

Department of Conservation

**MAINE LAND USE REGULATION COMMISSION**

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**CHAPTER 13**

**Rules for Metallic Mineral Exploration,  
Advanced Exploration and Mining**

Effective Date: August 26, 1991

04-061 DEPARTMENT OF CONSERVATION  
MAINE LAND USE REGULATION COMMISSION

Chapter 13 METALLIC MINERAL EXPLORATION, ADVANCED EXPLORATION AND MINING RULES

and

06-96 DEPARTMENT OF ENVIRONMENTAL PROTECTION

Chapter 200 METALLIC MINERAL EXPLORATION, ADVANCED EXPLORATION AND MINING

Summary: This rule establishes requirements for exploration, advanced exploration, and mining of metallic minerals. The rule contains requirements for pre-application, baseline monitoring, application, environmental review, siting, design, operation, reclamation, closure, and post-closure.

## SUBCHAPTER 1. GENERAL PROVISIONS

### Section 1. Applicability

This subchapter applies to the following subchapters jointly promulgated by the Department and the Commission:

Subchapter 2. Exploration and Advanced Exploration

Subchapter 3. Pre-Application

Subchapter 4. Mining

Subchapter 5. Mine Waste Treatment and Management

### Section 2. Definitions

- A. Acid Rock Drainage. "Acid rock drainage" means the drainage that occurs as a result of natural oxidation of sulfide minerals contained in rock which is exposed to air and water.
- B. Advanced Exploration or Advanced Exploration Activity. "Advanced exploration" or "advanced exploration activity" means any activity involving the bulk sampling of metallic mineral deposits, or any metallic mineral exploration activities which exceed those defined as exploration activities.
- C. Advanced Exploration Permit. "Advanced exploration permit" means a permit to conduct metallic mineral advanced exploration activities.
- D. Advanced Exploration Site. "Advanced exploration site" means the area and facilities within which advanced exploration or activities incidental thereto occur, or may reasonably be expected to occur.
- E. Ambient Air. "Ambient air" means "all air outside of buildings, stacks or exterior ducts." 38 M.R.S.A. 582(5).
- F. Aquifer. "Aquifer" means a geologic formation composed of rock or sand and gravel that stores and transmits significant quantities of recoverable water.
- G. Baseline Monitoring Plan. "Baseline monitoring plan" means a monitoring plan that will define the existing site conditions for a specific location and shall include, but is not limited to, characterizations of the following resources: wildlife, surface water and groundwater quality and quantity, and air quality.
- H. Beneficiation. "Beneficiation" means the dressing or processing of ore for the purposes of (1) attaining the desired size consistent for the ore or product; (2) removing unwanted constituents; or (3) improving the quality, purity, or assay grade of a desired product.
- I. Bulk Sampling. "Bulk sampling" means the removal of samples for the purpose of testing to determine the feasibility, method, or manner of extraction and/or processing of metallic minerals. Such testing may include milling or grinding tests, and/or pilot plant and processing tests. Methods of bulk sampling may include, but are not limited to, drilling and boring, digging of shafts and tunnels, or digging of pits and trenches. For purposes of this rule, bulk sampling of metallic mineral deposits is included in advanced exploration.
- J. Closure. "Closure" means the process of closing out mine waste units pursuant to a closure plan approved by the Department and/or Commission.

- K. Coastal Wetlands. "Coastal wetlands" means "all tidal and subtidal lands, including all areas below any identifiable debris line left by tidal action; all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat or other contiguous lowland which is subject to tidal action during the maximum spring tide level as identified in tide tables published by the National Ocean Service [Ocean Survey]. Coastal wetlands may include portions of coastal sand dunes." 38 M.R.S.A. 480-B(2).
- L. Commission. "Commission" means "the Maine Land Use Regulation Commission."
- M. Commissioner. "Commissioner" means "the Commissioner of Environmental Protection." 38 M.R.S.A. 361-A(1-E).
- N. Coordinating Agency. "Coordinating agency" means the agency responsible for coordinating an application for an advanced exploration permit or a mining permit.
- O. Complex Hydrogeology. "Complex hydrogeology" means subsurface hydrogeological conditions such that it is not technically feasible to monitor groundwater to detect migration of contaminants from the mine waste unit to the uppermost aquifer, or it is not technically feasible to conduct corrective action.
- P. Corrective Action. "Corrective action" means action taken by the permittee to correct a violation or to meet a performance requirement in a metallic mineral mining permit or advanced exploration permit, or other law.
- Q. Department. "Department" means "the Department of Environmental Protection composed of the board and the commissioner." 38 M.R.S.A. 361-A(1-H).
- R. Department and/or Commission. "Department and/or Commission" means the Department and the Commission in reference to activities located within the jurisdiction of the Commission. "Department and/or Commission" means the Department alone in reference to activities located outside the jurisdiction of the Commission.
- S. Director. "Director" means the Director of the Maine Land Use Regulation Commission.
- T. Director of the Survey. "Director of the Survey" means "the Director of the Maine Geological Survey." 12 M.R.S.A. 549-A(2).
- U. Displacement. "Displacement" means the relative movement, measured in any direction, of the two sides of a fault.
- V. Drilling. "Drilling" means the making of holes with a drill for exploration of a metallic mineral deposit.
- W. Drill Hole. "Drill hole" means the cavity created by drilling.
- X. Endangered or Threatened Species. "Endangered or threatened species" means any species of fish or wildlife that the Commissioner of Inland Fisheries and Wildlife has designated as endangered or threatened under 12 M.R.S.A. 7753.
- Y. Environmental Impact Report. "Environmental impact report" (EIR) means a detailed study describing and analyzing the environmental impacts of a mining or advanced exploration activity, discussing ways to mitigate or avoid such impacts, and evaluating reasonable alternatives to the proposed activity.
- Z. Environmental Review. "Environmental review" means a process of assessing the environmental impacts of a proposed mining activity.

- AA. Exploration. "Exploration" or "exploration activity" means any activity engaged in for purposes of determining the location, extent and composition of metallic mineral deposits, provided that such activities are limited to test boring, test drilling, hand sampling, the digging of test pits having a maximum surface opening of 100 square feet, or other test sampling methods which cause minimum disturbance of soil and vegetative cover. Exploration activities shall not include advanced exploration activities.
- BB. Exploration Site. "Exploration site" means the area within which exploration or activities incidental thereto occur, or may reasonably be expected to occur.
- CC. Extraction. "Extraction" means the removal of ores, minerals, overburden, and waste rock, but does not include the injection of leaching solutions, lixiviants, or solutions to solubilize or extract metallic minerals in place (in situ) from existing geologic formations.
- DD. Fault. "Fault" means a fracture along which rock formations on one side have been displaced with respect to those on the other side.
- EE. Floodplain. "Floodplain" means the "lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of offshore islands, which are inundated by a flood that has a 1 percent or greater chance of recurring in any year or a flood of a magnitude equalled or exceeded once in 100 years on the average." 06-096 CMR 400.1(kk).
- FF. Fractured Bedrock Aquifer. "Fractured bedrock aquifer" means "a consolidated rock formation which is fractured and which is saturated and recharged by precipitation percolating through overlying sediments to a degree which will permit wells drilled into the rock to produce a sufficient water supply for domestic use." 38 M.R.S.A. 1310-N(2-A)(B).
- GG. Freshwater Wetlands. "Freshwater wetlands" means "freshwater swamps, marshes, bogs and similar areas which are:
- A. Of 10 or more contiguous acres, or of less than 10 contiguous acres and adjacent to a surface water body, excluding any river, stream or brook, such that in a natural state, the combined surface area is in excess of 10 acres;
  - B. Inundated or saturated by surface or ground water at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soils; and
  - C. Not considered part of a great pond, coastal wetland, river, stream or brook.
- These areas may contain small stream channels or inclusions of land that do not conform to the criteria." 38 M.R.S.A. 480-B(4).
- HH. Fugitive Emissions. "Fugitive emissions" means those emissions of air contaminants which do not pass through a stack, flue, chimney, or vent." 06-096 CMR 100.30. For purposes of this rule, fugitive emissions include, without limitation, dust arising from an advanced exploration or mining activity, or from the advanced exploration or mine site.
- II. Great Pond. "Great Pond" means any inland body of water which in a natural state has a surface area in excess of 10 acres and any inland body of water artificially formed or increased which has a surface area in excess of 30 acres. 38 M.R.S.A. 480-B(5).

- JJ. Groundwater. "Groundwater" means "all the waters found beneath the surface of the earth which are contained within or under this State or any portion thereof, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State." 38 M.R.S.A. 361-A(2-A).
- KK. Hazardous Waste. "Hazardous waste" means "a waste substance or material, in any physical state, designated as hazardous by the board under section 38 M.R.S.A. 1319-O. It does not include waste resulting from normal household or agricultural activities. The fact that a hazardous waste or part or constituent may have value or other use or may be sold or exchanged does not exclude it from this definition." 38 M.R.S.A. 1303-C(15).
- LL. Holocene. "Holocene" means the most recent epoch of the Quaternary period, extending from approximately 10,000 years ago to the present.
- MM. In-Situ Leaching. "In-situ leaching" means the leaching of minerals occurring in the situation in which they were originally formed or deposited. For purposes of this rule, in-situ leaching is not considered mining.
- NN. Land Clearing Debris. "Land clearing debris" means "solid wastes resulting from the clearing of land and consisting solely of brush, stumps, soil material and rocks." 38 M.R.S.A. 1303-C(18).
- OO. Land Use District. "Land use district" means "the area located within the boundaries of air, land or water delineated vertically or horizontally by the commission for distinct categories of use." 12 M.R.S.A. 682(8).
- PP. Leachate. "Leachate" means any liquid, including any suspended components in the liquid, that has passed through or emerged from any material.
- QQ. Liner. "Liner" means a continuous layer of man-made or reconstructed natural materials, or a combination thereof, which restricts the vertical or lateral movement of liquids.
- RR. Metallic Minerals. "Metallic minerals" or "metallic mineral deposit" means any mineral containing any metal, including, but not limited to, minerals containing gold, silver, iron, manganese, copper, lead, zinc, tin, chromium, cobalt, nickel, molybdenum, platinum group elements, aluminum, antimony, or bismuth as their valuable constituent(s). Metallic minerals do not include common rock-forming minerals such as quartz, calcite, dolomite, feldspar, pyroxenes, amphiboles, zeolites, clays, or micas. For purposes of this rule, "metallic minerals" does not include thorium or uranium.
- SS. Minerals. "Minerals" means "all naturally occurring mineral deposits, including hydrocarbons and peat, but excluding sand, gravel and water." 12 M.R.S.A. 549-A(6).
- TT. Mine Site. "Mine site" means the area and facilities owned, leased, or otherwise subject to the possessory control of a mining company within which mining or activities incidental thereto are to occur. The mine site includes, but it not limited to, the excavation, tailings, mine waste units, waste rock or overburden, storage areas, mills, conveyors, concentrators, crushers, screens, pipes, canals, dams, ponds, lagoons, ditches, roads, access roads, utility facilities or equipment, pollution control facilities, railroad tracks or sidings, administrative or other buildings, or improvements, structures, rights-of-way, or easements appurtenant or related to any of the foregoing.
- UU. Mine Waste. "Mine waste" means all waste materials (solid, semi-solid, or liquid) associated with exploration, advanced exploration, and mining activities. Such wastes include, but are not limited to, rock, tailings, and other process waste such as leachate and wastewater treatment plant residuals. Land clearing debris, woodwaste, wastes from solvent extraction and electrowinning are not considered mine waste for purposes of this rule. Notwithstanding 06-096 CMR 850, mine waste is not hazardous waste to the extent mine waste has been excluded by Subchapter 3 of the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.

- VV. Mine Waste Unit. "Mine waste unit" means any land area, structure, location, equipment, or combination thereof on or in which mine wastes are managed. A land area or structure shall not become a mine waste unit solely because it is used to store (for 90 days or less) wastes generated on the same site.
- WW. Mining or Mining Activity. "Mining" or "mining activity" means any activity or process that is for the purpose of extraction or removal of metallic minerals, and includes processes used in the separation or extraction of metallic minerals from other material including, but not limited to, crushing, grinding, beneficiation by concentration (gravity, flotation, amalgamation, electrostatic, or magnetic); cyanidation; leaching; crystallization; or precipitation; mine waste handling and disposal; and processes substantially equivalent, necessary, or incidental to any of the foregoing. Mining or mining activity does not include exploration, advanced exploration, or thermal or electric smelting.
- XX. Mining Permit. "Mining permit" means a consolidated permit to conduct mining activities.
- YY. Mitigation. "Mitigation" means any action taken, or not taken, in order to avoid, minimize, rectify, reduce, eliminate, or compensate for adverse environmental impacts. Such actions include, but are not limited to: (1) avoiding an impact altogether by not taking a certain action or parts of an action; (2) minimizing an impact by limiting the magnitude or duration of an activity or by controlling the timing of an activity; (3) rectifying an impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating an impact over time through preservation and maintenance operations during the life of the project; and (5) compensating for an impact by replacing affected resources or environments, or providing substitute resources or environments.
- ZZ. Neat Cement. "Neat cement" means a slurry composed of Portland cement and water.
- AAA. Net Acid Producing Potential. "Net acid producing potential" means the difference between the neutralization potential and acid generation potential of a waste expressed as calcium carbonate equivalents.
- BBB. Ore. "Ore" means "any mineral or an aggregate of minerals which can be extracted from the earth economically." 12 M.R.S.A. 549-A(8). For purposes of this rule, "ore" also means a metallic mineral deposit and may also include previously disposed of or abandoned mine waste from which a metallic mineral or minerals of economic value can be commercially extracted.
- CCC. Ore Leaching. "Ore leaching" means the intentional separation, selective removal, dissolving-out, or extraction of soluble metals, salts, or other constituents from an ore by the action of percolating water or other percolating solution. For purposes of this rule, ore leaching may include, but is not limited to, heap leaching, vat leaching, agitation leaching, dump leaching and bioleaching.
- DDD. Overburden. "Overburden" means "earth and other materials naturally lying over the product to be mined." 38 M.R.S.A. 482(3-A).
- EEE. Permittee. "Permittee" means a person who has received an advanced exploration permit or mining permit in accordance with this rule.
- FFF. Person. "Person" means "an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity." 38 M.R.S.A. 361-A(4).
- GGG. Post-Closure Maintenance. "Post-closure maintenance" means all activities undertaken at a closed mine waste unit to maintain the integrity of containment features and to monitor compliance with applicable performance standards and permit conditions.
- HHH. Pre-Application Conference. "Pre-application conference" means an initial conference for purposes of discussing the proposed advanced exploration or mining activity contemplated by the applicant.

