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# Governor's Task Force on Mining and Minerals

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## Recommendations for Strengthening Minnesota's Mining and Minerals Industry 1994

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*A Report to the Governor*

May 1994



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## INTRODUCTION

The economy of northeastern Minnesota is heavily dependent on the taconite mining industry. Approximately 6,000 people are directly employed by the taconite industry on the Iron Range of northeastern Minnesota. In addition, about 11,000 people are employed by suppliers and other businesses which provide products and services to the mining industry or its employees.

Altogether, the taconite mining industry and related businesses employ approximately 17,000 people -- nearly 15 percent of the total work force of 117,000 in northeastern Minnesota. The wages paid by the mining industry to its employees are higher than those paid by any other industry in the state.

If the challenges presently facing Minnesota's mining industry are not met, the region will likely witness a massive loss of jobs in the mining industry -- comparable to the first-half of the 1980's -- and the closing of taconite-producing facilities. The vulnerability of the mining industry is perhaps demonstrated by the October, 1993, idling of the National Steel Pellet Company taconite plant in Keewatin, affecting over 700 workers.

The loss of jobs by people employed by the mining industry -- and by businesses which support the mining industry -- would be a devastating setback to northeastern Minnesota. The region is slowly recovering from the social and economic upheaval caused by the permanent layoff of thousands of mine workers in the early 1980's.

The principal problem confronting the mining industry is a pending decline in the steel-making market for taconite ore. The market for taconite is likely to diminish for these reasons:

- minimills -- which produce steel from scrap utilizing electric-arc furnaces, and which produce it more cheaply and faster than firms producing steel from taconite ore -- are capturing a larger portion of the steel-making market each year. Minimills presently produce about 37 percent of the steel in the United States. By the year 2000, minimills are projected to increase their portion of the market to 50 percent. As a result, minimills have reduced the need for iron ore and taconite in the steel-making process. Overall, in 1981, for each ton of finished steel produced in the United States, 1.2 tons of iron ore were used. By 1990, only .97 of a ton was used to produce a ton of finished steel.

- companies presently using taconite ore are adopting more effective methods and means for producing steel -- resulting in the use of less iron ore per ton of steel produced. One such method is known by steel makers as "continuous casting". A measure of the amount of ore used in producing steel is the amount of scrap that is produced in the process. The change is illustrated by a reduction in the amount of scrap produced in making one ton of finished steel -- from 39 percent in 1981 to 11 percent in 1991.
- lighter weight steel is being used for products which previously used heavier weight steel, and the development of new finishing techniques has extended the life of steel products.
- depending on foreign exchange rates and on the distances involved, some producers in foreign countries can mine ore, ship it to the U.S. and sell it at a price which permits steel-producers to make steel at a lower cost than if they purchased and used taconite ore mined in Minnesota.
- manufacturers who previously bought steel to make their products are replacing some of the steel in those products with other substances such as plastic and aluminum.

In the last several years, the mining industry in Minnesota has been making efforts to cope with the decline in the market for taconite by:

- reducing the cost of taconite pellets by reducing production costs, including energy costs, and improving processing techniques.
- improving the quality of the pellet so that it is more valuable to steel producers by adding limestone so the pellet reduces more rapidly in the blast furnace, resulting in coke savings and greater furnace productivity.
- further reducing silica so there is less slag to be removed in the steel-making process. Slag is a product impurity, the removal and disposal of which is accomplished at a cost to the producer.
- identifying and developing more uses for taconite, such as the use of taconite concentrate in removing impurities from coal.
- identifying and developing more uses for the high-quality steel which must be produced from taconite pellets (rather than the lower quality steel which is produced from scrap).

However, these efforts alone are expected to be insufficient to prevent further decline in the mining industry -- and a resulting loss of jobs.

On behalf of its citizens, the state of Minnesota has a stake in the survival of the mining industry. The loss of the jobs now provided by the taconite industry would result in social and economic distress of the scope experienced by the Iron Range throughout the first-half of the 1980's when thousands of jobs were eliminated due to a sharp decline in the market for taconite pellets. Loss of these jobs would also bring social and economic distress to Iron Range communities -- which receive approximately \$80 million each year in taxes paid by the mining industry.

There are steps which the state of Minnesota could take to help preserve and create jobs on the Iron Range and elsewhere in Minnesota. It could play a more active role in creating employment opportunities for all its citizens -- including workers who may ultimately be displaced by a reduction in the market for taconite pellets -- by fostering wider research which could lead to:

- the discovery of less expensive methods for processing taconite.
- the development of new uses for iron ore, including the use of iron ore in new steel-making processes.
- the identification, mining and processing of other minerals throughout the state.
- new processing methods and equipment which would simultaneously be more environmentally-friendly and reduce environmental fees paid by mining companies.

In fact, however, at a time when jobs in the mining industry are in peril, the state of Minnesota has substantially diminished its support of such research. Also, at a time when the mining industry is struggling to reduce its costs to compete with prices charged by foreign producers of iron ore, the state has made changes in the nature and structure of environmental fees imposed on mining companies -- making it more costly to produce taconite pellets.

The Governor believes that the state of Minnesota should take a more active role in helping to preserve jobs in the taconite mining industry and in promoting the creation of jobs through the exploration, mining and processing of other mineral resources.

To identify measures to help the state of Minnesota achieve these goals, the Governor issued an executive order on January 4, 1993 creating a Task Force on Mining and Minerals. The Task Force is made up of 15 members appointed by the Governor. A list of the members is included

in the appendix to this report. The members represent a broad cross section of people from the mining and minerals industry, labor, state and local government, environmental groups, and research and educational institutions. The Commissioner of the Iron Range Resources and Rehabilitation Board (IRRRB) served as the chair of the Task Force.

The original executive order which created the Task Force charged it with making recommendations to the Governor for strengthening the mining and minerals industry of Minnesota by April of 1993. From January 8 through April 2, 1993, the Task Force held seven day-long meetings. The Task Force examined all areas in which state government affects the mining industry, including taxation, royalties, regulations, environmental issues and mineral research, and mineral policies of state agencies, including the University of Minnesota. A report to the Governor was made in May, 1993, and many of the recommendations of the Task Force have impacted executive or legislative action.

