

INTRODUCTION

Laws addressing mining of metallic minerals in the United States address two general concerns: the first is ownership of the minerals or the right to exploit them; the second is the condition under which mining is conducted so that the environment can be protected from pollution and other adverse impacts. While this case study focuses on pollution prevention laws, it is necessary to understand the ownership of metallic minerals.

Metallic minerals in the United States are generally the property of the owner of the surface of the land. The surface owner may exploit the minerals by conducting mining, or may sell the mineral estate to another or lease the right to mine. Mineral interests can be severed from surface interests, so that the owner of the surface may be different from the owner of the minerals. In such instances, the owner of the mineral interests has the right to extract the minerals in accordance with the terms of any deed or conveyance of such minerals, provided that such extraction is also consistent with environmental laws.

Metal mining on state-owned lands and privately owned lands is subject to lease, sale, or exploitation by the owner of the mineral interests. Metal mining on federally-owned lands is governed by the 1872 Mining Law, which establishes an open access regime for the location of minerals by prospectors, the staking of claims with the exclusive right to mine such claims, and a procedure for purchasing title to the surface land and underlying minerals outright (“patenting”) at a fixed price of \$2.50 per acre for placer claims or \$5 per acre for lode claims. The holder of an unpatented mining claim has the exclusive authority to extract the metallic minerals from the claim; the miner need not seek a patent. No leases or royalty payments apply.

Both the state and federal governments regulate the environmental effects of mining. Pollution control and prevention laws administered by the Environmental Protection Agency are often administered by states under delegated programs. Reclamation laws are frequently state laws. Environmental conditions for mining on federal lands are determined under surface management regulations of the relevant land management agency (usually the Bureau of Land Management or the U.S. Forest Service), as well as under applicable state and federal water pollution laws, reclamation laws, air pollution laws, and the like. Environmental regulation of mining on state-owned and private lands is primarily under state environmental laws, which may

include delegated federal environmental programs, such as the Clean Water Act.

The following questions and answers address the content of the relevant laws that may affect pollution prevention in the context of hard rock mining. While federal laws and policies are discussed in full, some state examples are used to illustrate some of the approaches that different states take in their own regulation of the industry. Summarizing all of the various state laws is beyond the scope of this summary.

I. ENVIRONMENTAL IMPACT ASSESSMENT

Exploration and Mining

1./2.a. IS AN ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REQUIRED FOR EXPLORATION, INCLUDING ANY INITIAL PROSPECTING ACTIVITIES, OR MINING ACTIVITIES?

The National Environmental Policy Act (NEPA) requires an environmental impact statement (“EIS”) to be prepared if (1) there is “a proposal,” (2) for major federal action, (3) significantly affecting the quality of the human environment.¹ The law is intended to promote informed decisionmaking, but does not itself require selection of environmentally desirable approaches by the federal agency. NEPA applies to major federal actions, which include actions by private companies that require a permit or formal approval from a federal agency to proceed. Thus NEPA procedures may come into play if a mining or exploration operation is on federal land or if such an operation on private land requires a federal permit. An environmental impact statement is prepared if the action is one that may significantly affect the quality of the environment; if the action may be below this threshold, an environmental assessment (EA) is prepared. The EA may either conclude that an EIS is needed or may support a Finding of No Significant Impact (FONSI). Federal agencies may also adopt regulations identifying certain routine, low-impact activities which may be categorically excluded (CE) from preparation of an EIS. Such CE activities typically involve those that do not involve the disturbance of the land surface or use of mechanized equipment.

The two major federal agencies governing mining on federally-owned public lands, the Forest Service and Bureau of Land Management (BLM), have specific requirements as to when an EIS may

¹ 42 U.S.C. § 4332.

be required. When mining operations take place entirely on state-owned or privately-owned lands, an EIS may still be required if the operation needs a federal permit (such as a permit to fill wetlands, or a discharge permit for water pollutants in the few states that do not have federal approval to operate their own discharge permit programs).

If a mining or exploration activity occurs entirely on non-federal (state or private) lands, and no federal permit is required for the kind of operation contemplated, then NEPA does not apply and no EA or EIS is prepared. However, a number of states where metal mining occurs – including California, Montana, and Washington – have their own “little-NEPA” laws that require preparation of environmental impact assessments in connection with private activities that need state permits.

- ***Federal Lands***

Most mining allowed on federal lands takes place on land managed by either the Forest Service or the Bureau of Land Management. These agencies are under different departments of the federal government (the Department of Agriculture, and the Department of the Interior, respectively), and operate with differing regulations. Under Forest Service regulations,² any person proposing to conduct mineral extraction operations must file either a plan of operations or a notice of intent to operate. The plan of operations is required whenever the operation will disturb surface resources; the notice must be filed in lieu of the plan of operations if the operation might cause disturbance to the surface resources.

The Forest Service then determines within 15 days whether the operation will likely disturb the ground surface. If so, the operator must submit a plan of operations. The processing of notices of intent is **not** a major federal action requiring preparation of an environmental assessment under NEPA. The requirement to prepare a plan of operations does not apply to (i) operations which will be limited to the use of vehicles on existing public roads used and maintained for National Forest purposes, (ii) individuals desiring to search for and occasionally remove small mineral samples or specimens, (iii) prospecting and sampling which will not cause significant surface resource disturbance and will not involve removal of more than a reasonable amount of mineral deposit for analysis and study, (iv) marking and monumenting a mining claim, and (v) subsurface operations which will not

² 36 CFR Part 228.

cause significant surface resource disturbance.

The Forest Service must prepare an **environmental assessment** (EA) in connection with review of a plan of operations, unless the Forest Service determines from the outset that an EIS will be prepared. An EA is a concise document that provides sufficient evidence and analysis for deciding whether an EIS is necessary. Approval of a plan of operations for a mine that would cause “considerable surface disturbance over 700 acres in a 10,0000 acres roadless area always requires an EIS under Forest Service procedures. An EIS is required in other circumstances if the proposed activity will significantly affect the environment.

Categorical exclusions from preparing an EIS include short term mineral investigations and incidental support activities that may require cross-country travel by vehicles and equipments, construction of less than one mile of low standard road, and/or use and minor repair of existing roads. An exclusion otherwise applicable does not apply if there are extraordinary circumstances, including steep slopes or highly erosive soils, threatened and endangered species or their critical habitat, wetlands, and wilderness areas.

The determination as to whether prospecting, exploration or mining activities on Bureau of Land Management (BLM) lands require an EA or EIS depends on which category of operations the proposed activities fall within. BLM regulations establish three categories of mining operations based on the impact of the operation: casual use, notice operations, and plan of operations.³

"Casual use" operations are those involving activities ordinarily resulting in only negligible disturbance of the land and resources. For example, activities that do not involve the use of mechanized earth moving equipment or explosives or do not involve the use of motorized vehicles in areas designated as closed to off-road vehicles are generally considered "casual use." Proposed regulations being considered by BLM would exclude from the casual use category operations involving the use of truck mounted drilling equipment and chemicals, as well as operations involving full or part time residence on the land.⁴ Casual use operations require no notification to BLM or approval by BLM, and no EA or EIS is required.

³ 43 CFR Part 3809.

⁴ 64 Fed. Reg. 6422 (Feb. 9, 1999)(proposed rules).

"Notice" operations are those that will cause a cumulative surface disturbance of five acres or less during any calendar year. (Proposed regulations would define "notice" operations as those that consist of unreclaimed surface disturbance of 5 acres or less and specifically require that operations not be segmented to avoid the filing of a plan of operations.) Although notice of such operations must be filed 15 days before commencing operations, no approval by the BLM of the notice is required and thus no EA or EIS is required.

Activities that exceed the five acre disturbance level or will take place in certain designated conservation areas must submit a plan of operations for approval prior to commencing operations. (Proposed regulations would also require operations involving the leaching of any kind or storage, addition, or direct use of chemicals in milling, processing, beneficiation, or concentrating activities to file a plan of operations.) BLM officials will conduct an environmental assessment in connection with review of the plan of operations and an EIS may be required depending on the significance of the impact. An EIS is always required in connection with the approval of any mining operation where the area to be mined over the life of the mining plan, including any area of disturbance, is 640 acres or larger in size.

Activities that are categorically excluded from NEPA review under BLM regulations include: determination and designation of logical mining units; (2) approval of minor modifications to or minor variances from activities in an approved exploration plan; (3) approval of minor modifications to or minor variances from activities described in an approved underground or surface mine plan for leasable minerals; and (4) digging of exploratory trenches for mineral materials, except in riparian areas. Again, categorical exclusions may not apply if there are circumstances that create significant environmental impacts.

- ***State and Private Land***

NEPA does not generally apply to activities on state or private lands unless a federal permit is required. The issuance of a federal permit will generally trigger the requirement for an EIS. In the mining sector such a permit may be a federal permit authorizing the operator to fill wetlands; or a water pollution discharge permit (in those few states that have not received federal authorization to issue their own discharge permits under the federal Clean Water Act). But mining activities on state or private lands that do not need federal permits are not subject to federal NEPA requirements.

Several states have their own environmental impact assessment laws. California, for example, requires environmental impact reports (EIRs) for projects with significant environmental impacts. Preparation of these reports and their review are conducted by local governmental authorities and may be applicable to exploration or mining operations with significant environmental impacts. Only a few states with significant metal mining activity have their own environmental impact assessment laws – these include California, Montana, and Washington.

1./2.b. IF SO, PLEASE DESCRIBE THE PROCESS FOR PREPARATION OF THE EIA AND THE REVIEW BY A GOVERNMENTAL AGENCY. PLEASE IDENTIFY ANY SPECIFIC DIFFERENCES OR SPECIAL REQUIREMENTS APPLICABLE TO SMALL BUSINESSES.

Under NEPA the federal land management or permitting agency is responsible for conducting the environmental impact assessment process.⁵ The decision to go forward with a full environmental impact statement may be preceded by an initial "environmental assessment" which is used to determine the environmental significance of an action. The environmental assessment must include a discussion of the need for the proposed activity, alternatives and environmental impacts of the proposed action and alternatives. Agencies may allow the project proponent to prepare the initial environmental assessment, although the agency must make its own evaluation of the environmental issues and take responsibility for the assessment as the agency's own document. More often, the agency prepares an assessment based on information submitted by the operator and its own information. If the environmental assessment reveals that a project will significantly affect the quality of the human environment, then a full environmental impact statement is required. If not, then the responsible agency must prepare a "finding of no significant impact" (FONSI) which briefly explains why the project will not significantly affect the environment. If the proposed action is similar to one which normally requires an EIS, then the FONSI is to be made available for public review for 30 days before the agency makes its final determination as to whether to prepare an EIS.

If an EIS is required, the responsible agency must notify the public that it intends to prepare an EIS and invite public participation in "scoping" by publishing a "notice of intent" in the Federal Register and in other publicly accessible places, such as local newspapers. Scoping usually takes

⁵ The procedures summarized in this section follow the NEPA regulations adopted by the Council on Environmental Quality, 40 CFR Parts 1500-1508, which establish the parameters with which specific NEPA procedures adopted by the federal agencies must conform.

place in a meeting or series of meetings involving the public, the operator and responsible government agencies; such meetings are usually held in one or more locations near the project site and/or cities near the project site. Scoping is used to define the parameters for the environmental analysis and the significant issues to be analyzed in depth in the EIS, and to identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review.

The EIS must include a discussion of all feasible *alternatives* to the proposed project, including a full analysis of the option of not proceeding with any action at all. The discussion must address all significant environmental impacts as well as potential *mitigation* measures.

The responsible agency prepares a draft EIS. The public is given notice of the draft EIS, and is given a period of no shorter than 45 days to prepare and submit comments. A public hearing is often held to receive some of these comments. The responsible agency then prepares the final EIS, which must include responses to all of the comments received. The final document is circulated to all agencies, organizations and individuals who submitted comments, and notice of the final EIS is published in the Federal Register. The document is filed with the Environmental Protection Agency and the Council on Environmental Quality. NEPA regulations impose a 30-day waiting period between the filing of the final EIS and the agency's decision on the project. This ensures that the agency has sufficient opportunity to consider the EIS before making its decision and allows time for additional comments.

There is no requirement under NEPA for evaluation and monitoring of the project after the EIS is complete, although the agency's record of decision may adopt such requirements (which then are intended to be incorporated in permits, plans of operations, or other enforceable documents). Judicial review of the EIS (or EA if no EIS is prepared) is limited to questions of procedure. As long as the responsible agency has complied with the procedure requirements of the statute – including consideration of alternatives and identification of impacts – then the courts will not evaluate the merits of the agency's substantive decision on the project.

State procedures for preparing EISs (in those states with environmental impact assessment laws) are basically similar to the NEPA process.

There are no specific differences or special requirements applicable to small businesses. The government, not the project proponent, is responsible for preparing the EIS; although the government

may require the proponent to provide funding for the analysis.

1./2.c. PLEASE IDENTIFY ANY OPPORTUNITIES FOR PUBLIC REVIEW AND PUBLIC PARTICIPATION IN COMMENTING ON THE EIA BEFORE THE FINAL DECISION TO ALLOW EXPLORATION AND DESCRIBE THE PROCESS FOR THE GOVERNMENT TO CONSIDER AND INCORPORATE ANY PUBLIC COMMENTS. IS THERE ANY OPPORTUNITY FOR THE PUBLIC TO CHALLENGE THE DECISION APPROVING THE EIA.

See generally the response to question 1.b for public participation in the EIA process – which is required by CEQ regulations as well as additional Forest Service and BLM procedural regulations implementing NEPA. (For example, BLM regulations provide that, if the agency determines, as a result of an environmental assessment, that there is substantial public interest in a proposed plan of operations, the operator is to be notified that an additional 60 day period is required to consider public comments on the environmental assessment.)

Apart from the NEPA requirements, the Forest Service and BLM also have regulations on public access to information concerning mining activities. All data submitted to the Forest Service are available for examination by the public at the Office of the District Ranger. Information designated by the operator as confidential information concerning trade secrets or privileged commercial or financial information will not be available for public examination, and may include the known or planned location of exploration pits, drill holes, and excavations pertaining to location and entry. Information submitted to the BLM by the operator and identified as containing trade secrets or confidential or privilege commercial or financial information will not be available for public information. Other submitted information is available for examination by the public at the office of the authorized officer in accordance with the provisions of the Freedom of Information Act.

1./2.d. IS THERE AN AUTOMATIC APPROVAL PROCESS FOR THE EIA? IF SO, PLEASE DESCRIBE.

There is no automatic approval process for an EA or EIS under any federal or state law. The federal agency responsible for preparing the document must determine its adequacy and must in the final EIS respond to all substantive comments on the draft – including those submitted by other federal, state, and local agencies, and members of the public. The Environmental Protection Agency also reviews the EIS and may, if it believes the document inadequately addresses environmental

concerns, elevate consideration of the document to the Council on Environmental Quality – a relatively rare occurrence. The real external check on the document is the fact that if an agency relies on an EA or EIS for its decision, the adequacy of the document may be challenged in an appropriate court action brought by any affected person.

1./2.e. WHAT TYPE OF POLLUTION PREVENTION MEASURES, IF ANY, MUST BE IDENTIFIED IN THE EIA IN ORDER FOR IT TO BE APPROVED? WHAT TYPES OF INCENTIVES, IF ANY, EXIST FOR THE INCLUSION OF POLLUTION PREVENTION MEASURES IN THE EIA?

NEPA itself does not regulate the identification of any particular pollution prevention measures. However, in order to be complete, the EIS would need to include consideration of such measures in the alternatives analysis and in the discussion of mitigation. The federal Environmental Protection Agency (EPA) has interpreted NEPA and the Pollution Prevention Act⁶ to provide sufficient legal basis for incorporating pollution prevention into the design and operative alternatives, and mitigation measures described in an EIS.

