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Kennecott was orally informed that "we need to apply for...[a WPDES] permit to discharge...process plant tailings into our waste containment site... ." Subsequently, DNR told Kennecott that such a permit was not necessary. On November 1, 1976, the Public Intervenor filed a declaratory ruling petition with the Department, asking whether a WPDES permit was necessary for a tailings pond as proposed by Kennecott, which would leak 27.8 gallons per minute. A ruling was never issued on that petition. Late last summer, a WPDES permit was issued for the Jackson Iron Company tailings pond, which was already leaking at a rate of 326 gallons per minute. What industry does not yet know is when does a tailings pond leak at a sufficient rate so as to be classified as a point source of pollution requiring a WPDES permit.

For a long time, Kennecott did not know if the solid waste laws applied to mining. For example, an internal December 5, 1975, memo said, "the WDNR's oscillating their opinion re [solid waste rules] to the point that I advise we apply for a license." An earlier 1975 memo said, "Again the solid waste section is creating confusion. I am not clear whether we need either, none or both of the [solid waste] licenses." The legislature and the Department clarified that issue on March 14, 1979. However, industry should not need to wait three and one-half years for such an answer.

The third objective of administrative rules to control mining waste should be very tough and complete protection of the environment from those mining wastes. An example of the very large danger pyritic wastes will pose for the environment is found in a December 3, 1976, Kennecott memo. In that memo

is found the sentence, "Other lesser environmental concerns are: clean-up of approximately six pyrite acid burn areas within the proposed open pit parameter." Apparently, these acid burn areas were a result of sludge surging to the surface and spilling into the open environment [from pipe casings in exploratory drill holes]. These acid burn areas existed several years after exploratory drilling had ceased. Compare this small damage to the environment with the potential that exists from millions upon millions of tons of pyritic waste rock and tailings that will be placed in the environment as mining waste. Complete environmental protection from metallic mining wastes is a paramount objective of the rules you will write.

The third objective of the rule-making process should be to maintain the consensus approach to problem solving, which has been a landmark characteristic in much of the mining process for the last two and one-half years. Two days after Kennecott saw its mining permit application hearing adjourned in November of 1976, a Kennecott official told his superiors what had become painfully obvious,

Getting into bed with environmentalists might rub raw with many of our colleagues, but in this day and age I cannot recommend a better course of action for expedition of our project.

Robert L. Russell, Exxon's manager of the Crandon Project, gave a presentation in New Orleans in February of 1979. He talked of the new mining legislation and said in part,

Perhaps one of the most surprising results of this consensus approach to solving environmental problems was the eventual realization that all sides were really closer together in terms of attitude and position than they had ever cared to admit....

As to the work of the Metallic Mining Council, he said:

"There is the expectation on the parts of the environmental groups, industry and state government that the results will be reflective of a truly constructive consensus approach similar to that experience in the development of the mine reclamation law in 1977... . [I guess that what I am saying is that ... results are best achieved when all sides of an issue work together in the spirit of cooperation.]

THE NEED FOR PUBLIC PARTICIPATION

Good administrative rules are built around the twin concepts of clear standards and well-established procedures for decision-making. The need to establish decision-making processes, which are expeditious, fair and public cannot be over-stated.

Many of the failures surrounding the Kennecott mining venture center around the lack of a clearly defined process by which industry, DNR staff and environmentalists could clearly and fairly have their day in court. This council, in drafting new administrative rules to regulate mining wastes, will have an opportunity to draft hearing procedures which should insure that such failures do not reoccur.

There will be resistance by some to a very open process of decision-making. There will be complaints raised that openness and full due process rights will slow decision-making and will detract from the appropriate role of the experts in the decision-making process. Our experience with the Kennecott mining permit application effort, should cause you to reject both complaints rapidly. Some examples are in order.

First, at the close of mining, Kennecott proposed to leave a 56-acre, 285-foot deep lake to be located some 300 feet from the Flambeau River. The water near the top of the pit lake would flow westerly toward the Flambeau River. The issue was whether the water near the top of the open pit lake would be contaminated.

The company alleged it would not because the lake would become meromictic. A meromictic lake is one that does not turn over seasonally. Because the lower levels of the meromictic lake would contain the heavy metals and other environmentally dangerous materials, the theory was developed that there would be no potential danger to pollution of the Flambeau River.

The February 3, 1976, DNR EIS said, "Regardless of the method of filling the pit, the lake would eventually become meromictic." The EIS does not state who reached that conclusion, and upon what information, if any, it was based.

Despite DNR staff's absolute declarations that the lake would become meromictic, Kennecott was told as early as 1973 by one of its consultants that it could not be ascertained with certainty whether the lake would be meromictic or not. Even more disturbing is an April 21, 1977, letter sent by Kennecott which said in part, "Our recent investigations indicate that the lake would not become meromictic...."

It was and is the public hearing process, including a comprehensive discovery process, which helped focus this most critical issue of whether the Flambeau River could become contaminated by the open pit lake, which in retrospect, may or may not become meromictic. The decision-making process cannot rely

solely upon well-edited reports as a basis for making the critical policy conclusions.

A second example of the need for full public participation involves the Kennecott decision on how it classified mineralized versus non-mineralized waste. During discovery proceedings, Kennecott was asked how they reached the conclusion of what was non-mineralized rock that could be put on the outside of the waste containment area and that which would be stored inside an allegedly impervious clay core dyke. Kennecott answered that material which contained less than 5% sulfide was viewed as non-mineralized waste rock. When asked why the number 5% was chosen, the Kennecott employee responded, "Again, I think it was more or less an arbitrary number." The witness further testified that there was no literature survey conducted prior to selection of the 5% figure. There was no field testing done prior to the decision to use the 5% figure. In light of the six acid burn areas I talked about earlier, this in itself is most interesting. During my discovery efforts, I was not able to ascertain whether any laboratory work had been done by or for Kennecott or the DNR on acid mine drainage generation rates based on waste rock with less than 5% pyrites. My personal conclusion is that none were done. This Council has heard witnesses tell them that such laboratory tests can be done for as little as \$500 for one test and \$800 for two tests.

In short, the delineation between mineralized and non-mineralized waste rock is a subject which received minimal attention in both the Kennecott mining permit application and the DNR EIS. It was only through a contested hearing process that

an understanding of how that characterization decision was made and whether it was sound policy came to be understood.

A third example of the need for full disclosure of information to the public and to the regulator involves the question of base line data gathering and verification. On April 19, 1976, a memo was written between two Kennecott employees dealing with monitoring of water quality. The memo said in part,

"A meeting was called to discuss with [our environmental consultant] and [our testing laboratories] repeated sloppy reporting of results, anomalous results, and [consultant laboratories] inability to reproduce EPA standards on two occasions... [consultants laboratory] could not adequately explain the results of the EPA 'blanks' nor could they satisfy my inquiries regarding typographical errors and inconsistent significant figures on their report sheets.... Furthermore, I discovered that [our environmental consultant] has not been following EPA recommendations during their sampling."

Obviously, a well-established verification program between DNR and industry will minimize errors in base line gathering. However, public confidence of such a base line data gathering and verification-program will only be established through processes which guarantee full due process to environmentalists and local units of government.