- III. Pre-Existing Data. "Pre-existing data" means data collected prior to a pre-application conference.
- JJJ. Private Drinking Water System. "Private drinking water system" means a well, spring or other source of groundwater for human or domestic animal consumption.
- KKK. Property Boundary. "Property boundary" means any boundary between parcels of land owned or leased by different persons or groups of persons.
- LLL. Protected Natural Resource. "Protected natural resource" means "coastal sand dune systems, coastal wetlands, significant wildlife habitat, fragile mountain areas, freshwater wetlands, great ponds or rivers, streams or brooks," 38 M.R.S.A. 480-B(8), as these terms are defined in 38 M.R.S.A. 480-B.
- MMM. Public Drinking Water System. "Public drinking water system" means a well, spring, or other source of groundwater which has at least 15 service connections or serves an average of at least 25 individuals daily at least 30 days out of the year. See 10-144A CMR 231.
- NNN. Qualified Professional. "Qualified professional" means a scientist, engineer, or professional in a technical discipline with sufficient training and experience to enable the individual to make sound professional judgments regarding conducting technical analyses, or regarding the design, construction, and operation of regulated units and ancillary structures.
- OOO. Reclamation. "Reclamation" means the rehabilitation and continued maintenance of the area of land affected by mining under a reclamation plan which can include, but is not limited to, grading and land shaping, the creation of lakes or ponds, the planting of forests, the seeding of grasses and legumes, the planting of crops for harvest, and the enhancement of wildlife and aquatic resources.
- PPP. Responsible Officer. "Responsible officer" means
1. A person holding a principal executive position as established by the charter or by-laws of the corporation;
  2. A general partner or the proprietor, as appropriate, if a partnership or sole proprietorship; or
  3. A principal executive officer or ranking elected official of a municipal, state, federal, or other public agency.
- QQQ. River, Stream or Brook. "River, stream or brook" means "a channel between defined banks including the floodway and associated flood plain wetlands where the channel is created by the action of the surface water and characterized by the lack of upland vegetation or presence of aquatic vegetation and by the presence of a bed devoid of top soil containing water-borne deposits on exposed soil, parent material or bedrock." 38 M.R.S.A. 480-B(9).
- RRR. Significant Sand and Gravel Aquifer. "Significant sand and gravel aquifer" is defined as "a porous formation of ice-contact and glacial outwash sand and gravel that contains significant recoverable quantities of water which are likely to provide drinking water supplies." 38 M.R.S.A. 1310-N(2-A)(A).
- SSS. Scoping Process. "Scoping process" means the process of determining the factors and issues to be addressed in an environmental impact report.
- TTT. Site. "Site" means an advanced exploration site or a mine site, depending upon the nature of the activity as determined by the Department and/or Commission.

- UUU. State Lands. "State lands" means "all lands owned or held in trust by the State or in which the State holds an interest, including inland and tidal submerged lands and waters." 12 M.R.S.A. 549-A(11).
- VVV. Structure. "Structure" means building, structure, or permanent structure as defined under any of the following provisions: 12 M.R.S.A. 682(3) and (4), 38 M.R.S.A. 482(6), and 38 M.R.S.A. 480-B(7).
- WWW. Surface Impoundment. "Surface impoundment" or "impoundment" means a mine waste unit or part of such a unit that is a natural topographic depression, man-made excavation, or diked area formed of earthen or other materials that is designed to hold an accumulation of liquid and solid wastes.
- XXX. Tailings. "Tailings" means those portions of a metallic mineral deposit remaining after extraction of minerals by physical or chemical means.
- YYY. Transfer of Ownership. "Transfer of ownership" means "a sale, a lease, a sale of over 50% of the stock of a corporation to one legal entity or a merger or consolidation where the surviving corporation is other than the original licensee." 38 M.R.S.A. 361-A(6).
- ZZZ. Unstable Area. "Unstable area" means any area where mass movement of earth materials such as landslides, rockfalls, mudslides, slumps, earth flows, subsidence, or debris flows are likely to occur.
- AAAA. Uppermost Aquifer. "Uppermost aquifer" means the geologic formation that is an aquifer nearest the natural ground surface, as well as lower aquifers that are hydraulically interconnected with this aquifer.
- BBBB. WAD Cyanide. "WAD cyanide" means the cyanide concentration as determined by Method C. Weak Acid Dissociable Cyanide, D2036-082, Part 31 of the American Society for Testing and Materials Book of Standards.
- CCCC. Waste Rock. "Waste rock" means rock which has been removed during mining or advanced exploration but does not contain sufficient metallic minerals to constitute ore.
- DDDD. Waters of the State. "Waters of the State" means "any and all surface and subsurface waters which are contained within, flow through, or under or border upon this State or any portion thereof, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State." 38 M.R.S.A. 361-A(7).
- EEEE. Woodwastes. "Woodwastes" means "brush, stumps, lumber, bark, woodchips, shavings, slabs, edgings, slash, and sawdust, which are not mixed with other solid or liquid waste." 06-096 CMR 400(1)(UUUU).

### Section 3. Prohibition

It shall be unlawful for any person to establish, construct, alter, operate or otherwise engage in any activity at a mine site, advanced exploration site, or exploration site contrary to this rule, a permit issued under this rule, or other applicable law.

### Section 4. Relation to Other Rules

Subchapters 1-5 are intended to supplement rules administered by the Department and the Commission. No activity described in Subchapters 1-5 is exempt from a requirement contained in any Department or Commission rule unless such requirement, and rule, is specifically cited and described as inapplicable. No Department or Commission rule is intended to be repealed, superseded, or modified in any way by Subchapters 1-5 unless such rule is cited and described as repealed, superseded, or modified. Nothing herein shall repeal or supersede any additional requirements imposed by statute, rule of another agency, or municipal ordinance. No enforcement authority set forth herein is intended to waive or limit any other authority of the Department or Commission.

## Section 5. Consolidated Permit

Permits are required under this rule for advanced exploration, when applicable, and mining activities. The following permits and related procedures, when applicable, will be consolidated into an advanced exploration or mining permit issued under this rule, provided that all statutory and other legal criteria for issuance of such consolidated permit shall be considered by the Department and/or Commission in evaluating an application for a permit hereunder:

- A. Development Permit. See Land Use Regulation Law, 12 M.R.S.A. 685-B, with rules 04-061 CMR 1-5, 7-12, 15, and 16, as hereafter amended or superseded.
- B. Natural Resources Protection Act Permit. See Natural Resources Protection Act, 38 M.R.S.A. 480-A, et seq., with rules 06-096 CMR 305, 310 and 355, as hereafter amended or superseded.
- C. Site Location of Development Permit. See Site Location of Development Law, 38 M.R.S.A. 481, et seq., with rules 06-096 CMR 371-378, as hereafter amended or superseded.
- D. Solid Waste Permits. (for mine waste, land clearing debris and woodwaste only). See Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. 1301 et seq. Refer to Subchapter 5 of this rule for requirements for mine waste; refer to 06-096 CMR 400-409, as hereafter amended or superseded, for requirements for land clearing debris and woodwaste only.

*NOTE: The following state permits and district boundary changes are not incorporated into the consolidated advanced exploration or mining permit, but will be separately required depending upon the location, type and extent of activity proposed (other federal, state, or local legal requirements may also apply):*

*Air Emission License. See Protection and Improvement of Air Law, 38 M.R.S.A. 581, et seq.*

*Commission District Boundary Change. See Land Use Regulation Law, 12 M.R.S.A. 685-A.*

*Oil Discharge Pollution Prevention Control License. See Oil Discharge Prevention and Pollution Control Law, 38 M.R.S.A. 561, et seq.*

*Solid and Hazardous Waste Permits for non-mine waste only (excluding land clearing debris and woodwaste). See Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. 1301, et seq.*

*Underground Oil Storage Facility License. See Underground Oil Storage Facilities and Ground Water Protection Law, 38 M.R.S.A. 561, et seq.*

*Waste Discharge License. See Protection and Improvement of Waters Act, 38 M.R.S.A. 413, et seq.*

## Section 6. Permit Criteria

The Department and/or Commission shall approve, or approve with conditions, an application under this rule upon finding the applicant has met all applicable statutory and regulatory criteria for each and every permit consolidated under this rule. In addition, the applicant shall: (1) affirmatively demonstrate that the reclamation plan will result in reclamation of the mine or advanced exploration site consistent with this rule; (2) certify it has not forfeited sureties posted for any mining or advanced exploration activity; and (3) affirmatively demonstrate that the issuance of the permit will not cause or contribute to a violation of law. In determining whether issuance of a permit will cause or contribute to a violation of law, the Department and/or Commission may consider any prior violation, suspension, or revocation of a permit issued to the applicant or any person related to the applicant and any other environmental enforcement history of the applicant or related person. The Department and/or Commission may require the applicant to present evidence of changed conditions or circumstances sufficient in

the judgment of the Department and/or Commission to warrant issuance of the permit notwithstanding any prior violation, suspension or revocation.

#### Section 7. General Procedure

- A. Exploration. Depending upon the type, extent and location of the activity proposed, approvals pursuant to other laws may be required by the Department, the Commission, and/or the Director of the Survey. The requirements for exploration are discussed in Section 15.
- B. Advanced Exploration or Mining. This rule authorizes consolidated permits for advanced exploration and mining. The following is a general description of the application process.
  1. Baseline Monitoring. If a mining project is proposed, the applicant submits a baseline monitoring plan. If an advanced exploration project is proposed, the applicant submits such a plan when required by the Department and/or Commission on a case-specific basis.
  2. Pre-Application Conference. The applicant submits information concerning the proposed project to the coordinating agency (described in Section 19(A) of this rule), and requests a pre-application conference. The Department and/or Commission meet with the applicant to determine the nature of the project, identify areas of concern, and specify additional submissions required.
  3. Environmental Review Process. If the proposal is for a mining activity, or if the proposal is for an advanced exploration activity, and the Department and/or Commission determine the environmental review process is necessary:
    - a. The applicant prepares and submits a draft scoping document for an Environmental Impact Report (EIR).
    - b. The Department and/or Commission make the draft scoping document available for public review and comment.
    - c. If the Department and/or Commission determine the scoping document is acceptable, the applicant prepares an EIR and submits it as part of the permit application.
  4. Consolidated Permit Application. An applicant for an advanced exploration or mining permit files an application in accordance with the requirements of this rule, including a completed permit application form and all supporting materials.

*NOTE: Pursuant to state law, within the jurisdiction of the Commission, the Department and the Commission must each approve an application for advanced exploration or mining.*

#### Section 8. Permit Conditions

This section applies in lieu of 06-096 CMR 372.12, 400.4(J), and 856.13. Permits shall be subject to the following.

##### A. Standard Conditions

1. Relation of Permit to Application. The plans, specifications, descriptions, and other documentation submitted by the permittee in support of the application, and approved by the Department and/or Commission in issuing the permit, constitute terms of the permit which must be complied with by the permittee. Any variation or change in the plans, specifications, descriptions, or other documentation must be approved by the Department and/or Commission prior to implementation. Upon completion of any construction or alteration, the permittee must submit to the Department and/or Commission a written certification by a registered

professional engineer that the site has been constructed or altered in accordance with the terms of the permit.

2. Duty to Comply. The permittee must comply with all conditions of the permit. Any noncompliance constitutes a violation of law and is grounds for enforcement action, for permit suspension or revocation, and for denial of a renewal application.
3. Duty to Reapply. If the permittee wishes to continue an activity regulated by the permit after the expiration date of the permit, the permittee must submit an application for renewal at least 180 days, but no earlier than 210 days, prior to the expiration date.
4. Duty to Halt or Reduce Activity. It shall not be a defense in an enforcement action that halting or reducing the permitted activity would have been necessary in order to maintain compliance with the conditions of the permit.
5. Duty to Mitigate. The permittee shall take all steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit.
6. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems which are installed or used by the permittee to achieve compliance with the conditions of the permit.
7. Solid Waste Disposal Facilities. All solid waste disposal facilities are required to accept only solid waste which is subject to recycling and source reduction programs at least as effective as those imposed by State law.
8. Permit Actions. The permit may be modified, suspended, or revoked by the Department and/or Commission as provided under the Maine Administrative Procedure Act, 5 M.R.S.A. 8001, et seq., or other applicable law. The filing of a request by the permittee for a permit modification does not stay any permit condition.
9. Property Rights. The permit does not convey any sort of property right or exclusive privilege.
10. Duty to Provide Information. The permittee shall furnish any information which the Commissioner or Director requests in order to determine whether cause exists for modifying, suspending, or revoking the permit; or to determine compliance with the permit. The permittee shall also, upon request, furnish to the Department and/or Commission copies of records required to be kept by the permittee, and not otherwise required to be filed with the Department and/or Commission.
11. Monitoring and Records
  - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. Records of the monitoring information shall include the following:
    - i. Analytical results;
    - ii. The detection limits for each analyte;
    - iii. Method reference;
    - iv. The dates that samples were collected, received, prepared, and analyzed;
    - v. Chain-of-custody records;

- vi. Results of laboratory control samples (method blanks/initial calibration reference standards);
  - vii. Results of matrix-specific spikes, matrix-spiked duplicates, or reference standards (if applicable); and
  - viii. Commentary on any anomalies encountered during the sampling and analysis.
- c. The permittee shall retain, at the site or at such other location as approved by the Department and/or Commission, the following records for a period of at least 10 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department and/or Commission at any time, and is automatically extended for the period of any enforcement action:
- i. Calibration and maintenance records;
  - ii. Strip chart recordings for continuous monitoring instrumentation; and
  - iii. Records of all data used to complete the application, and copies of all reports required by the permit.
- d. The permittee shall retain the following monitoring records for the life of the facility, including the closure and post-closure periods: groundwater monitoring, waste characterization, surface water monitoring, and sediment monitoring records.
12. Monitoring Reports. Monitoring results shall be reported to the Department and/or Commission at the intervals specified in the permit.
13. Noncompliance and Occurrence Reporting. The permittee shall report to the Department and/or Commission any noncompliance; and any unpermitted or otherwise unlawful release or discharge of pollutants, fire or explosion at the site. Information shall be provided orally within 24 hours from the time the applicant becomes aware of the circumstances, and in writing within 5 working days. If the noncompliance, release or discharge of pollutants, or cause of fire or explosion has not been corrected, the anticipated time it is expected to continue shall be given, together with the steps taken or planned to reduce, eliminate and prevent recurrence. The written submission shall include the following:
- a. Name, address, and telephone number of the owner or operator;
  - b. Name, address, and telephone number of the facility, if applicable;
  - c. Date, time, type, and description of incident;
  - d. Name and quantity of any waste(s) involved;
  - e. The extent of injuries, if any;
  - f. An assessment of actual or potential hazards to the environment and human health inside and outside the site, when applicable; and
  - g. Estimated quantity and disposition of any pollutants released or discharged.
14. Other Information. When the permittee becomes aware that it has failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in

any report to the Department and/or Commission, it shall promptly submit such facts or information to the Department and/or Commission.

