pervasive regulation of, and in many instances a prohibition on the use of, land... is a zoning ordinance. ... (Citation omitted.) p. 94.

In its conclusion the Court states, "control over the use to which property may be devoted is a zoning control which can be imposed only by a comprehensive zoning ordinance enacted as required by the zoning enabling act." pp. 101-102.

Most recently, the Court of Appeals revisited this issue in *City of Waukesha v. Town Board of Waukesha*, 198 Wis.2d 592 (1995). At issue was whether a town ordinance not adopted in accord with its zoning authority, reserving to itself the right to grant "use" permits as to land subject to a city's extraterritorial zoning authority was a valid exercise of its police power. The Court held that it was not, citing the *Boucher* case, *supra*, for the principle that control over use of a property can be accomplished only by means of a comprehensive zoning enactment. It is also of importance to note that the Town's use regulation would apply throughout the Town, irrespective of zoning districts. Because Waukesha County was zoned at the time, failure to comply with §60.62, Wis. Stats., was also deemed to be fatal to the regulation.

Returning to the opinion of the Attorney General cited above, in it a town's "land use guidance system" ordinance was analyzed. The ordinance contained several elements: (1) A long-range policy plan for land use planning goals -- to preserve the family farm and farmland; to guide future growth of the town; to plan for the provision of necessary public services; and to protect the natural environment. (2) Performance standards through which the policies were to be implemented. (3) Administrative procedures for reviewing and approving proposed land uses, granting variances and amending provisions of the ordinance. The Attorney General concluded that what an ordinance is called is not as important as its nature, citing *New Berlin v. Stein*, 58 Wis.2d 417 (1973). Further, a zoning ordinance "covers the immediate use of land...". *Town of Sun Prairie v. Storms*, 110 Wis.2d 58 (1983). In reliance upon the *Storms* decisions, the Attorney General held that a town could not use its subdivision authority under Chapter 236, Wis. Stats., as a subterfuge "for enacting what would otherwise be an invalid zoning ordinance." In further support he cited *Rayco Ind. Corp. v. Board of Selectmen*, 331 NE2d 910 (Mass., 1975), in which a town enacted a subdivision ordinance prohibiting the issuance of additional permits to trailer parks. While acknowledging that such a regulation might be valid under the town's general police powers, the Supreme Court struck down the ordinance as being a zoning regulation, holding:

A further consideration which leads us to this conclusion is that were we to adopt the defendants' theory the asserted protections contained in the zoning enabling act could in many instances be circumvented, thereby defeating the purpose of the statute. For example, just as the town purports to limit the number of mobile home parks within its borders under its police power, so another town might want to limit the number of apartment buildings in the town, perhaps as a health regulation to protect the town's water supply or sanitation facilities. Under the theory advanced by the defendants, the latter measure could be viewed as outside the scope of the zoning enabling act if not adopted strictly as a zoning regulation. The problem with this approach is that it views

the municipal police power in a vacuum, whereas the law is clear that a municipality's "independent police powers...cannot be exercised in a manner which frustrates the purpose or implementation of a general or special law enacted by the legislature"... p. 115.

He concludes his opinion by succinctly stating:

Cases such as *Beck* and *Rayco* indicate that the question of whether a particular enactment constitutes a zoning ordinance is often a matter of degree. The more comprehensive the ordinance, the more likely it will be characterized by a court as a zoning ordinance. A quota system which virtually precludes all forms of building is far broader in scope than either of the ordinances enacted in *Rayco* and *Beck*. Since such an ordinance constitutes a pervasive regulation of, and in many instances a prohibition on the use of, land, I therefore conclude that such an ordinance is a zoning ordinance which requires county board approval. p. 68.