EPA defines pollution prevention to include resource reduction and other practices that reduce or eliminate the creation of pollutants. Pollution prevention further does not involve the transfer of pollution from one media to another. Generally, EPA considers pollution prevention techniques to include: Equipment or technology modifications; process or procedure modifications; reformulation or redesign of products; substitution of raw materials; and improvements in housekeeping, maintenance, training or inventory control.⁷ EPA also considers recycling, procurement of recycled products and energy recovery as appropriate mechanisms to reduce pollution and minimize waste.

In the context of mining operations, EPA has identified several broad categories of actions to achieve pollution prevention as well as specific actions to address certain problems. These broad categories include:

⁶ 42 U.S.C. §§ 13101-13109.

⁷ Technical Document: Background for NEPA Reviewers: Non-Coal Mining Operations (USEPA 1994).

- (i) Product substitution, recycling and other actions in the context of vehicle and equipment operation and maintenance;
- (ii) Facility-wide and process-specific reviews to identify opportunities for pollution prevention, including facility-wide pollution prevention plans.
- (iii) Reducing the environmental footprint, for example by minimizing the size of the site and leaving as much undisturbed areas in the site.
- (iv) Taking specific actions through design and operational measures to reduce environmental releases and damages during the active life and afterwards.

EPA has also identified specific mitigation measures for impacts on surface water, ground water, air, soils, and ecosystems from extraction, beneficiation, and mineral process operations. EPA emphasizes the importance of understanding baseline conditions at the site to enable proper design and planning measures. EPA has also identified measures to address the specific problems of acid drainage (AMD), releases from cyanide leaching operations, and sedimentation/erosion.⁸ EPA identifies two approaches to deal with AMD: avoiding mining deposits with high acid mine drainage potential (identified through up-front testing); and implementing mitigation measures to limit potential been impacts. EPA notes that it may be difficult to completely avoid mining in areas with the potential for AMD because of the widespread distribution of sulfide minerals. EPA's approach to cyanide releases focuses on improved design and operation measures, including a focus on preventing liner failures. To address long term problems from cyanide releases, EPA suggests that reviewers examine reliance on detoxification and reclamation measures, but also suggests operators develop contingency plans for future problems that may occur. For sedimentation problems, EPA advises a range of controls that can be used in combination at the site including diversion, techniques, stabilization practices, and structural controls. In some cases, EPA recommends capping sources of erosion as the most cost effective measures to control sediment discharges and other sources of pollution.⁹

⁸ Id. at 4-1 - 4-5.

⁹ EPA has also prepared a guidance document identifying specific pollution prevention opportunities for the metal mining industry in controlling and mitigating mining waste and using innovative waste management practices. EPA Office of Compliance, "Sector Notebook Project,

As part of the environmental assessment process, agencies can identify measures to lessen the environmental impacts of a project. Based on these mitigation measures, the agency would then be in position to issue a special kind of "finding of no significant impact" known as a "mitigated FONSI." This approach bases a decision not to prepare a full EIS on the conclusion that particular mitigation measures (including pollution prevention) will reduce the project's likely environmental impact below the threshold of significance. An EIS would not be required in this instance. Thus, the opportunity to avoid having an EIS prepared in some instances could serve as an incentive to including pollution prevention measures. Most often, an EIS is required for full-scale mining on federal lands. Mitigation and pollution prevention measures must be identified in the EIS, but are enforceable only if made a condition of federal approval of the plan of operations or related permit.

1./2.g. Do government officials have the authority to establish emission limits in connection with the EIA process which are not otherwise provided for by law?

Emission or discharge limits are established under such laws as the Clean Water Act, and NEPA does not itself provide discretion to alter limits otherwise prescribed by law. But the EIA process can be used to inform the exercise of whatever discretion agencies have under their regulatory laws (such as endangered species, wildlife habitat, clean water). For example, BLM has authority to prevent "unnecessary or undue degradation" of the public lands. The EIA process could help BLM give content to this general statutory standard on a site-specific basis. Similarly, the EIA process could result in better understanding of baseline water quality and hence induce EPA to impose water-quality based limits as well as technology based limits on a specific mine under the Clean Water Act.

1./2.h. HOW IS COMPLIANCE WITH MONITORING AND MITIGATION REQUIREMENTS (OR OTHER EIA CONDITIONS) MONITORED AND ENFORCED? PLEASE IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN MONITORING OR ENFORCEMENT, INCLUDING THE AUTHORITY OF THIRD PARTY BENEFICIARIES OF THE EIA TO PARTICIPATE IN ANY LEGAL ACTION?

The EIA itself does not make any conditions or mitigation requirements enforceable. The

Profile of the Metal Mining Industry" (September 1995).

"record of decision" prepared by the responsible agency is to summarize any enforcement or monitoring programs adopted for mitigation. However, these are enforceable only if included in enforceable documents such as approvals of plans of operations or permit conditions. There is no opportunity for citizen participation in any legal action based solely on a failure to carry out an action identified in the EIS.

1.i/2.i. UNDER WHAT CIRCUMSTANCES OR FOR WHAT ACTIVITIES IS AN EIA NOT REQUIRED IN THE EXPLORATION OR MINING PHASE.

See response to question 1.a. above. In general, activities not involving disturbance of the surface, or "casual use" operations, do not trigger preparation of an EA or EIS.

1./2.j. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE EIA? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

There is no requirement for a bond or other type of financial assurance to be provided in connection with the EA or EIS. However, the EA or EIS will usually discuss the need for bonding and the activities to be bonded. Bonding and other financial assurance requirements relate to permit additions or approval of plans for mining activities, as described below under 4.j. Financial assurance instruments do not assure performance in accordance with the EA or EIS, but rather with the reclamation obligations or other obligations outlined in the plan of operations.

2.k. UNDER WHAT CIRCUMSTANCES OR CONDITIONS IS CONSTRUCTION PERMITTED TO PROCEED PRIOR TO APPROVAL OF THE EIA?

With respect to BLM lands, pending final approval of a plan of operations, the authorized officer is to approve any operations that may be necessary for the timely compliance with requirements of federal and state laws, subject to any terms and conditions that may be needed to prevent unnecessary or undue degradation. In general, this may allow activities not involving disturbance of the land surface or water. The Forest Service also has authority to approve these types of activities prior to approval of the plan of operations. However, no discharges to the waters of the United States are allowed in advance of obtaining the appropriate discharge permits. In addition,

state laws may prohibit various activities prior to obtaining the necessary permits or approvals.

II. PLANNING

Exploration and Mining Plans

- 3.a./4.a. IS AN EXPLORATION/MINING PLAN REQUIRED TO BE SUBMITTED IN CONNECTION WITH OPERATIONS?**
- 3.b./4.b. IF SO, WHEN MUST THE PLAN BE SUBMITTED AND TO WHOM MUST IT BE SUBMITTED?**
- 3.c./4.c. IS GOVERNMENTAL APPROVAL OF THE PLAN REQUIRED?**
- 3.d./4.d. WHAT ARE THE REQUIRED ELEMENTS OF THE PLAN? IS THERE A MECHANISM FOR MODIFYING THE PLAN?**
- 3.e./4.e. IS THE PLAN REQUIRED TO IDENTIFY OR PREDICT THE EXISTENCE OF ANY TOXIC SUBSTANCES OR ACID-FORMING MATERIALS AT THE EXPLORATION SITE?**
- 3.f./4.f. IS THE PLAN REQUIRED TO DISCLOSE THE USE OF ANY TOXIC SUBSTANCES IN CONNECTION WITH THE OPERATION?**
- 4.g. IS THE PLAN REQUIRED TO DESCRIBE THE METHODS THAT WILL BE USED TO CONTROL AND DISPOSE OF TAILINGS AND THE LOCATIONS OF SUCH DISPOSAL?**
- 3.g./4.h. WHAT TYPE OF POLLUTION PREVENTION MEASURES, IF ANY, ARE REQUIRED IN ORDER FOR THE PLAN TO BE APPROVED?**
- 3.h./4.i. HOW IS COMPLIANCE WITH THE PLAN MONITORED AND ENFORCED? PLEASE IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN THE APPROVAL PROCESS AS WELL AS IN MONITORING AND ENFORCEMENT?**

3.i./4.j. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE PLAN? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

3.j./4.k. UNDER WHAT CIRCUMSTANCES IS A PLAN NOT REQUIRED?

These questions are discussed together for greater clarity and to avoid repetition.

As discussed in Section I. on Environmental Impact Assessment, the determination as to whether a plan is required to be submitted in connection with exploration or mining operations depends on a number of factors, including who owns or manages the land and to what extent the environment will be affected by the proposed activities.

In general, on federal lands, exploration not involving disturbance of the land surface does not require submittal of a plan. Nor do exploration and mining operations conducted under “notice” provisions (e.g. those under 5 acres on BLM lands). On private or state lands, state law varies. Some states exempt from plan requirements mining operations that will disturb less than 5 acres; others require plans for all mining operations.

- ***Forest Service***

A "plan of operations" is required for exploration or mining activities on land managed by the U.S. Forest service when it is determined that such operations will likely cause significant disturbance of surface resources. (See response to questions 1.a for a discussion of the procedure for making such determination as well as a description of the activities exempt from requirement to submit a plan of operations). If a "plan of operations" is required to be submitted to the Forest Service, the plan must be submitted to the appropriate District Ranger prior to the commencement of operation for approval. Timing of approval of a plan of operations is heavily dependent upon the EIA process. Most smaller operations are approved in a short period with an EA/FONSI; larger mines take much longer to complete the full EIS process in connection with the plan of operations.

The plan of operation must include: the name and legal mailing address of the operators, a map sufficient to locate the operations and proposed roads and access routes and the approximate

location and size of the areas where surface resources will be disturbed, information on the proposed type of operations and means of transportation and measures to be taken to meet the requirements for environmental protection. If the development of a plan for an entire operation is not possible at the time of preparation of the plan, the operator is required to file an initial plan setting forth its proposed operation to the degree reasonably foreseeable at that time and thereafter file a supplemental plan or plan whenever significant surface disturbance not covered by the initial plan is proposed. At any time during operations under an approved plan of operations the authorized Forest Service officer may ask the operator to furnish a proposed modification of the plan detailing the means of minimizing unforeseen significant disturbance of surface resources. Operations may continue in accordance with the approved plan until a modified plan is approved, unless the operations are unnecessarily or unreasonably causing irreparable injury, loss, or damage to surface resources. In this case the operator is to be advised of those measures needed to avoid such damage.

Although the Forest Service regulations do not specifically require the operator in the plan of operations to disclose the use of any toxic substances, such disclosure may be necessary in order to comply with the broader requirement to describe the measures that will be taken to comply with the Forest Service requirements for environmental protection. Description of the methods to be used to control and dispose of tailings and the locations of such disposal may be required for the same reason. These requirements provide for all operations to be conducted as to "minimize adverse environmental impacts on National Forest surface resources."¹⁰ More specifically, the operator is required to comply with applicable federal and state air quality, water quality and solid waste standards. Such disclosures may also be necessary in connection with complying with the requirements for protecting fisheries and wildlife habitat. These require operators -- in addition to complying with water quality and solid waste disposal standards -- to take all practicable measures "to maintain and protect" fisheries and wildlife habitat which may be affected by operations.¹¹

Similarly, Forest Service regulations do not specifically require pollution prevention measures as part of the plan of operations, but such measures may be necessary in order to comply with the Forest Service requirements for environmental protection. Again, such measures may be necessary to comply with the requirement to take all practical measures "to maintain and protect" fisheries and

¹⁰ 36 CFR 228.8.

¹¹ 36 CFR 228.8(e).

wildlife habitat. Other requirements that encourage the adoption of pollution prevention measures include the requirement that all garbage, refuse or waste be removed from National Forest Service lands or disposed of or treated so as to minimize, as far as is practicable its impact of the environment and forest service resources. Similarly, all tailings, deleterious materials or substances and other wastes are also to be dealt so as to minimize the environmental impact.¹² Moreover, the Forest Service also requires all roads to be constructed so as "to minimize, or where practicable, eliminate damage to soil, water, and other resources."¹³ Furthermore, reclamation requirements are normally to be met at the earliest practicable time during operations. These include taking such measures as will prevent or control onsite and off-site damage to the environment and forest surface resources including, isolation, removal or control of toxic materials.

Forest Service officers are required to inspect mining operations to confirm compliance with the plan of operations and other requirements. Violation of any term or condition of an approved operating plan is punishable by a fine of not more than \$500 or up to six months imprisonment or both. In the case of noncompliance which is unnecessarily or unreasonably causing injury, loss or damage to the surface resources, notice is to be given to the operator specifying the action necessary to come into compliance the time within which such action is to be completed, generally not to exceed 30 days.

Forest Service regulations do not provide for public participation in monitoring and enforcement. See response to question 1.b for description of public participation in the approval process.

Operators on Forest Service lands may be required to furnish a bond to assure compliance with reclamation requirements before approval of a plan of operations.¹⁴ Alternatively, the operator can supply cash or negotiable U.S. securities with a market value in the amount of the bond, or a blanket bond covering nationwide or statewide operations. The amount of the bond will be determined taking into consideration the "estimated cost of stabilizing, rehabilitating, and reclaiming the area of operations." If the plan of operations is modified, the amount of the bond must be

¹² 36 CFR 228.8(c).

¹³ 36 CFR 228.8(f).

¹⁴ 36 CFR 228.13.

adjusted accordingly, if necessary. When reclamation has been completed, the authorized officer will notify the operator that performance under the bond is complete. The amount of the bond may be reduced proportionately in the event a portion of reclamation has been completed.

In some states the Forest Service has agreements with state agencies to accept the same bonding requirement as the state, with the state and Forest Service as co-payees.

- ***BLM***

If required, a plan of operations must be filed in the appropriate District Office of the Bureau of Land Management prior to commencing operations.¹⁵ The BLM will review the plan of operations to determine whether the plan meets the requirement of preventing unnecessary or undue degradation and provides for reasonable reclamation. Generally within 30 days the BLM will notify the operator as to whether the plan is complete or notify the operator of specific deficiencies. Timing for final approval of a plan of operations is heavily dependent upon the completion of the Environment Impact Statement, where one is required. This can be a lengthy process, sometimes measured in years.

The plan must include information on the operator, a map of the proposed area of surface disturbance and access routes, information on the proposed types of operations, measures to be taken to prevent unnecessary or undue degradation and measures to reclaim disturbed areas, and measures to be taken during extended periods of non-operation to maintaining the area in a safe and clean manner and to reclaim the land to avoid erosion and other adverse impacts.¹⁶ Where the operator does not have the necessary technical resources to developed measures to avoid degradation and to perform reclamation, the authorized officer will assist the operator in developing these measures.

Discussion draft regulations for the plan of operation are much more specific in the type of information required to be submitted. In terms of the description of operations, a detailed description of the proposed "exploration or mining and mineral processing activity" is required including locations of drill sites, location and engineering design and operating plans for mine facilities and processing facilities, plans for structures or buildings, water management plans, waste characterization and

¹⁵ 43 CFR 3809.1-4.

¹⁶ 43 CFR 3809.1-5.

handling plans, quality assurance plans, schedule of operations from start through closure, spill contingency plans, locations of access routes and construction plans for all access roads and power or utility services.