The Task Force was reconvened in December, 1993, and held five day-long meetings last winter. At its last meeting on February 11, 1994, the Task Force approved the recommendations which follow.

### **RECOMMENDATIONS OF THE TASK FORCE**

The Task Force understands that mining companies may increase their sales of taconite pellets -- and thereby preserve jobs -- by selling pellets at a lower price. Taconite pellets can only be sold at a lower price if companies are able to reduce their cost of producing pellets. Such cost reductions can be achieved or encouraged by:

- promoting and investing in research which explores ways for mining companies to reduce the cost of pellets and improve their quality.
- reducing costs imposed by government, such as by
  - reducing taxes, including production and sales taxes; and
  - reducing environmental fees or structuring fees to provide incentives for companies to reduce pollutants.
- providing incentives which promote the development of new facilities, facility improvements or process improvements.

The Task Force has also served as a forum for debate over the issue of value-added iron products. Many industry analysts believe that a portion of the anticipated decline in demand for taconite pellets projected to gradually occur over the next decade can be replaced by direct reduced iron (DRI) or iron carbide, should a cost effective means to produce such products from northeastern Minnesota ores be proven.

Electric-arc furnace (EAF) steel producers such as the minimills, which use scrap as their main feed-stock rather than iron ore, need these products to dilute the contaminants commonly found in scrap; some of the large integrated steel companies operate EAF's as well. DRI can also be consumed in the blast furnaces (BF) operated by the integrated producers, where it helps to increase hot metal capacity and/or reduce coke consumption; or used as a coolant in their basic oxygen furnaces, where the steel is actually made from the BF iron. The foundry industry potentially is another sizable market for a DRI product.

Experts agree that demand for scrap substitutes is expected to grow by at least three million tons per year by 2000, and if the material is not supplied domestically, it will surely be imported. However, many observers also believe that if this "window of opportunity" is not entered quickly, that DRI facilities built elsewhere in North America will capture these new markets, making it more difficult, if not impossible, for Minnesota to capitalize on such opportunities at a later date. But some integrated producers which own taconite facilities in northeastern Minnesota view the development of DRI facilities there as aiding their minimill competitors who have already made significant incursions into their traditional markets. DRI proponents counter that this market erosion will continue regardless of whether or not DRI is produced in Minnesota, and the choice is really whether Minnesota companies or someone else will sell the DRI that the market will ultimately demand.

The state can also help develop other jobs on the Iron Range by promoting exploration for and mining of other minerals.

To accomplish the above tasks, the Task Force makes the following 20 recommendations, which fall into five general categories:

- State and local taxes
- Environmental permits and fees and energy consumption
- Minerals research
- Federal action
- Mining and minerals task force

## STATE AND LOCAL TAXES

### **Taconite Economic Development Fund**

Mining companies pay the taconite production tax -- \$2.054 for each ton of taconite they produce. Of this amount, 15.4 cents is currently set aside in the Taconite Economic Development Fund. This fund was created by the legislature in 1992 to provide funds to help the mining companies invest in new equipment and facilities and to conduct research on new mining technology. One reason for establishing the fund is that banks have been reluctant to lend mining companies funds for such improvements. Parent companies of the Iron Range mining companies have also been reluctant or unable to provide funds to the mining companies for such improvements.

The fund is held by the Iron Range Resources and Rehabilitation Board. Expenditures from the fund must be approved by a joint committee made up of equal numbers of production and maintenance employees and managerial personnel. The fund has resulted in getting production and maintenance employees and managerial personnel to work closely together to set and achieve common goals, thus helping to reduce labor-management friction.

Each taconite producer has a separate account in the Taconite Economic Development Fund which is funded by the taxes it pays. The funds in the account are provided by setting aside 15.4 cents of the total \$2.054 of taconite production tax paid by the company for each ton of taconite it produces.

The Task Force recommends that the state increase the amount of taconite production tax deposited in the Taconite Economic Development Fund from 15.4 cents to 25.4 cents per ton for pellets produced in 1994 and each year thereafter.

### **Taconite Escalator**

The taconite production tax is indexed to increase with inflation. The present index is based on the gross national product implicit price deflator. This index measures changes in the prices of fuel, housing, clothing, food and other related items, and changes in the prices of these items often have little or no relationship to changes in the prices of steel products.

The index of the taconite tax rate to this measure was frozen by the state legislature for production in 1986, 1987, 1988, 1990, 1992, and 1993. It was not frozen for production in 1989 and 1991.



The Task Force recommends that the state extend the freeze on the indexing of the taconite tax rate for 1994 production. In addition, that an interim committee be established -- comprised of representatives of the Iron Mining Association, United Steel-workers of America, Range Association of Municipalities and Schools, the commissioner of the Iron Range Resources and Rehabilitation Board, Department of Revenue Minerals Tax Office and the chairman of the Iron Range Delegation -- to determine an index which is acceptable to taxpayers and tax recipients; and to report its recommendations to the 1995 legislature by November 30, 1994.

### **Sales Tax on Pollution Control Equipment**

The cost of producing taconite pellets can be reduced by reducing the environmental fees paid by mining companies. This must be accomplished in two stages:

- first, by reducing environmental fees or structuring fees to provide incentives for companies to reduce pollutants; and
- second, by encouraging companies to reduce the amount of pollutants they produce through the installation of pollution control and prevention equipment.

To encourage the purchase and installation of such equipment, the Task Force recommends that the state exempt the purchase of pollution control and prevention equipment -- including the footings and foundations constructed for the equipment -- from the state sales tax.

### **Sales Tax on Construction of New Mineral Processing Facilities**

Mining companies can sell more taconite pellets by increasing the value of the pellet to steel producers, such as by enhancing the quality of the pellet by adding limestone or by increasing the iron content of the pellet. New facilities may also be needed for the production of new products from taconite, including use in new steel-making processes.

If Minnesota is to develop nonferrous mineral resources, new mines or processing facilities will also be required.