A fourth example of the need for full hearing rights involves tailings. Tailings may be appropriate material for backfill during an underground mining operation. The DNR EIS in describing the underground mine operation that would follow the open pit mining by Kennecott said, "The coarse fraction from the tailings contain up to 50% pyrite and would be unsuitable for fill due to fire hazards." Exxon has made the preliminary announcement that it intends to add a floatation unit at its concentrator

so as to be able to remove the pyrites from the remainder of the tailings. Thereafter, Exxon tentatively plans to use a good portion of the separated pyrites as backfill. One wonders if Exxon pyrite tailings are unsuitable for fill due to fire hazards, or whether there is a scientific distinction in the nature of the pyrites between Ladysmith and Crandon? Or is DNR wrong in asserting that the Kennecott tailings are a fire hazard? Whatever the answers to these questions may be, it is clear that a public hearing process is most necessary to feel comfortable with the final decision.

In short, what may appear to be a fact in one day may be, upon further reflection, not a fact at all. One of the best ways our nation has devised to sort out fact from myth ~~is~~ is a full due process hearing. The administrative rules that you are about to write should insure that Wisconsin citizens will be able to distinguish between myth and fact when making decisions about the environment and metal mining.

WETLANDS PROTECTION

Section NR 1.95 of the Wisconsin Administrative Code directs staff of the Department of Natural Resources to preserve and protect wetlands from harmful effects by every lawful means. DNR is generally charged with protecting wetlands under authority found in Chapter 144 of the Wisconsin Statutes. Sec. 144.83, Stats., requires the Department to insure minimization of the disturbance to wetlands by metallic mining activities.

What does, "minimization of disturbance to wetlands," mean? One mining company consultant said of this phrase in late 1977,

A specific compromise in wetlands policy has been avoided intentionally by all parties. The standard 'minimization of the use of wetlands' has been used to effect this situation.

I don't agree with this analysis. The legislature has several alternatives in dealing with wetlands and mining. The standard it chose was extremely high. Next to outright prohibition of use of any wetlands under any circumstances, the legislature selected the next highest standard, ^{The committee's direction means} which ~~direct~~ ^{by mining companies} that wetlands are not to be used unless absolutely necessary.

The legislature has not defined the term "minimization of disturbance to wetlands." This will be a responsibility of this committee. It will be one of the more significant actions you take.

As you grapple with the question of defining minimization of disturbance to wetlands, one must remember that the mining companies will insist that wetlands are a necessary place to deposit metal mining waste. I caution you to remember that such a claim may represent more political rhetoric than technical reality.

For example, Kennecott consistently told whoever asked that they needed thirteen to nineteen acres of wetland in order to construct their 156-acre waste containment area. In fact, this was not the case.

On February 26, 1976, a Kennecott official wrote,

The Corps will review the public comments and then decide whether Flambeau Mining Corporation will be required to submit an environmental impact statement or not. If an environmental impact statement is required, it would take a year and a half to two years to get the Corps approval. An alternative to this would be to decrease the waste containment area by nineteen acres and stack the waste higher. This would be difficult to do and is not a good alternative, but the threat may be enough to cause the Corps to negotiate with Flambeau Mining Corporation to make a land trade and allow us to proceed with present plans without an environmental impact statement.

On April 9, 1976, the same official wrote another memorandum, which said,

As an alternative, we could redesign the waste containment areas so that the Corps does not have any jurisdiction over the project. I feel we should reject this alternative for the following reasons:

1. We do not intend to start the project this year because of economic conditions and this delay will not materially hurt us;
2. Through some technicality or change in the law, the Corps could get jurisdiction over this project immediately stop it until an environmental impact statement is prepared;
3. By getting an environmental impact statement from the State of Wisconsin and one from the Corps of Engineers, there is hardly any way that an environmental group can intercede to stop this project or harass the project at a later date.

On September 25, 1978, this official wrote,

If the Corps of Engineers has to prepare an environmental impact statement, they will add another year to the permit system to mine at Flambeau (we have planned to revise our Mining Permit Application to cut out this 19 acres of wetland area so we do not have to involve the Corps of Engineers in our project).

On March 6, 1979, while under oath, the technician who designed the waste containment area for Kennecott testified that based on stability analysis, foundation conditions, site view, and technical investigations, the wetlands could be avoided.

In summary, when this council defines minimization of disturbance of wetlands, a very strong presumption should be created in the regulations against use of wetlands. The burden to overcome the presumption should be on the applicant seeking to mine if it chooses a wetlands location. A contested case hearing will be the appropriate vehicle to test the applicant's claim of impossibility to select a non-wetland site for mining activity.

POLITICAL BOUNDARIES AND WASTE CONTAINMENT AREAS

Exxon is in the very preliminary process of identifying potential sites for its mining wastes. Areas under consideration include those with some wetlands.

In materials that have been circulated by Exxon, it would appear that political boundaries are being considered as factors in the selection process for mining wastes. This council, through rule-making, and Exxon, in its site selection process, must consider whether political boundaries are relevant in the selection of environmentally safe storage areas for mining waste. For example, if site X is an ideal site for the location of mining wastes except for the fact that it is too small, and if site X could be expanded by crossing a town or county line, then should not the company be required to select site X over a less attractive but larger alternative.

In short, should political boundaries have any role in the selection of waste sites, particularly as that might impact on the availability or non-availability of upland sites not containing wetlands?

REVIEW OF NR 131 PRIOR TO EXXON APPLICATION

Sometime this fall, Exxon will be applying for a prospecting permit, pursuant to the provisions of Administrative Code Chapter NR 131. Prior to that application being filed, and preferably at its next meeting, I would recommend that this Council review this administrative code chapter and receive public comment on whether any or all of its provisions should be updated prior to its utilization by Exxon. Is NR 131 in the best shape possible before we use it as a basis for a major environmental policy decision? Based on the great deal of knowledge all of us have gained in the last year the Metallic Mining Council has worked, are there additional thoughts or considerations which should be incorporated into the administrative rules? Exxon should not be ambushed and the environment should not be short changed by any possible inadequacies in NR 131. A quick look by all concerned at these provisions would be appropriate.

Four areas of immediate interest come to mind regarding NR 131. First, the confidentiality provision of NR 131.13 is probably unduly broad. Even when read in conjunction with NR 2.19 of the Administrative Code, one is impressed with the excesses of secrecy contained in the current language.

Second, there appears to be increasing reason to believe that there is a potential for environmental problems associated

with leachate from waste rock piles associated with zinc and copper mining. In light of Kennecott's failure to develop either a laboratory and/or field testing program in order to determine the leachate associated with its waste rock from the proposed Ladysmith mine, it appears appropriate to consider requiring waste rock leachate studies as a condition of the prospecting permit. If this policy objective is to be achieved on a uniform basis, NR 131 will need to be amended.

Third, society is becoming ever-increasingly aware of the problems associated with asbestos materials. Consideration should be given to amending NR 131 to require as a condition of prospecting permits a study on the characteristics of "asbestos or asbestiform minerals within the ore body and associated waste rock.

Fourth, testimony received from an environmentalist in Minnesota would suggest that this state ought to be concerned with the nature of the chemicals that are used in the separation process within a concentrated plant. The Metallic Mining Council will consider the development of rules which regulate the use of such chemicals in the concentration process. However, laboratory and on-site tests should be conducted on such concentrate reagents during the pilot plant program conducted as part of the prospecting program. NR 131 should probably reflect this requirement.