In my opinion, the metallic mining regulation of the Town of Cleveland constitutes a pervasive regulation of and, in certain respects, a prohibition of, the use of land within the Town of Cleveland for mining related purposes. I am not impressed by the fact that, for purposes of application of the regulation, the Town has not divided itself into districts. While there is little doubt that if districts are specified that an ordinance relies in whole or in part upon zoning authority, as indicated in *Borough of Edgeworth v. MacLeod*, *supra*, this is not, in and of itself, a necessity. Indeed, §62.23(7), Wis. Stats., pursuant to which a town exercises zoning authority states that a town "may divide [itself] into [districts]...". (Emphasis supplied.) To enact zoning, districting is not required. For example, a zoning jurisdiction could conceivably be composed of one district in which certain permitted and conditional uses are allowed, the latter subject to express limitations.

The division of a jurisdiction into districts is but one criterion upon which a determination is to be made that a police power regulation is, in fact, a zoning regulation. It is the overall intent to regulate land use which is central to the analysis. In *Rathkopf, The Law of Zoning and Planning* at §1.02(3), it is stated that the difference between a general police power enactment and zoning should be determined upon the following basis:

Where the particular restriction constitutes, or would constitute, a substantial interference with land use, the municipality ordinarily must treat it as a zoning regulation and must follow statutory or charter zoning procedures, even though other authority for the particular type of ordinance has been granted. While the zoning power is justified because it is a facet of the general police power, a municipality cannot evade the protection thrown about the citizen's use of his property by the legislative limitations imposed on the zoning power, by labeling what is actually a zoning ordinance a "police power" ordinance.

Commenting on what constitutes proper considerations in a zoning ordinance at §1.02(4)(d), *Rathkopf* states:

Generally, courts have interpreted the authorized purposes for zoning under traditional enabling acts to include regulation of the use of land and structures thereon both to prevent and minimize the harmful spillover effects or externalities that might otherwise impact neighboring land, i.e., the segregation of incompatible land uses, and to provide for an orderly and comprehensive scheme of land development within the community which facilitates the adequate provision of infrastructure, resources and the overall comfort, convenience and welfare of the community.

He states further that courts have also considered that zoning properly deals with such externalities as "protection of the character of an area and property values therein, aesthetic and environmental values, historic, educational, and cultural values, youth and family values, promotion of economic development within the community, and impact on the community's comprehensive land use plan."

A review of the regulation reveals a very comprehensive scheme of regulation concerning a specific land use; i.e., mining. Reference to Exhibit "A" will reveal that in adopting this ordinance the Town has gone far beyond an exercise of general authority under the police power, either to license or otherwise regulate a particular land use or occupation within the Town. In this respect, it is unlike the ordinance construed in *Town of Clearfield v. Cushman*, 150 Wis.2d 10 (1988). In this case a town adopted a "mobile home park" ordinance requiring a building permit, minimum dwelling size, minimum lot size and well and septic system requirements. Although the Supreme Court struck down the minimum lot sizes as being beyond the authority of the Town, it characterized the remaining criteria of the ordinance as being enacted under the general police power. In support the Court states:

Here...the town does not regulate the use of property by the establishment of zones or districts. There is no regulation as to what the property may be used for. Rather the ordinance establishes the minimum requirements for land to be used as a site for a mobile home. Section 9 permits mobile homes to be installed both as dwellings and commercial structures. Consequently, we hold the town's ordinance as not a zoning ordinance.

It is plainly evident upon review of the regulation that its intent is to regulate a certain type of land use; i.e., metallic mining, by dividing that type of land use into three, specific forms of application. Also, the regulation applies not just to a certain piece of property or mine site but to mining as a land use throughout the entire town. Furthermore, a permitting system is involved, not dissimilar to zoning and the land use is prohibited in the absence of a permit or permits being granted. The purpose of the legislation is to regulate mining vis a vis other actual or potential land uses. In addition, from a philosophical standpoint the regulation has been adopted to promote the health, safety and welfare, to conserve natural resources and to protect the environment. The granting of a permit shall be subject to a determination of the impact of

the land use upon the natural beauty, character, tax base, land value and other land uses in the area by the Board. Also, in reviewing such a permit application, the Board is to keep in mind the legislative policy that the most suitable land use for the Town is "agricultural and residential use."