The proposed BLM regulations also require the submission of a reclamation plan, tied to specific standards discussed below, with a schedule, that includes hole plugging procedures, regrading and reshaping, mine pit reclamation, riparian restoration, topsoil handling, revegetation plans, plans for the isolation and control of toxic or deleterious materials, post-closure management plans, and facilities removal. The plan of operations must also include a plan for monitoring the effect of operations. BLM may also require the applicant to provide baseline environmental information to analyze potential environmental impacts as required by NEPA, which could include information needed to characterize the geology, hydrology, soils, vegetation, wildlife, air quality, in and around the project or to characterize the potential for acid drainage to be produced.

Current BLM regulations allow the operator at any time during operations at his or her own initiative, or at the request of the authorized officer, to modify the plan. Significant modifications must be approved in the same manner as the initial plan.

Existing regulations do not specifically require the plan to identify or predict the existence of any toxic substances or acid-forming materials at the exploration site, although such information could be requested in connection with the requirement to provide information on the measures to be taken to prevent unnecessary or undue degradation. BLM has adopted a policy that requires submittal of such information.¹⁷ Proposed regulations would provide BLM with explicit authority to request information needed to characterize the potential for acid drainage.

BLM requires operations that use cyanide or other similar leaching techniques which use potentially toxic or lethal concentrations in solution as the leachate medium to submit engineering designs, maps and cross-sections of the leaching facilities in connection with the plan of operations. Ground water and soil mechanics information is also required to be provided, as well as a detailed description of quality control and quality assurance programs that will be used during construction of the cyanide facilities. The engineering designs of all cyanide facilities, exclusive of the recovery and refining facility, are subject to review and approval by BLM prior to construction, startup and

¹⁷ BLM Acid Drainage Policy, BLM Instruction Memorandum No. 96-79 (April 2, 1996).

introduction of cyanide. BLM may require an operator to provide independent verification by a registered, professional engineer that the facilities are constructed according to the approved design plan and specifications.¹⁸

BLM also requires the applicant to identify measures to be taken to assure that all tailings, dumps, deleterious materials or substances and other waste are disposed of so as to prevent unnecessary or undue degradation and comply with applicable federal and state laws.

Existing regulations do not specifically require any pollution prevention measures be included in the plan in order for it to be approved, although consideration such measures could be required in connection with the requirement to prevent unnecessary or undue degradation and provide for reasonable reclamation. As noted above, in the discussion draft regulations, operators must describe in the plan the measures that they will take to comply with specific performance standards related to pollution prevention. Absent such measures, it would be impossible for the BLM to review the plan to determine if it would meet the required standards.

BLM officials may periodically inspect mining operations to verify compliance with the plan of operations. BLM policy requires cyanide operations to be inspected on a quarterly basis. In addition, all inactive cyanide operations which are not reclaimed (*i.e.*, seasonal or temporarily shut down operations) are inspected by BLM personnel to ensure that cyanide is not inadvertently lost to the environment through inadequate maintenance or failure of facilities at the site. Under the discussion draft regulations, BLM is authorized to inspection operations "at any time." The proposed regulations also provide that BLM is required to inspect operations four times a year if cyanide is used or if there is a significant potential for acid drainage. Current regulations do not specify what type of monitoring measures must be included in the plan of operations, although operators are subject to monitoring and reporting requirements of applicable federal and state air and water quality laws. Under the discussion draft regulations, the plan must include specific monitoring measures which will demonstrate compliance with the approved plan of operations and other federal or state environmental laws and regulations, provide early detection of potential problems, and supply information that will assist in directing corrective actions as necessary.

¹⁸ BLM Cyanide Management Policy for Activities Authorized under 43 CFR 3802/3809, BLM Instruction Memorandum no. 90-566 (Aug. 6, 1990).

In the event of non-compliance with the plan, the operator will be served with a notice of non-compliance which identifies the violations and the action necessary to correct the violation and the time, not to exceed 30 days, within which corrective action is to start. Operators with a record of non-compliance must file plans of operations for activities that would only require notice, and are subject to more stringent financial guarantee requirements. They may be enjoined from continuing such operations and be liable for damages for such acts. Operators are not subject to any civil penalties, but criminal penalties, including fines or imprisonment, or both, may be imposed for "knowing and willful" violations. Individuals can be fined up to \$100,000 and be imprisoned up to 12 months; organizations can be subject to a fine of up to \$200,000.

Under the proposed BLM regulations, BLM would be expressly empowered to issue various types of enforcement orders in addition to a notice of noncompliance, including immediate temporary suspension, a cessation order, and a suspension or a revocation order. The proposed regulations also would provide for a civil penalty of up to \$5,000.

There are no specific procedures for public participation in the approval process of the plan of operations, apart from the public comments considered in connection with the environmental assessment or EIS, which is reviewed concurrently with the plan of operation. Similarly, there are no specific opportunities provided in current BLM regulations for public participation in monitoring and enforcement. (see discussion above on review of agency actions and citizen suits under air pollution and water pollution statutes). Under the proposed regulations, BLM may allow a citizen to accompany the inspector. However, citizens would not have the right to trigger an inspection on belief that a violation may be taking place.

BLM does not require a performance bond in connection with casual use or notice operations. Operators on BLM lands who conduct operations under an approved plan of operations may be required in the discretion of the authorized officer, to furnish a performance bond. A bond may not be required, for instance, where operations would cause only minimal disturbance to the land. The amount of the bond will be determined taking into consideration "the estimated cost of reasonable stabilization and reclamation of areas disturbed." BLM policy requires all operators with a record of noncompliance to submit a reclamation bond for 100 percent of the cost of reclamation for all activities in excess of casual use that are conducted on public lands managed by BLM. In lieu of the bond, the operator can provide evidence of an existing bond under state law with similar coverage, cash, negotiable U.S. securities with a market value of not less than the amount of the bond, or a

blanket bond covering statewide or nationwide operations. BLM policy further requires all cyanide operations conducted on public lands under an approved plan of operations to furnish a bond for the full cost of reclamation, including heap and solution detoxification and neutralization to State and Federal standards.¹⁹

Under BLM regulations which were published in February 1997 but remanded by a federal court to BLM in May 1998 for further revision, financial guarantees would have been required for activities conducted under a notice or plan of operations in the amount of 100 percent of the amount that would be needed to pay for reclamation by a third-party contractor using equipment from an off-site location.²⁰ In the case of calculating the amount of the financial guarantee for notice operations, each acre of disturbance would have required not less than \$1,000. In calculating the amount for plan of operations activities, in no case would the financial guarantee be less than \$2,000 per acre or fraction thereof. Calculation of the amount would be at the operator's expense and must be certified by a third-party professional engineer registered to practice in the State in which the operations are proposed. The regulations also would have required operators who compiled a record of noncompliance to post financial guarantees for all existing disturbance for which they are responsible. In newly proposed regulations BLM has proposed full-cost bonding of both notice and plan of operations mines sufficient to cover completion of reclamation by a third party.²¹ In some states the BLM has agreements with state agencies to accept the same bonding requirement as the state, with the state and BLM as co-payees. The proposed regulations would formalize this process.

- *State Plans*

A variety of plans are required by the states with significant mining operations. Submittal of plans is mostly in connection with the states' reclamation permit requirements. State requirements include requirements for operating plans, as well as the closure plans and contingency plans discussed in responses to questions 5 and 6 below. **The states also have bonding requirements, summarized in response to question 8.E below.**

¹⁹ Id.

²⁰ 62 Fed. Reg. 9093 (Feb. 28, 1997); *Northwest Mining Assoc. v. Babbitt*, No. 97-1013 (D.D.C. May 13, 1998).

²¹ 64 Fed. Reg. 6463 (Feb. 9, 1999).

Closure Plans

5.a.-5.d. IS A PLAN FOR THE CLOSURE OF TAILINGS DISPOSAL AREAS REQUIRED TO BE SUBMITTED IN CONNECTION WITH A METAL MINING OPERATION?

- ***BLM***

BLM regulations do not specifically require mining operations on BLM lands to submit closure plans; rather the plan of operations outlines a general approach to closure. Formal review and approval of a “closure” plan does not occur until close to the time to closure and it is usually treated as a minor amplification of the original plan of operations (and thus not subjected to formal public processes or environmental impact assessment). Measures to address pollution prevention after active mining operations have ceased may be required to be set forth in the plan of operations as part of the reclamation measures. Required reclamation measures include measures to control water runoff, as well and measures to isolate, remove and control toxic materials. As a general matter, operators are required "at the earliest feasible time" to reclaim the area disturbed by taking reasonable measures "to prevent or control" on-site and off-site damage of federal lands". In addition, "all tailings, dumps, deleterious materials or substances, and other waste produced by the operations are to be disposed of so as to prevent unnecessary or undue degradation and in accordance with applicable federal and state laws." Proposed regulations specifically would require the reclamation plan to include plans for the isolation and control of toxic or deleterious materials as well as post-closure management plans.

- ***Forest Service***

Forest service regulations do not specifically require mining operations to submit closure plans; rather, as with BLM lands, the plan of operations generally must contain a conceptual approach to closure. Measures to address pollution prevention after active mining operations have ceased may be required to be set forth in the plan of operations as part of the reclamation measures. Required reclamation measures include control of water runoff, as well as isolation, removal and control of toxic materials. In general measures to prevent or control onsite or offsite damage to the environment and forest surface resources are required.

- ***State***

The states with significant mining operations require submittal and approval of closure plans. These plans may be required in connection with other permits or plans.

Arizona, for example requires a proposed closure plan to be submitted in connection with the

application for an aquifer protection permit. Any person who discharges or owns or operators a faculty that discharges is required to obtain an APP. Among the mining facilities that are categorized as discharging facilities are surface impoundments; solid waste disposal; injection wells; tailing piles and ponds; leaching operations; wastewater treatment facilities; addition of pollutants to underground caves or mines; and point source discharges to navigable waters.

The closure plan is submitted to the Arizona Department of Environmental Quality at the time the aquifer protection permit is submitted. New facilities are required to submit a an application no later than 180 days before the date on which the facility is expected to begin discharging. Existing facilities are subject to a schedule based on the degree of risk to public health and welfare and the environment, with the goal of processing all applications by January 1, 2001.

In addition before permanently ceasing operation the permittee must file notice of the intent to permanently cease operations. Within 90 days of the filing of such notice, the permittee is to submit a final closure plan for approval.

The closure plan must describe: (i) the quantities and the chemical, biological, and physical characteristics of the materials to be removed and of the materials to remain; (ii) the destination of the materials to be removed and an indication that final placement of these materials at the destination is approved; (iii) the methods to be used to treat remaining materials, to control discharges of pollutants from the facility, and to secure the facility; (iv) any restrictions on future land or water use; (v) an estimate of the cost of closure; and (vi) a schedule for implementing the closure plan and submitting a postclosure plan.

The APP applicant is also required to submit a postclosure monitoring and maintenance plan with the application unless "closure of the facility will eliminate to the greatest degree practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance." The nature of some facilities, including landfills and mine tailings ponds, will always necessitate postclosure plans.

The postclosure plan is to describe: (i) the duration of postclosure; (ii) monitoring procedures, including frequency, type, and location; (iii) operation and maintenance procedures for aquifer quality protection devices; (iv) a schedule and description of physical inspections to be conducted; (v) an estimate of the cost of postclosure maintenance and monitoring; and (vi) any future

limitations on land or water uses.

A closure plan that "eliminates, to the greatest extent practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance" is to be approved. The closure plan for a facility is to assure that there will be no adverse impact on groundwater quality in the future. Concentrations of certain specified organic substances in tailing must be reduced to the maximum extent practicable, regardless of cost. Cover design and maintenance of cover integrity of a tailings impoundment are critical to achieving BADCT. An effective impoundment cover has four main components: cap material, final cover material, vegetation and other erosion protection and final surface configuration. The final surface configuration is to be designed to conduct surface water runoff away from the facility.²²

Nevada requires two types of closure plans to be submitted in connection with an application for a water pollution control permit application (see discussion below in section 8.b.): one for temporary closures (for seasonal, operational or other reasons) including activities that will continue during closure (e.g. what level of monitoring), and a draft plan for permanent closure of the facility describing stabilization of spent materials. The final closure plan is required to be prepared and submitted before closure.²³

5.e. HOW IS COMPLIANCE WITH THE PLAN MONITORED AND ENFORCED? PLEASE IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN THE APPROVAL PROCESS AS WELL AS IN MONITORING AND ENFORCEMENT.

- *BLM*

See response to question 4.i. above.

- *Forest Service*

²² Ariz. Comp. Admin. R. Regs. R18-9-116 (1991).

²³ Nev. Adm. Code 445A.382, 445A.446 (1994).

See response to question 4.i. above.

- *State*

Inspections and enforcement may occur in connection with state reclamation permitting programs, and state-operated water pollution control permitting programs. The Arizona Department of Environmental Quality (ADEQ), for example, is authorized to conduct inspections of facilities to ensure compliance with the aquifer protection law. Prior notice of entry is not required if such notice would frustrate enforcement of the law; however, the owner or managing agent is to be afforded the opportunity to accompany the inspector during inspections and to be provided copies of monitoring or sampling results. ADEQ can request information relevant to a release or threatened release of a pollutant, including information relating to ability to pay or undertake remedial action. Arizona also requires all companies engaged in activities subject to Arizona's environmental laws and regulations to submit a certificate of disclosure of felony convictions and court judgments for violations of any state or federal environmental law.

ADEQ has a number of enforcement tools available for violation of any aquifer protection permit condition, including compliance orders, injunctive relief, and civil penalties of up to \$25,000 per day. Criminal liability may be imposed for discharging without a permit or appropriate authorization; failing to monitor, sample or report discharges as required by permit; violating a discharge limitation in a permit or violating a water quality standard. Citizen suits may be brought by a person having an interest (which is or may be adversely affected) against (1) a person, the state, or a political subdivision for a violation of any statutory provision or any order, permit, rule, standard, or discharge limitation; or (2) the director of ADEQ for failure to perform a nondiscretionary act or duty.

ADEQ is required to post a list of notifications to permanently cease operations in the offices of each county department of health and each council of government and to include a description of the procedure for requesting a public hearing on the proposed permit action. A hearing is to be held if significant public interest exists or significant issues or information has been brought to the attention of the ADEQ that has not been considered previously in the permit process.

State reclamation programs often have the power to issue notices of compliance, or compliance orders, as well as to assess civil penalties – generally in amounts ranging from \$1,000 to

\$10,000 for violations. Injunctive relief is also generally available to assure compliance.

5.f. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE PLAN? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

- ***BLM***

See response to question 4.j. above.

- ***Forest Service***

See response to question 4.j. above.

- ***States***

See response to question 4.j. above and 8.e. below.

5.g. UNDER WHAT CIRCUMSTANCES IS A PLAN NOT REQUIRED FOR THE CONTROL AND DISPOSAL OF TAILINGS AND ABANDONMENT OF THE TAILINGS AREA?

- ***Forest Service***

See response to questions 5.a. and 1.a.

- ***BLM***

See response to questions 5.a and 1.a.

- ***States***

See response to question 5.a.

CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

6.a. IS THE OWNER OR OPERATOR OF A METAL MINING OPERATION REQUIRED TO SUBMIT A PLAN DESCRIBING HOW THE COMPANY INTENDS TO DEAL WITH FORESEEABLE ACCIDENTS INVOLVING TOXIC SUBSTANCES AT THE MINE SITE? (FOR EXAMPLE, CYANIDE SPILLS, OVERFLOW OF PONDS CONTAINING TOXIC SUBSTANCES DURING MAJOR STORM EVENTS).

- ***BLM***

Current BLM regulations do not specifically require an emergency response plan to be submitted in connection with the plan of operations. Proposed regulations require the plan of operations to be submitted by the operator to include a spill contingency plan.

- ***Forest Service***

Current Forest Service regulations do not specifically require an emergency response plan to be submitted in connection with the plan of operations.