15. Signatory Requirement. All applications, reports, or information submitted to the Department and/or Commission shall be signed by a responsible officer. Such responsible officer shall make the following certification:

*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

16. Construction/Operation Within 4 Years. If construction or operation at the site is not begun within 4 years of the date the permit is issued, the permit shall expire and the applicant shall reapply to the Department and/or Commission for a permit. No construction or operation may be undertaken until a new permit is granted. The new application shall state the reasons why construction or operation was not begun within 4 years from the granting of the initial permit, and the reasons why construction or operation will be able to begin within 4 years from the granting of the new permit. The new application may incorporate, by reference, information submitted in the initial application, but must include all information required by law or rule at the time the new application is submitted.
17. Commencement of Operations. The permittee may not commence work at the site, or conduct activities in or associated with the new, altered or modified portion of the site, until:
  - a. The permittee has submitted to the Department and/or Commission by certified mail or hand delivery a letter signed by the permittee and a State of Maine Registered Professional Engineer stating that the site has been constructed, altered, or modified in compliance with the permit.
  - b. The Department and/or Commission have inspected the site and found it to be in compliance with the conditions of the permit. If within 15 days of the date of submission of the letter required by (a) above the permittee has not received notice from the Department and/or Commission of intent to inspect, prior inspection is waived and the permittee may commence activity at the site.
18. Other Permits and Licenses. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, approvals, conditions, agreements, and orders prior to and during construction, alteration, modification, operation, reclamation, and closure as appropriate.
19. Bid Specification. A copy of the approval must be included in or attached to all contract bid specifications for the site.
20. Contractor Copy. The permittee shall not direct or allow any work within the scope of the permit to be done by a contractor until the contractor(s) has been given a copy of the approval. The permittee shall certify to the Department and/or Commission that the contractor(s) has received a copy of the approval.
21. Annual Fee. The applicant shall pay the annual fee as required by 38 M.R.S.A. 352(4-A). The permit is not effective until and unless the annual fee has been paid.
22. Inspection and Entry. Employees and authorized representatives of the Department and/or Commission shall be allowed access to the site and affected area during business hours, and at such other times as the Department and/or Commission deem necessary, for the purpose of

performing tests, collecting samples, conducting inspections, examining records relating to the site, or developing or enforcing any rule or statute.

23. Financial Responsibility. The permittee shall not commence construction or continue operation at the site until and unless:
    - a. All required insurance coverage is in force and effect.
    - b. All assurance of insurance, reclamation, corrective action, closure and post-closure funding is made as required.
    - c. All financial responsibilities are met as required.
    - d. All cash deposits or payments and letters of credit are delivered as required.
  24. Preconstruction. All preconstruction terms and conditions must be met before any construction begins.
  25. Advertising. Advertising relating to matters included in the permit application may refer to the approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
  26. Transfer of Ownership. Unless otherwise provided in the permit, the permittee shall not sell, lease, assign, or otherwise transfer the site or any portion thereof, or cause or allow any other action where the purpose or consequence is to transfer any of the obligations of the permittee as incorporated in the permit, without prior written approval of the Department and/or Commission.
  27. Deed Notation. Whenever any site, or portion thereof, previously used for mining or advanced exploration is transferred by deed, the following shall be expressly stated in the deed:
    - a. The type(s) of waste unit(s) located on the site, the dates of establishment and closure of each, and a description of the location, composition, extent, and depth of waste deposited in each; and
    - b. The date of issuance of the permit, number of such permit, and names of issuing agencies.
- B. Special Conditions. The Department and/or Commission may place special terms and conditions, without limitation, on a permit issued under this rule. However, terms and conditions shall specify particular means of satisfying minor or easily corrected problems, relating to compliance with these rules and with the applicable law, and shall not substitute for or reduce the burden of proof on the applicant to affirmatively demonstrate to the Department and/or Commission that each of the applicable standards has been met.

#### Section 9. General Application Requirements

- A. Filing. An applicant for a permit shall file an application in accordance with the requirements of this rule, including a completed permit application form and all supporting materials. The coordinating agency (described in Section 19(A) of this rule) will specify the number of copies to be submitted. All drawings must be done on paper no smaller than 8-1/2 x 11 inches and no larger than 36 x 48 inches in size unless otherwise approved.
- B. Certification of Application. The application must be signed and certified by a responsible officer of the applicant. The signing of the application constitutes certification thereof in accordance with the

certification statement on the application form. The property owner(s) must also sign the application indicating knowledge of the proposed activity.

- C. Payment. With the application, an applicant must remit the appropriate application fees by certified check or money order made payable to the "Treasurer, State of Maine". Fees are required for new and renewal applications, as well as for any application for a minor revision or amendment to an existing permit.
- D. Certification of Supporting Documents. All work done to support the investigation, design, construction, operation, reclamation, closure, post-closure, and corrective action at a site shall be completed by qualified professionals, as follows:
1. Reports, plans, or other materials submitted in support of the application shall bear the signature and seal of the qualified professional who drafted or supervised the drafting of each document.
  2. Engineering designs, reports, plans, and other technical engineering documents must be signed and certified by a State of Maine Registered Professional Engineer.
  3. Geological work must be signed and certified by a State of Maine Certified Geologist.
  4. Soils work must be signed and certified by a State of Maine Certified Soils Scientist.
  5. Survey work must be signed and certified by a State of Maine Registered Land Surveyor.
- E. Title, Right, and Interest. This section applies in lieu of 06-096 CMR 372.9. The coordinating agency will consider an application only when an applicant has demonstrated sufficient title, right, and interest in all of the property which is proposed for use. An applicant shall make such demonstration as follows:
1. When the applicant owns the property, a copy of the deed(s) to the property shall be supplied.
  2. When the applicant has a lease or easement on the property, a copy of the lease or easement shall be supplied. The lease or easement shall be of sufficient duration and shall otherwise have sufficient terms, as determined by the coordinating agency, to permit construction, reasonable use, reclamation, closure, and post-closure maintenance at the site.
  3. When the applicant has an option to buy or lease the property, a copy of the option agreement shall be supplied. The option shall be sufficient if it provides rights to the title or a leasehold as provided herein.

#### Section 10. Renewal

*NOTE: A license issued under the Maine Hazardous Waste, Septage and Solid Waste Management Act has a limited term not to exceed 5 years. See 38 M.R.S.A. 1310-N(6) and 1319-R(1). Because such license is incorporated into the consolidated permit, see Section 5(D), the term of the consolidated permit may not exceed 5 years.*

- A. Renewal Criteria. A permit renewal shall be granted by the Department and/or Commission if the applicant demonstrates:
1. Compliance with the terms of the permit or, if not in compliance with the terms of the permit, compliance with a Department- and/or Commission- approved corrective action plan, administrative consent agreement and enforcement order, or court order; and

2. Compliance with Sections 31 through 35 of this rule, except that any new siting and design standards shall not be applicable to previously permitted mine waste units.
- B. Renewal Application Requirements. The renewal application shall be signed by a responsible officer and include the following:
1. A narrative summary of occurrences of noncompliance and any accompanying corrective action taken during the previous permit period;
  2. A narrative summary of any continuing non-compliance;
  3. Information necessary to demonstrate compliance with Sections 31 through 35 of this rule, as hereafter amended or superseded; and
  4. Evidence that the required public notice for the renewal application has been given.
- C. Applicability of New Siting and Design Standards. Notwithstanding Section 10(A)(2), new siting and design standards shall apply to previously permitted but unconstructed mine waste units if the Department and/or Commission determine such standards may be necessary to protect public health or the environment.
- D. Delay of Expiration. When an applicant has submitted a complete application for renewal at least 180 days, but no earlier than 210 days, prior to the expiration date, the existing permit shall not expire until the renewal application has received final agency action.

#### Section 11. Transfer of Permit

This section applies in lieu of 06-096 CMR 400.4(L). The permittee shall not sell, lease, assign, or otherwise transfer the site or any portion thereof, or cause or allow any other action where the purpose or consequence is to transfer any of the obligations of the permittee as incorporated in the permit, except following the approval of the Department and/or Commission. The Department and/or Commission shall either require that the proposed transferee apply for a new permit, or approve the transfer of the permit when the applicant has demonstrated the following:

- A. The terms and conditions of the permit, and all applicable laws, can and will be met.
- B. The proposed transferee has the financial capacity and technical ability and intent to satisfy the terms of the permit.
- C. The transfer of the permit or the activities it allows will not cause or contribute to a violation of law. In determining whether transfer of the permit will cause or contribute to a violation of law, the Department and/or Commission may consider any prior violation, suspension, or revocation of a permit issued to the proposed transferee or any person related to the proposed transferee and any other environmental enforcement history of the proposed transferee or related person. The Department and/or Commission may require the proposed transferee to present evidence of changed conditions or circumstances sufficient, in the judgment of the Department and/or Commission, to warrant transfer of the permit notwithstanding any prior violation, suspension, or revocation.

#### Section 12. Variances

The Department and Commission intend, through this section, to allow for flexibility in meeting certain aspects of the siting, construction, design and operational requirements of this rule. This section applies only to variances from the following provisions of this rule: Section 24; Section 25; Section 26(D)(3); Section 26(H)(2)(b), 26(H)(5)(c); Section 32(B); Section 33(A)(1), 33(A)(4), 33(B), 33(C), 33(G)(6); and Section 35(A)(3)(c)(i). No other provisions, including those contained in rules or laws incorporated by reference, are subject to this section.

The Department and/or Commission shall consider a variance request as part of its comprehensive review of a complete application.

- A. Variance Criteria. The Department and/or Commission may grant a variance only when they find, by clear and convincing evidence, that the alternative proposed will provide at least an equivalent degree of protection as would otherwise applicable standards contained in this rule. The applicant must affirmatively demonstrate the proposed alternative will provide at least this equivalent degree of protection. A variance may be issued subject to such terms and conditions as the Department and/or Commission deem necessary, and the permittee shall comply with such terms and conditions.
- B. Information Required. A request for a variance, submitted to the coordinating agency, shall include, but is not limited to:
  1. Identification of the specific provisions of this rule from which a variance is sought;
  2. Description of the alternative siting, design, construction, or operational procedure proposed; and
  3. Information and explanation affirmatively demonstrating that the alternative proposed will provide at least an equivalent degree of protection as would otherwise applicable standards contained in this rule.
- C. Term and Renewal of Conditions. The term of the variance shall be concurrent with the term of the permit, or for such lesser term as the Department and/or Commission may specify in the permit.

## SUBCHAPTER 2. EXPLORATION AND ADVANCED EXPLORATION

### Section 13. Purpose of Exploration and Advanced Exploration Requirements

The purpose of this subchapter is to establish procedures and standards for exploration and advanced exploration activities.

### Section 14. Applicability of Exploration and Advanced Exploration Requirements

This rule applies to any person proposing to conduct exploration or advanced exploration activities.

### Section 15. Requirements for Exploration Activities

- A. Permit Requirements. Depending upon the location, type and extent of activity, a permit may be required under other rules or statutes of the Department, the Commission, and the Maine Geological Survey. Persons seeking to conduct exploration activities should check with the appropriate agencies to determine applicable requirements. Permit requirements for exploration activities may include, but are not limited to, the following:
  1. Maine Geological Survey Registration. See Mining on State Lands, 12 M.R.S.A. 549.
  2. Natural Resources Protection Act Permit. See Natural Resources Protection Act, 38 M.R.S.A. 480-A, et seq.
  3. Commission Permits. See Land Use Districts and Standards, 04-061 CMR 10.
  4. Permitting, Licensing and Leasing on State Lands. See Mining on State Lands, 12 M.R.S.A. 547 and 549-B, et seq.

B. Standards. The following minimum standards must be met for exploration activities, wherever the Department and/or Commission have regulatory or permitting jurisdiction:

1. Access ways shall involve little or no recontouring of the land or ditching, and shall not include the addition of gravel or other surfacing materials. Clearing of the vegetative cover shall be limited to the minimum necessary to allow for the movement of equipment.
2. Access way approaches to stream channels shall be located and designed so as to divert water runoff from the way in order to prevent such runoff from directly entering the stream.
3. Except when surface waters are frozen, access ways for exploration activities shall not utilize stream channels bordered by Commission P-SL2 Protection Subdistricts except to cross the same by the shortest possible route. Unless culverts or bridges are installed in accordance with 04-061 CMR 10.17(A)(4)(b) and (d), such crossings shall only use channel beds which are composed of gravel, rock or similar hard surface which would not be eroded or otherwise damaged. For stream crossing standards in organized areas, see Natural Resources Protection Act Permit by Rule Standards, 06-096 CMR 305.10 (a full permit may be required).
4. For standards concerning disturbance of soil adjacent to a wetland or water body, see Natural Resources Protection Act Permit by Rule Standards, 06-096 CMR 305.2 (a full permit may be required).
5. Soil which is stripped or removed must be stockpiled for use in reclaiming disturbed land areas. Soil stockpiles shall be seeded, mulched, and anchored or otherwise stabilized.
6. The affected land shall be restored to a physical state that is similar to and compatible with that which existed prior to any exploration. Within 30 working days following completion of exploration at a site, any person conducting exploration activities shall accomplish the following:
  - a. Disposal of all debris in accordance with applicable state laws and regulations;
  - b. Grading of the surface of the site so that the final graded slope conforms with the original contour of the land; and
  - c. Reseeding and stabilization of graded topsoil with vegetation native to the area. Any person conducting exploration activities shall follow the "Guidelines for Soil Stabilization," 04-061 CMR 10, Appendix B.
7. Within 30 working days after completion of exploration activities, all excavations including trenches, test pits, and mud pits shall be capped, refilled or secured.
8. Sealing of all drill holes, whether temporary or permanent, shall be completed within 30 days of cessation of drilling or testing activities such as "down-the-hole" geophysical surveys or other similar activities. All artesian wells shall be capped or sealed within 48 hours after cessation of drilling or the onset of artesian conditions. No drill hole may be temporarily sealed for more than 3 years unless the drill hole is being used for sampling or other studies related to a mineral deposit or general hydrological conditions of the area. Sealing requirements are as follows.
  - a. A drill hole that is temporarily sealed shall prevent the passage of water into or out of bedrock. The method of temporary sealing shall include:
    - i. Plugs at the top of the bedrock;
    - ii. Plugs at the surface opening of the drill hole; or

- iii. Such other methods as approved by the Department and/or Commission so as to reasonably prevent the passage of water into or out of the bedrock portion of the drill hole for a period of at least 3 years.
  - b. When any person conducting exploration activities determines that a drill hole need not remain open, or when a drill hole has remained temporarily sealed for more than 3 years and is not being used for sampling or other studies, the drill hole shall be sealed. Permanent sealing requirements include the following:
    - i. The drill hole shall be permanently sealed by using concrete or neat cement to form a plug at least 10 feet in length down from the top of the bedrock surface. If the bedrock surface is so fractured or otherwise permeable that a 10-foot plug is not adequate to prevent water from entering or exiting the drill hole, then a plug of sufficient length shall be used to accomplish the desired seal.
    - ii. The surface opening of the drill hole shall be plugged with a non-metallic permanent plug of at least 3 feet in length. The plug may be made of wood, cement, rubber or other materials approved by the Department and/or Commission.
    - iii. As an alternative to Sections 15(B)(8)(b)(i) and (ii) above, the drill hole may be filled with a bentonite slurry from the bottom of the hole level with the surface. Other methods may be used as approved by the Department and/or Commission.
    - iv. If the owner of the land on which the drill hole is located desires to maintain the drill hole as a source of water, the owner shall notify the Department and/or Commission as part of the report required in Section 15(B)(8)(c) below.
    - v. All materials, debris, and obstructions that may interfere with sealing operations shall be removed from the drill hole. Casing and other pipe shall be removed or perforated when necessary to ensure placement of an effective seal.
  - c. Within 30 working days after permanent sealing of a drill hole, any person conducting exploration activities shall submit to the Department and/or Commission a report including, but not limited to, the following information for each drill hole:
    - i. Location and identification of the drill hole;
    - ii. Dimensions of the drill hole;
    - iii. Identification of depth, static elevation, and estimated flow of any groundwater encountered, if known; and
    - iv. Methods of sealing the drill hole, demonstrating compliance with Section 15(B)(8)(a) and (b) above.
9. The Department and/or the Commission may enter any exploration site, take samples, and conduct tests in order to determine compliance with any provision of this rule or other applicable requirements.