This is not merely a licensing regulation in which, subject to certain criteria being met, and in exchange for payment of a license fee, a permit to engage in a particular activity (not necessarily a land use) will be allowed within the Town. The regulation constitutes a control of land use so as to obtain the orderly development of the Town. Correspondingly, it is my opinion that insofar as the regulation constitutes a land use regulation, it is subject to the limited powers vested in the Town pursuant to Chapter 60, Wis. Stats.

CONCLUSION

In consequence, in accord with §60.10(2)(c), Wis. Stats., the Town Board of the Town of Cleveland having been granted village powers, it is capable of exercising zoning authority in accord with §61.35, Wis. Stats., which, in turn, incorporates by reference the powers to zone under §62.23(7), Wis. Stats. By enacting the so-called metallic mining regulations resolution, the Town has engaged in an exercise of zoning authority. Thus it has failed to adhere to the minimal procedural requirements imposed on it as a matter of law. These procedural requirements include the reporting out of a proposed ordinance by the Town Board or a committee thereof, the holding of the requisite public hearing or hearings and, thereafter, the proposed adoption of the ordinance by the Town Board, itself. Thereafter, in accord with §60.62, Wis. Stats., the ordinance as adopted by the Town Board would yet be subject to the approval by the Town meeting or a referendum vote of the electors of the Town held at the time of any regular or special election. Finally, §60.62(3), Wis. Stats., requires that any such ordinance must be submitted to the Jackson County Board and until it is approved of by the County Board it has no force and effect.

Should you have any further questions, do not hesitate to contact me.

Very truly yours,

WELD, RILEY, PRENN & RICCI, S.C.

William G. Thiel

WGT:sjg

WELDRILEYPRENN&RICCI.SC

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& MACDOUGALL, S.C.
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DANIEL J. BRADSHAW
CHRISTINE M. WETMOREL
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CHARL H. THOMPSON
OF COURTESY:
JAMES F. BARRON
ROBERT W. BARR
FRANK V. HANNETT
RONALD A. HELLER
ADMINISTRATOR
PATRICIA A. DANFORD

JANESVILLE
MADISON
MONROE
DELTA

November 11, 1996

Michael D. Orgeman
Lichstein & Hensel, S.C.
111 E. Wisconsin Avenue, Suite 1800
Milwaukee, WI 53202

Re: Town of Cleveland
Metallic Mining Regulations Ordinance

Dear Mr. Orgeman:

Thank you for the opportunity to analyze the Metallic Mining Regulations (MMR) ordinance adopted by the Town of Cleveland. In our opinion, it is valid and enforceable, and not a "zoning" ordinance.

The MMR is not a zoning ordinance because it does not attempt to regulate, restrict, or determine any specific area within which particular types of activities may be conducted. While aimed to ensure safe practices related to mining and related activities, it does not, on its face, restrict any area of the county from mining activity. It is much like a building set back or housing code ordinance that does not restrict where activities can take place, but rather restricts the manner of the development on a particular parcel to protect the health and safety of the community.

Although the ordinance could arguably have been enacted as either a zoning or regulatory ordinance, we feel that authority exists to allow the town board to make a choice of whether to enact a regulatory ordinance like a building code or exercise similar police power control through a zoning ordinance. *Wind Point v. Kalamazoo*, 38 Wis. 2d 1, 9, 155 N.W.2d 654 (1967); 69 OAG 248, 253. As both the Court and the Attorney General noted, the Court has liberally construed the power of a city or village as having a choice as to how to enact health and safety regulations related to how property might be used.