METALLIC MINING COUNCIL AND MINING

INVESTMENT AND LOCAL IMPACT FUND BOARD RELATIONSHIP

The 1977 session of the Wisconsin legislature created two agencies to assist citizens of Wisconsin in handling the impacts of metallic mining. The Mining Investment and Local Impact Fund Board assists local communities in handling social, economic and political problems associated with new metallic mining operations. The Metallic Mining Council assists local communities in areas involved with environmental impacts of mining. I would strongly recommend that the Impact Board and the Metallic Mining Council plan a joint meeting at a Northern Wisconsin location so as to consider what, if any, relationship the two units of government have to each other. I believe that such a meeting would be useful.

PYRITE WASTE

The Metallic Mining Council should develop a public policy position on what mining companies should be prepared to do with the millions upon millions of tons of pyrite that will result from their mining activities. The council should seriously consider developing a rule which will prohibit mining companies from placing pyrite waste in either above ground sites or in any other area which would bring them in contact with ground or surface water. Necessarily then, mining companies would be expected to separate pyrites in the concentrating process and sell them or use them as backfill. These standards may need some flexibility to recognize unique problems.

This Council has heard some rather gloomy testimony regarding the marketability of pyrites, but the Kennecott files provide a slightly different perspective. A December 4, 1978, Kennecott letter said in part,

In summary, what we have determined from all of those studies was that yes, there is a market for pyrite but, in each case, the potential customer would not commit themselves with an affirmed delivery date. Our present plans for the Flambeau project include a pyrite recovery circuit within the concentrator, which would extract approximately 90% of the pyrite.

An earlier Kennecott memorandum said that of the alternatives studied, the production of sulfuric acid at Ladysmith is the only totally viable method for disposing of the pyrite. If the acid produced could be sold at \$35 to \$55 a ton, ROIs [return on investment] of 12% to 23% could be obtained respectively for a total capital investment of approximately thirteen million dollars. The memo cautioned that additional market research is recommended to assess accurately the sulfuric acid demand/supply situation in the midwest before a final decision is made.

On July 18, 1975, a Kennecott official said,

Representatives of the WDNR have expressed concern that Kennecott does not have definite plans to treat the acidic effluent from the waste containment area, which is calculated to be about 25 gpm. I also have been concerned this might hold up the environmental impact statement approval and have requested that MMD/RC to review the alternative methods of disposal of pyrites from the mill tailings, even if it were a break even or loss proposition.

This very enlightened position taken by this Kennecott official should be fostered in the rules that you are about to write. The removal or marketing of pyrite should be considered a significant responsibility of the mining permit applicant even if it is a break even or loss proposition and the rules should reflect that concept.

EXXON AND PUBLIC HEARINGS

On November 2, 1978, I told a Department of Natural Resources hearing panel that there are things that Exxon could be doing better. I made two specific suggestions worth repeating at this meeting.

First, Exxon should consider sponsoring or co-sponsoring a series of community forums where technical and public policy problems associated with this proposed activity can be discussed. These community forums would be briefing sessions for the public. They would create an opportunity for exchange of information in non-technical language.

Second, Exxon should sponsor or co-sponsor a series of technical forums in which the corporation describes current scientific and engineering problems and alternative solutions associated with the mine. These forums would be for the technicians and professionals associated with mining. The issues would be discussed in minute detail.

Exxon has not acted upon these two recommendations as of yet. If it does not do so, it would be a mistake both to the company and the community. Preparing for public meetings forces a company

to think through its position more carefully and help focus various issues.

A July 16, 1975, Kennecott memo demonstrates the importance public hearings have in focusing issues within a company. The memo said in part as follows:

Tension and concern continue to be focused on the waste containment area. Indeed I have several concerns of my own which, needless to say are not voiced in public. However, the [DNR] Bureau continues to be uneasy over the possibility of leachates from the waste area and the FMC's lack of definitive plans to treat such unplanned and possibly acid-rich discharge. It is the old question, 'what happens if the anticipated 25gpm discharge is highly acidic?' How would the company treat such a fluid? We have sidestepped this issue in the past but may be called to task at the hearing.

Duwayne Gepken feels...that lack of treatment methodology of leachates could pose a serious stumbling block during the public hearing. I concur and have brought this matter to Bear Creek's attention several times in the past without success. (Emphasis supplied).

What this memorandum tells us is that companies will focus on issues when they know that they are in an arena in which they do not have complete control of the questions that are going to be asked or the alternatives that are going to be provided. Exxon must remember this in structuring its community participation program. From the highest to the lowest ranked employee, Exxon must support efforts to establish alternative sources of information about mining impacts.

Perhaps an August 2, 1971, memorandum from a Salt Lake City Kennecott employee explains best why it is in Exxon's self interest to follow some of the recommendations outlined above:

I believe it is important at this time to also better familiarize the local residents of our plans. It is necessary now for us to take the initiative and establish an offensive position, rather than finding themselves in a defensive, excuse-making situation, as it seems we, as an industry, are in so often. We must go to them before they come to us. This will improve our image, which has suffered for so long.

Exxon's style in dealing with the public decision-making process in Wisconsin has been good. With some refinement it can even be better.

REASONS TO BE OPTIMISTIC

We all have much to be optimistic about as we approach the rule-making process. First, DNR staffing in the metallic mining field continues to improve. There is better organization of staff and the people involved are becoming ever-increasingly enthusiastic. The remaining shortcomings are becoming more readily identified. Second, the consensus approach to decision-making remains healthy. Third, the Impact Board is getting closer to that period of time when it can start to provide resources to local units of government so that they can more effectively participate in the proceedings of the Metallic Mining Council. Fourth, we are all getting smarter about the problems and potential solutions surrounding metallic mining. The Metallic Mining Council's activities of the past several months have been most impressive.

The Public Intervenor pledges his continued interest and support in the metallic mining field. Because the public has so much to gain or lose from appropriate or inappropriate copper

and zinc mining in Wisconsin, the Public Intervenor will be asking difficult questions. I hope all understand that this is precisely the role of the Public Intervenor.



The State of Wisconsin
Department of Justice
Madison
53702

For Release:
Wednesday
March 14, 1979

MADISON — A comprehensive settlement of eight legal proceedings between Flambeau Mining Corporation and the Wisconsin Department of Natural Resources, the Town of Grant, Wisconsin's Environmental Decade, Inc., and the Public Intervenor was announced today. Settlement of the proceedings marks an end to disputes which began on September 14, 1976 when the Flambeau Mining Corporation, a wholly owned subsidiary of the Kennecott Copper Corporation, filed a mining permit application to mine a 6 million ton copper ore body in the Town of Grant, Rusk County, Wisconsin.