10. Any person conducting exploration activities shall notify the Department and/or the Commission orally within 24 hours and in writing within 5 working days of any activity or occurrence during the course of exploration or reclamation which has the potential to damage public health or the environment.

#### Section 16. Requirements for Advanced Exploration Activities

This rule authorizes a consolidated permit for advanced exploration activities. See Section 5.

- A. Standards. The standards for advanced exploration activities include the minimum exploration standards listed under Section 15 of this rule, together with any additional site-specific standards and conditions required under the advanced exploration permit. These standards will be drawn from Sections 17-35 of this rule.
- B. Submission Requirements. Because of the varying nature and complexity of advanced exploration activities, the specific submission requirements will be determined by the Department and/or Commission on a case-by-case basis, upon review of the pre-application submissions set forth in Section 19.

### SUBCHAPTER 3. PRE-APPLICATION

#### Section 17. Purpose of Pre-Application Requirements

This subchapter establishes procedures and requirements for the pre-application process associated with advanced exploration and mining activities.

#### Section 18. Applicability of Pre-Application Requirements

The provisions of this subchapter apply to all mining activities, and may apply, at the discretion of the Department and/or Commission, to advanced exploration activities, depending upon the nature of the activity.

#### Section 19. Requirements for Pre-Application

- A. Request by Applicant. Prior to preparing an application for a permit, the applicant should write the Commissioner or Director to request designation of the coordinating agency. The Commissioner and Director will determine which agency will act as coordinating agency on a case-by-case basis. The applicant also shall request in writing a pre-application conference with the coordinating agency.
- B. Scheduling of Pre-Application Conference. The purpose of a pre-application conference is to help the applicant understand the pre-application and application processes, to identify particular areas of concern, and to exchange information. The coordinating agency shall schedule a pre-application conference with the applicant following receipt and review of the information required in Section 19(D) below.
- C. Designation of Agency Contact. After the pre-application conference, the coordinating agency shall designate an agency contact.
- D. Pre-Application Submissions. Prior to the pre-application conference, the applicant shall furnish the coordinating agency with three copies of the following information. Additional information may be required from the applicant during this phase:
  1. The name, title, organization, address, and phone number of the applicant and the principal representative of the applicant;

2. Regional maps showing the location of the activity in relation to existing communities, transportation systems, and major physical features of the area;
3. Detailed topographic maps (most recent edition of 7½-minute USGS topographic quadrangles are preferred) of the area within at least 5 miles of the site;
4. Description of the metallic minerals of potential interest;
5. Evidence of the applicant's legal right to conduct the activity on the site, including a description of the ownership of the metallic minerals;
6. A description of the existing land use classification and/or zoning designation of the site;
7. A conceptual advanced exploration or mining plan; and
8. A proposed baseline monitoring plan meeting the requirements set forth in Section 19(E) below. The applicant may, upon prior written notice to the coordinating agency, elect to submit the proposed baseline monitoring plan as part of the draft scoping document required under Section 19(F)(2) of this rule. In such case, the public notification requirements and public comment periods required under Sections 19(E)(4) and (5) and Sections 19(F)(3), (4), and (5) of this rule shall be consolidated.

E. Baseline Monitoring Plan. A baseline monitoring plan defines existing site conditions prior to commencement of the proposed activity. The proposed baseline monitoring plan shall include, at the discretion of the Department and/or Commission, but is not limited to, characterizations of the following resources: protected natural resources, wildlife, fisheries, aquatic life, vegetation, surface water and groundwater quality and quantity, air quality, and socioeconomics.

1. Contents. Baseline studies shall provide sufficient data to allow qualitative and quantitative analysis of the study areas. The study areas should include all areas within the site and affected areas. The proposed baseline monitoring plan may include, as required by the Department and/or Commission, studies on each of the following:
  - a. Climate, including precipitation zone, both annual and monthly;
  - b. Air quality;
  - c. Surface water, including:
    - i. Seasonal water quality and quantity;
    - ii. Storm-event water quality and quantity;
    - iii. Storm survey calculations for 24-hour duration storms at 10-year, 25-year and 100-year return intervals;
    - iv. Maps of affected watersheds and wetlands;
    - v. Flow estimates of affected watersheds; and
    - vi. Sediment quality;
  - d. Groundwater, including:
    - i. Groundwater quality and quantity;

- ii. Hydrologic inventory of wells, springs and seeps in area of impact;
  - iii. Aquifer characteristics (values of transmissivity, storage coefficient, aquifer saturated thickness);
  - iv. Potentiometric surface map; and
  - v. Delineation and characterization of hydrostratigraphic units;
- e. Geology, including:
- i. Geologic map indicating known stratigraphy, structure and fault system with appropriate cross-sections;
  - ii. Narrative of geologic history;
  - iii. Discussion of the metallic mineral deposit including mineralogic and chemical nature of the ore and waste rock;
  - iv. Geologic stability of the affected area including regional seismicity, known landslides, and fault systems; and
  - v. Unique geologic features;
- f. Soils and other surficial deposits including type, extent, thickness, and physical and chemical properties;
- g. Vegetation, including:
- i. Plant community types;
  - ii. Percent of cover by morphological class;
  - iii. Existence of endangered or threatened species; and
  - iv. Map indicating range, distribution, and community type;
- h. Wildlife and fisheries, including:
- i. Biological monitoring (fish-tissue analysis, fish surveys and appropriate invertebrate studies);
  - ii. Significant wildlife habitats and unusual natural areas including mapped or unmapped deer wintering areas;
  - iii. Existence of endangered or threatened species; and
  - iv. Wildlife uses;
- i. Socioeconomic characteristics, including:
- i. Population and demographics;
  - ii. Local economy;
  - iii. Public facilities and services;

- iv. Transportation; and
- v. Housing;
- j. Adjacent land uses and land cover; and
- k. Cultural, historic and scenic resources.

## 2. Data Acquisition

- a. The baseline monitoring plan shall describe methods for acquiring data at the site of the proposed activity. The proposed data acquisition methods shall include, but are not limited to, the following:
  - i. Scope of analysis or investigation;
  - ii. Sampling methods;
  - iii. Detection limits and analytical methods, where appropriate; and
  - iv. Sampling frequency, and locations where appropriate.
- b. The baseline monitoring plan shall include a timetable for collection of data.
- c. The baseline monitoring plan shall include a quality assurance (QA) project plan. The purpose of the QA project plan is to ensure that data acquisition is performed using approved methods and meeting approved minimum technical and professional standards. The QA documentation for the baseline data shall include the following for water and air:
  - i. Analytical results;
  - ii. Detection limits for each analyte;
  - iii. Method reference;
  - iv. Dates that samples were collected, received, prepared, and analyzed;
  - v. Chain-of-custody records;
  - vi. Results of laboratory control samples (method blanks/initial calibration reference standards);
  - vii. Results of matrix-specific spikes, matrix-spiked duplicates, or reference standards (if applicable); and
  - viii. Commentary on any anomalies encountered during sampling and analysis.

*NOTE: For an example of a quality assurance project plan, refer to QAMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. Environmental Protection Agency, 1980.*

## 3. Technical Standards for Baseline Monitoring Plan

- a. Testing is required for (1) metallic elements for which maximum contaminant levels (MCLs) have been established by the U.S. Environmental Protection Agency (EPA) under the Safe Drinking Water Act, or for which applicable New Source Performance Standards for Ore Mining and Dressing Point Source Categories have been established pursuant to 40 CFR 440; and (2) for any toxics for which criteria have been developed by EPA under Section 304(a) of the Clean Water Act or by the Department under 38 M.R.S.A. 420, and other indicators that could adversely impact water quality. In addition, the Department and/or Commission may require testing which includes, but is not limited to, the following:

acidity	magnesium
alkalinity	manganese
aluminum	mercury
ammonia	molybdenum
antimony	nickel
arsenic	nitrate-nitrite
barium	pH
beryllium	phenols
biochemical	potassium
oxygen demand	radium 226 and 228
boron	selenium
bicarbonates	silver
cadmium	silica
calcium	sodium
carbonates	sulfate
cation-anion balance	sulfide
chemical oxygen demand	temperature
chloride	thallium
chromium	total dissolved solids
conductivity	total Kjeldahl nitrogen
copper	total organic carbon
cyanide	total petroleum hydrocarbons
dissolved oxygen	total phosphorus
fluoride	total suspended solids
hardness	vanadium
iron	volatile organic compounds
lead	zinc

- b. Minimum baseline data acquisition of ambient air quality data shall be that required under 06-096 CMR 115(VII)(D)(1).
- c. Sampling points and monitoring wells shall be adequate in number and located in such a manner as to adequately characterize existing conditions.
- d. Data shall be collected over 12 consecutive months for surface and groundwater quality unless pre-existing data are approved for use by the Department and/or Commission.
- e. Sampling frequencies shall be determined by the Department.
- f. Analyses shall be performed using EPA-approved methods by qualified independent laboratories unless otherwise agreed to by the Department and/or Commission.

*NOTE: For a listing of EPA-Approved Test Methods, refer to 40 CFR 136, as amended.*

- g. The required level of detection shall be determined by the Department and/or Commission.
  - h. The use of pre-existing data shall be subject to approval by the Department and/or Commission under the criteria set forth in Section 19(E)(3)(i) below.
    - i. All pre-existing data shall be clearly marked "pre-existing data" within the baseline monitoring plan. The applicant shall discuss the manner and time in which the data were acquired, the analytical or investigative methods used, and any other factors relevant to the quality and applicability of the data. Such factors, at the discretion of the Department and/or Commission, may include, but are not limited to, the following:
      - AA. Age of the data;
      - BB. Analytical methods used;
      - CC. Detection limit;
      - DD. Quality assurance/quality control documentation;
      - EE. Field method employed;
      - FF. Representativeness of the data; and
      - GG. Previous Department and/or Commission approvals of work plans submitted by the applicant.
    - ii. The Department and/or Commission shall accept or reject the use of pre-existing data prior to the acceptance of the baseline monitoring plan.
4. Publication and Notice of Baseline Monitoring Plans. Upon submittal of the baseline monitoring plan, the applicant shall provide public notice of the availability of the baseline monitoring plan for public review and comment by publishing notice in at least one newspaper of general circulation in the area where the activity is proposed, and in one newspaper with a circulation area of the entire State of Maine.
5. Public Comment Period. Following notice of publication of the baseline monitoring plan, there shall be 30 days for public review and comment.
6. Review and Acceptance of Baseline Monitoring Plan
- a. Upon review of the proposed baseline monitoring plan and consideration of comments received, the Department and/or Commission shall either accept the baseline monitoring plan or require amendments to the plan prior to acceptance.
  - b. After the baseline monitoring plan has been accepted by the Department and/or Commission, it shall be amended if:
    - i. Changes in the siting of the proposed activity necessitate an expansion of the study area;
    - ii. Changes in the scope of the proposed activity necessitate additional studies; or
    - iii. Any other information is necessary for the Department and/or Commission to evaluate the proposed activity under all applicable permit review criteria.

7. Consideration of Previously Accepted Baseline Monitoring Plans. Where an applicant has received acceptance of a baseline monitoring plan, for a proposed mining or advanced exploration activity, by the Department and/or Commission within 2 years prior to the adoption of this rule, such plan shall be deemed adequate unless:

- a. Changes in the siting of the proposed activity necessitate an expansion of the study area; or
- b. Changes in the scope of the proposed activity necessitate additional studies.
- c. Other information is necessary without which the Department and/or Commission cannot reasonably make the necessary statutory or regulatory findings.

F. Environmental Review. The environmental review process and the preparation of an Environmental Impact Report (EIR) shall be mandatory for all mining activities and may be required by the Department and/or Commission for advanced exploration activities, depending on the nature and extent of the proposed activity. The main objectives of the environmental review process and the preparation of an EIR are to: (1) encourage early public input into the process; (2) provide a useful informational assessment as part of the application that will inform the Department and/or Commission and the public of any potentially significant adverse impacts associated with a proposed activity; (3) identify methods to minimize any significant adverse impacts to the environment; and (4) identify and evaluate alternatives to the proposed activity or components thereof.

1. A scoping process shall be used before preparation of an EIR to identify environmental issues relevant to the proposed activity; determine the appropriate level of analysis, and contents of the EIR; identify the factors to be assessed in the EIR; and set a timetable for preparation. At a minimum, the scope of an EIR shall encompass environmental, physical, cultural, land use, and socioeconomic impacts of a proposed activity; measures for mitigating significant impacts; and discussions of project site and processing alternatives.
2. Prior to the preparation of the EIR, a draft scoping document shall be submitted to the coordinating agency by the applicant and must be accepted by the Department and/or Commission. The coordinating agency will specify the number of copies required. The draft scoping document shall include, but is not limited to, the following:
  - a. Description of the proposed activity including the applicant and the name and location of the activity;
  - b. Procedural details, including identification of the coordinating agency and other reviewing agencies;
  - c. Identification of potential environmental impacts and issues that require investigation;
  - d. Detailed work plan for the analysis of each major issue area including proposed evaluations;
  - e. Copy of the baseline monitoring plan; if previously accepted.
  - f. Identification of the baseline data that will be incorporated into the EIR and how it will be incorporated; and
  - g. Preliminary outline of the EIR.