To encourage the development of such new facilities, the Task Force recommends that the state exempt from the state sales tax materials and supplies used -- regardless of whether used by the owner or a contractor, subcontractor, or builder -- in constructing:

- any new capital project in excess of \$8 million directly related to production, cost or quality at an existing taconite plant; or

- a value-added iron products plant -- either incorporated into an existing plant or a new plant -- producing iron upgraded to minimum of 75% Fe by dry weight, or any alloy of iron such as ferrosilicon or ferrotitanium or steel with a total metallic content of a minimum of 90%; or
- any new mine and/or mineral processing plant for any mineral subject to the Net Proceeds Tax\*; or
- any new coal gasification plant built in conjunction with one of the above three types of facilities.

In order to qualify for the exemption, the construction must be commenced and funds expended between July 1, 1994 and December 31, 2002.

\* The Net Proceeds Tax is detailed in Minnesota Statutes §298.015 and applies to all mineral and energy resources mined or extracted in Minnesota **except** for sand, silica sand, gravel, building stone, crushed rock, limestone, granite, dimension stone, horticultural peat, clay soil, iron ore, and taconite concentrates.

### **Advance Credit Against Future Production or Net Proceeds Taxes**

Another obstacle to the development of value-added iron facilities or mines or processing facilities for other minerals is access to capital. To reduce the amount of capital required to construct a new mineral processing facility as well as to offer an investment incentive, the Task Force recommends that an advance credit against production or net proceeds taxes be established for investments of \$40 million or more made prior to December 31, 2002 to:

- construct a value-added taconite plant (producing taconite direct reduced iron upgraded to a minimum of 75% Fe); or
- convert all or a portion of an existing or idled taconite plant to a value-added taconite plant; or
- construct any new mine or mineral processing plant for any minerals subject to the net proceeds tax.

It's proposed that this advance credit be for 10% of the total investment, paid in periodic claims to a maximum of \$6 million. The money for the credit is proposed to come from the Northeast Minnesota Economic Protection Trust Fund (NEPF), commonly known as the 2002 Fund. The

credit is to be repaid to the NEPF through annual production or net proceeds taxes, utilizing 100% of the claimant's annual production tax paid on the value-added portion or 100% of its net proceeds tax payments.

The credit shall be repaid in 15 years or less, following the last year any advance credit is paid. If the amount of the advance credit is not repaid in the 15 years or less, any balance due must be repaid at the expiration of the 15 years in a single balloon payment.

If the credit exceeds the \$6 million maximum, it shall remain available as a credit against future production or net proceeds taxes, to be claimed after the amount of the advance credit has been repaid to the NEPF.

The maximum amount of money to be paid from the NEPF for all credits claimed shall not exceed \$30 million. The balance of the NEPF on June 30, 1994 is projected to be approximately \$58 million.

## **ENVIRONMENTAL PERMITS AND FEES AND ENERGY CONSUMPTION**

The legislature appropriates funds to the Minnesota Pollution Control Agency (MPCA) to pay for its costs in enforcing state air quality standards. At the same time, the legislature requires that these funds be paid back to the state general fund through a fee imposed on each ton of pollutant emitted. Each year the fee is determined by dividing the total amount of dollars appropriated to the MPCA into the total number of tons of pollutants emitted in the last reported year.

In addition, beginning this year the federal clean air act will also be administered by the MPCA. The fees required to cover the costs of enforcing the federal standards will be determined according to the same basic formula.

The formula does not provide an incentive for reducing air pollution because if the number of tons of pollutants emitted is reduced, the amount of the fee must be increased in order to provide adequate funds to enforce the standards. In addition, there are discussions on both the federal and state levels to levy a special tax on carbon or toxic emissions. As currently structured, such proposals would have a detrimental effect upon Minnesota's mining industry. Therefore, the Task Force recommends that the state attempt to:

- structure environmental fees, if permitted under federal law, to provide incentives for businesses to reduce pollutants.

- provide incentives for businesses to use fossil fuels more efficiently or to use more environmentally acceptable alternatives rather than energy taxes such as a carbon tax or BTU tax. Such incentives ultimately cost the state far less than the loss of businesses to other states or nations due to state energy policy which compromises the ability of businesses to compete in a global market. Rather, Minnesota should develop a comprehensive energy policy which includes both incentives and criteria for the most acceptable energy sources.
- encourage a progressive and multi-faceted program to collect information on the emission of air toxics and regulate those emissions in a way that relies as much as possible on existing state and federal regulations rather than new legislation requiring health-based standards for all toxic air emissions. This approach should allow the state to take full advantage of federal efforts and to gather scientific data that will allow Minnesota to make sound decisions regarding the regulation of air toxics in a way that will protect public health and the environment.

### **"Energy Bonds" Program**

Programs which help to reduce the consumption of energy by industry benefit our environment. Properly designed, such programs can also help make industry more competitive by reducing production costs. It is within this context that the Department of Public Service (DPS) and the Iron Range Resources and Rehabilitation Board (IRRRB), in conjunction with investor-owned utilities, have designed a financial incentive program to help finance energy conservation projects by large power users. The program is commonly referred to as the DPS/IRRRB "Energy Bonds" program.

Such a program will require legislation that grants DPS the authority to issue industrial revenue bonds in support of energy conservation projects by large power users statewide. DPS will authorize the use of Conservation Improvement Program (CIP) dollars to enhance bond issues for CIP eligible industries. For non-CIP eligible projects, DPS would rely exclusively on entities such as the Department of Trade & Economic Development (DTED) or other appropriate sources.

For projects located in the IRRRB service area, IRRRB has agreed in principle to provide incentive financing, jointly with DPS or other sources. These incentives may take the form of grants, interest reserve accounts, letters of credit and interest rate buy-downs selected in accordance with the financing needs of particular projects.

In order to qualify for the program, the project will need to meet cost effectiveness standards for efficiency measures similar to those used for the CIP program currently administered by DPS. The projected range of loan amount needed per project is \$5 to \$15 million.

The northeastern Minnesota taconite industry is targeted for assistance under this program. The taconite industry is an energy-intensive industry under extreme competitive pressures. These pressures are exacerbated by capital access problems which complicate the financing of plant and process improvements required to reduce production costs and increase competitiveness. The "Energy Bonds" program will provide one option for addressing this concern.

The Task Force supports enabling legislation to establish the DPS/IRRRB "Energy Bonds" Program.