Highlights of the settlement include the following:

1. All parties have stipulated that they will not appeal the judgment and order of the Dane County Circuit Court dated December 27, 1978 dismissing Flambeau Mining Corporation's appeal of the DNR order dismissing Flambeau's original mining permit application. Any new mining permit application to be filed by Flambeau Mining Corporation will thus be filed subject to the provisions of the three new environmentally related mining bills enacted by the last session of the Wisconsin Legislature.
2. All parties have stipulated to dismissal with prejudice of the three lawsuits filed by the Flambeau Mining Corporation to block issuance of declaratory rulings by the Department of Natural Resources regarding the appropriate regulatory scheme for controlling metallic mining wastes.
3. A declaratory ruling has been issued by the Wisconsin Department of Natural Resources containing the following points:

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- (a) Flambeau Mining proposed containment area must comply with all applicable solid waste disposal laws and rules;
- (b) the Flambeau Mining Corporation mine tailings are a solid waste under current Wisconsin law;
- (c) the Flambeau Mining Corporation proposed waste containment area is a solid waste disposal site and Flambeau Mining Corporation must obtain a solid waste disposal site operating license;
- (d) the locational requirements of the current Department of Natural Resources administrative code as to where solid waste sites may be located are applicable to the proposed waste containment area of the Flambeau Mining Corporation.

4. Flambeau Mining Corporation has been removed as a party to the two petitions seeking declaratory rulings on whether tailings ponds are point sources for pollution. The petitions remain pending.

5. The Town of Grant will receive \$3,000 from Flambeau Mining Corporation as part of the settlement.

Charles H. Stoddard, Minong, Wisconsin, Chairman of the Citizen Advisory Committee to the Public Intervenor, expressed strong support for the settlement. "Relations between the mining industry and environmental groups have been positive and constructive in the past two years. This settlement hopefully will reinforce this joint effort to develop realistic and strong regulations which will allow metal mining to operate in Wisconsin in an environmentally safe manner."

Peter A. Peshek, Public Intervenor, said, "Although we have taken a giant step toward effective and environmentally sound mining regulation, it must also be realized that Wisconsin is not yet ready to issue new permits to

authorize copper and zinc mining, including Exxon's proposed activity in Forest County. The legislation enacted last session regulating metallic mining delegated to the Metallic Mining Council and DNR the responsibility to develop a sound and effective scheme to regulate copper and zinc mining wastes. The declaratory ruling issued by DNR today provides the first major declaration of what will be part of the regulatory framework to control copper and zinc mining wastes. Details will need to be fleshed out by the Metallic Mining Council between now and May of 1980."

"In addition," Peshek said, "the staff at DNR must be beefed up so that the public can be confident that the State can effectively regulate such operations. We are hopeful that the decisions which are required can be made prior to the time Exxon proposes to start operations."

Kevin J. Lyons, a Milwaukee attorney representing the Town of Grant, also expressed strong support for the settlement. "It represents a new beginning. The Town of Grant is very encouraged by Kennecott's decision to end expensive litigation. The cash settlement also reflects the right of the taxpayers of a small town to recover part of the costs of litigating frivolous lawsuits brought by a giant opponent. While we are prepared to litigate again if necessary, we hope that period in Wisconsin's mining history has passed."

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The State of Wisconsin
Department of Justice
Madison
53702

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November 28, 1978

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RE: Preliminary Outline of Policy
Issues for Mining Wastes Regulations

Dear Jim:

This letter is stimulated by two recent thoughts you have shared with me. First, you have suggested that the time is drawing near for the preliminary exchange of outlines which can serve as the basis for discussing the contents of Wisconsin's regulations to control mining wastes. Second, you have suggested that all of us should work hard to "track" the development of ideas regarding mining regulations.

I agree with both of your very insightful comments. This letter is intended as a very preliminary beginning to both of your suggestions.

Below you will find a series of thoughts that I have gathered in the last couple weeks as I have considered the scope of potential regulations for mining waste. In writing this letter, I have not tried to determine what portions of NR 180 would be applicable to mining wastes. I have made no effort to relate those provisions of NR 132 which might serve as part of the basis for further discussion. I have not tried to go through all of my files to get together all of the ideas that probably exist therein. What I have tried to do is provide myself and hopefully you, a check list of some of the things I have heard and seen in the recent past. The list is not complete nor do I necessarily believe that each and every item in this letter should be in the final rules. Most import-

antly, I have not tried to prioritize these items at this time. I will number the ideas in order to facilitate further written and oral communication.

Finally, I would hope within a month we will be able to have a working check list which is broad enough and organized in an effective enough manner that it can be commonly used for further discussion. You inferred in today's Metallic Mining meeting that Exxon is meeting in Chicago on December 12. My Advisory Committee meets on December 14. It might be helpful for those that we report to to be able to review some of our thoughts if we could have them developed in the near future.

Given all of the qualifications and limitations that I have stated, below please find the preliminary list of questions or concerns worthy of some public debate:

1. Rules should be developed establishing standards for starter dams around tailings ponds.

2. Rules should be written establishing minimum sizes required for active disposal areas. For example, some literature suggest that 20 or 30 acres per 1,000 tons of daily capacity of tailings would be appropriate.

3. Rules should be written establishing standards for the rate tailings embankments can be raised per year. Factors such as pulp density would become relevant in such standards.

4. Standards regarding safety factors for tailings dams should be written into the rules.

5. Should a rule be developed to create a presumption that tailings ponds be down stream from the mill so as to guarantee gravity flow of the tailings?

6. Should a rule be developed prohibiting tailings on any mineralized areas, vane extensions or access routes?

7. Should a tailings pond site locational requirement include that the site be far enough away from projected mining to preclude seepage, spills or runs into the mine through faults, shafts or fractures from mining operations?

8. Should Wisconsin's rules prohibit tailings flurry sands as the outer embankment material in pyrite deposits?

9. Rules should be written to require the mining company to install instruments to monitor movements in the tailings pond's embankments and foundation. Results of such instrument monitoring should be recorded and regularly submitted to DNR.

10. Are borrow for materials for embankments for tailings ponds be regulated under Ch. 421 under all circumstances?

11. As to tailings pond embankment work, regulations should be written to require the company to regularly submit results of moisture and density samples taken by the company to assure certain things such as density.

12. Regulations might well be written so as to create a presumption that impervious tailings dams are to be required and previous tailings dams are to be considered only for ore bodies that do not have heavy metals or pyrite? We might also consider requiring impervious dams for all metallic mining in Wisconsin.

13. What kind of standards does Wisconsin wish to develop if the mining company is to use internal drainage systems for embankments and/or under tailings ponds. In order to insure proper embankment construction and re-construction, should be required two complete and separate ponds or cells of ponds for a minimum. Should we require regular alternating use of the sites? Should we require regular schedule maintenance?

14. Should Wisconsin require tailings ponds dams to be built only in the down stream method because this method is inherently a safer procedure than the up stream method of construction? Under what circumstances should Wisconsin allow the center line method of construction? What standards should we develop to select the down stream or center line method of construction?

15. What regulation should be written to regulate the problem of "free board" which needs to be available at the end of winter for storage of spring, snowmelt runoff so as to avoid over tapping?

16. Should regulations be written to require tailings basins effluent systems to be designed to have sufficient capacity to handle maximum inflow into the basin and maintain a minimum free board on the dam during the peak flow. Should the regulations require the tailings ponds to be designed to handle the peak 24-hour floodflow, with the re-occurrence intervals of 100 years plus the maximum production from the tailings system?