It should also be noted that other jurisdictions have held that regulatory ordinances regarding how land is used are valid, although it would also have been proper to promulgate such as zoning ordinances. *American Sign & Indicator Corp. v. Town of Framingham*, 399 N.E. 2d 41, 44 (1980); *Kirach Holding Co. v. Borough of Mansfield*, 240 A. 2d 31 (1968); *Howell Township v. Sapeready*, 134 A. 2d 452, aff'd 138 A. 2d 13 (1958).

Michael D. Orgeman
November 11, 1996
Page 2

In order to understand the basis for our opinion, it will be helpful to outline exactly what type of requirements are imposed by statute on a town government concerning zoning, and look at what options are available to a town government to exercise its police power to insure the health, safety, and welfare of the public.

No Requirement That a Town Adopt a Zoning Ordinance:

As the Town of Cleveland residents are well aware, there is no provision in the statutes that would require a town board to adopt a zoning ordinance. Although Jackson County did adopt a zoning ordinance, that ordinance gave each town the option of adopting the ordinance. Jackson County Zoning Code 17.09. The Town of Cleveland board has declined to adopt the ordinance. The town board is probably also aware that Jackson County Zoning Code section 17.09, was required by Section 59.97(5)(c), Wis. Stats., which provides:

"A county ordinance enacted as provided by this section shall not be effective in any town until it has been approved by the town board."

The intent of the legislature was obviously not to require a town to be saddled with the restrictions, benefits, or expenses of "zoning," unless the town board was in favor of it. As we understand it, the Town of Cleveland is of such a mind that it simply does not want the type of restrictions on choice of use of property that comes with zoning, and seems to be exactly the type of local governmental decision the legislature envisioned when it included Section 59.97(5)(c) in the county zoning statute.

No Prohibition of Regulatory Ordinances:

Additionally, the legislature went even further to protect the independent choice and needs of town governments when it also provided in Section 59.97(6) that:

"Nothing in this section (zoning enabling legislation) shall be construed to prohibit . . . a town board from adopting any procedures, formal or informal in addition to those provided in this section and not in conflict therewith."

The legislature's intent was quite obviously to preserve the autonomy and integrity of town board decision-making whenever possible. We would consider that the MMR is

Michael D. Orgeman
November 11, 1996
Page 3

merely one of the procedures that are permitted by this section, even if there was county zoning.

Town of Cleveland Has the Authority to Pass Safety Ordinances:

Since the Town of Cleveland has adopted village powers pursuant to Section 60.10(2)(c), and Section 60.22(3), Wis. Stats., it has the powers conferred upon it that are available to village boards in Chapter 61. As the Town of Cleveland Board is aware, that gave it the:

"power to act for the government and good order of the (town) . . . for the health, safety, welfare, and convenience of the public . . . (and) . . . the powers hereby conferred shall be in addition to all other grants and shall be limited only by express language." Section 61.34(1).

We believe that the MMR has been properly promulgated by the Town of Cleveland board, consistent with the authority given the town board in Section 61.34(1). Certainly, everyone must agree that the purpose of the MMR's was to "promote and protect the health, safety, and general welfare of the citizens of the town," as indicated in the ordinance's introductory section, which would be consistent with the town's authority, as outlined immediately above.

Further, as we understand the legitimate purpose of the MMR, it was not to deny a party the right to exploration, prospecting, or mining, but to ensure that there were no undesirable side effects from such activity, that the town would be saddled with for years in the future. While certain residents of the Town are no doubt opposed to any mining related activity, the regulations do not prohibit mining, and the opinion of the residents should not be confused with the enforcement of legitimate regulations.

Very truly yours,

BRENNAN, STIEL, BASTING
& MACDOUGALL, S.C.