## **MINERALS RESEARCH**

### **Increased Funding for Bedrock Geologic Mapping**

Geologists have known for many years that Minnesota has high potential for development of nonferrous metals (e.g. gold, platinum, copper, titanium, and others). Modern mineral exploration is information based; exploration dollars from the private sector will be risked only in areas where geological data are sufficient for rational development of target concepts and exploration strategies. In much of Minnesota, the rocks likely to host mineral deposits are covered by a blanket of glacial drift. This ubiquitous blanket makes it difficult to map the bedrock geology, and by extension, to address the probability for finding mineral deposits in the concealed rocks. Fortunately, aeromagnetic mapping and related investigations funded by the Legislative Commission on Minnesota Resources (LCMR) have provided regional data of exceptional quality to guide geologic interpretations. Building on the strong foundation of existing aeromagnetic maps with advanced interpretation, geologic test drilling and geologic interpretation can lead to production of high quality geologic maps in areas where present geologic maps are generalized and speculative. New geologic maps can be expected to stimulate exploration activity in the area, while providing the fundamental geologic data required for informed planning and decision making on other land use issues.

Specific benefits of new geologic maps include:

- Attracting private sector mineral exploration activity by providing the regional geologic basis for mineral potential appraisal and the geologic framework for defining and developing exploration target concepts.

- Developing, as a significant by-product, the stratigraphic data on glacial deposits required to understand and manage groundwater resources.
- Supporting the local economy through employment of Minnesota well drilling companies and the purchase of local goods and services during field operations.

Minnesota is fortunate to have very high quality aeromagnetic mapping and data covering the entire state. This aeromagnetic survey was funded by the LCMR in increments from 1979 to 1991. The map on page 13 shows the areas that were covered during the twelve-year period. The aeromagnetics form an excellent foundation for understanding bedrock geology and mineral potential, especially in areas where glacial material covers the bedrock.

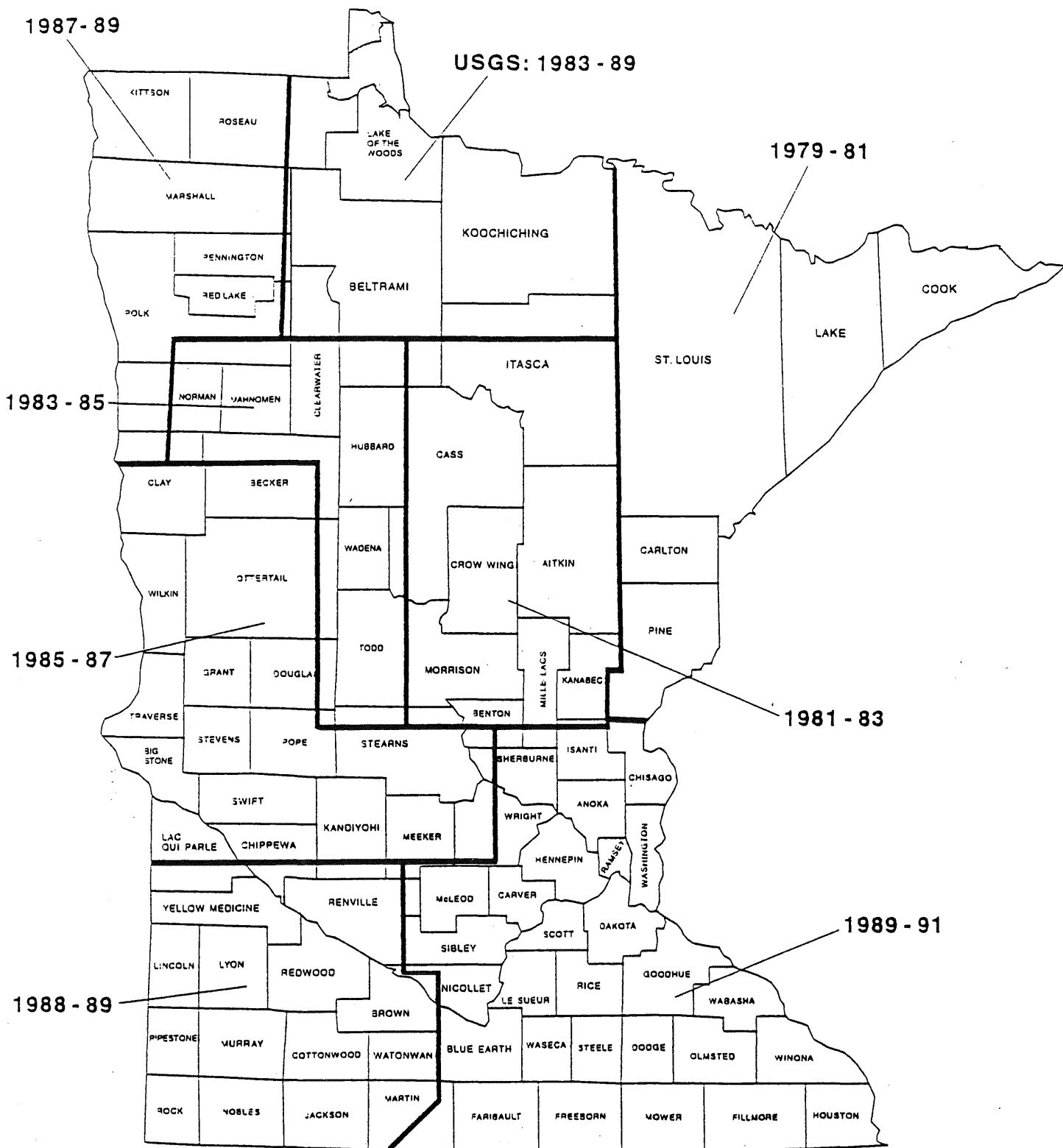
The Minnesota Geological Survey (MGS) has begun a program to use the aeromagnetic data to interpret the bedrock geology of Minnesota. Using computer processing of the aeromagnetics along with select bedrock drilling to confirm interpretations, MGS has made excellent progress in understanding the geologic framework of the state. The map on page 14 shows the areas of mapping using this approach, with year of completion.