17. What regulation should be written to require sufficient free board to prevent over topping of embankment by waves?

18. What should be the state's standards for selection of alternative tailings pond disposal systems? More specifically, an alternative approach to the single large basin or multiple isolated basins is the cellular type of construction, in which sections of the total embankment are built separately allowing for less active area at any given time. This alternative may be more expensive, occupy more area but reduce dust liftoff. Clearly, the mining companies and the staff should know what the state standards for the selection process of all alternatives are.

19. Should a rule be established requiring the companies to direct all uncontaminated waters around a tailings basin?

20. Should the state create a rule requiring reclaiming of water from tailings pond? Should the state mandate that all tailings ponds water systems will be a closed system?

21. What minimum engineering standards and rules should be promulgated for drainage systems such as perforated pipe drains, blanket or strip drains, etc.?

22. Should a rule be established dictating a minimum thickness of drainage layers, such as a minimum of 36 inches thick?

23. A rule should be written requiring chemical tests to be performed on the embankment and drain materials and the seepaged water, to insure capability of all of these items.

24. What if anything should be said in rules about injection and pumping wells to control pollution?

25. A rule should be established requiring a program to monitor seepage from tailings ponds and also require periodic reporting of that seepage to DNR.

26. What, if any, rule should be written about the final contours and cover for tailings ponds? Should the tailings ponds be required to be designed in such a fashion that they can support a layer of waste rock, about three to five feet thick, which is a positive, permanent and relatively maintenance free method of fugitive dust control? Should a rule be written requiring at least four feet of soil on top of the tailings ponds? Should a rule be written requiring all tailings ponds to have a cone-like shape on top rather than to have an internal depression?

27. Should Wisconsin require equipment to be installed to insure appropriate segregation of fine and course tailings so as to facilitate stability, seepage control and dust lift off? How specific should these rules get?

28. A rule should be written requiring trial batches of raw tailings to be produced providing materials for laboratory testing. Such tests with the tailings could be used for testing seepage control for example. What other standardized test should we require for these test samples of raw tailings?

29. Should we by rule create a presumption that the pump barge system of reclaiming water in a tailings pond system shall be required rather than (a) a decant tower and pumping system or (b) a syphon and pumping system.

30. Should we by rule require a spare tailing line to be build adjoining the main system.

31. Should we by rule require tailings piping lines greater than one mile to be insulated and heat traced?

32. A rule should be developed which would require planning data to describe what, if any, and how, the following functions will be preformed in the applicant's tailing basin:

- (a) Removal of tailing solids by sedimentation;
- (b) Acid neutralization;
- (c) Formation of heavy metal participates (hydroxides);
- (d) Sedimentation of metal precipitates;
- (e) Perpetual retention of settled tailings and precipitates;
- (f) Stabilization of oxidizable constituents (e.g., thiosalts and floatation reagent residuals;
- (g) Balancing action for fluctuations in influent quality and quantity;
- (h) Storm water storage and flow balancing;
- (i) Water treatment facility for recycling water to the mill; and
- (j) Sedimentation and perpetual retention of fibers present in the ore or created in the milling process.

33. What special rules are going to be written to control the fugitive dust problem associated with tailings ponds? Are we going to require a certain percentage of that tailings pond to be always covered by water; there appears to be no reason to rely solely on ambient air quality standards for dust control because the industry may well be able to do better if higher standards were established for tailings Wisconsin establish
34. What if any special water quality standards should Wisconsin establish as to the toxicity of Xanthates and other reagents used in the concentrating process?
35. By rule, what should Wisconsin establish as the uniform aquatic organisms for monitoring heavy metal pollution in waters associated with metallic mining. What are the "good indicators" of heavy metal pollution?
36. Should we standardize those tests which will be required, by rule, in all metallic mining operation applications?
37. A rule should be developed which requires applicant in submitting its water budget data to DNR to consider the 100 year dry year and the 100 year wet year in describing its water budget program. Such data would also consider the 100 year high evaporation year and its relationship to the 100 year low participation year.
38. What if any rules should be written requiring all catchment waters to be diverted around waste rock piles?
39. A rule should be written requiring applicants to provide data about the volume of seepage into regional ground water from waste rock piles.
40. Should a rule be written requiring waste rock to be located on an impermeable base?
41. What if any standard should be established about requiring applicants to put in recovery systems for water running off of lean ore and waste rock piles?
42. Should a rule be established requiring money companies to recycle their tailings ponds water rather than discharging it?
43. What if any rule should be written requiring a surge pond to be established at all mining sites?
44. A rule should be developed requiring an applicant to submit information on the potential toxicity of copper and/or zinc to algae in potential receiving waters of effluent and seepage, said data including information on the receiving waters:

- (a) Alkalinity;
- (b) PH;
- (c) Ability of water to complex metals;
- (d) Synergistic and antagonistic interactions among metal ions;
- (e) Species composition of the photo planktin community; and
- (f) Prior exposure of the community to copper and/or zinc.

45. A rule should be written requiring an applicant to submit plans on how his operation intends to minimize acid rains.

46. What if any special water quality standards should be developed for metallic mining operations? What criterion or criteria shall be established by rule for measuring adverse environmental impact on water?

47. As part of the application, a rule should require substantial aquatic toxicity testing. A test should be made for all potential receiving waters and these tests should be conducted in the field on an array of native species in natural water for at least 30 days. The measure of such test "chronic" level except where it is scientifically required to use "acute" tests.

48. A rule should be developed requiring a potential receiving waters of seepage or direct discharges be tested for: (a) PH; (b) hardness; (c) alkalinity; and (d) temperature - since increasing amounts of (a), (b), and (c) will reduce the effects of toxic metals while increases in (d) will reduce the time for toxic metals to work.

49. Applicants should be required to provide data on what the effects of several heavy metals in water at one time will do to the receiving water. Applicants should be required to provide data on what the joint toxicity of the metals will be.

50. Specific water quality standards for metallic mining might be developed which require that discharges, if any would result from such operations may not (a) reduce the number of aquatic species in the receiving water, (b) change the abundance of species in receiving waters, and (c) change the dominate species in the receiving waters.

51. Wisconsin should consider a rule requiring discrete tailing disposal areas to be limited to the confines of a single major water course and water shed boundaries and not to be able to be located in more than one of the 28 major water shed systems in Wisconsin.

52. We should consider developing a rule which would prohibit crossing of major water courses by tailing pipelines or at least creating a rule which establishes a presumption against such crossing unless certain other standards are met.

53. Consideration should be given to requiring mills and tailings ponds to be located in the same water shed.

54. What rules should be developed to regulate blockage breakage and leakage of tailings pipes?

55. A rule should be written requiring an applicant to submit design analysis for tailings ponds which includes the following:

- (a) Economic comparison of alternatives;
- (b) Seepage analysis;
- (c) Stability analysis;
- (d) Settlement analysis;
- (e) Hydrogeological analysis; and
- (f) Alternative construction materials and stabilization procedures.

56. A rule should be developed requiring money company to make periodic reports and DNR staff to do periodic inspections on foundation preparation and fill placement for tailings ponds.

57. Applicants by rule should be required to provide data on tailings pond effluent which would include such items such as sedimentation characteristics, turbidity, PH, metallic ion count. A rule should be developed requiring applicant to provide data to DNR on core drilling for locations of faults, plains and weaknesses mineralization and ground water and such other data as is necessary to determine the appropriateness or inappropriateness of the location of a potential tailings pond.