Edward A. Corcoran

EAC:msm

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WILLIAM E. SICKER
1911-1982

November 14, 1996

RODERICK J. MATTHEWS
MARIE A. SICKER
COURT COMMISSIONERS

Attorney Michael D. Orgeman
Lichtsinn & Haensel, S.C.
111 E. Wisconsin Avenue, Suite 1800
Milwaukee WI 53202

Re: Review of Town of Cleveland
Metallic Mining Regulations

Dear Attorney Orgeman:

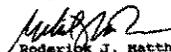
You have asked me to review the above-referenced regulations as well as the letter of Attorney Edward A. Corcoran, dated November 11, 1996, on these regulations.

My background on this matter is as follows: I graduated from the Harvard Law School in 1973, and am an attorney in good standing in the state of Wisconsin ever since 1973. I have taught in the Department of Real Estate and Urban Land Economics in the School of Business of the University of Wisconsin - Madison since 1974. My teaching has focussed on real estate law and land use law. I have also taught land use law at the UW-Madison Law School. This year I was selected to grade the real property questions of the bar exam for those individuals seeking admission to the state Bar of Wisconsin.

I have also served in local government. I was a member of the Dane County Board of Supervisors, 1974 - 1988. I was Chairman of the Dane County Board of Supervisors from 1980 - 1988, and served as Dane County Executive from 1987-1988. I am familiar with the Wisconsin Statutes that relate to local government.

Based on all the above, it is my opinion that the Town of Cleveland Metallic Mining Regulations is a valid and enforceable ordinance. Furthermore, it is my opinion that this ordinance is not a zoning ordinance.

Very truly yours,


Roderick J. Matthews

RJM/pc

RODERICK J. MATTHEWS

ACADEMIC BACKGROUND

- Harvard Law School, JD, 1973
- Kennedy School of Government, Institute of Politics 1972-73
- University of Wisconsin, BA Honors, Economics, 1968

POSITIONS HELD

- Director of Land and Real Estate Reform, and Deputy Director General, Russian Privatization Center, Moscow, Russia, sponsored by the Harvard Institute for International Development, Harvard University, 1995
- Senior Lecturer, Department of Real Estate and Urban Land Economics, University of Wisconsin Graduate School of Business, International Business, Real Estate Process, Real Estate Law, Land Use, Corporate and Institutional Asset Management, Residential Finance and Housing Policy, Real Estate Negotiations, Business Law, and International Real Estate, involving seminars and study in the following countries: Russia, Poland, Czech Republic, Hungary, England, France, Netherlands, Germany, Argentina, Brazil, Chile, Korea, Hong Kong, China, Japan, and Indonesia, Cambridge University/University of Wisconsin - Madison Real Estate Study Program, 1974 - present
- Director for International Programs, Wisconsin Center for Urban Land Economics Research, University of Wisconsin Graduate School of Business, 1992 - present
- Partner, The Law Firm of Sicker and Matthews, specialization in real estate law, land use law, and business law, 1973 - present
- Real Estate Market Consultant, University of Wisconsin Land Market Study in Albania, Land Tenure Center, Tirana, Albania, 1994
- Dane County Executive, Dane County (Madison), Wisconsin, 375,000 population, \$200 million annual budget, 1500 employees, 1987 - 1988
- Chairman of the Dane County Board of Supervisors, Dane County (Madison), Wisconsin, 1980 - 1988
- Supervisor, Dane County Board of Supervisors, Dane County (Madison), Wisconsin, 1974 - 1988

- Member, Dane County Regional Plan Commission, 1986 - 1988
- Land Use Lecturer, University of Wisconsin Law School, 1978 - 1980
- Farm Law Lecturer, University of Wisconsin, College of Agriculture and Life Sciences, 1974 - 1976
- Law Clerk, Burr, Pease & Kurtz, Anchorage, Alaska, 1973
- Economic Research Assistant, Joint Economic Committee, US Congress, Washington DC, 1967
- Russian Language Translator, National Security Agency, Department of Defense, Fort Meade, Maryland, 1966

LANGUAGES

- Russian - moderate
- Spanish - limited
- Vietnamese - limited

MILITARY

- U.S. Army 1969-70:
- Vietnam Army Foreign Language Institute, Intensive Vietnamese Language Course, Fort Bliss, Texas, 1969
- Bien Hoa, Vietnam, 1970