Future work will build on the excellent work of the past. Work should continue to complete the geologic framework mapping that the MGS has begun. Along with this work, the following mineral potential work should be done:

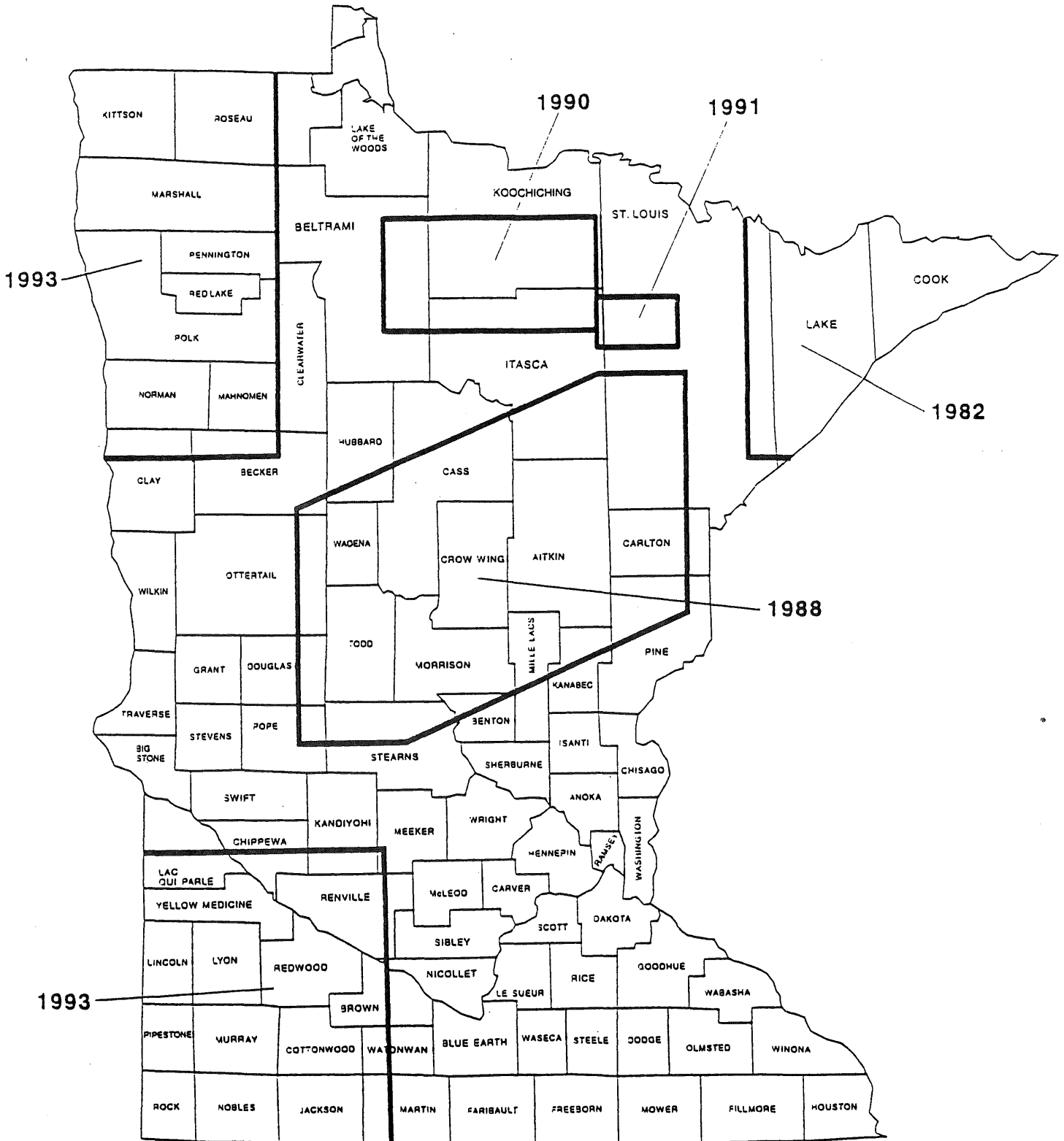
- GIS map production to make future interpretations of geology and map production more timely.
- Detailed aeromagnetic interpretations in select areas to further evaluate mineral potential.
- More detailed refinement of the geology and geochemistry in select areas.
- Include drilling techniques where undisturbed samples of the glacial overburden can be evaluated for glacial geology, geochemical evaluation of regional mineral potential, and ground water information.

The Task Force recommends that the state help to increase the knowledge of Minnesota's geology and mineral potential through geologic mapping that builds on existing aeromagnetic surveys. The Task Force recommends funding of \$400,000 per biennium for three bienniums for geologic framework mapping and \$500,000 per biennium to complete the more detailed mineral potential and geologic study in select areas; or \$900,000 per biennium for three bienniums and then \$500,000 per biennium thereafter. This program should be administered by the Minerals Coordinating Committee.

# MGS Aeromagnetic Mapping



# Recent MGS Geologic Map Completions





## **Department of Natural Resources (DNR) Capital Budget Request**

An 8,000 square foot, unheated, steel frame, metal clad addition to the Hibbing Drill Core Library is proposed by the DNR. The Drill Core Library protects drill core samples, which by M.S. §1031 must be submitted to the DNR by mineral exploration companies for future use in understanding Minnesota's geology and mineral potential. It currently contains over 1.7 million feet of exploration drill core, which represents an investment of more than \$50 million. Exploration companies, the MGS and research geologists spend several hundred person days per year sampling and evaluating these drill cores and associated data files. The Library is currently operating at its capacity. Without an expansion, the DNR's ability to protect the physical integrity of the drill samples and carry out mineral management is jeopardized. During the past ten years, an average of 21,360 feet of drill core has been added annually. The proposed addition would accommodate about 650,000 feet of additional drill core.

The relocation of the DNR's Reclamation Environmental Research Facility is also proposed. Reclamation studies and demonstrations which help the DNR determine how to dispose of and reclaim mine wastes through permits for mining as required by the Mineland Reclamation Act (M.S. §93.44 - §93.50) are conducted at this facility. The DNR, MPCA, U.S. Bureau of Mines (USBM) and Environmental Protection Agency (EPA) all use data developed from these reclamation demonstrations as a basis for state and national permitting decisions and regulatory development programs. The current facility, located near Babbitt, must be relocated to allow the final reclamation of the AMAX exploration area by the lessee. Relocating the facility will also allow the DNR to consolidate its research facilities and more efficiently manage its research program.