58. By rule, applicants should be required to provide DNR with information on the long term storage volume and schedule storage requirements for both waste rock and tailings ponds.

59. Should a rule be developed requiring applicants to establish a trial tailings pond embankment section incorporating the potential embankment materials and require a stability analysis to be done for the trial section to determine the factor of safety.

60. By rule, the applicant should be required to prepare a detailed construction drawing and specifications for foundation treatment, field placement and waste disposal.

61. By rule, applicants should be required to submit data on planning, designing construction of the effluent or r reclaim water system.

63. By rule, establish standards and procedures by which the applicant is to search for tailings pond and waste rock sites. Should we establish minimum search areas? Should we establish exclusion criteria? What should be established as minimum evaluation site criteria?

64. By rule, should Wisconsin require waste rock, leaching tests to be conducted prior to the application being granted or denied?

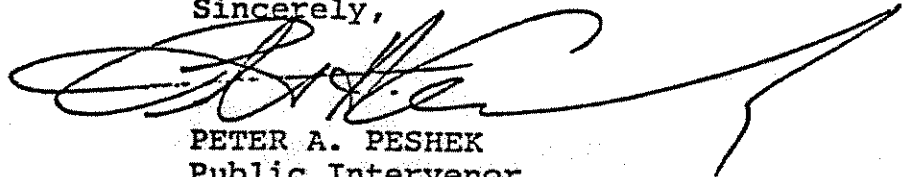
65. By rule, require applicant to have spare waste containment materials present on site as back-up for unforeseen seepage or safety problems from the tailings pond embankment.

66. By rule, establish maximum angles of slope for tailings ponds embankments.

67. Should a rule be developed which will prohibit mining companies from placing pyrite wastes in either above-ground sites or in any other area which would bring them in contact with ground or surface water? What flexibility should be given to such standards, if any?

This letter represents the Public Intervenor's effort to begin a formal dialogue on the public policy questions surrounding controlling mining wastes. I look forward to your contributions to this list so that we can have a preliminary working document.

Sincerely,



PETER A. PESHEK
Public Intervenor

PAP/mkp

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

In the Matter of a Public Hearing to Receive)
the Views and Comments of the Public Concerning) 1H-78-94
The Exxon Minerals Company, U.S.A. Zinc-Copper)
Discovery Near Crandon, Forest County, Wisconsin)

TESTIMONY OF PUBLIC INTERVENOR

Mr. Examiner, the Department of Natural Resources is to be congratulated for providing this opportunity to discuss the public policy questions surrounding Exxon's proposed copper-zinc mining project. While mining may be some seven years away, there is much to be learned from a public exchange of information and views among private citizens, elected officials, local and state units of government, the private sector and environmental groups.

The Public Intervenor is charged by the Legislature with the responsibility of advocating and seeking protection of the public rights in the environment. Because the public has so much to gain or lose from appropriate or inappropriate copper and zinc mining in Wisconsin, the Citizen Advisory Committee to the Public Intervenor has directed that metallic mining be the number one program priority of the Public Intervenor's office.

This paper will be divided into the following four parts: 1) An Historic Overview; 2) Exxon and Future Public Policy Decisions; 3) DNR and Future Public Policy Decisions; and 4) The Role of Other State Agencies in Future Public Policy Development.

AN HISTORICAL OVERVIEW

In October of 1976, a series of events began which bring us to today's hearing. The Kennecott Copper Corporation had sought permission from DNR to open a six million ton copper mine in the Town of Grant in Rusk County. A DNR hearing examiner conducted a hearing on the proceeding. The citizens of the Town of Grant believed that it was premature to approve such an application. The town hired Attorney Kevin Lyons, a well respected trial attorney. The town solicited and received the support of the Natural Resources Defense Council and the Public Intervenor.

Within a short period of time, all three lawyers and their clients came to recognize that Wisconsin was not then in any position to determine intelligently whether or under what conditions Kennecott should be permitted to mine its Ladysmith ore body. It was even more evident that the State of Wisconsin did not have a comprehensive and integrated regulatory scheme for copper and zinc mining. In time, the

DNR hearing examiner came to recognize these and other problems and dismissed in our view appropriately, the Kennecott mining application.

Immediately upon the adjournment of the Kennecott mining permit application hearings, there began a political process which would propel Wisconsin into the lead nationwide in an effort to regulate metallic mining operations. The Natural Resources Defense Council, under the guidance of Attorney Frank Turkheimer, now United States Attorney for the Western District of Wisconsin, prepared a comprehensive paper on the inadequacies of the 1973 Metallic Mine Reclamation Act, and made a series of recommendations for changes. Special committees of the Legislature which had thus far been principally concerned with taxation of mining operations formed a special working group to evaluate the need for additional regulation of the industry and propose changes in the statutes.

Under the able leadership of Representatives Mary Lou Muntz and Harvey Dueholm and State Senators Michele Radosevich and Henry Dorman a comprehensive new regulatory scheme for metallic mining was developed. The new consensus legislation was developed thanks in very large measure to the able efforts of Exxon attorney James Derouin and Exxon geologist Ed May and many environmental representatives, particularly Peter Anderson of the Wisconsin Environmental Decade. This legis-

lation was adopted by a nearly unanimous vote of the Wisconsin Legislature. Since that time, final administrative rules for the Metallic Mining Reclamation Act have been put in place by the Department of Natural Resources.

However, because of the lack of federal direction and the complexity of the problem, the Wisconsin Legislature did not make any final decisions about the location of and regulation of waste containment areas associated with copper and zinc mines. That decision was delegated to the Department of Natural Resources and the Metallic Mining Reclamation Council. The Department and the Council are to complete their work by May 21, 1980.

From a public policy perspective in light of these historic developments, Wisconsin has not been, and is not yet ready, to issue any new permits authorizing the mining of copper and zinc. This conclusion covers Exxon's proposed mining activity in Forest County.

There are two reasons to justify this conclusion. First, Wisconsin does not currently have in place a regulatory scheme to protect the environment from the dangers of waste containment areas and tailings ponds associated with copper and zinc mines. Neither does the federal government have such regulations. In the absence of a well recognized and well thought out comprehensive regulatory process, it would be inappropriate for the State of Wisconsin to grant permits for new zinc and copper mines. Second, DNR is not staffed or financed today at a level to warrant public con-

confidence that it can effectively regulate Exxon. However, substantial progress has been made in this area and there is every reason to be optimistic that this problem can be overcome prior to the time Exxon seeks permission to mine in Forest County.

In summary, the State of Wisconsin in the fall of 1976 came perilously close to granting mining permits to Kennecott when the state was in no position to make an intelligent decision on that issue. Very substantial progress has been made since that time and our state has now completed some 75 to 80 percent of the tasks that need to be done before mining companies may once again seek permission to operate new mines in Wisconsin. History has treated the Wisconsin environment well on this issue. In large measure, the people of the Town of Grant are responsible for these developments. This experience also tells us that the people of the towns of Nashville and Lincoln can have the same impact in writing their own futures if they choose to do so.