3. Public Notice and Availability of Draft Scoping Document

- a. Upon submittal of the draft scoping document, the applicant shall provide public notice of the availability of the draft scoping document for public review and comment by publishing notice in at least one newspaper of general circulation in the area where the activity is proposed, and in one newspaper with a circulation area of the entire State of Maine.
  - b. The applicant shall also notify, by certified mail, the municipal officers of the municipality in which the activity is proposed or, if within the jurisdiction of the Commission, the county commissioners with jurisdiction where the activity is proposed.
4. Public Comment Period. Following notice of publication of the draft scoping document, there shall be 45 days for public comment.
5. Public Scoping Meeting. During the comment period, the Department and/or Commission may hold a public scoping meeting to gather further comments on the draft scoping document if the Department and/or Commission determines that such a meeting is necessary or useful to the review process.
6. Acceptance of Scoping Document
  - a. At the end of the public comment period, the Department and/or Commission shall either accept the draft scoping plan or require the applicant to amend the draft scoping document prior to acceptance.
  - b. After the scoping document has been accepted by the Department and/or Commission, the scope of the EIR may be amended if:
    - i. Changes are made in the plans for the proposed activity that may affect the potential for unreasonable adverse effects to the public health or environment;
    - ii. New information arises that is material to the proposed activity or proposed site that may affect the potential for unreasonable adverse effects to the public health or environment; or
    - iii. Any other information is necessary for the Department and/or Commission to evaluate the proposed activity under all applicable permit review criteria.
7. Preparation of Environmental Impact Report. The completed EIR shall be submitted as a component of the mining permit application or, if applicable, the advanced exploration permit application in accordance with Section 23(C) of this rule.

## SUBCHAPTER 4. MINING

### Section 20. Purpose of Requirements for Mining

This subchapter establishes the general procedures and requirements for the application and implementation of a permit.

### Section 21. Applicability of Requirements for Mining

The provisions of this subchapter apply to all mining activities, and may apply to advanced exploration activities depending upon the nature and extent of the activity.

### Section 22. Application Processing Procedure

An application for a permit shall be processed in accordance with Department and/or Commission rules for processing of applications. Supplemental processing requirements are as follows:

- A. Public Notice of Filing an Application. An applicant shall give public notice of the filing of an application by:
  1. Filing a copy of the application and any subsequent changes thereto with the clerk of the municipality in which the site is to be located or, if within the jurisdiction of the Commission, the county commissioners with jurisdiction where the site is to be located. The application and changes must be so filed at the time each is filed with the coordinating agency; and
  2. Publishing notice, in size and form at least equivalent to standard legal notices and containing the information specified below, in at least one newspaper of general circulation in the area in which the mine site is to be located and in one newspaper with a circulation of the entire State of Maine. Notice must be published once during the week in which the application is filed and once during the following week. Such notice shall include the following:
    - a. A summary of the proposed activity;
    - b. The date of filing of the application and locations at which and the times when the application may be examined;
    - c. A statement that persons desiring to participate as a party must file a petition to intervene; and
    - d. A statement that public comments are invited and offering an opportunity to request a public hearing. Public comments will be considered if received within 45 days of the date the application was filed, or if an adjudicatory public hearing is required (refer to Section 22(D)), then a statement that comments are invited and an adjudicatory public hearing will be held on a date to be announced later. Public comments will be accepted for consideration until the date of the close of the public hearing record.
- B. Solid Waste Intervenor Grants. If an applicant proposes the disposal of Group A or Group B mine waste in a new or expanded mine waste unit, 38 M.R.S.A 1310-S and 06-096 CMR 400.7 regarding participation requirements and opportunities for local governments shall apply. The applicant shall notify, by certified mail, the municipal officers of the municipality in which the site is located or, if within the jurisdiction of the Commission, the county commissioners with jurisdiction over the site, of the proposed activity 60 days prior to filing of the application.
- C. Requests for Additional Information. In reviewing applications accepted for processing, the Department and/or Commission may require additional information from the applicant on any aspect of the application relating to compliance with the requirements of this rule or other applicable law.
- D. Public Hearings. If an applicant proposes a new site, or a new or expanded mine waste unit for disposal of mine waste, the Department and/or Commission shall hold an adjudicatory public hearing in the vicinity of the site prior to release of a draft decision. If an application does not propose a new site or a new or expanded mine waste unit, a public hearing may or may not be held at the discretion of the Department and/or Commission.
- E. Draft Decision. The Department and/or Commission shall prepare a draft decision after consideration of the application and public comments. At least 30 days prior to Department and/or Commission action, the draft decision shall be made available at the Department and/or Commission offices to any person. A notice indicating when the Department and/or Commission will act on the application, that a draft decision is available, and a date for receipt of comments shall be mailed to the applicant, municipality, or county commissioners, if applicable, and any person who has notified the coordinating

agency of his or her interest in the application. The Department and/or Commission may incorporate comments received on the draft decision into the final decision. If the Department and/or Commission determines the draft decision has been substantially revised, the revised draft decision shall be made available for public comment.

- F. Jurisdiction. The final decision on an application for a permit under this rule shall be rendered by the Department and/or Commission.

### Section 23. Contents of Application

The applicant shall provide all submissions requested by the Department and/or Commission which the Department and/or Commission determine are necessary to evaluate the criteria for permit issuance under the applicable statutes and rules. See Section 5. The Department and/or Commission may waive application requirements they determine are inappropriate, unnecessary, or irrelevant to a specific proposal. The following information must be provided, but is not intended to include all submissions that may be required under applicable law:

#### A. General Information

1. Applicant Information. Information about the applicant and the proposed activity must be provided including, but not limited to, the following:
  - a. The name, mailing address, and phone number of the applicant and principal representative of the applicant;
  - b. The general organizational structure of the applicant, any parent companies, owners, principal stockholders, partners, and joint venturers;
  - c. Any managing agents or subsidiaries which are or may be involved in the proposed activity;
  - d. Organizational and legal relationships between or among joint applicants;
  - e. The applicant's registered agent for service of process in the State; and
  - f. Evidence of the applicant's ability to undertake the proposed activity, including:
    - i. A statement of the applicant's prior experience and/or training as it relates to the proposed activity;
    - ii. The names and qualifications of all key personnel who will be involved with site preparation, extraction, beneficiation, reclamation, closure, and post-closure maintenance; and
    - iii. A summary of the applicant's and its responsible officers' and related corporation's record of compliance with environmental and land use laws and financial requirements of Maine and other jurisdictions, as follows:
      - AA. A list and explanation of any felony convictions, any criminal convictions of environmental and land use laws, and any civil violations of environmental or land use laws administered by the Department, the Commission, the State, other states, the United States, or another country, in the 10 years immediately preceding the filing of the application; and

BB. A list and explanation of administrative consent agreements or consent decrees entered into by the applicant or related persons including alleged violations of environmental or land use laws administered by the Department, the Commission, the State, other states, the United States or another country, in the 10 years immediately preceding the filing of the application.

2. Location. The location of the proposed activity must be provided including, but not limited to, the following:
  - a. The location of the proposed site, including the municipality or township, and county;
  - b. A legal description of the proposed site;
  - c. Whether or not the proposed site is within the jurisdiction of the Commission, and if so, the land use district(s) encompassing the site; and
  - d. The names and addresses of owners of abutting property.
3. Evidence of Legal Authority. Evidence of legal authority to conduct business in the State must be provided.
4. Other Permits. A list must be provided of all other federal, state, and local permits, licenses, and approvals required for the proposed activity, including the status of such permits, licenses, and approvals.
5. Mining Experience. A list must be provided of all mines controlled or operated by the applicant, or related persons, in the world. This list shall include mine site addresses, nature and duration of affiliation with the site, and a brief description of each mine.

B. Baseline Monitoring Studies. Baseline monitoring studies prepared pursuant to the requirements of Section 19(E) of this rule.

C. Environmental Impact Report. An environmental impact report prepared pursuant to the following requirements.

1. Contents of Environmental Impact Report. The following shall be included:
  - a. A cover sheet including:
    - i. Coordinating agency;
    - ii. Name of the proposed activity; and
    - iii. Name, address, and telephone number of the applicant or the applicant's representative;
  - b. Summary of the EIR stressing the major findings, areas of controversy, and the issues to be resolved, including alternatives;
  - c. Table of contents;
  - d. List of preparers and their experience and qualifications;
  - e. Description of all proposed activities;

- f. List of all required local, state, and federal permits, licenses, and approvals, including an identification of the governmental unit responsible for each permit or approval;
- g. An assessment of all potential environmental and socioeconomic impacts associated with a proposed mining or advanced exploration activity. The actual factors to be assessed will be based upon a project\_specific scoping process in accordance with Section 19(F) of this rule, which will take into consideration the site-specific characteristics associated with the proposed activity. These factors may include, but are not limited to, impacts on the following:
  - i. Climate and air quality;
  - ii. Great ponds, rivers, streams and brooks;
  - iii. Groundwater;
  - iv. Bedrock geology;
  - v. Surficial geology and soils;
  - vi. Land forms;
  - vii. Hydrology;
  - viii. Ambient noise levels;
  - ix. Vegetation;
  - x. Existing and future land uses;
  - xi. Wildlife and fisheries;
  - xii. Unusual natural areas as defined in 06-096 CMR 375(12);
  - xiii. Significant wildlife habitat;
  - xiv. Historic and archaeologic resources;
  - xv. Scenic resources;
  - xvi. Freshwater and coastal wetlands;
  - xvii. Fragile mountain areas;
  - xviii. Public health and safety;
  - xix. Schools;
  - xx. Roads and traffic circulation;
  - xxi. Housing;
  - xxii. Employment;
  - xxiii. Fire protection;

- xxix. Law enforcement;
  - xxv. Tax base;
  - xxvi. Social services;
  - xxvii. Public lands, parks and other public access areas;
  - xxviii. Local economics; and
  - xxix. Recreational resources;
- h. Identification of mitigation measures which may reasonably eliminate or minimize adverse environmental and socioeconomic impacts associated with the proposed activity; and
  - i. An assessment of alternatives comparing the impacts of the proposed activity with other alternatives, that are reasonably available, which have been or should be considered by the applicant in order to carry out the proposed activity in the most environmentally sound manner. This assessment may include, but is not limited to, design alternatives for ore leaching units and mine waste units; waste minimization alternatives including alternative extraction and beneficiation techniques, and opportunities for reuse, in-mine disposal, sale, recovery, treatment or processing of mine wastes; waste treatment and handling alternatives, including alternatives to the proposed method for management and disposal of wastewaters; reclamation alternatives, including phased reclamation; and alternatives on land within the control of the applicant for siting ore processing and mine waste units.
2. Review and Acceptance of EIR. Upon review by the Department and/or Commission, if the EIR is not considered to be adequate in accordance with this rule and the accepted scoping document, the application will not be considered complete for processing by the Department and/or Commission.

*NOTE: In order to facilitate review of the proposed activity and ensure the accuracy of the EIR, the applicant is encouraged to submit a preliminary EIR to the coordinating agency for review and comment prior to submittal of the application.*

- D. Operating Plan. An operating plan detailing the location and siting of the proposed activity, including mine waste units. At a minimum, the operating plan shall include, but is not limited to, the following:
- 1. Maps. The following maps shall be included (map scale shall be 1 inch=100 feet or as otherwise approved by the Department and/or Commission):
    - a. A location map of sufficient size to adequately depict the area;
    - b. Vicinity maps, including 7½-inch USGS topographic maps where available or other maps at 1:24,000 (1 inch to 2000 feet), identifying railroads, public and private roads, electrical transmission and telephone lines, pipelines, buried cables, pre-existing mining disturbances, and any other surficial land features as required by the Department and/or Commission; and
    - c. Site maps and overlays for areas of expected disturbance, and areas within 2,000 feet of the site perimeter showing:
      - i. The cadastral base (land grid, no culture);

- ii. Topography, at a maximum of 5-foot vertical contour intervals;
  - iii. The natural environment, including:
    - AA. Surficial and bedrock geology;
    - BB. Hydrology of both surface and groundwater, including wells, springs, ponds, and other sources of water used by others, surface drainage and watersheds on the site;
    - CC. The shape and extent of the metallic mineral deposit to be extracted, with cross-sections;
    - DD. The type, extent, and thickness of soils, as indicated by a soil survey that includes a soil map of the site;
    - EE. Any sensitive natural areas within a 3-mile radius of the mine site including protected natural resources under 38 M.R.S.A. 480-B(8), unusual natural areas under 06-096 CMR 375.12, and state and federal lands; and
    - FF. A description of the general cover characteristics of the site in percentage of total area, comparing the existing situation with that anticipated upon completion of the project, including areas which are wooded, cleared, scrub, exposed bedrock, wetland, and surface water bodies;
  - iv. Historical and archaeological sites;
  - v. Surface and mineral ownership;
  - vi. Adjoining property owners;
  - vii. Soil stripping and storage (one overlay per year for the first 5 years, then one overlay for each 5th year to identify volumes of soil stripped by area and volumes stored by area);
  - viii. Proposed surface and underground excavations and haul roads (one overlay per year for the first 5 years, then, one overlay for each 5th year and one overlay of the final configuration);
  - ix. Proposed surface water diversion, drainage and sedimentation facilities;
  - x. Proposed impoundments, ditches, and pipelines;
  - xi. Proposed structures, parking areas, crushing and conveying facilities, stockpiles identified by function, waste facilities, permanent roadways, service areas, substations, pump stations, ventilation stations, aboveground and underground storage tanks, and site monitoring locations; and
  - xii. Areas where blasting is proposed within 2000 feet of an existing structure.
2. Extraction and Beneficiation Processes. A narrative description of all proposed extraction and beneficiation processes shall be included, including the following:
- a. Soil stripping and storage;

- b. Drilling and blasting;
  - c. Management practices for loading, hauling, dumping, and stockpiling of overburden, waste rock, and ore;
  - d. Crushing, and conveying;
  - e. Extraction and beneficiation, including on-site refining, if any, and including a process flow sheet;
  - f. Water balance and water requirements;
  - g. Chemicals, reagents, and explosives to be used, transported, and stored, including the range of chemical concentrations used in operating;
  - h. Disposition of concentrates and mine waste;
  - i. Estimated rate and duration of extraction and beneficiation;
  - j. Times of operation, including seasons, days, and hours;
  - k. Equipment to be used, including types and numbers;
  - l. Off-site transport to and from the site of chemicals, reagents, and explosives, including types, volumes, and frequency;
  - m. A plan demonstrating compliance with the siting, design, construction, monitoring, and operational standards of this rule when ore leaching is proposed. The plan shall include an assessment of all engineered systems against failure in accordance with the Engineered Systems Assessment described in Section 33(D)(5) of this rule. The plan shall also include the management of contaminated stormwater and processing waters from heap or dump leaching facilities; and
  - n. A chronological summary of the proposed activity including all stages of development, reclamation and closure.
3. Mine Waste Treatment and Management Plan. A mine waste treatment and management plan shall be included. As described in Sections 31 through 35 of this rule, the plan shall include, but is not limited to, the following:
- a. Characterization and analysis of mine waste;
  - b. Hydrogeologic assessment;
  - c. Engineering design;
  - d. Engineering report;
  - e. Quality assurance/quality control program;
  - f. Operations manual;
  - g. Monitoring plan;
  - h. Closure plan; and