The Task force supports the \$650,000 DNR request to expand the Hibbing Drill Core Library and build a new Reclamation Environmental Research Facility at Hibbing.

### **IRRRB/NRRI Capital Budget Initiative**

The acquisition of the Coleraine Minerals Research Laboratory (CMRL) by the University of Minnesota (UM) is an important element in the rebirth of metallic minerals research in the state. The research efforts at CMRL are an integral part of the legislative mandate to the Natural Resources Research Institute (NRRI) to support and enhance the Minnesota minerals industry, and a major portion of the work currently being done at the CMRL supports the long-term viability of northeastern Minnesota's taconite industry.

The laboratory and pilot plant equipment at the CMRL that were originally sold to the University for \$50,000 has a replacement value exceeding \$1 million, and the cost of upgrading the facility, which will not be borne by the University, is much less than to construct an equivalent new facility. Despite the age of the facility, the buildings proposed to be retained are structurally sound, and if the improvements recommended by an engineering/feasibility study of the complex are completed as planned, no major capital improvements are anticipated for several years. All potential environmental hazards on the site have been corrected in accordance with MPCA, EPA and UM requirements.

\$400,000 is requested from the state to renovate the CMRL, to be matched by \$600,000 from the federal Economic Development Administration. This combined financial risk is relatively small compared to the potentially great economic benefit to the state if research conducted at the facility helps to extend the life of the taconite industry or encourage the development of new minerals.

The Task Force supports the \$400,000 IRRRB/NRRI initiative for renovation of the Coleraine Minerals Research Laboratory.

### **Private Metallic Minerals Research Laboratories**

The Task Force supports the retention of private industry metallic minerals research laboratories in northeastern Minnesota. Such facilities, equipment and personnel are valuable resources which enhance the region's ability and capacity to perform critical metallic minerals research. The sponsorship of mineral research by the state should support and encourage cooperation with private research laboratories.

### **Environmental Research**

Environmentally sound development of the state's mineral resources and continued operations of the state's mineral industries requires data on the prediction and mitigation of potential environmental impacts. Public-private cooperation in this research area is necessary to provide for sustainable development of the state's mineral resources.

Continued environmental research will result in a stronger and more competitive minerals industry in Minnesota, and it will allow the state and industry, in a collaborative effort, to maintain a leadership role in providing environmental protection for Minnesota's citizens and its natural resources.

Environmental regulations, such as the Wetland Conservation Act and Mineland Reclamation Act, as well as federal laws, require mining operators to mitigate, reclaim and/or replace disturbed landscapes. Often it is not known how to best comply with requirements of law or regulations. Frequently field and laboratory studies must be conducted to determine how to effectively comply with regulatory requirements. It is through a cooperative research program that requires participation of affected parties that these studies can be most successfully implemented.

The Cooperative Environmental Research Program initiated by the 1993 legislature is modeled on earlier cooperative programs that have successfully advanced the understanding of the state, public and industry. Three cooperative environmental studies currently being undertaken by the DNR under this legislative appropriation include prairie restoration of sand and gravel mining areas, construction of wetlands on areas previously disturbed by mining, and implementation of financial assurance requirements for the iron industry.

Three projects are currently being proposed to the LCMR. These projects address waste rock and tailings impacts on water resources, competing land uses in Clay County, and acid mine drainage impacts.

Future studies can consider the mitigation of in-pit disposal of taconite mining wastes, underwater disposal of sulfide mining wastes, control and mitigation of sulfur release from tailings, and the use of composted municipal waste as a soil enhancement for taconite tailings.

The Task force supports the concept of increasing the knowledge of environmental effects of mineral extraction and use in Minnesota. Cooperative environmental research will serve to facilitate industry growth and competitiveness and to protect the integrity of landscapes and ecosystems. The Task Force recommends funding for LCMR proposals to:

- characterize iron mining wastes.
- develop a plan to address aggregate resource supply and prairie protection for the beach ridge area of the former Glacial Lake Agassiz.
- examine the effects of reclaiming nonferrous tailings basins by converting them to wetlands.

The Task Force also recommends that research be continued to examine the effects of reclaiming ferrous tailings basins by converting them to wetlands, and further, that the IRRRB and the DNR explore with St. Louis County and the taconite companies the possibility of developing a

municipal compost supply for revegetating coarse taconite and other uses. Studies to determine natural pre-mining levels of metallics and contaminants in various water bodies that might be affected by future mining are also recommended.

### **Ferrous Minerals Research**

Continued state sponsorship of research is needed to protect the state's interest in its \$2 billion per year iron ore industry. The Task Force supports an additional \$1.6 million allocation per biennium for ferrous minerals research to restore funding to traditional levels and to accommodate inevitable new studies to facilitate improvements in existing processes and new initiatives such as DRI and system economics. This program should be administered by the Minerals Coordinating Committee.

### **A Meeting of Key Copper-Nickel Companies**

The Task Force recommends that parties having an economic interest or technical expertise in the development of Minnesota's copper-nickel deposits should form a working group to determine the obstacles to the development of this large resource and report its findings and recommendations to this Task Force or the Governor.

## **FEDERAL ACTION**

### **Federal Air Emission Fees as a Match to Federal 105 Grants**

The 1990 Clean Air Act Amendments (CAAA) require states to implement an air emission fee system to fund the requirements of the operating permit program contained in the 1990 CAAA. In October, 1993, EPA's Office of General Counsel issued a final legal opinion which states that air emission fees cannot be used to match federal 105 Grant funds. Minnesota annually receives approximately \$2.1 million from the federal 105 Grants, which pays for a significant portion of the state's Air Quality program.

Further, in September, 1993, EPA transmitted guidance to state and local air programs that explains which programs can be funded by air emission fees and which can be funded by 105 Grant money. This guidance indicates that the majority of the historical air construction permits program, compliance determination and enforcement programs, and new source performance standard programs are to be funded by air emission fees and not by the 105 Grant. Historically, the state has funded these programs out of state general fund money which was used to match the federal 105 Grant funds. Thus, if Minnesota cannot use air emission fees to match the 105

Grant, then the MPCA will have to find additional revenue from other sources or ask the legislature for a state appropriation to match the federal grant.