EXXON AND FUTURE PUBLIC POLICY DECISIONS

Exxon has been an excellent corporate citizen in Wisconsin in the environmental field. The corporation has chosen to challenge its employees and corporate technical skills as well as to challenge those who will regulate so as

to develop the new technology and laws to meet Wisconsin's demanding environmental standards and concerns. They have brought to Wisconsin a staff which on the whole is very environmentally aware. They have positively and constructively participated in the development of appropriately stringent environmental regulations. Exxon has hired consultants and lawyers who are willing to listen to state objectives and to try to reach them. What else should Exxon be doing? What could Exxon be doing better? I would offer the following suggestions for consideration:

(1) Exxon should consider sponsoring or cosponsoring a series of community forums where technical and public policy problems associated with its proposed activities can be discussed. These community forums would be briefing sessions for the public. They would create an opportunity for exchange of information in non technical language.

(2) Exxon should sponsor or cosponsor a series of technical forums in which the corporation describes current scientific and engineering problems and alternative solutions associated with the time. These forums would be for the technician and professionals associated with mining. The issues would be discussed in minute detail.

The technical forum is as important to the citizens of the State as are the community forums. We are asking Exxon to develop technical and engineering solutions beyond those which Kennecott had been prepared to offer in Ladysmith. In order to understand the public policy consequences of new technology and in order technological problems be openly

discussed so that the alternatives can be publicly known and publicly debated.

(3) Exxon has expressed the conclusion that it will need to use wetlands in order to dispose of its mine wastes. Many citizens have unequivocally opposed this Exxon position. Much of this opposition is centered around the concept that in the absence of a state wetlands protection program, it is indefensible to permit any further destruction of this priceless asset. Exxon should use its social resources to play a positive and constructive role in assisting Wisconsin in the development of a statewide wetlands protection program which would establish standards and criteria for the use of wetlands.

(4) Exxon must redouble its already substantial efforts to communicate with the regulator. Early exchange of preliminary technical and scientific data is a must if there are to be facts upon which preliminary policy direction can be established.

(5) It is important that Exxon develop management stability and continuity for the Wisconsin project. Long range policy development should be facilitated by such stability.

(6) Exxon's public relation program should continually and accurately reflect that the environmental regulations being developed in Wisconsin have been established with the full consent and support of Exxon. Every sentence and every paragraph of Chapters 377 and 421, Laws of 1977, the cornerstones of regulation of the mining industry in this State, were prepared in joint participation with Exxon representatives and environmental groups.

(7) There appears to be increasing reason to believe that there is a potential for environmental problems associated with leachate from waste rock piles associated with zinc and copper mining. Either Exxon or the Department of Natural Resources or both jointly should immediately begin exploring the development of a laboratory and field testing program in order to determine the leachate problems associated with waste rock from the proposed Crandon Mine.

I would strongly recommend that the field and laboratory testing procedures developed by the University of Minnesota for the copper-nickel study in that state serve as the model for such a study. It may well be that the University of Minnesota would be in a position to actually do the study. The source of materials for the study could be materials removed during the prospecting program to be conducted by Exxon sometime in the next few years.

(8) Exxon should publicly and unequivocally state its intent not to file mining permit applications until Wisconsin has a comprehensive regulatory scheme for mining wastes. The threat that Exxon might unilaterally proceed when a regulatory vacuum exists would be removed by such a policy declaration by the corporation.

(9) As Exxon makes various of its reports available to the public and to the regulator, it is imperative that this material be developed in such a way so that the public and the regulator can understand what the various alternatives are in any given phase of mining development. Not only must the public and regulator understand what those alternatives are, there must also be a general understanding of which alternatives the company has eliminated and the reasons it prefers the one it intends to adopt.

It is the understanding of the technical and policy alternatives which will maximize environmental protection. For example, should Exxon have one huge 600 acre tailings pond or should it develop a series of smaller tailings ponds which can be reclaimed at a faster rate? What is the safest way to protect the environment from the cadmium associated with the ore body? These are but two of the kinds of questions that the public would like to have discussed as the project information is developed. While the legal process is a very effective instrument to protect the public's rights, it is far easier and more constructive to develop new horizons of environmental protection through consensus and dialogue. To have such dialogue requires expanding the kinds of information the public should receive over the course of many years from Exxon.

To summarize this portion of my remarks, Exxon has done a constructive job to date in the environmental field in Wisconsin. The citizens of Wisconsin should continue to expect even more from Exxon in the future. The State should look forward to a very exciting next few years of policy development with Exxon playing a very prominent role.

DNR AND FUTURE POLICY DECISIONS

DNR does not have substantial expertise in the regulation of metallic mining. The state does not have a comprehensive regulatory scheme in place for metallic mining.

Given these two factors, the process by which this state will regulate Exxon through DNR in the next few years should be viewed by DNR staff as follows: 1) The prepermitting and permitting process that the Department will go through with the Crandon project offers current and future staff an opportunity to gain working knowledge of knowledge of metallic mining in massive sulphide deposits. This on the job training opportunity should be maximized and the top management team at DNR should recognize this unique opportunity; 2) the prepermitting and permitting process surrounding the Crandon projects offers an opportunity for DNR to understand policy alternatives and to use this experience as a basis for development of final regulations to control metallic mining operations; and 3) the prepermitting and permitting process

associated with the Crandon project allows an opportunity for DNR staff to gather the kind of technical data necessary in order to approve or disapprove this particular proposed mining activity.

The DNR staff and the DNR management team must recognize then that the Crandon project offers all three benefits to the Department. All three goals must be considered as the Department determines what staff activities will or will not occur relative to the Crandon project. If the Department chooses to view this opportunity as only one of approving or disapproving the project, it will fail to maximize the opportunity to expand this state's ability to protect its own environment.

It is this concern which has caused the Metallic Mining Reclamation Council to request the secretary to consider appointing specific individuals to be responsible for the development of the Department's policy on Metallic Mining. It is also the concern which has caused the Metallic Mining Council to request the Secretary to make sure the staff attends Metallic Mining Council meetings where technical data is being developed and where policy alternatives are being explored.

The Department's staff should be most eager to participate in this exciting venture. To date, there has been some resistance to such participation.

DNR staff did a most effective job of preparing administrative rules to implement the Metallic Mining Reclamation Act of 1978. Gordon Rienke and Rick Henneger of the DNR staff deserve praise for the promptness they displayed in preparing the complex administrative rules which met with the approval of all concerned. There are some problem areas at DNR which will impact upon future public policy development. Four areas of concern are worthy of specific note.

(1) DNR staff should maximize its opportunity to communicate with Exxon at an early stage of the project design. The Department should not wait for Exxon to complete all of its engineering designs before getting deeply involved in the environmental impact process. Policy and technical alternatives should become a subject of regular dialogue between the regulator and the regulated at a very early date.

(2) DNR has been sitting on a series of declaratory ruling petitions since November of 1976. Two years have passed since the petitions were filed and the Department has yet to conduct a hearing regarding them.

These petitions deal with what laws are applicable to the regulation of metallic mining wastes. It is totally indefensible that the Department has failed to hold hearings on these petitions and to render a judgment. The DNR staff has a right to know what laws are going to be applicable. Exxon and Kennecott have a right to know what laws are going to

regulate them. In planning for engineering solutions, they need to know what standards will be applicable. Local units of government should know what laws are going to be used to regulate mining so that they can tell the legislators whether there is sufficient or insufficient protection.