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- Law Office:
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Madison, WI 53703
Telephone 608/257-4303
Fax 608/257-4305
- Residence:
418 West Shore Drive
Madison, WI 53715
Telephone 608/251-3347

OTHER ACTIVITIES:

Dane County Government Committees:

- US Constitution Bicentennial Commission, co-chair, 1987
- Budget Committee, chair, 1984 - 1988
- Judiciary and Legislative Committee, chair, 1976 - 1980
- County Space Needs Committee, chair, 1975 - 1979
- County Commission on Aging, 1974 - 1978
- City-County Liaison Committee, 1974 - 1980
- Public Protection and Emergency Planning Committee, chair, 1980 - 1984

National Association of Counties:

- Intergovernmental Steering Committee, Washington DC, 1981 - 1988
- Task Force on Antitrust Litigation, chair, 1982

Wisconsin Counties Association:

- Board of Directors, 1982 - 1984
- Executive Director Selection Committee, chair, 1983
- Audit and Dues Committee, chair, 1983

Owner and manager farmland in southern Wisconsin

Madison Downtown Rotary Club, 1981 - present

UW-Moscow State University Rotary Student Exchange Program, Chair, 1992 - 1994

Wisconsin Department of Natural Resources, Urban Forestry Council, 1993 - 1994

MIPIM International Real Estate Conference, Cannes, France, 1994, 1995, 1996

Panel Member: Eastern European Retail Real Estate, MAPIC International Retail Real Estate Conference, Cannes, France, 1995

Speaker on Business of Management, National Apartment Association Convention, Las Vegas, Nevada, 1993

Russian Real Estate Panel, FIABCI-USA Fall Meeting, Houston, 1993

University of Wisconsin Union, Voting Member, 1982 - present

FIABCI, Academic Member, 1994 - present

Urban Land Institute, Associate Member, 1980 - present

National Association of Corporate Real Estate Executives, academic member, 1989 - present

State Bar of Wisconsin, 1973 - present

Dane County Bar Association, 1973 - present

Author, "A Real Estate Lesson from Thousands of Miles Away," *Real Estate Today*, April, 1995

Principal Author, "Real Estate Development for Tourism Planned in Albania," *Urban Land*, November, 1994

Co-author, "International Law and Business Studies at the University of Wisconsin - Madison: Developing a Dual Degree Program and Beyond," *UW Law School and UW Graduate School of Business*, 1994

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TOTAL P.05

APPENDIX C

LETTERS FROM CONCERNED CITIZENS AND OTHERS



November 12, 1996

Mr. John Kariger, Chairman
Cleveland Township Mining Impact Committee
N12425 Hixton Road
Fairchild, WI 54741

Dear John:

I am writing this letter to register my unequivocal opposition to mining in Cleveland Township. I oppose mining because of the disastrous impact I believe it would have on the environment and the quality of life we enjoy in Cleveland Township. Our water is clean, our air is clean, and our rural surroundings are peaceful. I do not want to see any of these qualities harmed in any way.

On a personal note, I should mention that I was raised in Cleveland Township. My parents (Otto and Marian Watenphul), grandparents, and great-grandparents farmed here for many years. My father passed away in 1994, but my mother still resides on the 120-acre farm they purchased almost 50 years ago. I reside on the 160-acre farm my paternal grandparents (George and Dora Watenphul) and great-grandparents farmed for many more years. The 80-acre parcel my maternal grandparents (John and Stella Zurawski) and great-grandparents farmed is also still "in the family." My cousin, John Danielson, owns the property and has renovated the original farmhouse there.