In committing to the minimum air emission fees required under the 1990 CAAA, the MPCA assumed that the 105 Grant funding would remain at levels similar to past levels. Recent EPA policy advisories seem to support the MPCA's concern that the federal government may be attempting to phase out the 105 Grant money to states. Under such a scenario, the presumptive minimum established by the 1990 CAAA for funding new air programs is not sufficient to pay for the states' historical air programs without states having to contribute significant amounts of money to the air program above what is being collected in air emission fees.

The Task Force supports the same or an increased level of funding for the federal 105 Grants to the states for the air program. It also supports the use of air emission fees spent on historical air programs as the state match for 105 Grant money.

### **Revisions to the Mining Law of 1872**

A congressional conference committee will meet sometime in the spring of 1994 to consider legislation amending the Mining Law of 1872. On the table are the Senate proposal, S. 775, which is being supported by the mining industry, and the House proposal, H.R. 322, which is being supported by environmental interests.

Minnesota has been an active participant in the development of federal EPA regulations for the disposal of mine wastes, both individually and as a member of the Western Governor's Association Task Force on Mining. Minnesota has also been an active trust agent in the leasing of state-owned lands for exploration and development. Because the bills being considered by Congress address many of the issues important to the long-term viability of mining, it is appropriate for the State of Minnesota to present its perspective during the congressional conference over these bills.

Therefore, the following recommendations are offered for potential revisions to the Mining Law of 1872 in two general categories:

- Mineral Exploration and Development
- Environmental Considerations: Reclamation

These recommendations follow several consistent themes: avoiding duplication of federal, state and local regulatory efforts; retaining local authority over site-specific factors rather than

pursuing a "one size fits all" philosophy by federal regulators; and, generally, following an "if it isn't broken, don't fix it" approach to federal regulation and oversight.

## **Mineral Exploration and Development**

- **Coverage**

Proposals for changes in exploration and development policy in both the House and Senate apply specifically to lands open to mineral location (claim staking) under the Mining Law of 1872. The law was designed to encourage exploration of federal lands by individual initiative and then "tie the prospectors to the land" by allowing them to stake mining claims, and by granting them patents to those lands if they demonstrated diligence and paid a fee of \$5.00 per acre. Minnesota, Michigan and Wisconsin were explicitly exempted from this act in 1873.

Federal lands in Minnesota, comprising about 8% of the state's total land area, are covered by provisions of the Minerals Leasing Act, which grants authority to issue hardrock mineral leases on public domain lands in national forest areas to the United States Bureau of Land Management (USBLM), United States Department of the Interior.

The current federal leasing system provides an equitable return for minerals removed from federal lands in Minnesota and should be retained.

The Task Force recommends that Congress should not apply changes in exploration and development of minerals to federal lands in Minnesota. Minnesota is excluded from the Mining Law of 1872 and is properly covered by the Mineral Leasing Act.

- **Royalty**

The House of Representatives has adopted an 8% "net smelter return" royalty, stating "the Committee intends that the Secretary rely on the definition for gross income from mining found in section 613 of the Internal Revenue Code to further refine the definition and the application of the royalty." The Senate adopted a 2% "mine mouth value" royalty which allows the deduction of a greater portion of mining costs prior to computing the royalty.

Minnesota uses a competitive bid leasing system. Royalties are equal to the sum of the base rate (which ranges from 3.5% to 20%, varying with the value of concentrate recovered) plus the bid rate, multiplied by the value of metallic minerals and associated products recovered in the mill concentrate minus base smelter treatment charges and net smelter losses. Net royalties in

Minnesota fall between the rates proposed for federal lands open to mineral location by the House and the Senate.

The Task Force recommends that legislation should establish a reasonable royalty to be paid in return for minerals removed from federal lands.

- **Classification**

The USBLM in Washington, D.C. currently has leasing authority over "uncommon varieties." The local federal surface management (e.g. the local management of the Superior National Forest) has authority to issue permits for "common variety" minerals. The distinction between common and uncommon varieties is often vague and has historically been litigious. H.R. 322 would eliminate the distinction subject to valid existing rights.

The Task Force supports the elimination of this unnecessary and confusing distinction, as well as granting authority to local surface managers of federal lands to grant sales contracts for sand, stone, gravel, pumicite, cinders, clay and petrified wood subject to supervision by the USBLM. Local managers may best act on contract requests in a timely manner utilizing specialized knowledge of local conditions in coordination with state and local units of government.

The Task Force recommends that the distinction between "common" and "uncommon" mineral varieties should be eliminated (as proposed by H.R. 322) so that all sand, stone, gravel, pumicite, cinders, clay and petrified wood are subject to sale by contract. Local federal units (e.g. national forests) should be authorized to manage sales of these materials.

### **Environmental Considerations: Reclamation**

- **Implementation**

Minnesota's record in regulating mine waste disposal is one of fair, strong and effective management of environmental impacts. Minnesota was one of the first non-coal states to adopt mineland reclamation regulations and permits. Over the past ten to fifteen years, other states have also developed programs that, in most instances, provide equivalent regulatory coverage for mining.

The House reclamation proposal sets specific nationwide environmental requirements to be enforced by federal agencies, essentially duplicating programs that already exist in most states. The Senate proposal utilizes existing state programs to enforce existing state and federal regulations.

Legislation on this issue should be more comprehensive than the Senate proposal and less prescriptive than the House proposal. The most effective approach is to identify critical components that state programs must contain to be granted primacy over federal lands. These components should be addressed by individual states in coordination with federal authorities to reflect the site-specific nature of minerals being mined, climate, geography and state administration requirements within the context of federal policies and goals. This approach avoids the duplication of programs implicit in H.R. 322 but allows federal oversight and intervention in cases where state programs are unable to meet federal standards.

The Task Force recommends that federal policy should employ state programs which meet federal performance criteria, under memoranda of agreement between state and federal agencies, to meet federal established performance criteria, subject to federal audit. Establishing federal reclamation and financial assurance programs only in the absence of acceptable state programs avoids unnecessary duplication of agencies, regulatory provisions and financial assurance requirements.