The Department staff has no reasonable defense for its failure to proceed to hearing on these petitions. The Secretary of the Department should immediately direct that the citizens that sought these rulings be given their day in court and a judgment rendered in the very near future.

(3) One of the major problems associated with massive sulphide copper and zinc deposits is the large amounts of pyrites which will be separated in the concentrating process. During the summer of 1978, Department staff began to explore possible studies which might be conducted to resolve this environmental problem. DNR has been stalling on this issue since August. The Department should once again move forward with its pre-August efforts.

(4) The Department will over the course of time hire nearly two dozen people to fill positions in the Environmental Impact Bureau and the Solid Waste Bureau. Given the Department's current limited knowledge on metallic mining, recruitment efforts should be designed so as to guarantee that a number of the individuals will be brought aboard as employees have experience in the metallic mining field.

In addition to the internal improvements within DNR that are possible, the Department will need to develop administrative rules for the regulation of mining wastes. Two areas of potential interest are worthy of specific examination.

First, it is increasingly clear that the Metallic Mining Council should develop a public policy position on what mining companies should be prepared to do with the millions upon millions of tons of pyrites that will result from their mining activities. The Council should seriously consider developing a rule which will prohibit mining companies from placing pyrite waste in either above ground sites or in any other area which would bring them in contact with ground or surface water. Necessarily then, mining companies would be expected to separate pyrites in the concentrating process and sell them or use them as backfill. These standards may need some flexibility to recognize unique problems. It will be up to mining companies to recommend standards for such exceptions. Second, testimony received from environmentalists in Minnesota would suggest that this state ought to be concerned with the nature of the chemicals that are used in the separation process. The Mining Reclamation Council should begin to consider the development of rules which will regulate the use of chemicals in the concentration process.

In summary, one must be impressed with the fact that DNR is making progress in defining its appropriate role in the regulation of metallic mining. There appears to be more and more appropriate staff interest in the subject area. One can

only hope that many of the suggestions that I have outlined today are adopted by the Department.

THE ROLE OF OTHER STATE AGENCIES
IN FUTURE PUBLIC POLICY DEVELOPMENT

While the citizens of this state will be depending upon DNR to develop the large majority of regulations to protect Wisconsin's environment from metallic mining operations, there is also a role for other state agencies in the development of such policy alternatives. My remarks will be limited to the Departments of Revenue, the administration and Business Development and the University of Wisconsin, Madison.

Robert Melbourne and the Department of Revenue have displayed a keen understanding of how state agencies can assist DNR in insuring appropriate metallic mining operations consistent with good environment. Three examples are readily apparent. First, the Department of Revenue has been concerned since 1976 with the inadequacies of the Kennecott EIS in analyzing the social and economic consequences of mining in Rusk County. The Department has written to the Wisconsin Environmental Policy Act interagency coordinating committee requesting that the committee consider the problem of how agencies are to adequately measure social and economic impacts of major projects in the absence of staff expertise.

This policy initiative on the part of Department of Revenue is a recognition that Wisconsin is going to need to intergrate multiple agency participation in the drafting of complex environmental impact statements.

Second, the Department of Revenue has published a comprehensive report on the social and economical consequences of metallic mining in northern Wisconsin.

Third, Department of Revenue's efforts to develop models to measure social and economic impacts of future mining activities will also have a positive contribution to sound public policy creation.

The work of members of the University of Wisconsin - Madison faculty in the area of metallic mining is also to be commended. Of most notable recognition, is the work of Professor John Strasma of the Department of agricultural Economics who has concerned himself with the development of economic data which will provide public policymakers with the kind of information necessary in developing appropriate environmental regulation. Professor Duncan Hankin of the University of Wisconsin extension has done extensive research on the alternatives in leasing public lands. Professor Meredith Ostrom, Director, of the Geological Natural History Survey has directed research on zoning and various other technical and public policy issues connected with mining. Their intimate knowledge of the economics of metallic mining has and will continue to bare immeasurable fruit as public policy formulas are completed in this state.

The Department of Administration has been farsighted and creative in its contribution to the development of Wisconsin's policy for metallic mining. The work of Tom Krauskopf and other in projecting the scope of public policy needs is to be commended.

However, the Department of Administration must resolve one important manpower problem. DNR needs to hire consultants to do an effective job of preparing environmental impact statements. The last session of Legislature recognized this problem and specifically expanded the "charge-back" program which will allow DNR to charge back EIS preparation costs to Exxon.

DNR now believes that it appears that it does not have an adequate funding mechanism to pay for consultant services. The reason the Department uses the word "appears" is because DOA has not firmed up its position on the issue of whether "refund of expenditure" or GPR earned (or both) approaches are appropriate mechanisms to pay for consultant services. While DNR has on at least two occasions retained University associated consultants for EIS work and charged the cost thereof back to the applicant, DOA is now uncertain whether the "refund of expenditure" approach is appropriate and/or statutorily permitted.

OUTLINE OF FUTURE POLICY DECISIONS

BY THE

METALLIC MINING COUNCIL AND THE NATURAL RESOURCES BOARD

PRESENTED TO THE

METALLIC MINING COUNCIL

September 25, 1978

By: James G. Darouin
Attorney at Law

and

Peter A. Peshak
Public Intervenor

C-I

I. POLICY ISSUES TO BE ADDRESSED.

Wisconsin does not currently have in place an agreed upon comprehensive regulatory scheme for waste containment areas and tailings ponds associated with mining. Confusion exists as to how various laws can and/or should be applied in an understandable and coordinated fashion — e.g., reclamation laws; solid waste laws; water laws; air laws; drinking water laws, etc.

II. ROLE OF THE METALLIC MINING COUNCIL IN ADDRESSING POLICY QUESTIONS.

- A. On May 21, 1978, s. 15.347(12), Wisconsin Statutes, became effective and reads:

15.347(12) METALLIC MINING COUNCIL. There is created in the department of natural resources a metallic mining council consisting of 9 persons representing a variety and balance of economic, scientific and environmental viewpoints. Members shall be appointed by the secretary of the department for staggered 3-year terms. The council shall advise the department on the implementation of ss. 144.43, 144.44, 144.441, 144.442, 144.445, 144.60 to 144.74 and 144.80 to 144.94 as those statutory sections relate to metallic mining in this state. The council shall serve as an advisory, problem-solving body to work with and advise the department on matters relating to the reclamation of mined land in this state and on methods of and criteria for the location, design, construction and operation and maintenance of sites and facilities for the disposal of mine-related wastes. All rules proposed by the department relating to the subjects specified in this subsection shall be submitted to the council for review and comment prior to the time the rules are proposed in final draft form by the department. The department shall transmit the written comments of all members of the council submitting written comments with the summary of the proposed rules to the appropriate standing committees of the legislature under s. 227.018(2). Written minutes of all meetings of the council shall be prepared by the department and made available to all interested parties upon request.

- B. On the same date, s. 144.43(lm), Wisconsin Statutes, became effective [as part of Chapter 377, Laws of 1977 which revised Wisconsin's solid waste laws and implemented in Wisconsin the federal Resource Conservation and Recovery Act of 1976 (RCRA)] and reads:

144.43(lm) No later than 24 months after the effective date of this act (1977), the department shall adopt, with the advice and comment of the metallic mining council, rules for