- ***EPCRA and Clean Water Act***

Pursuant to the Emergency Planning and Community Right-to-Know Act (EPCRA),²⁴ each state has established a State Emergency Response Commission. The State Emergency Response Commission must designate local emergency planning districts and appoint Local Emergency Planning Committees. The primary responsibility of the Local Emergency Planning Committees is to develop an emergency response plan by October 17, 1988 and to review it at least annually thereafter. The State Emergency Response Commission is responsible for reviewing local emergency response plans. Facilities that are subject to emergency planning requirements must designate a representative to participate in the planning process. The local emergency response plans are to be initially focused on, but not limited to, the 360 extremely hazardous substances published in the Federal Register and are to address transportation of these substances as well as fixed facilities. The lists include threshold planning quantities for each substance. Any facility that has any of the listed

²⁴ 42 U.S.C. §§ 11001-11050.

chemicals present in a quantity equal to or greater than the established threshold must participate in the emergency planning process. Additional facilities can be subjected to the requirement by the State Emergency Response Committee or the State Governor, after public comment.

The Clean Water Act also has provisions for spill reporting and responses for hazardous substances.

Spills of listed substances in reportable quantities (e.g. cyanide spills) must be reported to a national hotline as quickly as possible after the spill, subject to enforcement for failure to report or to report within the required time.

- ***Stormwater Permit***

Mining operations required to obtain stormwater permits must submit a pollution prevention plan that outlines how stormwater runoff will be controlled or diverted at the site.

- ***State Requirements***

Individual states may require the preparation of emergency response plans. Nevada, for example, requires the preparation of an emergency response plan in connection with the application for a water pollution control permit. The emergency response plan must identify what actions will be taken, and by whom, in the event of various failures in the fluid management system.

6.b. IF SO, TO WHOM IS THE PLAN SUBMITTED AND WHEN IS IT SUBMITTED? WHAT ARE THE REQUIRED ELEMENTS OF THE PLAN?

- ***BLM***

The spill contingency plan is submitted as part of the plan of operation to the local BLM field office with jurisdiction over the lands involved. The specific elements of the plan are not identified in the regulation.

- ***EPCRA***

Facilities subject to the emergency planning requirements must notify the State Emergency Response Committee and the Local Emergency Response Committee that they are subject to these requirements within 60 days of the presence of any of the extremely hazardous substances in an amount equal to or in excess of the threshold planning quantities. As discussed in 6.a. above, the facility representative must participate in the local emergency planning process. The plan is submitted to the State Emergency Response Committee and must be developed initially by October 17, 1988 and reviewed at least annually thereafter. The plan must: identify facilities and transportation routes of extremely hazardous substances; describe emergency response procedures, onsite and off-site; designate a community coordinator and facility coordinator(s) to implement the plan; outline emergency notification procedure; describe methods for determining the occurrence of a release and the probably affected area and population; describe community and industry emergency requirement and facilities and identify the persons responsible for them; outline evacuation plans; describe a training program for emergency personnel (including schedules); and present methods and schedules for exercising emergency response plans.

Stormwater

The pollution prevention plan is submitted to the state regulatory agency.

6.c. WHAT TYPE OF POLLUTION PREVENTION MEASURES, IF ANY, ARE REQUIRED IN ORDER FOR THE PLAN TO BE APPROVED?

- ***BLM***

The proposed draft regulations do not identify any specific pollution prevention measures that are required to be identified in the spill contingency plans in order for the plan of operation to be approved.

- ***EPCRA***

Need to check Hazardous Materials Emergency Planning Guide; Developing a Hazardous Materials Exercise Program: A Handbook for State and Local Officials

- ***Stormwater***

The specific measures required in stormwater management plans vary by state. Colorado, for example, requires several types of pollution prevention measures, including a preventive maintenance program, spill prevention and response procedures; and best management practices for stormwater diversion, materials handling and spill prevention, and sediment and erosion prevention.

6.d. HOW IS COMPLIANCE WITH THE PLAN MONITORED AND ENFORCED? IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN THE APPROVAL PROCESS AS WELL AS IN MONITORING AND ENFORCEMENT?

- ***BLM***

See response to question ? above regarding monitoring, enforcement and public participation in connection with the plan of operations.

- ***EPCRA***

Each emergency response plan is to be made available to the general public during normal working hours at the location designated by the appropriate official. Each local emergency planning committee is to annually publish a notice in the local newspaper that the emergency response plan has been submitted and that members of the public who wish to review any such plan may do so at the designated location.

Failure of facilities to comply with the requirement to notify the State Emergency Response Commission that it is subject to the emergency planning requirements or to provide the information required for such process is subject to civil penalties of up to \$25,000 per day. See response to question ? **above** regarding penalties applicable to failure to make emergency notification.

Interested public and private sector groups and associations with experience in emergency planning and right-to-know issues may be included in the State Emergency Response Committees which review the local emergency response plans.

- *Stormwater*

Colorado, for example, requires several pollution prevention-type measures including a preventive maintenance program, spill prevention and response procedures, and best management practices for stormwater diversion, materials handling and spill prevention, and sediment and erosion prevention.

See response to question 8.d. above.

6.e. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE PLAN? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

- *BLM and Forest Service*

See response above to questions 3-4 concerning financial assurance requirements associated with the plan of operations.

- *EPCRA*

No financial assurance required.

- *Stormwater*

No financial assurance required.

- *States*

Financial assurance requirements vary by state. Most states require financial assurance only for completion of reclamation requirements, which may or may not specifically address contingencies. However, California, for example, in addition to reclamation bonding also requires financial assurance to guarantee safe closure of mine waste disposal units, including

cleanup contingencies and repairs in the event of a release.²⁵

III. PERMITS

7.a./8.a. ARE PERMITS REQUIRED FOR EXPLORATION OR MINING OPERATIONS?

7.b./8.b. IF SO, PLEASE DESCRIBE WHAT TYPE OF PERMITS ARE REQUIRED, AND ANY PERMIT REQUIREMENTS THAT ADDRESS POLLUTION PREVENTION?

Mining operations typically require numerous permits, depending upon the state in which they are conducted, their size, and the environmental resources they affect. As noted above, mining operations on federal land do not receive federal mining or reclamation permits but rather operate under approved “plans of operations” or under notices not requiring approval. These mines on federal lands may require all or some of the following permits, however: water pollution discharge permits, stormwater permits, wetlands permits, air permits, hazardous or solid waste permits, and state mining or reclamation permits. These permits are also needed by mines on state or private lands.

- ***BLM***

As explained in detail in the response to question 1.a, BLM does not require permits for operations on lands subject to its jurisdiction. These activities, however, may be subject to permitting requirements under other federal or state laws, as discussed below.

- ***Forest Service***

As explained in detail in the response to question 1.a., the Forest Service does not require permits for operations on lands subject to its jurisdiction. These activities, however, may be subject to permitting requirements under other federal or state laws, as discussed below.

- ***Water Pollution Discharge Permits - NPDES***

²⁵ Cal. Code Regs. tit. 23, § 2574(f),(g) (1990).

Under the Federal Water Pollution Control Act (also known as the Clean Water Act or CWA), a National Pollution Discharge Elimination System (NPDES) permit is required for any discharge from any "point source" -- including sources associated with hard-rock mines -- into the waters of the United States.²⁶ A point source is a discrete conveyance, such as a pipe, ditch, or gully. A point source can also include sources where no direct action of a mine operator was taken to discharge pollutants into the waters. For example, gravity flow, resulting in a discharge into a navigable body of water, may be part of a point source discharge if the miner at least initially collected or channeled the water and other materials. Moreover, the term "waters" is not limited to waters which are literally navigable, but includes all waters of the United States. NPDES permits, in most cases, are issued by states that have been authorized to issue permits deemed consistent with the federal program. About ten states have not assumed this authority, and in these states the federal EPA must issue the permit.

Some mines which are designed not to discharge their treatment water off-site have not been required to obtain an NPDES permit. These mines rely on recycling or evaporation as the means to eliminate water used to extract or process materials and are known as "zero-discharge facilities". However, some zero discharge facilities have obtained a permit in order to discharge waste water in certain emergency situations which can be only be done legally with a permit.

NPDES permits contain specific terms and conditions, as well as numerical discharge limits. The CWA provided a number of means for limiting discharges. First, EPA is to establish effluent limitations requiring discharges to meet the numeric limits that can be achieved through use of the "best practicable control technology currently available" (BPT) within an industry. Then, for the discharge of toxic pollutants, effluent limitations are to be based on the "best available technology economically achievable" in the industry as a whole (BAT). For the discharge of conventional pollutants, effluent limitations are to be based on the use of "best conventional pollution control technology" (BCT). Moreover, new pollution sources must meet a separate set of standards referred to as new source performance standards. These limits are based on the "best available demonstrated control technology." The regulations set the maximum levels of specifically enumerated pollutants that can be discharged in process wastewater, as well as a limitation on the pH level. The permit sets the limits of the level of contaminants that are permissible to be discharged. There is usually both a daily and monthly average limit that cannot be exceeded. Permit limits must satisfy at least the

²⁶ 33 U.S.C. § 1342.

technology based numerical effluent limits established in the regulations for each type of mining operation, but must be more stringent when required in order to meet water quality standards within the receiving stream.

Finally, EPA may establish best management practices, in order to control plant site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage in order to diminish the amount of toxic pollutants flowing into receiving waters.

Special regulations apply to gold placer mines limiting the levels of toxic metals and volume of process wastewater that can be discharged. Gold placer mines are also subject to best management practices aimed at preventing surface water, process water and waste water from coming into contact with polluting materials. See response to question 10.a. for further discussion of discharge limits.

- ***Stormwater***

Mining operations that allow stormwater to come into contact with any manufacturing, processing or waste materials and then to drain through a point source are required to obtain a stormwater permit. Point source discharges are defined as contained flows through ditches, culverts, pipes, etc.; nonpoint discharges are not covered. Hardrock mines that have been reclaimed in accordance with applicable federal or state standards may be exempt.

The application for the permit must provide basic information about the applicant, the facility design and the site. Once the permit is granted the applicant must also develop a pollution prevention plan that outlines how stormwater runoff will be controlled or diverted at the site using best management practices; these plans are not required to be approved as a condition of permit approval. Best management practices means standard industry accepted operating procedures for controlling water drainage, preventing spills and leaks and handling raw and waste materials, and sediment and erosion prevention.

- ***Section 404 of the Clean Water Act***

A permit from the Army Corps of Engineers under the Clean Water Act may be required for certain mining operations that involve dredging or filling in wetlands. Various mining activities, such as road construction, mining site construction, construction of dams for storage, channelization,

dredging of streams, and recontouring wetland areas, may require a 404 permit.²⁷ However, many activities regulated under this section may be permitted under a general or “nationwide” permit with standard conditions. The issuance of a Section 404 permit may also trigger the requirement that an environmental assessment or environmental impact statement be prepared. (See response to question 1.a. above). District engineers have the discretion to draft permit conditions which may include pollution prevention measures.

- *Air*

There are a variety of forms of air pollution resulting from mining operations. Fugitive dust -- that is dust not coming from a centralized emission point -- is produced by rock crushing operations, truck and other machinery operations on dry roads, earth removal and other activities.

The federal national ambient air quality standards (NAAQS) set limits on the amount of particulate matter in the air. Individual states are responsible for developing plans (referred to as "state implementation plans" or "SIPS") to meet these standards.²⁸ States implement these plans through state laws and regulations that may regulate fugitive dust emissions from mining operations. State programs usually require dust suppression management activities, such as wetting, chemical stabilization, revegetation or other measures. Some mining-specific toxics, such as arsenic, are not regulated as air pollutants at the federal level except insofar as they are particulates. See discussion below of Colorado air permitting program.

- *Hazardous Wastes*

Under the Resources Conservation and Recovery Act (RCRA) EPA has authority to regulate the management of hazardous wastes from their generation through storage and disposal. Hazardous wastes that are subject to regulation include both listed substances as well as other wastes that exhibit one or more defined characteristics (reactivity corrosivity, ignitability and toxicity). Under the Bevill Amendment to RCRA, however, "solid waste from the extraction, beneficiation and processing of ores and minerals" is excluded from regulation as a hazardous waste pending completion of studies

²⁷ 33 U.S.C. § 1344.

²⁸ 42 U.S.C. § 7410.

on the environmental and health consequences of these wastes. Based on these studies, EPA concluded that the regulation of extraction and beneficiation wastes as hazardous wastes was not warranted. (EPA then examined 20 specific mineral processing wastes and determined that regulation of these wastes was inappropriate or infeasible. Five additional wastes were listed as hazardous waste subject to regulation under RCRA. Other mineral processing wastes may be subject to regulation if they exhibit one or more hazardous waste characteristics. However, mineral processing is beyond the scope of this report).²⁹

Other hazardous substances that are not specifically associated with the extraction and beneficiation of ores and minerals – such as waste solvents – are subject to regulation under RCRA. Since few mines are subject to permitting requirements under RCRA, these requirements are not discussed further in this report.

- *Solid Wastes*

Management of solid wastes that are not classified as hazardous wastes under RCRA is under state jurisdiction. As most states only regulate industrial or household waste under this authority – rather than waste directly generated from mining operations – it is not discussed in this report.

- *States*

States may require additional permits to those required under federal law. Among the permits that frequently apply to metal mining operations are groundwater protection permits and other forms of state water pollution control permits that apply beyond the NPDES requirements, and state reclamation permits.

Arizona, for example, requires an aquifer protection permit (see response to question 5.a. above) Nevada requires mining operations to obtain "water pollution control" permits for certain operations in addition to NPDES permits.

The Nevada water pollution control permit application contains several requirements that

²⁹ See generally, Van Housman, "The Scope of the Bevill Exclusion for Mining Waste," 24 *Envtl. L. Rep. (Envtl. L. Inst.)* 10657 (Nov. 1994).

address pollution prevention. First, the application must provide an assessment of the area to be affected, including hydrogeological information, as well as information on known surface waters, drinking wells, and habitable buildings. The application is also to include a meteorological report, and a report of sampling results representative of the overburden, waste rock and order. An engineering design report must be prepared by a Nevada-registered professional engineer with enough detail to identify which potential pollution sources are process components, to evaluate whether the design of such components will protect the waters of the state from degradation and to determine whether the monitoring system is adequate. The application also is to describe the proposed operating plans for the facility, including a general operating plan, a fluid management plan, a monitoring plan, an emergency response plan and a draft closure plan. Small-scale, pilot, testing placer and other facilities that rely solely on physical separation methods to process ore are subject to abbreviated and distinct permit application requirements. For example, a permit application for a mining facility using only physical separation methods must include a certification that the applicant will not use any chemicals in the process except those previously identified and approved.

All hard rock mining states require a state-issued reclamation permit before conducting a mining operation, and many apply such requirements to exploration operations. Colorado, for example requires any operator proposing to engage in a new mining operation to obtain a reclamation permit. "Mining operation" includes, but is not limited to "open mining and surface operation and the disposal of refuse from underground and *in situ* mining. The application process requires information about the applicant, a mining plan and a reclamation plan to be submitted. Colorado has developed specific guidelines for cyanide leaching projects which suggest geochemical testing to characterize waste and acidification/neutralization testing, among other tests, to evaluate acid-generation potential. The guidelines also suggest a number of techniques for controlling the release of acid or potentially toxic elements to the environment, based on site-specific conditions.

In California, mining operations that take place in the state's coastal zone areas must secure a permit from the state Coastal Commission in addition to permits under the state's surface mining and reclamation law and its waste discharge requirement under its water pollution law. Through the coastal permitting requirement, the state may impose environmental regulations concerning water quality, erosion, air pollution and environmentally sensitive habitat.