- **Suitability Review**

The House proposes comprehensive federal suitability reviews to be integrated with land use plans to determine whether to allow mining or to require special restrictions on mining and establishes general criteria to guide Interior and Agriculture in making these reviews. The Senate has taken the industry position that suitability reviews are unnecessary because of existing federal authority to remove lands from mining eligibility and because of the environmental impact study (EIS) process required for permitting.

The Task Force supports a cooperative suitability review process that is conducted using specific criteria rather than general guidelines. Furthermore, state and local interests and expertise must be represented in the review process as well as the interests and expertise of diverse groups affected by land use decisions.

The Task Force recommends that the federal government establish explicit, specific and reasonable criteria to assess federal lands during "suitability for mining" review; and that it also establish an advisory committee of state regulatory agencies, environmental and industry interest groups to assist in identification of unsuitable lands.



- **Reclamation Fund**

The House proposal would establish the Abandoned Locatable Minerals Mined Land Reclamation Fund: to receive all royalties, claim fees, claim maintenance fees, permit fees, and penalties raised by mining federal "mineral location" lands. It also creates an abandoned mine inventory (database) of lands eligible for federal expenditures covering reclamation of lands and waters. The Senate proposal would establish the Abandoned Hardrock Mine Reclamation Program, making grants to state programs for reclamation. Two-thirds of receipts are deposited in the U.S. Treasury, one-third to state treasuries where a claim or patent is located. Reclamation funds allocated may not exceed mineral-generated U.S. Treasury deposits.

The reclamation of mined land is an issue best addressed at the state level using site-specific criteria. Funds collected for abandoned mined land reclamation should be allocated to the reclamation programs of the states of their origin. The federal role should be that of oversight and compliance rather than primary regulator.

The Task Force recommends that legislation should direct Abandoned Locatable Minerals Mined Land Reclamation Funds to the states where federal receipts from locatable minerals originate to facilitate local implementation of reclamation projects.

- **Citizen Suits**

The section on citizen suits in H.R. 322 utilizes citizen suits to enforce compliance with the measure by litigation. Interests opposed to this measure have asserted that unaffected parties may tie-up the processes and induce unfair expenses by filing frivolous claims.

Provisions requiring citizens to follow specific administrative processes prior to filing suit, as well as requiring documentation of their claims, will greatly reduce the incidence of frivolous suits while ensuring the public adequate enforcement of the law.

The Task Force recommends that citizen suits and requests for inspection should be used to assure compliance, provided that citizens are required to follow administrative processes prior to filing suit and that written information is provided on suspected violations.

### **Continued Metallic Minerals Research at the USBM Twin Cities Research Center**

In response to pressures to reduce the federal budget, the Bureau's annual budget is projected to decrease from \$170 million to \$150 million with corresponding reductions in staff and facilities. This has resulted in the Bureau undergoing a self-examination process designed to

"reinvent the USBM." As part of this effort, the Bureau is re-examining its priorities, developing programs to address national problems, improving programs by means of project redirection, cost-sharing, or cancellation, and conducting internal and external peer reviews.

Three program areas have been identified for emphasis: environment, health and safety and mineral information, with plans to establish five "Centers of Excellence" in addition to retaining the Bureau's headquarters in Washington, D.C. Currently, the USBM Twin Cities Research Center is doing work in the areas of environmental remediation, pollution prevention and control, and health and safety. In addition, the Twin Cities Research Center has made valuable contributions to research impacting both Minnesota's existing taconite industry as well as efforts to develop new minerals in the state.

While the Task Force recognizes the Bureau's need to reorganize its programs and facilities, Minnesota's mineral stakeholders hope that consolidation undertaken as a part of restructuring efforts will not compromise the Bureau's ability or capacity to support metallic minerals research efforts in Minnesota through its Twin Cities Research Center.

The Task Force supports the Bureau's ability and capacity to conduct and support research on taconite and other metallic minerals at and through the USBM Twin Cities Research Center.

## **MINING AND MINERALS TASK FORCE**

### **Extend the Life of the Task Force**

Finally, the State of Minnesota should continue to take advantage of the expertise and energy which has been assembled on the Task Force and the momentum which has been generated by extending the life of the Task Force. Each fall, the Governor should convene a Governor's Task Force on Mining and Minerals to assess the status of the Minnesota mining and minerals industry and make recommendations for action which will strengthen the existing industry and promote the development of new minerals.

## Members of the Governor's Task Force on Mining and Minerals

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**Jim Gustafson**, (Chair) Commissioner, Iron Range Resources and Rehabilitation Board  
Duluth

**Carl D'Aquila**, (Vice-Chair) business owner and former state legislator  
Hibbing

**Bill Brice**, Director, Minerals Division, Department of Natural Resources  
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**Dave Dingeman**, business owner and former Reserve Mining Company manager  
Silver Bay

**Jan Green**, environmentalist and former member of the Minnesota Pollution Control Agency's citizens' board  
Town of Duluth

**Tom Hayes**, Director, Public Affairs, Cliffs Mining Services Company; former Director, Hibbing Chamber of Commerce, former President, Northeastern Minnesota Development Association  
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**Jim Hoolihan**, Mayor, City of Grand Rapids, and business owner  
Grand Rapids

**Mac Karpen**, Executive Director, Range Association of Municipalities and Schools  
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**Jerrold Peterson**, Professor of Economics, University of Minnesota-Duluth  
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**Elizabeth Prebich**, St. Louis County Commissioner  
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**Gene Roach**, Assistant Director, District 33, United Steelworkers of America  
Duluth

**Bob Rootes**, steelworker and spokesperson for Iron Range steelworkers' unions  
Chisholm

**Doug Schrader**, President, Iron Mining Association of Minnesota  
Duluth

**Bill Ulland**, Vice President, Minnesota Exploration Association  
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**Chuck Williams**, Commissioner, Minnesota Pollution Control Agency  
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**David Meineke**, President, Meriden Engineering, a division of Sargent Land Co., non-voting member  
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**John James**, Attorney at Law, Fredrikson & Byron, P.A., former Commissioner of the Governor's Blue Ribbon Commission on Mining, 1990;  
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