In fact, I am now living in the farmhouse my father's parents built 89 years ago. I began renovating this house in 1985, when I was living in Richfield, Minnesota, and commuting to work in downtown Minneapolis. At the time, I intended the house to be a retirement home because I enjoyed Minneapolis and all the things it had to offer. However, as the renovation neared completion, I realized that I could not wait for retirement some 30 years away. This realization came to me one day on my way home from work--as I was sitting on an MTC bus waiting through three stop lights at the same intersection in the summer heat as diesel fumes collected around the passengers. I did not want to be a big city dweller anymore, so I moved back to Cleveland Township in October of 1987.

Many people would pay a small fortune for the things we take for granted because they're in our backyard--watching deer coming down out of the woods at twilight, listening to whippoorwills, picking blackberries, canoeing beautiful rivers, and, most importantly, drinking clean water and breathing clean air. It would be a shame to destroy all this and more based on a mining company's shaky promise of future financial gain.

Thank you for the opportunity to share my concerns with you, John.

Sincerely,

Nancy A. Watenphul

Nancy A. Watenphul
N13481 North Alma Center Road
Fairchild, WI 54741
Telephone: 715-334-4463

February 17, 1997

Dear Mr. Kariger, Chairman of the Mining Impact Committee,

I am writing in regard to the proposed mining in our area. As a child, I always loved to be out of doors, exposing oneself to the fresh air, sun, sand, and the wildlife. That has not changed. If anything, my appreciation increased as I grew to adulthood. My husband and I decided to move to the country, considering it to be a healthier place to raise our sons. Where else could we go where there is less traffic, less pollution, neighbors with ample space between, less noise, but in this serene area of Cleveland Township in Jackson County. We have come to realize that we definitely made the correct decision. Our son recently remarked that he would move back here if he could bring all his friends with him. So ones environment becomes home where one feels safe and warmly welcomed.

I am definitely opposed to sulfide mining in our area. Because independent investigation of the truth is a principle I live by, as well as justice, having a voice, and carrying forward an ever-advancing civilization, I simply cannot approve of this process for us; current citizens of this community, and our future generations. The facts bear that out... just too dangerous. I can be detached, in a good way, from a lot things; but not clean, pure water, and the other precious qualities that make this a safe home for us, our sons, daughter-in-law, and little grandson.

Sincerely yours,


Jan Kariger

Tom Wilson
N13145 Wildwood Lane
Fairchild, WI 54741
November 14, 1996

Dear Committee and Board Members;

I have in my possession a position paper from Ms Rebecca Clark, dated 10 October, 1996, criticizing the content of a document *Wisconsin Mining Laws - The Hard Facts That Do Not Meet The Eye at First Glance* by Ms Evelyn Churchill, now deceased, who viewed first-hand the years of deliberation and litigation which resulted in the establishment of the Ladysmith mine. I would like to take opportunity to respond to this criticism.

Ms Clark's discusses three general characterizations of Wisconsin law. I am not a lawyer and I have had little opportunity to study these issues in detail, but I would like to reference a recent, very carefully crafted document *A Question of Bias? - The Wisconsin Department of Natural Resources' Record on Metallic Mining Issues* from the Environmentally Concerned Citizens of the Lakeland Area (ECCOLA) a copy of which has been presented to the Mining Impact Committee. I highly recommend it as essential reading for all persons of authority or interest in our community.

In addition, I would like to present here a few personal observations regarding the issues raised by Ms Clark. As in the October 10 document, my comments are divided into three sections.

1) Local Agreements.