Colorado, like other mining states, has a federally approved air program under which all existing and new sources are required to obtain emission permits. Sources which are exempt from

this requirement include (i) sources in nonattainment areas having uncontrolled emissions of any criteria pollutant of less than one ton per year; (ii) sources in attainment areas having uncontrolled emissions of any criteria pollutant of less than two tons per year; and (iii) sources with uncontrolled lead emissions less than 100 pounds per year, regardless of where the sources is located. Colorado's air quality permitting for mining operations is focused primarily on fugitive particulate emissions. Fugitive particulates from mining, haul roads, haul trucks, tailings piles and ponds, and blasting as well as some other activities that may be incident to mining must be controlled. A prohibition of off-property transport of air particulates, nuisance emission limitations and a 20 percent opacity guidelines are applied to these activities. The air permit application must include an air pollutant emission notice and a fugitive particulate control plan.

8.c. DESCRIBE ANY OPPORTUNITIES PROVIDED FOR PUBLIC REVIEW OF PERMIT APPLICATIONS AND COMMENT ON WHETHER PERMITS WOULD BE ISSUED, CONDITIONED OR DENIED.

- ***NPDES***

After receipt of the NPDES permit application, the permitting agency prepares a draft permit or publishes a notice of the decision to deny the permit. The public then has the opportunity to submit comments and when there is a significant degree of public interest, a hearing may be held. Once the final permit is issued or denied, judicial review is available. If the USEPA is the permitting agency rather than the state, NEPA requirements – including public participation requirements described under 1.a above – are also triggered by the permit process.

- ***Stormwater Permits***

Stormwater permits are a kind of NPDES permit. The information in the permit application is available for public review. The public has the right to review and comment on the permit application prior to agency approval as well as to petition the agency to require the applicant to make changes in the permit once it is granted. Because the pollution prevention plan is not a part of the permit application, it is not subject to formal public review and comment. The plans are considered public information available at any time for public review.

- ***Section 404***

Once the Section 404 permit application is complete, the public is given notice and an opportunity to comment on the application. A public hearing will be held whenever it is needed for making a decision on the application or when it is proposed to modify or revoke a permit. Any person may request a public hearing which request will be granted if there are substantial issues or a valid interest to be served by the hearing. Because 404 is a federal permit, it triggers NEPA.

States

State reclamation permits typically have a public notice and comment process, as do state-issued NPDES permits and air permits.

For example, in Nevada when a draft water pollution control permit is issued or a notice of intent to deny is issued, the public must be given notice and a fact sheet prepared giving the location of the proposed facility, describing the facility and monitoring systems, identifying the potential pollution sources, identifying the probably receiving waters, and describing the procedure for public comments. The public has thirty days from the date of publication of the notice to submit written comments on the proposed decision and to request a public hearing if one has not already been scheduled. A hearing must be scheduled if there is a significant degree of public interest in the matter; the state may hold a hearing on its own initiative. Public notice of any hearing must be given 30 days before it will be held. The comment period is automatically extended to the close of the hearing. If a permit is issued, the state agency must provide written response to the comments received, identify any changed provisions in the final permit with the reasons for the change, and notify commenters of their right to appeal to the environmental commission.

The applicant for a reclamation permit in Colorado must publish notice of the filing of the application in a local newspaper of general circulation once a week for four weeks. Copies of the notice must also be sent to all owners of the surface rights in the affected land, to owners of immediately adjacent land and to other owners who may be designed as being affected by the operation. A copy of the application material must be made available for public inspection. Public comments must be filed within 20 days of the last date of publication of the notice. A hearing may be held on the application for good cause shown in the comments. Notice of the hearing will be given to those who gave comments and published in a local newspaper. Judicial review of permitting decisions is available.

A public comment period is required in connection with the application for an air pollution

emission permit in Colorado for projected controlled emissions greater than a certain amount. Public comment is also required for sources where there is a possible violation of odor emission regulations and for sources of pollutants that are regulated as hazardous. If public comment is required, there is notice of the application is published. A hearing will normally be held within 60 days of receipt of request.

8.d. HOW IS COMPLIANCE WITH THE PERMIT MONITORED AND ENFORCED? IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN THE APPROVAL PROCESS AS WELL AS IN MONITORING AND ENFORCEMENT?

- ***NPDES Permits***

Mine operators are required to monitor effluent levels to verify compliance with the permit and provide periodic reports to the permitting agency. The permit agency can inspect the operation and records to ensure compliance. Violations of the permit are subject to administrative penalties, civil penalties of up to \$25,000 per day for each violation, injunctive relief or compliance orders. Criminal penalties -- including fines and imprisonment -- may also be available for negligent violations, knowing violations, knowing endangerment and false statements. Citizens have access to the information presented in the discharge monitoring reports required to be filed by the permittee. Citizens may bring citizen suits based on permit violations evidenced by these reports.

- ***Stormwater Permits***

Monitoring of stormwater discharges is required and the information is submitted to the appropriate state agency. Violations of the permit conditions, including the terms of the stormwater pollution plan, may result in fines, shut down of operations, or permit revocation.

In the event of a permit violation the public has the right to request an inspection of the facility and can ask to accompany the official on the inspection. Citizens may also bring a citizen suit against the violator.

- ***Section 404***

Section 404 permits are subject to enforcement provisions similar to those for NPDES permits. The Army Corps of Engineers also has enforcement authority, including the authority to conduct inspections and impose civil and criminal penalties for permit violations.

- *States*

Monitoring requirements for reclamation permits may be proposed in the reclamation plan and specified in the permit. Enforcement of Colorado's reclamation permits like that in most other states is provided through notices of violations, administrative orders, civil penalties, and injunctive relief.

Under Nevada's water pollution control permit, each facility is to have a monitoring program and report quarterly. Standard permit conditions require tracking and reporting of the volume of fluids pumped from leak detection systems. The permit usually sets a level at which leak becomes a permit violation. Permits also generally require sampling of overburden and waste rock for potential to release pollutants and acid-generation. Analyses reported to the government must be done by a Nevada-certified laboratory. All reports filed with respect to monitoring are public records. Nevada inspects facilities on average 1-2 times per year. Prior notice is not required or prohibited. If inspection is refused, the permit may be revoked. Violations of the permit conditions may be enforced through compliance orders, a civil action for injunction, civil penalties of up to \$25,000 per violation per day, plus actual damages (which may be administered at the agency level), criminal penalties of up to \$25,000 per day of violation and/or up to one year's imprisonment; and \$50,000 per day of violation/and or no less than one year no more than six years of imprisonment for second offenses. Permits may also be modified, revoked or suspended for cause.

Colorado has a typical approach to air permitting. Prior to issuance of a final air pollution control permit in Colorado and within 30 days after commencement of a permitted operation, the operation is inspected to determine whether the terms and conditions of the permit are being satisfied. Before final permit approval is granted the operator may be required to conduct performance tests which the division may monitor, or it may conduct performance tests itself. The law also authorizes regular compliance inspection of permittees. Violations of a Colorado air pollution control permit are enforced through compliance orders, civil penalties and injunctive remedies, as well as permit suspension and revocation.

8.e. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE

PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE PERMIT? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

- ***NPDES***

There is no financial assurance required in connection with an NPDES permit.

- ***Stormwater***

There is no financial assurance required in connection with a stormwater permit.

- ***Section 404***

A bond may be required if there is reason to consider that the permittee might be prevented from completing work which is necessary to protect the public interest in an amount sufficient to indemnify the government against any loss as a result of corrective action it might take.

- ***States***

Financial assurance requirements differ significantly from state to state. Some states require financial assurance for the costs of reclamation, while others require financial assurance for discharge contingencies and for closure of waste management units. Several states require both or accept a combined assurance.

Colorado, Montana, and Nevada require financial assurance for operators' reclamation obligations. South Dakota, California, and Idaho require financial assurances both for reclamation and for contingencies and closure. Arizona requires financial assurance for closure of aquifer protection permit facilities (such as tailings impoundments), and for reclamation.

Financial assurance amounts range from actual reclamation costs in Colorado and Nevada to actual reclamation, contingency, and closure costs in California, to specified per-acre maximum amounts in other states. South Dakota requires financial assurance for closure of cyanidation facilities at a minimum amount of \$25,000 and a maximum of \$500,000, and financial assurance for

reclamation at the projected actual cost. Idaho requires financial assurance for closure of cyanidation facilities at a minimum of \$25,000 and a maximum of \$100,000, and for reclamation in an amount not to exceed \$1,800 per acre. States allow varying forms of surety, trust agreements, guarantees, or financial tests.³⁰ As noted previously, financial assurance provided to states is often used to satisfy the requirements of BLM and the Forest Service for financial assurance to mine on federal lands. (However, small mining and exploration operations on BLM land may not be required to provide financial assurance at all where they are “notice” mines, and where no state financial assurance requirements apply – e.g. in states with their own small mine or exploration exemptions).

9.a. DO THE LAWS GOVERNING MINING CONCESSIONS IMPOSE ANY ENVIRONMENTAL CONDITIONS AS A CONDITION TO OBTAINING OR MAINTAINING THE CONCESSION?

The U.S. does not grant concessions for metallic mineral mining. Instead, it has a regime allowing open access to explore for and remove valuable metallic minerals on the public lands. There are two ways by which an individual or company may secure exclusive rights to hard-rock minerals on federal lands: (1) simply marking and working the claim on federal land, or (2) purchasing the land from the federal government after establishing the presence of valuable minerals (the latter method is referred to as "patenting" a claim). Under the first method, a prospector establishes his or her right to newly discovered minerals by marking the boundaries of the claim, filing with the BLM office and continuing to work the claim diligently. In the 1990's a \$100 annual fee was substituted for the work requirement. Many mines are operated on “unpatented” mining claims using this method. Under the second method, a prospector can purchase title to the land provided that the prospector can show discovery of a valuable mineral in commercial quantities. The current rate for purchase of a patent (unchanged since 1872) is \$2.50 per acre for placer claims and \$5.00 per acre for lode claims. Neither of these processes are considered federal actions subject to the requirements of NEPA. Nor are there any legal mechanisms for imposing any environmental conditions in connection with the two processes for securing rights to hardrock minerals; rather, environmental conditions are imposed through regulatory requirements such as the plan of operations and through requirements for various environmental permits such as NPDES and air permits.

In a few cases, mostly on federally-acquired lands not part of the original public domain, land

³⁰ McElfish, et al., *Hard Rock Mining: State Approaches to Environmental Protection* (Environmental Law Inst. 1996).

may be leased for hard rock mining. The only significant hard rock mining conducted under lease is lead-zinc mining in the national forests in Missouri. In these cases the leases are to contain terms consistent with the comprehensive land use plan for the mineral deposit in question and comply with NEPA.

States may establish their own requirements related to leases of state lands.

9.b. DO LAWS GOVERNING MINING CONCESSIONS GIVE GOVERNMENTAL AGENCIES THE AUTHORITY TO REQUIRE ANY TYPE OF POLLUTION PREVENTION MEASURES AS A CONDITION TO THE GRANTING OF THE CONCESSION?

No, but agencies can use regulatory authorities and court actions to require mining operators to cease operating in ways that violate plans of operations or environmental permits..

9.c. HOW IS COMPLIANCE WITH THE CONCESSION MONITORED AND ENFORCED? PLEASE IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MY BE IMPOSED FOR NON-COMPLIANCE. IS THERE ANY OPPORTUNITY FOR PUBLIC PARTICIPATION IN APPROVAL OF THE CONCESSION AS WELL AS IN MONITORING AND ENFORCEMENT?

Not applicable.

9.d. IS THERE A REQUIREMENT THAT A BOND OR OTHER TYPE OF FINANCIAL ASSURANCE BE PROVIDED BY THE OWNER OR OPERATOR TO THE GOVERNMENT TO GUARANTEE PERFORMANCE IN ACCORDANCE WITH THE CONCESSION? IF SO, HOW IS THE AMOUNT OF THE FINANCIAL ASSURANCE DETERMINED?

Not applicable.

9.e. HOW DOES THE CONCESSION TERMINATE? CAN THE CONCESSION BE TERMINATED FOR NON-COMPLIANCE WITH ANY ENVIRONMENTAL LAWS OR CONDITIONS?

Not applicable.

IV. REGULATORY STANDARDS AND BEST PRACTICES

10.a. DO ANY LEGALLY ENFORCEABLE STANDARDS, OR SUGGESTED BEST PRACTICES OR INCENTIVES ADDRESS THE HANDLING OF TOXIC SUBSTANCES INTRODUCED TO THE MINING SITE – E.G., CYANIDE, MERCURY, ACIDS? IF SO, PLEASE IDENTIFY.

Federal regulations applicable to mining operations on federal lands specify only general performance standards with respect to pollution prevention as follows: BLM requires that “All operations . . . shall be reclaimed as required in this title.” Reclamation is defined as “taking such reasonable measures as will prevent unnecessary or undue degradation of the Federal lands, including reshaping land disturbed by operations to an appropriate contour and, where necessary, revegetating disturbed areas so as to provide a diverse vegetative cover.” Operations of 5 acres or less, conducted under a notice, must comply with the following performance standards relevant to pollution prevention: “All tailings, dumps, deleterious materials or substances, and other waste produced by the operations shall be disposed of so as to prevent unnecessary or undue degradation Reclamation shall include . . . [m]easures to isolate, remove, or control toxic materials.”³¹ Larger operations conducted under a plan of operations must also comply with these performance standards.³² The current BLM regulations do not prescribe design standards or best practices with respect to the handling of introduced toxic substances, nor do they prohibit the introduction of such substances. BLM does have a policy regarding these substances. (See response to question 4.g. for further discussion of BLM and Forest Service standards.)

Federal water pollution regulations (which establish permit limits for operations on federal lands and state or private lands) may result in pollution prevention with respect to introduced toxic substances insofar as such prevention is driven by the establishment of discharge limits. These regulations provide the discharge limits for copper, lead, zinc, gold, silver, and molybdenum mines, for example. The limits are set on the basis of best practicable technology, best available technology, or new source performance standards, depending upon when the operation was permitted. In addition to the numerical limits, which may produce some pollution prevention indirectly by setting discharge limits, the regulations specifically provide that (with a limited exception based on water balance) “there shall be *no discharge* of process wastewater to navigable waters from mines and mills which employ dump, heap, in situ leach or vat leach processes for the extraction of copper from ores

³¹ 43 CFR 3809.1-3(d)(2), (4).

³² 43 CFR 3809.1-5)(c)(5).

or ore waste materials” and “there shall be *no discharge* of process wastewater to navigable waters from mills which extract gold or silver by use of the cyanidation process.”³³ New sources are also prohibited from discharging any process wastewater “from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores.”³⁴

State mining laws deal with introduced substances in different ways. These are discussed at greater length under 10.b., because they generally deal with design standards or performance standards relating to the units and areas where such substances are used or disposed. However, it should be noted here that in November 1998 the citizens of Montana voted in a referendum enacting a law to prohibit the establishment of any *new* surface mining operations using cyanide.

10.b. DO ANY LEGALLY ENFORCEABLE DESIGN STANDARDS, PERFORMANCE STANDARDS, SUGGESTED BEST PRACTICES OR INCENTIVES ADDRESS THE CONSTRUCTION AND MAINTENANCE OF OR BENEFICIATION UNITS OR AREAS (MILLS, HEAP LEACH PADS, DUMP LEACH AREAS, PONDS) TO PREVENT RELEASES OF INTRODUCED TOXIC SUBSTANCES?

The current BLM and Forest Service regulations applicable to mining operations on federal lands do not specifically address the construction and maintenance of ore beneficiation units except by general performance standards.

The BLM has proposed regulations which would require liner systems and other design features meeting certain performance standards; construction of secondary containment around vats, tanks, and recovery circuits; and numerous other measures.