- i. Post-closure maintenance plan.
4. Reclamation Plan. A reclamation plan shall be included, as follows:
  - a. The reclamation plan shall provide for restoration of the site to the original land use and land form or an alternative land use and land form acceptable to the Department and/or Commission. An alternative proposal shall require restoration of the affected land to encourage productive uses and be harmonious with the surrounding environment. If an alternative land use is proposed, the applicant shall provide the following information:
    - i. A description of the original land use(s);
    - ii. A description of the alternative land use(s) proposed by the applicant; and
    - iii. A discussion of the costs and benefits of the proposed alternative use(s) compared to the costs and benefits of the original use(s).
  - b. The reclamation plan shall include the following information:
    - i. Final surface and subsurface configuration of the site; a pre- and post-mining contour map that includes the topography of land in the vicinity of the site;
    - ii. The method, extent, and timing of construction operations necessary to complete reclamation;
    - iii. Topsoil and subsoil replacement, including location, method, schedule and depth of replacement; source of material; and erosion and sedimentation control plans;
    - iv. Revegetation, including the method, location, and timing of cover; species to be seeded or planted in specific locations; seeding and planting rate; justification for species selection; mulching plans; timing and nature of the evaluation of success of revegetation practices, including response plan to instances of revegetation failure including maintenance provisions;
    - v. The final surface drainage system layout for the reclaimed site; and
    - vi. Reclamation costs, including itemized costs of continuous, temporary, and permanent reclamation of the site.
5. Blasting and Vibration Plan. A pre-blasting survey shall be completed for all off-site structures within 2000 feet of any blasting. The survey report must determine the condition of the structure and must document any pre-existing defects and other physical factors that could reasonably be affected by the blasting. This survey shall be carried out by an independent consultant specializing in the field of blasting vibrations and their effect on structures. The applicant shall also submit a plan which addresses airblast limits, ground vibrations and maximum peak particle velocity. The plan must address measures taken to limit the impact from blasting.
6. Surface Subsidence Plan. Where there is potential for subsidence, the applicant shall submit a surface subsidence plan including the following:
  - a. Reasons why such subsidence is necessary or desirable;

- b. Evidence that the anticipated subsidence methods represent no threat to public health, safety, or the environment;
  - c. Steps that will be taken to establish ground-control survey locations and to conduct surveys documenting the extent of ground movement; and
  - d. Procedures that will be undertaken to reclaim areas affected by subsidence including, but not limited to, contouring, filling, or flooding so as to protect public health and safety, and the environment.
7. Oil and Hazardous Material Management Plan. Where site operation includes the transportation or handling of oil or hazardous materials or wastes (non-mine waste), the applicant must submit a plan for the siting, design and operation of the site to protect the environment and must, where required, meet all permitting and other applicable requirements of 06-096 CMR 850-857, and other applicable law.
8. Site Monitoring Plan. The site monitoring plan shall describe all the environmental monitoring to be conducted at the site. This plan shall be designed to detect and monitor the effects of the site, mine waste units, and ore leaching facilities on the surrounding environment including, but not limited to, groundwater, surface water, air, and soils and surficial materials. This plan shall contain, at a minimum, a sampling and analytical plan, location of monitoring sites, and a description of the construction, installation and maintenance of monitoring sites.
9. Inspection Plan. The inspection plan must describe the measures to be taken at the site to ensure that all structures and other design features necessary for proper operation of the site are maintained.
10. Site Security Plan. The applicant shall provide a plan for security provisions to prevent unauthorized access to the mine site.
11. Financial Responsibility Plan. Financial responsibility shall be required of a person engaged in any proposed activity. A financial responsibility plan for the proposed activity shall detail the form and amount of financial assurance and insurance required for construction, operation, monitoring, reclamation, closure, post-closure maintenance, and any corrective action and shall conform to the following requirements:
  - a. Financial capacity to construct, operate, reclaim, close, and conduct post-closure maintenance at the site and to cover the corrective action costs of a "credible accident" in accordance with 06-096 CMR 373(1) and other applicable laws;
  - b. Financial assurance for reclamation, closure, and post-closure maintenance, as well as corrective action when required, as specified in Section 26(H) of this rule; and
  - c. The type and amount of liability insurance in compliance with the provisions of Section 26(H)(6)(a) of this rule.
12. Contingency and Emergency Procedures Plan. Each site must have a contingency and emergency procedures plan designed to minimize hazards to public health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of waste or materials that may pose a threat to air, soil, groundwater, or surface water.
13. Air Quality Control. Where fugitive emissions are anticipated, the applicant must submit a best management practices plan for the control of fugitive emissions. The best management practices plan shall indicate the methods the applicant intends to use to minimize fugitive emissions resulting from a proposed activity, roads, and stockpiles at the site such that emission and air quality standards are not exceeded.

14. Erosion and Sedimentation Control Plan

- a. The applicant shall provide a plan describing measures to be used to prevent erosion and sedimentation.
- b. At a minimum, an erosion and sedimentation control plan shall include the following:
  - i. A narrative describing permanent and temporary erosion and sedimentation control measures to be used;
  - ii. Plan view of the site showing location of proposed measures;
  - iii. Design and construction specifications for measures to be used, including calculations supporting sizing and design of any structures;
  - iv. Cross-sections of control measures, showing installation details;
  - v. Implementation schedule for permanent and temporary control measures; and
  - vi. Inspection and maintenance schedule for proposed control measures and designation of the responsible party.

15. Storm and Surface Water Management Plan. The applicant shall submit a storm and surface water management plan. At a minimum, a storm and surface water management plan shall be developed in accordance with 06-096 CMR 375 and this rule.

16. Protected Natural Resource Plan. The applicant shall submit a protected natural resource plan. The plan must describe the measures to be taken to comply with the requirements of the Natural Resources Protection Act, 38 M.R.S.A. 480-A through 480-T. See also Wetland Protection Rules, 06-096 CMR 310.

Section 24. Siting Standards

A proposed site shall be located and designed to comply with applicable siting standards under the statutes and rules listed in Section 5(A)-(C) and the siting standards in Section 33(A) of this rule. In addition, the following are supplemental minimum siting standards.

- A. Siting Within Floodplains. In order to locate any portion of a site in a 100-year floodplain, the applicant must demonstrate to the satisfaction of the Department and/or Commission that such portion of the site will be designed, operated, reclaimed or closed so that the requirements of this rule are met. This demonstration must consider the degree to which the portion of the site in the floodplain will restrict the flow of the 100-year flood and reduce the temporary water storage or conveyance capacity of the floodplain, and whether it will result in erosion and sedimentation or water pollution.
- B. Siting Over Unstable Areas. The mine waste units and ore leaching facilities shall not be located over an unstable area.
- C. Setbacks. The following minimum setbacks shall be maintained. Greater setbacks may be required depending upon site-specific conditions.
  1. Mine waste units, and outdoor ore leaching or ore storage facilities shall be set back a minimum of 1,000 feet from a property boundary or a public or private drinking water system.
  2. The limit of excavation shall be set back a minimum of 1,000 feet from a public water system and 300 feet from a private water system and a property boundary. Upon receipt of written

permission from the abutting property owners and all owners of property whose wells are located within 300 feet of the limit of excavation, the 300-foot setback may be reduced to 100 feet.

3. All activities other than mine waste units, and outdoor ore leaching or ore storage facilities, and the limit of excavation shall be set back a minimum of 300 feet from a property boundary, a public or private drinking water system, or a public road. Upon receipt of written permission from the abutting property owner, the 300-foot property boundary setback may be reduced to 100 feet.

## Section 25. Design Standards

A site shall be designed to comply with the applicable standards under the statutes and rules listed in Sections 5(A)-(C) of this rule. In addition, the following are supplemental minimum design standards.

### A. Ore Leaching Facilities

1. Ore leaching facilities, including associated solution ponds and all ditches connecting these facilities, shall be constructed and operated in accordance with the siting, design, monitoring and operating standards of Sections 32, 33 and 34 of this rule. In addition, the following requirements must be met:
  - a. The facility shall be designed to minimize overspray and wind dispersion of leaching solutions.
  - b. The design shall include a system for detection of leaks through the composite liner and leak recovery. Levels of an indicator parameter(s) signifying excessive leakage shall be designated in the permit.
2. Ore leaching facilities, including associated solution ponds and all ditches used to connect these facilities, shall be designed and constructed so their volumes shall accommodate all precipitation and runoff resulting from a 24-hour, 100-year storm.
3. Closure shall be in compliance with the requirements of Section 35 of this rule, as applicable.

### B. Wildlife Exclusion

1. Fencing. All open waters which contain any chemical(s) at levels harmful to wildlife shall be fenced to exclude terrestrial animals. The fence bottom shall be secured tight to the ground to prevent animals from gaining access under the fence. These fences shall be inspected and maintained to prevent wildlife access.
2. Covering or Containment. All waters that contain any chemical(s) at levels harmful to wildlife must be covered or contained in a manner that shall prevent access by wildlife. All covers or containers shall be maintained in a manner that shall continue to prevent access by wildlife for as long as the pond or container could be harmful to wildlife.
3. Chemical Neutralization or Isolation. Any chemical-laden fluids that are the result of any process and that are impounded in an area that is too large to cover or contain must be rendered non-harmful to wildlife prior to outside storage.

- C. Stormwater. The site will be designed to minimize run-on of surface water into the site, and stormwater runoff will be managed to ensure the performance requirements of this rule will be achieved, and standards contained in 06-096 CMR 375 and other applicable law will be met.

## Section 26. Operational Standards

A site shall be operated to comply with the applicable criteria and standards under the statutes and rules listed in Sections 5(A)-(C), 31, 32, 33, and 34 of this rule. In addition, the following are supplemental minimum operational standards.

A. Site Monitoring. The site must be monitored to demonstrate compliance with the performance requirements of this rule and the site monitoring plan required under Section 23(D)(8).

B. Temporary Cessation of Mining

1. Cessation of operation of the site, or any portion thereof, for more than 30 days, as the result of a planned or unplanned activity, shall constitute temporary cessation of mining. The Department and/or Commission may, at its discretion, require the permittee to submit, within 30 days of the temporary cessation of mining, a plan demonstrating how compliance with permit conditions and the requirements of this rule will be achieved.
2. The permittee shall take all steps reasonably necessary to protect public health and the environment during temporary cessation of mining and shall report to the Department and/or Commission the steps taken.

C. Reclamation

1. All reclaimed slopes and slope combinations must be structurally stable and harmonious with the surrounding environment. All grading, backfilling, and topographic reconstruction of affected lands must achieve stabilization and minimize the need for long-term maintenance. Techniques shall be utilized to prevent sliding, slumping and heaving.
2. Temporary erosion control measures such as mulching and anchoring shall be implemented immediately to minimize erosion of disturbed areas prior to seeding and planting.
3. Seeding and planting must be done in accordance with accepted agricultural practices. Disturbed areas shall be seeded immediately after final soil preparation, unless an alternative plan is approved by the Department and/or Commission.
4. Vegetative material used in reclamation shall consist of grasses, legumes, herbaceous or woody plants, shrubs, trees or a mixture thereof which is consistent with the design function and the site and soil characteristics such as drainage, pH, nutrient availability, and climate.
5. The vegetative cover shall be considered acceptable if:
  - a. The planting of trees and shrubs results in a permanent stand or in a stand capable of regeneration and succession sufficient to ensure a 75% survival rate; and
  - b. The planting of all materials results in 90% ground coverage for those areas disturbed within 18 months of seeding and planting.
6. All structures and access, haul, and other support roads constructed under the permit shall be removed, unless such structures and roads are required for post-closure care activities or as part of an approved alternative use at the site.
7. Site reclamation activities shall be planned to accomplish reclamation progressively throughout the operational period of the activity to the extent that the phased reclamation is technically feasible.
8. Soil which is stripped or removed must be stockpiled for use in reclaiming disturbed land areas unless the permittee demonstrates to the satisfaction of the Department and/or Commission that

the soil is not needed for reclamation purposes. Soil stockpiles shall be seeded, mulched and anchored or otherwise stabilized.

D. Ore Leaching Facilities

1. To ensure compliance with design and operating requirements of the approved permit, the construction, operation, and maintenance of ore leaching facilities shall be:
  - a. Inspected each day during operations; and
  - b. Inspected by a qualified professional at least twice yearly, and the permittee shall report the results along with the inspector's recommendations to the Department and/or Commission.
2. Upon completion of metal extraction, the leachate from the ore leaching facilities shall be treated pursuant to Sections 32 and 33 of this rule.
3. Spent ore which has been left in place or which will be removed must first be rinsed until:
  - a. WAD cyanide levels in the effluent rinse water are less than 0.2 mg/l;
  - b. The pH level of the effluent rinse water is between 6.0 and 9.0; and
  - c. Contaminants in any effluent from the processed ore resulting from precipitation would not degrade waters of the state.
4. Leached ore, upon completion of metal extraction and after rinsing, whether left on the base foundation or stockpiled elsewhere, shall be disposed of pursuant to Sections 31 through 35 of this rule.

- E. Blasting and Noise Requirements. All activities shall be conducted in accordance with the applicable standards of 06-096 CMR 375 and other applicable law.

*NOTE: See the Blasting Guidance Manual of the Office of Surface Mining Reclamation and Enforcement (OSMRE), U.S. Department of the Interior (March 1987).*

- F. Annual Report. The permittee shall submit to the Department and/or Commission, in the number of copies specified by the Department and/or Commission, annual reports due 1 year and 2 months from the date of issuance of the permit, and then yearly thereafter. Each report shall describe the activities completed during the past year and planned for the upcoming year. The reports shall be in a format approved by the Department and/or Commission and shall contain, at a minimum, the following information:

1. For the preceding 12 months:
  - a. The actual rate of extraction;
  - b. The actual area disturbed and tons and composition of material extracted;
  - c. A discussion of rock types or formations to be encountered during extraction that were not characterized in the original mine operating plan;
  - d. The actual area reclaimed;
  - e. The success of revegetation efforts;

- f. The status of the reclamation materials including, where appropriate, capillary break material, textural break material, inert rock fill, clay cap materials, other subsoils, and topsoils;
- g. A comparison between the available reclamation materials and the amount used for reclamation;
- h. Status of all conditions of the permit;
- i. Annual summary and evaluation of environmental monitoring;
- j. Status of any special studies required as a part of the permit;
- k. Operating summary of the mine waste unit(s) including a comparison between the actual waste stream characterization as compared with the anticipated characterization;
- l. Summary of inspection records;
- m. The financial information contained in Section 26(H)(3)(g); and
- n. A description of any material changes in the financial condition of the permittee.