As was made clear at the informational meeting organized by Ms. Clark last month at the Fairchild firehouse, in the case of the Ladysmith mine:

- a) the local agreement was signed before any environmental impact statements had been filed and the actual mine design was fully formalized.
- b) no formal attempt had been made to poll the community as to whether the residents wanted a mine in their community
- c) the local agreement was written such that the signators to that agreement were bound by law neither to raise any objections nor otherwise stand in the way of the permitting process (much as the landowner exploration agreements restrict the landowners freedom of speech and political activity)

2) Variances and Exceptions

Ms Clark's observations seem to be that the rules by which the mining company is expected to operate are at least as strong as the rules to which other industry and homeowners need to comply. A few cases that I am familiar with and belie this point are:

a) Although you and I as private landowners, should it be necessary to abandon a water well, must fill the entire well with concrete, NR 130.06(2) allows that "...drill holes larger than 4 inches in diameter *preferably* should be filled in a manner similar to that described in (1)" [with concrete] but the regulations go on to allow the mining companies to fill these drill holes with gravel, crushed rock, sand, pea gravel, or clay slurry.

b) Whereas all other residential or commercial operations (including gas stations and farms) are responsible for the impacts of their activities on ground water quality under all their land, DNR 182.075 established a "compliance boundary" defined as 1,200 feet from the edge of the mining operations within which no ground water standards apply and no groundwater testing is required.

c) If the DNR water quality regulations for mining are so good, why is the mining interest-funded Wisconsin Manufacturing and Commerce fighting the Indian tribes right to have Federal EPA water quality standards applied to their reservation lands?

3) Long Term Responsibility

a) Ms Clark says "...the company must *prove* that it will not cause harm to the environment." This is not required because such proof is impossible. Outside of pure systematized areas such as Euclidean geometry (that we all struggled with in high school), there is no such thing as scientific *proof*. What the permitting process does is allow the mining company to *convince* the hearing boards that they think there will be no harm to the environment through engineering projections. The only proof can be in the historical record and no mining official or governmental authority has yet to identify any mining operation of the type anticipated here that has ever been successfully reclaimed. It is the intention of the proposed statewide mining moratorium to ask the mining companies to prove that they can successfully reclaim such a mine site anywhere (for only ten years, no less). Even this, however, is clearly not proof that there won't be a failure here or in the moratorium example site some time in the future.

b) Ms Clark says a bond must be posted for 40 years. DNR regulations NR 132.13 Certificates of completion and bond release states, "Not less than 4 [not 40] years after notification to the department of completion of the reclamation plan, the operator may petition the department to reduce

the amount of the bond...After 20 years after issuance of the latest certificate or certificates of completion for the mining site, the department shall release the bond or security if the department determines that the operator has complied with the reclamation plan" [but not necessarily having successfully reclaimed the site, just having complied with the plan!]

c) Ms Clark claims the mining operator is responsible "in perpetuity." The law says otherwise. NR 182.17 (10) on Early Termination states, "The owner of an approved mining waste facility may apply to the department for termination of its responsibility for long term care at any time after the facility has been closed for at least 10 years."

d) There is no evidence in my reading of the law (and confirmed by Towns Association lawyer Tom Harnish), that should the Flambeau Mine go out of business, that either Kennecott or RTZ would be liable for any future clean up costs.

Ms Clark defends her positions almost exclusively with quotes from Mr. Tom Evans' excellent publication *Metallic Mining Mineral Regulations in Wisconsin* (from which all the quoted laws in this letter are also taken. Although I value this information source, Mr. Evans is not to be counted on as a soul authority of the subject. He is a geologist, not a lawyer and cannot speak for the DNR which has authority in these matters. When Mr. Evans appeared at the Fairchild firehouse and was asked about the possibility of the use of Sodium Cyanide at a local mine, his response was that he thought it was most unlikely. In fact, for the Exxon mine in Crandon, which is recognized as the type of mine most closely resembling what would occur in Cleveland Township, the Mine Permit Application list the typical reagent storage capacity for sodium cyanide as between 5 and 18 tons per month.

I would challenge Ms Clark, rather than trying to counter the position that the DNR regulations have been thwarted by quoting comments regarding the supposed intentions of these regulations, to deal with the specific incidents referenced in *A Question of Bias?* and Ms Churchill's document where the will of the people, the democratic process and the protection of the environment have been thwarted. The proof is in the historical record.

Sincerely,

Tom Wilson