Federal water pollution regulations may affect construction and maintenance of ore beneficiation units through specifying discharge limits, or by prohibiting certain discharges altogether, as noted above (*e.g.*, discharges from cyanidation milling operations, discharges from copper leaching operations)

³³ 40 CFR 440.102(c), (d); 440.103(c), (d); 440.104(c), (d).

³⁴ 40 CFR 440.104(b).

State mining laws vary in their approaches. Most state permit programs rely on performance standards, although design standards are not unusual for construction of liners and containment structures. Most state laws and regulations require operators to adopt measures to assure the protection of surface water and groundwater quality, control of sediment, and protection of wildlife. Most also require constructed units to withstand certain storm events (or to control releases in case of such events). For example, Montana requires cyanidation process units to control the 50-year, 24-hour storm event, while South Dakota requires such units to control the maximum 6-hour event. Idaho requires such units to control the 100-year, 24-hour storm, while Nevada requires such units to “withstand” the 100-year, 24-hour storm, and to contain the 25-year, 24-hour storm event.

Construction design standards are often specified for leach pads, process ponds, and other units that contain substantial introduced toxic substances. Typical state design standards for cyanide heap leaching units for gold recovery specify clay liners with a permeability of no greater than 10^{-6} cm/sec with 12 inches of clay. Nevada requires this for the clay liner, but also requires that it be used with a synthetic liner. California allows a single clay liner of this permeability, but requires that the permeability be no greater than 10^{-7} cm/sec. if the unit contains particularly hazardous materials. California also allows mining operators to demonstrate alternative technologies that can meet the prescriptive standards.³⁵

10.c. DO ANY LEGALLY ENFORCEABLE STANDARDS, SUGGESTED BEST PRACTICES, OR INCENTIVES ADDRESS THE HANDLING OF ORES AND ROCK TO AVOID OR MINIMIZE THE RELEASE OF NATURALLY OCCURRING TOXIC SUBSTANCES – E.G., ACID MINE DRAINAGE, METALS, ARSENIC? IF SO, PLEASE IDENTIFY.

The BLM and Forest Service regulations applicable to mining operations on federal lands include the general performance standards noted above, which do not require avoidance of the generation of naturally occurring toxic substances. But they do require isolation, removal or control of toxic materials and other measures to prevent unnecessary or undue degradation. The BLM proposed regulations, not yet adopted, would require operators to “minimize water pollution (source control) in preference to water treatment” and to “handle earth materials and water in a manner that minimizes the formation of acidic, toxic, or other deleterious pollutants of surface water systems” and manage excavations and other disturbances to “prevent or control the discharge of pollutants into

³⁵ McElfish, et al., *Hard Rock Mining: State Approaches to Environmental Protection* (Envtl. Law Inst. 1996).

surface waters” among other pollution prevention requirements including “minimiz[ing] the likelihood of acid formation and toxic and other deleterious leachate generation.”³⁶ The proposed regulations would incorporate existing BLM policy into enforceable regulations.

Discharge limits in the federal water pollution regulations may provide an incentive to avoid the release of naturally occurring toxic substances through the specification of numerical limits (for such things as lead, mercury, acidity) which may be met either through prevention or treatment, and by prohibiting certain discharges altogether as noted above. The numerical discharge standards apply to active permitted mining operations. Postmining discharges must also meet standards; these are not always the same as the active mining standards.

Most state mining and reclamation permit programs (and some state water pollution control programs) require operators to characterize their waste materials for acid generation potential; this then serves as a basis for the permitting and performance standards. This is the intent of BLM and Forest Service policies, as well.

10.d DO ANY LEGALLY ENFORCEABLE STANDARDS, ANY SUGGESTED BEST PRACTICES, OR INCENTIVES ADDRESS THE DISPOSAL OF MINE TAILINGS IN CONSTRUCTED UNITS TO PREVENT THE RELEASE OF TOXIC SUBSTANCES INTO THE ENVIRONMENT? IF SO, PLEASE IDENTIFY.

The BLM and Forest Service regulations applicable to mining operations on federal lands include the general performance standards noted above – which are generally applied to require the disposal of mine tailings in constructed units to prevent the release of toxic substances into the environment. But design standards or adherence to best practices are not prescribed by regulation.

Discharges to surface waters from tailings disposal units at active mining operations are regulated by the federal water pollution control regulations noted above, and thus implicitly require the placement of such materials in engineered units in order to meet the required numerical standards for the outfalls from such units. In addition, the law prohibits discharge of tailings directly into the waters of the United States, which means that they need to be placed in designated units. Discharges from tailings disposal units after closure are regulated by best professional judgment.

³⁶ 64 Fed. Reg. at 6459 (Feb. 9, 1999) (proposed 43 CFR 3809.420).

State mining laws and regulations virtually all require the disposal of tailing in engineered units, with varying levels of specificity in the performance standards such units must meet. Some state laws specifically require certain design approaches where the tailings contain toxic materials. For example, California has a detailed hierarchy of design criteria that apply depending upon the substances found in the tailings. Waste types are divided into Groups A, B, and C, with more prescriptive and stringent design requirements applied to the more toxic group A, less to B, and none for C except the ability to withstand certain storm events; and the requirement for each type of facility to meet an array of additional performance standards. Most other states (*e.g.*, Colorado, Montana) rely heavily on performance standards in dealing with construction and maintenance of engineered tailings disposal units.

10.e. DO ANY LEGALLY ENFORCEABLE STANDARDS, SUGGESTED BEST PRACTICES, OR INCENTIVES ADDRESS THE CLOSURE OF CONSTRUCTED UNITS FOR THE DISPOSAL OF MINE TAILINGS TO ENSURE THAT THEY ARE STABILIZED, DECONTAMINATED, OR OTHERWISE PLACED IN A CONDITION THAT RELEASES OF TOXIC SUBSTANCES TO THE ENVIRONMENT ARE PREVENTED AFTER CLOSURE?

Under the BLM and Forest Service regulations applicable to mining operations on federal lands, closure of mine tailings units is covered in the operator's plan of operations, but the only enforceable standards are the general performance standards noted above.

Under the federal water pollution control law, discharges from closed units as well as active units must be controlled, and thus the law provides the basis for assuring adequate closure. However, the specific discharge requirements after termination of the mining operation and closure of all units are based on "best professional judgment."

State mining laws usually address the closure of tailings disposal units most directly. The typical state approach is to specify a performance standard (relating to preventing contamination of the surrounding environment), which is often reinforced by a numerical performance standard (setting concentration limits in the tailings). Some states also specifically require treatment, rinsing, or detoxification of tailings. Standards may vary. For example, California requires free cyanide concentrations in the rinse water from gold heap leach operations not to exceed 5.2 mg/l; in contrast, South Dakota requires 0.5 mg/l. In contrast, Nevada specifies 0.2 mg./l WAD cyanide. Other states use performance standards or allow alternative measures (such as raising the alkalinity to a certain

level). Various states specify engineering stability performance standards for tailings disposal areas and tailings impoundments.

10.f. HOW IS COMPLIANCE WITH ANY LEGALLY ENFORCEABLE STANDARDS MONITORED AND ENFORCED? PLEASE IDENTIFY ANY CIVIL OR CRIMINAL PENALTIES THAT MAY BE IMPOSED FOR NON-COMPLIANCE. IS THERE AN OPPORTUNITY FOR PUBLIC PARTICIPATION IN MONITORING AND ENFORCEMENT?

Compliance with the federal regulations applicable to mining operations on federal lands is monitored generally by land management officials, but does not involve the public in any formal way. Enforcement mechanisms are described in the planning section of this summary. Frequently, state mining and reclamation agencies conduct inspections of operations on federal land under Memoranda of Understanding with the federal agencies.

Compliance with water pollution control regulations is monitored through the required filing of discharge monitoring reports (DMRs) with the U.S. EPA and/or the responsible state water quality agency, as well as by occasional inspections. These reports may be reviewed by the public and the public may initiate citizen enforcement actions where violations are apparent. Enforcement mechanisms used by the U.S. EPA and states are described in the permitting section of this summary.

Compliance with state mining laws and regulations is monitored in various ways, but primarily through state inspections and the required filing of quarterly or annual reports by mining operations in accordance with the terms of their permits. Enforcement mechanisms are described in the permitting section of this summary.

10.g., 10.h. HAS THE GOVERNMENT ITSELF DEVELOPED ANY OTHER “BEST PRACTICES” DESIGNED TO PREVENT POLLUTION IN THE METAL MINING SECTOR, OR ADOPTED SUCH A DOCUMENT DEVELOPED BY THE MINING INDUSTRY? IF SO, HOW ARE THESE BEST PRACTICES USED, ENCOURAGED, AND ENFORCED?

The federal government has not developed “best practices” nor adopted such a document. However, reliance on such practices as defined by state agencies or industry norms can be part of the process for showing compliance with the general BLM and Forest Service performance standards requiring operators to avoid “unnecessary or undue degradation” of the public lands. In contrast,

the discussion draft BLM regulations, not yet adopted, would specifically require the use of “most appropriate technology” defined as “equipment, devices, or methods that have demonstrable feasibility, success, and practicality” in meeting performance standards.

Few state laws and regulations specifically require use of “best management practices” except with respect to control of sediment; instead they ordinarily set performance standards, or (in some cases) design standards. One exception is Arizona, which specifically requires operators to use “best available demonstrated control technologies (BADCT).” These BADCT methods are described in detail in a guidance manual, which is continually revised, and which is to be used by mine operators applying for the required state aquifer protection permit. However, operators are free to propose and use alternative approaches which may be approved as “site-specific BADCT.” Typically, states that rely heavily on performance standards have also published “best practices” manuals or guidance documents, which are intended to indicate to operators what kinds of controls can be used to meet the performance standards. Many states have guidelines for handling of cyanide and closure of cyanidation units or tailings impoundments -- which, in effect, establishes a “best practices” approach for these units.

V. FINANCIAL INCENTIVES

11.a. ARE THERE ANY TAX INCENTIVES, CREDITS AGAINST ROYALTIES, CONCESSIONS INCENTIVES, OR OTHER FINANCIAL INCENTIVES TO INDUCE METAL MINE OPERATORS OR OTHERS TO ENGAGE IN POLLUTION PREVENTION MEASURES OR TO DEVELOP, TRANSFER OR USE POLLUTION PREVENTION TECHNOLOGY? IF SO, PLEASE DESCRIBE THESE FINANCIAL INCENTIVES AND THE TYPES OF POLLUTION PREVENTION MEASURES OR TECHNOLOGIES THEY PROMOTE.

No direct financial incentives to encourage or discourage pollution prevention activities at mining operations exist in the Federal system. Nevertheless, a number of existing Federal laws and policies may serve as indirect financial incentives that do not encourage pollution prevention activities and the use of pollution prevention technology.

The Department of the Interior has initiated a process to revise the current 43 CFR 3809 regulations which govern mining on federal BLM lands. This initiative stems in a large part from belief that the current regulations do not provide an incentive, financial or otherwise, for companies

to use proven, economically-achievable “best available demonstrated technology” standards.

11.b ARE THERE ANY TAX OR OTHER FINANCIAL INCENTIVES THAT DISCOURAGE OR DETER METAL MINE OPERATIONS OR OTHERS TO ENGAGE IN POLLUTION PREVENTION MEASURES OR TO DEVELOP, TRANSFER OR USE POLLUTION PREVENTION TECHNOLOGY? IF SO, PLEASE DESCRIBE.

Several provisions of the tax code may have the unintended effect of discouraging pollution prevention activities. Section 486 of the Internal Revenue Code, for example, permits reclamation and closure costs to begin to be deducted immediately when mining begins, even though the actual closure and reclamation of a mine site will not occur for quite a while. A risk is that allowing a current deduction without a requirement to establish a separate fund to accomplish the future reclamation may increase the chance of non-compliance; the financial benefit of deductibility is conferred early even though the expenses are deferred into the future. In addition, early deductibility of reclamation expenses means that back-end reclamation approaches may have some financial advantages over pollution prevention expenditures (expenditures where the actual costs are incurred early in the process).

VI. MONITORING AND DISCLOSURE

12.a. DOES THE LAW REQUIRE AN OPERATOR/OWNER OF METAL MINING OPERATIONS TO DISCLOSE THE RELEASE OF INTRODUCED TOXIC SUBSTANCES INTO THE ENVIRONMENT? DESCRIBE THE REQUIRED FORM OF THE DISCLOSURES, IF ANY, AND TO WHOM THE INFORMATION MUST BE DISCLOSED.

According to the Emergency Planning and Community Right-to-Know Act (EPCRA), Section § 313, certain facilities manufacturing, processing or using listed toxic chemicals are required to report specific information about such chemicals, including the annual quantities of those chemicals entering each environmental medium. This information is used by EPA to establish an inventory of routine toxic chemicals. Facilities subject to this requirement must complete a Toxic Chemical Release Inventory Form for designated chemicals. This requirement is applicable to owners and operators of facilities with 10 or more full time employees, and to activities that are included in specific items of the Standard Industrial Classification Codes whenever these facilities manufacture, process or use the toxic chemicals listed.

In 1997 EPA promulgated a regulation which added seven industry groups (including the metal mining industry) to the list of facilities subject to the EPCRA reporting requirements. This mandate will be applicable in the 1998 reporting year.³⁷

EPCRA establishes a threshold for reporting based on the amount of the chemical that is released, but the Administrator of EPA has the capacity to establish a different one based on classes of chemicals or categories of facilities. If a toxic chemical that is a constituent of overburden is processed or used by a covered facility, such toxic chemical is not included when determining whether the applicable threshold for reporting has been met.

The following information is required to be included on the Toxic Chemical Release Form:

- The name, location and type of business;
- Off-site locations to which the facility transfers toxic chemicals in waste for recycling, energy recovery, treatment or disposal;
- Whether the chemical is manufactured (including importation), processed, or otherwise used and the general categories of use of the chemical;
- An estimate (in ranges) of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year;
- Quantity of the chemical entering each medium – air, land, and water – annually;
- Waste treatment/disposal methods and efficiency of methods for each waste stream;
- Source reduction and recycling activities; and,
- A certification by a senior facility official that the report is complete and accurate.

The Pollution Prevention Act of 1990 expanded the type of information that facilities must report to include information on source reduction, recycling and treatment.³⁸ Specially, the following information must now also be reported:

- Amounts released or disposed on-site or off-site, the quantities from the previous

³⁷ 62 Fed. Reg. 23890 (May 1, 1997). This regulation incorporates, among others, code 10 of the Standard Industrial Classification, with the exception of codes 1011 (Iron Ore Mining), 1081 (Metal Mining Services) and 1094 (Uranium-Radium-Vanadium Ores).

³⁸ 42 U.S.C. § 13106.

- year, the quantities anticipated for the next two years;
- Amounts recycled on-site and sent off-site for recycling, the quantities from the previous year, the quantities anticipated for the next two years;
 - Amounts treated on-site and sent off-site for treatment, the quantities from the previous year, and the quantities anticipated for the next two years;
 - Amounts used for energy recovery on-site and sent off-site, quantities from the previous year, and the quantities anticipated for the next two years;
 - Types of source reduction practices implemented and the techniques used to identify those practices;
 - Methods of recycling used on-site;
 - Production ratio or activity index to track changes in the level of economic activity at a facility; and
 - Amount of releases resulting from one-time events not associated with production processes.

The information is reported to EPA, and designated state agencies, and is made broadly available to the Federal, State and local governments and the public.

EPA has established and maintains a national toxic chemical inventory based on the data submitted -- the Toxics Release Inventory (TRI). The inventory is accessible through a computer database which is available to any person.