2. For the upcoming 12 months:

- a. A statement describing the financial capability of the applicant to meet the requirements contained in the financial responsibility plan;
- b. The anticipated extraction, including:
  - i. The rate, types, amounts, and schedule for extracting the ore body;
  - ii. Anticipated reclamation and revegetation planned for the next year;
  - iii. A comparison between the available reclamation materials contained in Section 26(F)(1)(e) above and the anticipated reclamation needs for each type of material; and
  - iv. A revision of the financial responsibility plan emphasizing changes, if any, in costs associated with anticipated reclamation, closure, and post-closure maintenance of the site as well as the costs associated with any required corrective action; and

3. The total area reclaimed to date.

G. Wildlife Reports. The permittee shall maintain a record of any wildlife mortalities that occur in association with the permitted facility. Those reports shall be provided quarterly to the Department and/or Commission. In addition, the permittee shall report all wildlife mortalities that are associated with chemical-containing tanks or impoundments by the beginning of the next working day following the occurrence or observation of those mortalities.

H. Financial Assurance. Financial responsibility for ensuring compliance with the reclamation, closure, and post-closure maintenance requirements of the permit, and the cleanup and corrective action costs of permitted or accidental releases, must be fulfilled through a trust fund as provided by this section.

- 1. Computation of Financial Assurance. The amount of the financial assurance required of an applicant must be approved by the Department. The type of financial assurance must be as

described under this rule and is otherwise subject to the approval of the Department. As annually or otherwise determined by the Department according to this rule, the amount of the trust fund must be, at a minimum, the estimated cost to a third party for:

- a. Completing the reclamation for all disturbed areas and all areas expected to be disturbed within the upcoming year;
- b. Closure and post-closure maintenance requirements for mine waste already generated together with mine waste expected to be generated within the upcoming year; and
- c. Corrective action costs as required by a corrective action plan or as otherwise determined by the Department under this rule.

2. Trust Fund Requirements. The permittee shall pay into a trust fund established for the benefit of the Department as follows:

- a. The trust fund shall be funded by the permittee through cash deposits. In lieu of cash deposits, the permittee may provide one or more irrevocable letters of credit in a total amount (including previously provided and unexpired letters) equal to 100% of the total of all annual cash deposits otherwise required under this section.
- b. The trust fund shall be established in a financial institution, acting as trustee, with trust assets under management of not less than \$200 million and whose unsecured long-term debt is rated "A-1" or better by Moody's Investor Service or "AA" or better by Standard and Poors. In addition, the trustee shall have capital stock and surplus aggregating not less than \$25 million and a primary capital to asset ratio of not less than 8% and equity to total assets ratio of not less than 5%, determined in accordance with accounting rules of the primary federal regulator of the trustee.
- c. The initial deposit into the trust fund for reclamation costs, identified in 26(H)(1)(a) above, shall be made on or prior to site disturbance. Subsequent payments shall be made on or prior to the next subsequent anniversary date of permit issuance, and annually thereafter.
- d. The initial deposit into the trust fund for financial assurance for closure and post-closure maintenance, identified in Section 26(H)(1)(b) above, shall be made in advance of the first placement of waste in a waste unit(s). Subsequent payments shall be made on or prior to the next subsequent anniversary date of permit issuance, and annually thereafter.
- e. The amount and payment schedule for financial assurance for corrective action, identified in Section 26(H)(1)(c) above, shall be as specified in the corrective action plan or as otherwise determined by the Department under this rule.
- f. Annual deposits or increases in the required trust fund amount shall be made from the beginning of operations until the end of the post-closure period. Without limitation, changes in the amount in the trust fund may be required due to modifications of the permit, changed financial or site conditions, technology changes, inflation, anticipated changes in mining activity and waste unit utilization, or changes in requirements for closure, post-closure maintenance, corrective action, or reclamation. The permittee shall annually report to the Department, subject to the Department's approval, an estimate of cost changes as provided in this rule. The permit remains in effect only if all required deposits or increases are made within 30 days of the due date provided in this rule. The obligation to make deposits or adjust the letter of credit amount ceases only upon approval from the Department.

- g. When computing the annual inflation adjustment for reclamation, closure, post-closure, or corrective action trust funds, the Department and the permittee must use the Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in "Survey of Current Business," or a successor index.
- h. All interest or other income resulting from the investment of funds in the trust fund shall be deposited into the trust fund, may be used to offset subsequent payments into the trust fund, and shall be subject to the same restrictions as the principal. The permittee may request from the Department release of income or interest of any balance over the required amount. The Department shall grant such a request when it finds the trust fund is adequately funded and the release will not adversely affect the ability of the fund to cover its intended expenses.
- i. The Department may at its discretion grant approval for the withdrawal by the permittee of portions of the trust fund upon the permittee's verification that the sum(s) authorized have been used solely for their intended, and Department-authorized, purposes provided the remaining funds are sufficient to cover expenses required by this rule. In any event, 25% of the total current financial assurance obligations shall be retained in the trust fund until all reclamation and closure activities are completed.
- j. If a permit is suspended, revoked, or not renewed, the permittee shall continue to make deposits according to this rule.
- k. The Department shall be a party to the trust agreement as beneficiary and shall have the right to withdraw and use part or all of the funds in the trust fund or to require the liquidation of the assets of the trust fund, including any letter of credit, at its sole discretion, to carry out reclamation, closure, post-closure, and corrective action requirements as the Department determines necessary. The trust agreement shall provide that there shall be no withdrawals from the trust fund except as authorized in writing by the Department.
- l. The financial assurance cost estimates shall be made in U.S. dollars in accordance with established estimating practices and shall not incorporate any salvage value that may be realized by the sale of materials, wastes, site structures or equipment, land, or other assets associated with the site.
- m. The proposed trust agreement shall be submitted to the Department for review and shall be subject to its approval.

### 3. Management of the Trust Fund

- a. The trust fund shall not constitute an asset of the trustee or permittee and shall be established in such a manner so as to ensure the funds in the account will be available to the Department and not any creditor, including in the event of bankruptcy or reorganization of the trustee or permittee. The permittee shall pay all costs of managing the fund and compensating the trustee.
- b. The trustee shall observe the standards in dealing with the trust fund that would be observed by a prudent person dealing with the property of another, bearing in mind the overriding investment purposes set out in Section 26(H)(3)(d) below, and shall bring to bear all special skills and expertise available to the trustee as a professional fiduciary.
- c. The trustee shall not invest assets of the trust fund in any real estate or real estate investment trust (as defined in the Internal Revenue Code of 1986, 26 U.S.C. 856(a), as amended), any contract for the future sale or delivery of commodities or foreign

currency, any corporate or municipal bond not rated "A-1" or better by Moody's Investors Service or "AA" or better" by Standard and Poors, any equity instrument the issuer of which does not have at least one class of securities registered with the United States Securities and Exchange Commission under the Securities Exchange Act of 1934, 15 U.S.C. 78a, et seq., as amended, or any security issued by the permittee or applicant or any affiliate (as such term is defined in the Investment Company Act of 1940, 15 U.S.C. 80a-1, et seq.) thereof.

- d. The trustee shall invest the assets of the fund in a manner that assures to the greatest possible extent the availability of the assets in liquid form on notice of 30 days or less and also assures the safety of the principal of the trust fund and the availability of the assets of the trust fund for a vital public purpose.
- e. The trustee shall notify the Department immediately in the event that any payment or letter of credit has not been received from the permittee by the due date.
- f. With respect to any letter of credit held by the trustee in the trust fund, the trustee must assure that the letter of credit is issued by a financial institution meeting the requirements of Section 26(H)(5)(c) and that the other requirements of Section 26(H)(5) are satisfied.
- g. The trustee shall submit to the Department an annual statement of deposits, letters of credit, investments, and any income and principal in the trust fund, and changes in the same over the prior year.

4. Close-Out or Release of the Trust Fund

- a. When requesting close-out of the trust fund, the permittee shall submit to the Department an environmental evaluation of the waste units, reclamation and any required corrective action to ensure that any remaining problems are identified and corrected before financial assurance is released.
- b. When the Department makes a determination to release funds from the trust fund, it shall notify the trustee and the permittee in writing of the decision. At that time, the Department shall supply the trustee and permittee with written approval to transfer the excess funds or to close the account. The Department does not release the permittee from any reclamation, closure, post-closure, or corrective action requirements or third party liability as a result of releasing any funds.

5. Letter of Credit Requirements. The following requirements shall apply to all financial assurances utilizing a letter of credit:

- a. The letter of credit must be unconditional, irrevocable, issued for a period of at least 1 year, and otherwise in a form satisfactory to the Department. At least 90 days before the expiration date, the financial institution issuing the letter of credit must notify the trustee, the permittee and the Department if the letter of credit will not be renewed for an additional 1-year period, and the letter of credit shall so provide. If the permittee is unable to obtain a letter of credit that complies with this rule prior to 45 days before the expiration of the current letter of credit, the trustee shall immediately draw all funds under the letter of credit and deposit those in the trust fund. The trustee must also take all other measures necessary to maintain the letter(s) of credit as provided herein and to assure such letter(s) do not expire unless replaced with another duly qualified letter.
- b. The letter of credit shall be issued so as to be drawn upon unconditionally by the trustee to meet the terms of the trust fund or otherwise at the call of the Department.

- c. The financial institution issuing the letter of credit must meet the following financial criteria, as reviewed no less often than annually by the trustee:
    - i. Its unsecured long-term debt is rated "A-1" or better by Moody's Investor Service, or "AA" or better by Standard and Poors.
    - ii. It has assets of not less than \$1 billion and capital stock and surplus of not less than \$100 million and a primary capital ratio of not less than 8% and equity to total assets ratio of not less than 5% determined in accordance with accounting rules of the primary federal regulator of the financial institution.
    - iii. In the event that an issuer of a letter of credit ever fails to meet these criteria, the trustee shall immediately order the permittee to replace it with a properly qualifying letter of credit, failing which the trustee shall immediately liquidate the letter of credit.
  - d. The proposed letter of credit shall be submitted to the Department for review and approval.
  - e. In the event the Department delivers to the trustee a certificate so requesting and signed by the Commissioner, the trustee shall draw down the full amount available under the letter of credit specified in the certificate and shall add to the trust fund the amount drawn down.
  - f. If the trustee draws on any letter of credit, the trustee shall promptly report to the Department and the permittee the amount of such draft, the section or sections of the trust agreement calling for such a draft, and the disposition of the proceeds of such draft.
  - g. A financial arrangement in the form of a bond but that otherwise qualifies as a letter of credit meeting the requirements of this section shall be considered a letter of credit for purposes of this rule.
6. Proof of Insurance. The applicant must include, as part of a financial responsibility plan, and provide annually thereafter as part of the annual report required under Section 26(F) of this rule, proof of comprehensive liability insurance for the site for sudden and accidental occurrences. The need for non-sudden occurrence insurance shall be assessed by the Department on a case-by-case basis. The Department will make the final decision as to the necessary amount and the need for such insurance. The insurance underwriter(s) must be approved by the Department. Requirements include, but are not limited to, the following:
- a. Liability insurance coverage must be provided during operation, reclamation, closure, and, where mine wastes will remain on the site after closure, during the post-closure maintenance period.
  - b. The level of coverage for sudden and accidental insurance must be at least \$2 million per occurrence and \$4 million annual aggregate, unless because of a greater risk, a higher minimum is required by the Department for a particular site.
  - c. All liability insurance coverage amounts must be exclusive of legal defense costs.
  - d. An applicant may not self-insure. If liability insurance is unavailable, a \$2 million letter of credit drawn upon a reputable bank which meets the criteria of Section 26(H)(5)(c) may be utilized in lieu of liability insurance for sudden and accidental occurrences.

- e. The liability insurance policy may not be written as a "claims made" policy unless approved by the Department.

I. Performance Requirements. All sites must meet the performance requirements specified below.

1. Performance Requirements for Groundwater Quality

- a. A site shall not cause a discharge of pollutants into groundwaters of the State without a license or that violates the groundwater classification, pursuant to the Standards of Classification of Ground Water, 38 M.R.S.A. 465-C. and Classification of Maine Waters, 38 M.R.S.A. 464.
- b. Parameters for which performance requirements must be established in the permit are:
  - i. Ag, As, Ba, Cd, Cr, Hg, Pb, Se;
  - ii. pH, nitrate, sulfate;
  - iii. Radionuclides including gross alpha and beta; and
  - iv. Other parameters determined to be present by the waste characterization conducted under Section 31 of this rule which may pose a threat to public health or the environment.
- c. Performance requirements for parameters identified above must be established for each site. For each parameter, the performance requirement shall be established in the permit using the following criteria:
  - i. Maximum Contaminant Level (MCL) promulgated under the Safe Drinking Water Act National Primary Drinking Water Regulations, or the Rules Relating to Drinking Water as developed by the Maine Department of Human Services, whichever is lower; or
  - ii. The Maximum Exposure Guideline (MEG) as developed by the Maine Department of Human Services; or
  - iii. The health-based level that is protective of human health and the environment using a risk-based approach consistent with the following:
    - AA. The level established under the procedures set forth in the Maine Bureau of Health, "Policy for Identifying and Assessing the Health Risks of Toxic Substances," February 1988;
    - BB. For known or probable carcinogens, the concentration associated with maximum probability of excess lifetime risk of  $1 \times 10^{-6}$ ;
    - CC. For non-carcinogenic toxicants, the concentration that is likely to present no appreciable risk of adverse effects over a lifetime; and
    - DD. Environmental risk, as determined by the Department and/or Commission; or
  - iv. Naturally occurring background concentrations as determined in baseline studies may serve as performance requirements when background

concentrations for specific parameters exceed the concentration set pursuant to Section 26(I)(1)(c)(i), (ii) and (iii) above.

- d. Performance requirements for groundwater will also be set to ensure that surface water quality standards will be maintained. The hydraulic connection between groundwater and surface water will be assessed in order to assign any performance requirements necessary to ensure that surface water quality standards are maintained.
- e. Where a performance requirement in groundwater necessary to protect surface water quality is more stringent than the applicable drinking water or health-based performance requirement, then the performance requirement necessary to protect surface water shall apply.

2. Performance Requirements for Surface Water Quality

- a. A site shall not cause a discharge of pollutants into surface waters of the State that violates either the Surface Water Classification Program, 38 M.R.S.A. 464 et seq., or the Protection and Improvement of Waters Act, 38 M.R.S.A. 414-A.
- b. Surface water performance requirements shall be established in the permit. The performance requirements for specific parameters shall be established to ensure attainment of State surface water quality standards. Title 38 M.R.S.A. 420 specifies the numeric criteria for controlling the presence of toxic substances in surface water, and a procedure for adopting new, revised, or alternative site-specific numerical criteria. These numeric criteria shall be incorporated into the performance requirements for surface water quality. Naturally occurring background concentrations as determined in baseline studies may serve as performance requirements when background concentrations for specific parameters exceed the numeric criteria identified above.