EPCRA also requires facilities to report the release into the environment of certain hazardous substances. The substances subject to this requirement are those on the list of 360 extremely hazardous substances published in the Federal Register (40 CFR 355) as well as more than 700 hazardous substances subject to emergency notification requirements under CERCLA. The notice of such release must be given to the emergency coordinator of the local emergency planning committees and the State emergency planning commissions of the areas or States likely to be affected. Notice of release of the CERCLA hazardous substances must also be given to the Natural Response Center. This emergency notification needs to include:

- The chemical name;
- An indication of whether the substance is extremely hazardous;
- An estimate of the quantity released into the environment;

- The time and duration of the release;
- Whether the release occurred into air, water, and/or land;
- Any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention for exposed individuals;
- Proper precautions, such as evacuation or sheltering in place; and
- Name and telephone number of contact person.

Facilities must also provide a written follow-up emergency notice as soon as practicable after the release, including an update of the information in the initial notice, as well as a description of actual response actions taken and advice regarding any medical attention necessary for exposed individuals.

In addition to EPCRA, there are other media specific reporting requirements with which permit-holders must comply – including discharge monitoring reports filed by NPDES permittees, as well as requirements that such permittees give notice of any process upset or storm events resulting in a bypass of treatment facilities or discharge in excess of permit limits. Such information is maintained in a number of governmental sources, both by states and such federal programs as the Aerometric Information Retrieval System (AIRS), which tracks air emissions from industrial plants; the Permit Compliance System (PCS) for permits and enforcement status of facilities regulated under the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act; and the Biennial Reporting System (BRS) that tracks hazardous waste generation and disposal.

Several federal and state mining and reclamation laws also require mining operations to establish monitoring plans. Proposed regulations for BLM lands require a plan for monitoring the effect of operations which will demonstrate compliance with the approved plan of operations and other federal or state environmental laws and regulations, to provide early detection of potential problems, and to supply information that will assist in directing corrective actions as necessary. Monitoring and reporting may also be required as elements of the various other state plans that must be submitted in connection with mining operations as part of the permitting or other state regulatory processes. Many states require annual reports on acreage mined and reclamation accomplished during the year. See response to question 5.e above.

12.b. DOES THE LAW REQUIRE AN OPERATOR/OWNER OF METAL MINING OPERATIONS TO DISCLOSE THE RELEASE OF NATURALLY OCCURRING TOXIC SUBSTANCES AND ACID MINE

DRAINAGE INTO THE ENVIRONMENT? DESCRIBE THE REQUIRED FORM OF THE DISCLOSURES, IF ANY, AND TO WHOM THE INFORMATION MUST BE DISCLOSED.

The issue as to whether the release of naturally occurring toxic substances and acid mine drainage has to be reported under § 311 of EPCRA has not yet been addressed by EPA. As discussed in the response to question 12.a., the metal mining industry was just recently added to the list of industries which are subject to reporting under § 311.

Certain acids and various metals mobilized by mining operations are subject to NPDES reporting requirements. See response to question 8.b concerning NPDES permits.

12.c. DOES THE LAW REQUIRE AN OPERATOR TO DISCLOSE THE PRESENCE OF INTRODUCED TOXIC SUBSTANCES AT THE MINE SITE, REGARDLESS OF WHETHER SUCH SUBSTANCES ARE RELEASED INTO THE ENVIRONMENT? DESCRIBE THE REQUIRED FORM OF THE DISCLOSURES, IF ANY, AND TO WHOM THE INFORMATION MUST BE DISCLOSED.

Mining operations may also be subject to the two Community Right-to-Know reporting requirements within the Emergency Planning and Community Right-to-Know Act. These provisions aim to improve the public's knowledge of, and access to, information on hazardous chemicals in their community. Section 311 requires facilities that must prepare material safety data sheets (MSDS) under the Occupational Safety and Health Administration (OSHA) regulations to submit either copies of their MSDSs or a list of MSDS chemicals to the local emergency planning committee, the state emergency response commission, and the local fire department with jurisdiction over the facility.

If the facility owner submits a list of MSDS chemicals, the list must include the chemical or common name of each substance and identify the applicable hazard categories. The current reporting thresholds for Section 311 are:

- For extremely hazardous substances: 500 pounds or the threshold planning quantity, whichever is lower.
- For all other hazardous chemicals: 10,000 pounds.

Facilities were required to submit MSDS or a list of MSDS chemicals by October 17, 1987, or three

months after the facility is required to prepare or have available an MSDS under OSHA regulations. OSHA regulations require all employers to have or prepare MSDS for their chemicals.

An MSDS or a revised list must be provided when new hazardous chemicals become present at a facility in quantities at or above the established threshold levels after the deadline. A revised MSDS must be provided to update the original MSDS if significant new information is discovered about the hazardous chemical.

The second Community Right-to-Know reporting provision requires facilities to submit an emergency and hazardous chemical inventory form to the local emergency planning committee, the state emergency planning commission, and the local fire department with jurisdiction over the facility. Hazardous chemicals to be reported on in the form those for which facilities are required to prepare or have available an MSDS under OSHA's Hazard Communication Standard and that were present at the facility at any time during the previous calendar year above the following thresholds:

- For extremely hazardous substances: 500 pounds or the threshold planning quantity, whichever is lower.
- For all other hazardous chemicals: 10,000 pounds.

The inventory form incorporates a "two-tier" approach. Under the first tier, information is reported by chemical category concerning the yearly and daily amount of the chemicals present as well as general location. The second tier information is required upon request of the local emergency planning committee, the state emergency planning commission or local fire department and is by individual chemical. The Tier I information must be submitted for covered facilities on or before March 1 annually. The Tier II form may be sent by the facility instead of a Tier I form.

12.d. WHEN MUST THE DISCLOSURES BE MADE?

The Toxic Chemical Release Inventory Form is due annually on July 1 covering releases during the preceding calendar year. The applicability of this section of EPCRA to metal mining activities will be effective for the reporting year beginning on January 1, 1998. So, then the first reports will be submitted on July 1, 1999.

See question 12.c. for due date for compliance with the Community Right-to-Know Reporting requirements.

VIII. PUBLIC INFORMATION AND PARTICIPATION

13.a PLEASE IDENTIFY EACH POINT IN THE EXPLORATION AND MINING PROCESS AT WHICH THE MINING OPERATOR (OR THE GOVERNMENT) IS REQUIRED TO DISCLOSE INFORMATION TO THE GENERAL PUBLIC AND THE TYPE OF INFORMATION THAT MUST BE DISCLOSED IN EACH INSTANCE. ARE THERE ANY GAPS IN THE INFORMATION THAT IS REQUIRED TO BE DISCLOSED?

Section I of this study (on Environmental Impact Assessment) describes the opportunities for public review in the federal environmental assessment processes for exploration and mining operations on federal lands or that require federal permits, and the type of information that is disclosed in connection with such processes. One gap in this area is that since notice operations on BLM lands are not subject to environmental assessments (because notice operations do not require government approval), the government is not required to generate the type of information on environmental impacts that NEPA requires. Note that for notice operations there is also no opportunity for public participation in the decision because there is no decision to participate in. Section I also addresses EIA processes in those states that have state requirements for such assessments.

Section II on Planning describes the opportunities for public review in connection with the federal and state planning processes for exploration and mining operations and the type of information that is disclosed in connection with such processes. One gap in the information that is required to be disclosed concerns the existence of any toxic substances or acid-forming materials at the exploration or mining site. As noted in the response to questions 3.e. and 4.e. while regulations may support the submission of such information, the regulations do not specifically spell out what must be provided.

Section III on Permitting and Section VII on Monitoring describes the information that is made available to the public in connection with federal and state permits. One potential gap in this area is that EPA has not yet determined whether mining operations are required to report releases of acid mine drainage as part of their TRI reporting.

13.b. WHAT INFORMATION IS AVAILABLE TO THE GENERAL PUBLIC ABOUT SPECIFIC EXPLORATION OPERATIONS? WHERE IS SUCH INFORMATION AVAILABLE, IN WHAT FORM AND AT WHAT COST? ARE THERE ANY GAPS IN THE INFORMATION THAT IS REQUIRED TO BE DISCLOSED?

See response to question 1.a. and 1.c. Notice information for exploration operations that are disturbing the land surface is available at BLM state offices and Forest Service forests and can be examined without charge. Casual use or mere prospecting information is not collected nor available. States have varying information available on exploration operations.

13.c. WHAT INFORMATION IS AVAILABLE TO THE GENERAL PUBLIC ABOUT SPECIFIC MINING OPERATIONS. WHERE IS SUCH INFORMATION AVAILABLE, IN WHAT FORM, AND AT WHAT COST? ARE THERE ANY GAPS IN THE INFORMATION THAT IS REQUIRED TO BE DISCLOSED?

See response to question 1.a. and 1.c. for discussion of information submitted in connection with the plan of operations. The public also has access to permit files, state inspection reports, discharge monitoring reports, and information in the Toxic Release Inventory. See Section VII for a discussion of monitoring and reporting requirements.

13.d. IS THERE A FORMAL PROCESS TO INITIATE OR INVESTIGATE COMPLAINTS BY MEMBERS OF THE GENERAL PUBLIC WITH REGARD TO POLLUTION PREVENTION PRACTICES OR PROBLEMS AT SPECIFIC EXPLORATION AND MINING SITES? IF SO, PLEASE DESCRIBE THE PROCESS.

Federal law does not provide citizens with a formal process to initiate investigating of complaints by the general public with regard to pollution prevention practices or problems at specific exploration and mining sites. The formal citizen suit proceedings under the major federal environmental laws dealing with water or air pollution may provide sufficient basis for a government agency to take seriously a citizen complaint and to consider an investigation.

13.e. PLEASE IDENTIFY EACH POINT IN THE EXPLORATION AND MINING PROCESS AT WHICH MEMBERS OF THE PUBLIC MAY OFFER COMMENTS TO GOVERNMENTAL AGENCIES CONCERNING THE PERMITTING, APPROVAL, DISAPPROVAL, OR TERMS AND CONDITIONS UNDER WHICH AN EXPLORATION OR MINING OPERATION MAY BE CONDUCTED.

See Section I for comment opportunities in the environmental assessment process, Section II for comment opportunities in the planning processes, and Section III for comment opportunities in the permitting processes. Note that the public generally does not have the opportunity to comment on the appropriateness of enforcement measures.

13.f. IF INFORMATION IS NOT DISCLOSED BY THE MINING OPERATION OR THE GOVERNMENT AS REQUIRED BY LAW, WHAT PROCEDURES, IF ANY, ARE AVAILABLE TO THE PUBLIC TO ACHIEVE ACCESS TO SUCH INFORMATION?

The federal Freedom of Information Act³⁹ establishes a presumption that any person may have access to any record held by a federal governmental agency unless the record is covered by a specific exception. Most states and many localities have similar laws. To gain access to an agency record, a person must make a request in writing which reasonably describes the record desired. If the agency does not have the information, it may deny the request. It does not have to collect the information sought if such information is not already in its files. An agency may withhold information on certain narrow grounds, including trade secrets and certain governmental pre-decisional deliberative documents. When a request is denied, the reason must be specified in writing. A fee may be charge for processing these requests. Judicial review is available when requests are denied, with the burden on the agency of showing either than an exception to disclosure applies or that the record does not exist.

Individual environmental laws, including the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act – provide that the public may have access to any records, reports or information the government obtains in the course of enforcing these acts. The exemptions to public disclosure under these Acts are much narrower than those provided by FOIA. Failure of the mine operator to provide the government with the required information may be grounds for a citizen suit. In addition, federal and state agencies are generally subject to laws requiring them to conduct their official meetings in public and to make records publicly available.

IX. MANAGEMENT SYSTEMS

14.a PLEASE IDENTIFY ANY ENVIRONMENTAL MANAGEMENT PRACTICES THAT ARE REQUIRED

³⁹ 5 U.S.C. § 552-552a.

BY LAW FOR COMPANIES ENGAGED IN MINING OR EXPLORATION.

Generally there are no environmental management practices that are required by law for companies engaged in mining or exploration.

14.b. PLEASE EXPLAIN THE STATUS OF ISO 14000 OR OTHER VOLUNTARY ENVIRONMENTAL MANAGEMENT PROGRAMS IN YOUR COUNTRY, PARTICULARLY WITH RESPECT TO THE MINING INDUSTRY.

An industrial mineral producer in California is ISO-14000 certified. The extent to which other operators are or may be pursuing environmental management systems is not known. However, potential liability under U.S. environmental laws may discourage some operators from disclosing operational problems and/or violations on a voluntary basis.

14.c. PLEASE IDENTIFY ANY MANDATORY AUDITING PROGRAMS IN YOUR COUNTRY, INCLUDING ANY LAWS REQUIRING THE PREPARATION OF PLANS FOR COMING INTO COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS.

Generally there are no mandatory auditing programs. Auditing may be required in connection with an enforcement settlement or penalty.

X. REMINING/PRIVATIZATION

15.a. ARE THERE ANY SPECIFIC LAWS OR POLICIES OR FINANCIAL INCENTIVES THAT PROMOTE THE USE OF POLLUTION PREVENTION MEASURES IN CONNECTION WITH REMINING EXISTING OR ABANDONED MINES OR PRIVATIZATION OF GOVERNMENT-OWNED MINES? IF SO, PLEASE IDENTIFY.

Subsequent owners or operators of a mine may be liable for environmental pollution or damage caused by historic mining activities at the site. Under CERCLA, responsible parties are liable for to clean up hazardous waste at a site or to pay for cleanup actions conducted by the state, EPA or some other private party. Four potential classes of parties may be liable for cleanup costs under CERCLA: (i) current owners and operators; (ii) former owners and operators who were present at the time of the hazardous waste disposal; (iii) generators and parties responsible for the disposal of

the waste; and (iv) transporters. Responsible parties may also be held liable for the cost of natural resource damages.⁴⁰

Most likely, parties that become involved with exploration, operating or owning a site with historic environmental problems will be liable for the cleanup costs, even for conduct that occurred before enactment of CERCLA. However, natural resource damage claims may not be brought for preenactment releases.

CERCLA liability can serve as a disincentive to re-mining of previously mined areas with significant environmental hazards, and to the voluntary remediation of previously mined sites for which the volunteer (state, university, or mining company) currently has no liability. There are several possible ways that CERCLA could be used by EPA or private parties to promote re-mining with the use of pollution prevention measures. EPA can provide a prospective purchaser with a covenant not to sue if the following conditions exist: (i) an enforcement action is anticipated or pending; (ii) EPA has obtained substantial performance of or payments towards site cleanup in the settlement agreement which would probably not otherwise be available from the responsible party; (iii) the proposed activities will not aggravate or contribute to contamination of the site or interfere with a final remedy; (iv) the proposed activities will not present a health risk; and (v) the purchaser is financially capable of completing the proposed remedial actions. In the context of negotiating a covenant not to sue for a re-mining operation, EPA could condition the granting of the covenant on the incorporation of pollution prevention measures into the re-mining plan. The State of Colorado also has a policy allowing mining companies to negotiate a re-mining agreement to limit CERCLA liability. The Colorado policy allows the mining company to conduct baseline studies of the potential re-mining site. Colorado will agree not to hold the company liable for cleanup costs if the company complies with the re-mining plan approved by the state. The company however may still be subject to a CERCLA natural resources damages suit and liability for clean up costs in a CERCLA action brought by the federal government. Colorado has entered into an agreement with the USEPA which establishes a procedure to protect the State or its agents from liability under CERCLA.

Re-mining operations may also be subject to liability under the Clean Water Act for acid mine

⁴⁰ See generally Kornfeld, "Reclamation of Inactive and Abandoned Hardrock Mine Sites: Re-mining and Liability Under CERCLA and the CWA," 69 U. Colo. L. Rev. 597 (Spring 1998), on which this summary is based.

drainage created by historic activities. Recent cases have found that preexisting acid mine drainage is a pollutant under the Act for which companies are subject to permitting requirements. The Western Governors Association is currently trying to negotiate a “Good Samaritan” exemption to liability under the Clean Water Act for voluntary remedial actions on abandoned or inactive mined land. The WGA proposal would include entities other than governmental units, but would not include those with prior involvement at the site or those with current or prior legal responsibility for discharges at the site. Remining activities would not be permitted in connection with the proposed remediation activities; strong opposition from the environmental community exists to allowing such activity and the WGA has decided to postpone consideration of the issues connected with remining. Thus, non-remediation-development at the site would be subject to normal NPDES rules. The remediation plan must demonstrate with reasonable certainty that the actions to be taken will result in an improvement in water quality to the degree reasonably possible. Moreover, in order to assure that efforts were made first to identify parties with liability for cleaning up the site, the remediation plan would have to include a summary of efforts made to that end.

XI. LAND USE RESTRICTIONS

Protected Areas

16.a ARE THERE ANY LAWS THAT PROHIBIT OR LIMIT METAL MINING IN CERTAIN AREAS BECAUSE THE AREAS ARE SO IMPORTANT FOR THEIR BIOLOGICAL OR CULTURAL RESOURCES THAT MINING WOULD BE INCOMPATIBLE WITH THEIR PRESERVATION?

Yes, there are several laws that establish areas off-limits for mining purposes in order to protect biological or cultural resources. In fact, most national parks, wilderness areas and national wildlife refuges in the U.S. are off-limits to hard rock mining. In addition, several laws condition mining operations to preserve biological or cultural resources.

16.b. IF SO, PLEASE DESCRIBE EACH SUCH LAW AND WHAT AREAS IT PROTECTS. (FOR EXAMPLE, THESE MAY INCLUDE PARKS, ARCHEOLOGICAL SITES, CULTURAL SITES, BIOSPHERE RESERVES, WILDLIFE SANCTUARIES).

16.c. IS METAL MINING ABSOLUTELY PROHIBITED OR LIMITED IN THESE AREAS? IF ONLY CERTAIN KINDS OF MINING AND MINING-RELATED ACTIVITIES ARE PROHIBITED,

PLEASE IDENTIFY.

Federal laws described below render numerous kinds of federally-owned lands off limits to mining. However, most of these laws allow mining to continue on those specific locations (mining claims) where a valid claim had been established prior to the creation of the protected area or its withdrawal from new claims under the Mining Law. (States generally prohibit mineral development in state parks and forests; nevertheless, some states, such as Nevada, Utah and Alaska, allow mining in certain state parks.)

The Mining in the National Parks Act (1976) prohibits all types of mining in the National Park System, subject to valid existing rights, which exist in a few areas.⁴¹ All mining claims within the boundaries of units of the system were required to be recorded with the Secretary of the Interior within one year, and those not so recorded are void. This Act also provides the Secretary of Interior with the power to issue regulations to protect the parks from the adverse environmental impacts of mining. National Monuments, which are protected by the Antiquities Act are considered within the National Park System and therefore are subject to the same protective provisions as National Parks Act. National Monuments include historic landmarks, historic and prehistoric structures and other objects of historic or scientific interest. Many national monuments include areas of natural resources that are biologically significant.

The National Wildlife Refuge System Administration Act established the National Wildlife Refuge System to preserve a national network of lands and waters for the conservation and management of fish, wildlife and plant resources of the United States for the benefit of present and future generations.⁴² Mining is permitted if the refuge was acquired by purchase, but not if it was withdrawn from the general public lands by the federal government for refuge use. Even in this case, the Secretary of Interior must determine if mining is compatible with purposes of the refuge.

The Wild and Scenic Rivers Act⁴³ established the national wild and scenic rivers system composed of rivers and their immediate environments that are preserved for the benefit and

⁴¹ 16 U.S.C. §§ 1901-1912.

⁴² 16 U.S.C. §§ 668dd-668ee.

⁴³ 16 U.S.C. §§ 1271-1287.

enjoyment of present and future generations. Mining claims that affect lands within the system confer title only to the mineral deposits and only allow such use of the surface as is reasonably required to carrying on prospecting or mining operations. These activities must be consistent with the regulations that may be prescribed by the Secretary of Interior or in the case of national forest lands, by the Secretary of Agriculture. Such regulations shall provide safeguards against pollution of the river involved and unnecessary impairment of the scenery involved . The minerals located in the bed or bank or within one-quarter mile of designated wild rivers are withdrawn from all forms of appropriation and operation under mining laws, subject to valid existing rights. A similar rule for withdrawal exists in the case of rivers that may potentially be added to the system. In this case, prospecting activities or the issuance of leases, licenses and permits under the mineral leasing laws is permitted. Nevertheless, the Secretary of Interior or the Secretary of Agriculture may establish conditions to safeguard the area in the event it may be included in the system.

The Wilderness Act established federally owned areas designated as "wilderness areas", and provides for the protection of these areas, the preservation of their wilderness character and for their enjoyment as wilderness for now and the future.⁴⁴ The location of new mineral claims in wilderness areas after January 1, 1984 was prohibited, but mining may occur under valid existing rights under prior claims. Wilderness study areas also limit mining. Roadless public lands areas of five thousand acres or more and roadless islands which present wilderness characteristics shall be studied as to their suitability for preservation as wilderness. Mining in wilderness study areas can not be conducted so as to impair the suitability of such areas for preservation as wilderness. Holders of valid existing mining rights may build roads to access their property in wilderness study areas and continue mining "in the manner and degree in which it was conducted" prior to becoming a wilderness study area. The Secretary of Interior may take any action to prevent unnecessary or undue degradation of the lands and their resources and or to afford environmental protection.

The Historic Sites Act provides for the preservation of historical and archeological data which might otherwise be irreparably lost or destroyed as result of alterations of the terrain as a result of any federal construction project or federally licensed activity or program. In such case, the federal agency shall notify the Secretary of Interior in writing and shall provide appropriate information concerning the project, program or activity. Such agency may request the Secretary

⁴⁴ 16 U.S.C. § 1131-1136.

of Interior to undertake the recovery, protection and preservation of such data or may undertake such activities.

Whenever a federal agency provides financial assistance to any private project if the Secretary of Interior determines that significant historical or archeological data might be lost or destroyed, it may conduct a survey of the affected site and undertake the recovery, protection and preservation of such data.

16.d. DOES THE PROTECTED AREA LAW APPLY TO ANY TYPES OF PRIVATELY-OWNED LANDS? IF SO, PLEASE IDENTIFY.

16.e. IS EXPLORATION ALSO PROHIBITED OR LIMITED IN AREAS UNDER SUCH LAWS?

Federal and state protected area laws do not apply to privately-owned land. Some areas may, in effect be off limits to mining because of the operation of such laws as the federal Endangered Species Act, which prohibits the “taking” of a listed threatened or endangered species by any person (see 17b. below).

In the United States, conservation easements may also constitute a form of protection for private lands. The easements derive not from protected areas laws but from a contractual agreement. A conservation easement is generally created by a landowner (the "grantor") who desires to transfer certain rights to a conservation organization ("the grantee"). Working cooperatively, the landowner and the grantee identify appropriate uses for the land and detail activities which should be prohibited. Therefore, they could agree to declare the land as an off-limits area for mining activities.

Restrictions defined in the recorded conservation easement run with the title to the property perpetually or as otherwise established by the parties. The easement, which remains being private property, may be sold, bequeathed or otherwise transferred at any time. Additionally, all rights of ownership which have not been transferred to the grantee may be freely exercised by the current owner.

Incompatible Use Areas

17.a ARE THERE ANY LAWS THAT PROHIBIT OR LIMIT METAL MINING IN CERTAIN AREAS BECAUSE MINING WOULD CONFLICT WITH THE PRIMARY USE OF SUCH AREAS?

There are several laws and regulations that regulate the potential conflicts when land is used for multiple purposes. For instance, when multiple use federal lands are being used for mining operations and other Leasing Act operations, each of those operations shall be conducted in a manner compatible with such multiple use, as far as practicable.

17.b. IF SO, PLEASE DESCRIBE EACH SUCH LAW AND WHAT AREAS IT PROTECTS. (FOR EXAMPLE, THESE MAY INCLUDE MILITARY RESERVES, URBAN AREAS, FOREST DISTRICTS DEDICATED TO TIMBER PRODUCTION).

17.c. IS METAL MINING ABSOLUTELY PROHIBITED OR LIMITED IN THESE AREAS? IF ONLY CERTAIN KINDS OF MINING AND MINING-RELATED ACTIVITIES ARE PROHIBITED, PLEASE IDENTIFY.

Military reservations set aside for maneuvers are entirely withdrawn from public use for mining purposes.

All lands contained within the boundaries of an established Indian Reservation are withdrawn from location, entry and appropriation under the General Mining Law of 1872. Minerals on Indian Reservations may only be acquired by lease pursuant to the Act of May 11, the Act of March 3, 1909 or the Indian Mineral Development Act (1982) .

This Act establishes that resources development on land in which an Indian tribe or an individual Indian owns an interest is subject to mutual agreement. The agreement is subject to the approval of the Secretary of Interior who may decide considering the best interest of the Indian tribe or of the individual Indian, the potential economic return, the environmental, social and cultural effects on the tribe as well as the mechanisms for dispute resolution.

The Endangered Species Act⁴⁵ provides for the protection of fish, wildlife and plants in the United States. The Act, which is administered by the Fish and Wildlife Service (FWS) and the

⁴⁵ 16 U.S.C. §§ 1531-1544.

National Oceanic and Atmospheric Administration (NOAA), requires each federal agency to ensure that every federal action “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species” . To make this determination, the agencies must consult with FWS (for species on land or in fresh water) or NOAA (for marine species). This procedure is applicable for mining projects on federal lands. Section 9 of ESA establishes the general prohibition on the taking of endangered species, which is applicable to any person, whether on private or public lands. The term “take” has been a matter of legal discussion. Court cases have determined that “take” includes indirect harm to the species, through harm to its habitats.

Local zoning ordinances and land use plans may regulate the location and permissibility of hard-rock mining operations. The federal Coastal Zone Management Act requires consistency between mineral development of federal land located in coastal zones with state and local requirements.⁴⁶ The California Coastal Zone Management program specifically requires consistency between mineral development of federal land located in coastal zones with local zoning regulations, for example.⁴⁷ Note that states may not prohibit mining on federal lands, but only condition mining operations. A recent federal court decision held that the 1872 Mining Law preempted a county ordinance (adopted by initiative) that banned all new surface mining of metallic minerals in a portion of the county which consisted primarily of federal lands and minerals.⁴⁸

Some states allow local zoning to limit or condition where mining may occur on private lands, while others prohibit local zoning that restricts or purports to restrict mining.

17.d. DOES THE LAW APPLY TO ANY TYPES OF PRIVATELY-OWNED LANDS? IF SO, PLEASE IDENTIFY.

17.e. IS EXPLORATION ALSO PROHIBITED OR LIMITED IN AREAS UNDER SUCH LAWS?

There is no specific limitation for privately-owned areas. Nevertheless, some of these

⁴⁶ 16 U.S.C. §§ 1451-1464.

⁴⁷ See California Coastal Commission v. Granite Rock, 480 U.S. 572 (1987).

⁴⁸ South Dakota Mining Assn. v. Cole, No. 97-3861 (8th Cir. Sept. 16, 1998).

restrictions discussed above are applicable as indicated to private lands.

Areas Determined Unsuitable for Mining

- 18.a. ARE THERE ANY LAWS THAT CREATE A PROCEDURE THAT CAN BE USED BY GOVERNMENT OFFICIALS OR CITIZENS TO PROHIBIT OR LIMIT METAL MINING IN OTHER AREAS ON A CASE-BY-CASE BASIS WHERE THE AREAS ARE "UNSUITABLE" FOR MINING?**
- 18.b. IF SO, PLEASE DESCRIBE EACH SUCH LAW AND ITS PROCEDURE.**
- 18.c. DOES THE LAW ALLOW THE PROHIBITION OR LIMITATION OF METAL MINING FROM AN AREA THAT IS SO ECOLOGICALLY SENSITIVE OR FRAGILE THAT MINING WOULD PRODUCE IRREPARABLE INJURY IF IT OCCURS EVEN UNDER THE STRICTEST STANDARDS?**
- 18.d. DOES THE LAW ALLOW THE PROHIBITION OR LIMITATION OF METAL MINING FROM AN AREA WHERE THE ORE BODY OR SURROUNDING ROCK CONTAIN SO MUCH NATURALLY-OCCURRING TOXIC MATERIALS OR ACID-FORMING MATERIALS THAT MINING WILL PRODUCE IRREPARABLE INJURY EVEN IF IT OCCURS UNDER THE STRICTEST STANDARDS?**
- 18.e. DOES THE PROCESS APPLY TO ANY PRIVATELY-OWNED LANDS? IF SO, PLEASE IDENTIFY.**
- 18.f. DOES THE PROCESS ALLOW EXPLORATION TO BE PROHIBITED OR LIMITED?**

There is no federal procedure to declare an area unsuitable for mining other than withdrawal of the lands from mineral location. The BLM “unnecessary or undue degradation” standard, and the similar Forest Service standard may result in some *de facto* areas where mining cannot occur (because no known technology could prevent such degradation), but this is not clearly established in practice.

The state of Wisconsin recently passed a moratorium on the permitting of mines that proposed to mine sulfide ores. In effect, until the conditions to lift the moratorium are met, this

law may serve as a declaration of certain ore bodies as off limits to mining based on their presumed potential to generate pollution.

XII. INSTITUTIONAL ORGANIZATIONS

19.a BRIEFLY IDENTIFY AND DESCRIBE EACH GOVERNMENT AGENCY RESPONSIBLE FOR IMPLEMENTING THE ENVIRONMENTAL LAWS AND POLICIES DISCUSSED ABOVE?

19.b IF YOUR COUNTRY HAS A FEDERAL SYSTEM OF GOVERNMENT, BRIEFLY DESCRIBE THE DIVISION OF RESPONSIBILITY BETWEEN THE FEDERAL AND OTHER LEVELS OF GOVERNMENT?

As discussed earlier, regulation of the hard-rock mining industry in the United States is divided between the federal and state governments. Most mines on federally-owned lands fall under jurisdiction of either the Bureau of Land Management in the Department of Interior or the Forest Service in the Department of Agriculture, depending on whether they are found on BLM or Forest Service lands. These agencies are responsible for preparing EIA documents in connection with mines on their lands, under the National Environmental Policy Act (NEPA). They also regulate the conditions under which mining occurs.

The Environmental Protection Agency (EPA) administers federal pollution control laws applicable to mines on federal, state and private lands, except where program authority for administration of such laws has been delegated to the state government for administration under an equivalent state program. These laws include the Clean Air Act, the Clean Water Act, RCRA, TSCA, EPCRA, and CERCLA. TSCA, EPCRA, and CERCLA are not delegated to the states. The Army Corps of Engineers manages the Section 404 Permit Program (regulating filling of waters and wetlands) under the Clean Water Act.

States have a variety of agencies with regulatory authority over mining, including mining regulatory agencies and environmental agencies. In general, the mining agencies handle permitting of mineral exploration, mining, closure, and reclamation, while the environmental agencies handle permitting of air, water, and waste emissions and discharges (unless the EPA has retained this authority).

Mines on federal lands may be subject to dual regulation by the BLM or Forest Service and the relevant state mining agency. Most such regulation is coordinated under Memoranda of Understanding between the federal and state agencies.