3. Performance Requirements for Air Quality. Performance requirements for air will be determined by the Department as authorized by 38 M.R.S.A. 581, et seq.

4. Performance Requirements for Soils and Surficial Materials

- a. Best management practices shall be required to control fugitive emissions and other contamination into or upon any land.
- b. If the Department determines that a parameter released from, or as a result of, the mining activity creates a risk to the environment or human health, a numeric performance requirement may be established for that parameter. Such risk shall be determined based on impacts including, but not limited to, direct contact, bioaccumulation in plants and animals, and foodchain concentration that may occur on and off site.

Section 27. Corrective Action

A. Corrective Action Trigger. If there is an exceedance of any performance requirement, the permittee must complete the following actions:

1. Notify the Department and/or Commission orally within 24 hours of the exceedance, and in writing within 5 working days.
2. Commence corrective action as outlined below, unless the Department and/or Commission determines that another course of action is more appropriate.

3. Continue to monitor as required. The Department and/or Commission may require more frequent or more extensive monitoring as an interim measure.
  4. Take all other actions necessary to minimize contamination of the environment and risk to public health.
- B. Interim Measures. During implementation of corrective action, the Department and/or Commission may require the immediate implementation of interim measures.
- C. Release From Corrective Action. The permittee may demonstrate that a source other than the activity solely caused the exceedance or that the exceedance is an artifact caused by an error in sampling, analysis, or natural variation of the environmental media being monitored. The permittee may be released from the requirement to prepare a corrective action plan if the demonstration shows, to the satisfaction of the Department and/or Commission, that a source other than the site caused the exceedance, or that the exceedance resulted from an error in sampling, analysis, or evaluation. Corrective action or interim measures shall continue unless and until the Department and/or Commission determines that the site did not cause or contribute to the exceedance.

D. Corrective Action Plan Development Schedule

1. If the Department and/or Commission determine that corrective action is necessary, the permittee shall submit a schedule for corrective action plan development within 14 days of that determination.
2. The schedule shall identify the specific information that will be collected for the corrective action plan and the date that the corrective action plan will be submitted to the Department and/or Commission for review, all subject to the approval of the Department and/or Commission.

E. Corrective Action Plan Development and Submission

The permittee shall prepare and submit a corrective action plan, based on the corrective action plan development schedule approved above.

1. This plan shall, at a minimum:
  - a. Be protective of public health and environment;
  - b. Propose a remedy to control the sources of releases and ensure compliance with the performance requirements throughout operation, reclamation, closure, and post-closure maintenance;
  - c. Propose a schedule for implementing corrective action;
  - d. Provide a cost estimate for corrective action activities; and
  - e. Provide financial assurance for corrective action costs pursuant to Section 26(H).
2. In developing the corrective action plan, at a minimum, the following shall be considered:
  - a. Extent, nature and cause of contamination;
  - b. Identification of remedies to achieve compliance with the performance requirements and to prevent future exceedances;

- c. Availability of alternative treatment or disposal measures during implementation of the corrective action;
- d. Evaluation of performance, reliability, timing and ease of implementation, and potential impacts (including safety and cross-media environmental impacts) of alternative corrective actions;
- e. Potential risk to public health and the environment prior to completion of corrective actions;
- f. Evaluation of requirements (e.g., federal, state and local permit requirements, environmental or public health requirements) that could substantially affect implementation of potential corrective actions; and
- g. Other relevant factors specified by the Department and/or Commission.

F. Corrective Action Plan Approval

- 1. If, after review of the proposed corrective action plan, the Department and/or Commission does not approve the plan, the Department and/or Commission may require the permittee to revise the corrective action plan or prepare a new plan, which may be based on a remedy identified by the Department and/or Commission. In such cases, the permittee shall submit a new corrective action plan development schedule as required above. The revised plan shall address the elements identified above and any other factors that the Department and/or Commission determines are appropriate, and shall be reviewed and approved by the Department and/or Commission. The Department and/or Commission may direct the permittee to modify the corrective action plan at any time in order to protect public health and the environment.
- 2. At any time after an exceedance of a performance requirement, the Department and/or Commission may, in addition to requiring the development and implementation of a corrective action plan, require the permittee to implement such interim measures as may be necessary to protect public health or the environment, including the cessation of some or all activities.

G. Corrective Action Plan Implementation

- 1. Upon approval by the Department and/or Commission, the permittee shall implement the approved corrective action plan.
- 2. The permittee shall notify persons who may be adversely affected by releases from the site.
- 3. During implementation of the corrective action plan, the permittee may propose an alternative corrective action plan for approval by the Department and/or Commission. The corrective action shall continue until the alternative corrective action plan is approved by the Department and/or Commission.

H. Corrective Action Plan Completion

- 1. Corrective action plan implementation pursuant to this section shall be considered complete when the Department determines that compliance with the performance requirements and other legal requirements has been achieved for 12 consecutive quarters of monitoring.
- 2. Upon completion of corrective action, the permittee must submit to the Department and/or Commission certification that corrective action is complete in accordance with Section 27(H)(1) above.

- I. Enforcement Reserved. The provisions of this rule relating to corrective action shall not affect the State's right, at its discretion, to bring an enforcement action in response to a violation of state law including, but not limited to, a violation of this rule, any performance requirement, or the conditions of a permit. In addition to any penalties the law provides, such enforcement action may seek remedial and/or mitigation work that is in accordance with a timeframe or otherwise of a manner different from that prescribed above for corrective action plans, if the State determines such enforcement response necessary.

## SUBCHAPTER 5. MINE WASTE TREATMENT AND MANAGEMENT

### Section 28. Purpose of Mine Waste Treatment and Management Requirements

The purpose of this subchapter is to classify mine waste and to regulate the location, design, construction, operation, maintenance, closure, and long-term care of units for the storage, treatment and disposal of mine wastes.

### Section 29. Applicability of Mine Waste Treatment and Management Requirements

This subchapter governs mine waste units.

### Section 30. Relation of Subchapter 5 to Other Rules

This subchapter applies to mine waste in lieu of 06-096 CMR 400-409, except as otherwise provided in this rule.

### Section 31. Waste Characterization

The characterization and analysis of mine waste required under this rule shall include, but is not limited to, tailings and waste rock. All mine waste generated, disposed of, or otherwise handled at the site shall be analyzed and characterized as follows:

- A. Testing Frequency. Mine waste characterization and analysis shall identify the characteristics of the mine wastes. It shall be an evaluation of the quantities, variability, and physical, radiologic, and chemical properties of mine waste necessary for predicting the potential environmental impacts of mine waste handling, storage, treatment and disposal and for determining specific treatment, disposal and storage design. Evaluation shall be conducted prior to the issuance of a permit and thereafter as determined by the Department including, but not limited to, the following:
  1. Changes in the character of the mine waste managed at the site; and
  2. Changes in the design, operation, or management at the site which may potentially alter the characterization.
- B. Mine Waste Evaluation. Testing shall be performed on the representative samples of individual mine waste from the extraction and beneficiation process, and of composite mine waste or other materials where mixed storage or disposal of individual mining waste is proposed. The major components of mine waste characterization and analysis shall include, but are not limited to, the following:
  1. Identification of all mine waste which will be disposed of, stored or handled at the site, or removed from the site including classification of waste types, estimation of the generation rates and volumes of each type, and an explanation of the ultimate disposition of each type;
  2. Chemical, radiologic, and mineralogic analyses of the mine wastes;

3. Description of expected particle size distributions of waste rock and analysis of particle size distribution of mill tailings;
  4. Determination of the short- and long-term acid-producing characteristics of the mine waste, considering the acid-producing content of the materials, the particle size and particle form of the acid-producing material, and the spatial distribution of its particles, the neutralizing effect of host materials and the effects of acid precipitation (rain, snow and dry deposition); and
  5. Determination of the leaching potential of the mine wastes and determination of the composition of the resulting leachate.
- C. Test Methods. The applicant shall describe in detail its proposed waste characterization program which consists of the methods of obtaining samples of mine waste, sample preparation, sample shipment, testing, and chain-of-custody methods employed in evaluating the mine waste characteristics, and shall provide justification for the use of such methods. The acid-producing and neutralization potential shall be determined by a static test method and confirmed by a kinetic test method. The applicant shall submit its characterization program to the Department for review and approval. Test methods other than those listed below may be used only if the Department first grants approval.
1. The following static test methods are typically accepted:
    - a. Acid-base accounting (Sobek 1978);
    - b. B.C. research initial test;
    - c. APP:S ratio;
    - d. Net acid production test; and
    - e. Modified acid-base accounting.
  2. The following kinetic methods are typically accepted:
    - a. B.C. research confirmation test;
    - b. Modified biological oxidation test;
    - c. Humidity cell;
    - d. Shake flask test; and
    - e. Soxhlet extraction.
- D. Mine Waste Characterization Report. The applicant shall submit with its application a waste characterization report consisting of all test data concerning waste analysis for each type of waste, the testing program objective together with an interpretation of the results, and options for the control of acid generation and waste containment.
- E. Mine Waste Classification. Based on the mine waste characterization required above, the applicant shall propose, subject to the approval of the Department, classifying each mine waste as a Group A, Group B, or Group C waste according to the following criteria:
1. The mine waste has a net acid-producing potential or exhibits a characteristic of hazardous waste as defined in 06-096 CMR 850. Such waste shall be classified as Group A wastes.

*NOTE: Group A waste may include, but is not limited to, waste rock, tailings, and leachate derived from those wastes.*

2. The mine waste has no net acid-producing potential and may release soluble pollutants at concentrations which exceed performance requirements for groundwater or surface water. Such waste shall be classified as Group B waste.
3. The mine waste does not have the potential to violate water quality standards other than sedimentation or turbidity. Such waste shall be classified as Group C waste.

Section 32. General Criteria for Mine Waste Units

A. Performance Standards. All mine waste units shall be designed, constructed, operated and maintained during the development, operation, closure, and post-closure maintenance period in a manner that:

1. Meets the performance requirements for groundwater, surface water, air, and soils or surficial materials established under Section 26(I) of this rule;
2. Minimizes acid generation and acid rock drainage;
3. Provides structural stability;
4. Protects public health and the environment; and
5. Otherwise complies with applicable legal requirements.

B. Run-on/Runoff Control Systems

1. The applicant shall design, construct, and maintain:
  - a. A run-on control system to prevent or control surface water flow onto the mine waste unit during the peak discharge from at least a 24-hour, 100-year storm; and
  - b. A runoff control system to collect, control and treat surface water runoff from the mine waste unit of at least the water volume resulting from a 24-hour, 100-year storm.
2. Runoff from a mine waste unit shall not cause a discharge of pollutants into waters of the State in violation of any requirements of the laws of the State.
3. All surface impoundments associated with waste units shall be designed, constructed, maintained, and operated to prevent overtopping as a result of a 24-hour, 100-year storm event. An emergency overflow spillway shall be provided for storm events equivalent to the 24-hour, 100-year storm.

C. Design Alternatives. The applicant shall evaluate the following design features for mining waste units:

1. Underdrain systems allowing for free passage of water beneath waste units;
2. Leak detection systems;
3. Use and re-use of process and impounded fluids for beneficiation and other appropriate activities to the maximum extent technically practicable; and
4. Collection, treatment and final disposal of excess impounded fluids, wastewater, and leachate.

- D. Off-Site Utilization. The off-site utilization of mine waste shall be subject to approval of the Department and/or Commission.
- E. Waste Minimization. The applicant shall demonstrate that the methods of management of mine waste will minimize the risk to public health and the environment at the site. Such demonstration shall include an analysis of the practicability of the re-use, in-mine disposal, sale, recovery, or processing of such wastes for other purposes, and shall provide for such re-use and recovery where determined to be practicable by the Department.

*NOTE: Any license required for the storage and disposal of land clearing debris and woodwastes (regulated under 06-096 CMR 404) will be incorporated into the permit.*

### Section 33. Location, Design, Construction and Operating Criteria for Mine Waste Units

#### A. Location Standards

1. A mine waste unit for Group A and Group B waste shall not lie closer than 300 feet to a classified body of surface water.
2. The disposal of Group C waste is prohibited closer than 300 feet to any classified body of surface water without approval of the Department and/or Commission. Based on the nature of Group C mine waste, in issuing an approval the Department and/or Commission will consider whether the disposal within 300 feet of a classified body of surface water will not result in an unlicensed direct or indirect discharge of pollutants to such body of surface water, provided the following conditions are met:
  - a. The Group C mine waste shall not be placed in the water, below the normal high water line, or in a wetland.
  - b. The Group C mine waste shall be placed so that it cannot fall or be washed into the surface water body.
  - c. The sideslopes shall be adequately stabilized.
  - d. Such other precautions are taken as necessary, in the judgment of the Department, to protect water quality.
3. The mine waste unit shall not be located within 200 feet of a fault that has had known displacement in Holocene time.
4. A mine waste unit used to manage Group A or Group B mine waste shall have a soil or a base preparation grade a minimum of 5 feet above bedrock. The base preparation grade may not include any portion of the liner system.
5. No mine waste unit shall be located in an area overlying complex hydrogeology.
6. The applicant for a mine waste unit used to manage Group A or Group B waste shall provide a thorough hydrogeologic assessment of the area underlying a proposed mine waste unit and the adjacent area that could be affected during operation of the mine waste unit or the failure of any engineered barriers to leachate and groundwater movement. The applicant may use hydrogeologic information obtained during baseline monitoring. The hydrogeologic assessment shall include, but is not limited to, the following:
  - a. The methods used in, and the results of, bedrock aquifer pumping tests performed as part of the hydrogeologic assessment;

- b. The methods used for, and the results of, in-situ hydraulic conductivity tests performed as part of the hydrogeologic assessment of bedrock and surficial deposits; and
  - c. An assessment of the potential impact on the ground and surface water quality expected in the event of discharge of pollutants outside engineered containment systems. The assessment shall include the following:
    - i. Potential volume of release;
    - ii. Area and location of source;
    - iii. Initial concentration;
    - iv. Magnitude and direction of groundwater flow;
    - v. Attenuation capacity including dilution and a discussion of hydrodynamic and ionic dispersion, horizontal and transverse dispersivity, and vertical mixing;
    - vi. Recharge;
    - vii. Time of travel to the bedrock aquifer, classified bodies of surface water, significant sand and gravel aquifers, and public and private water supplies;
    - viii. Direction of travel, including flow path and contaminant transport modeling for conservative and non-conservative contaminants; and
    - ix. Projected extent and quality of plumes.
7. A mine waste unit for disposal of mine waste shall not overlie a significant sand and gravel aquifer, or pose an unreasonable threat to the quality of a significant sand and gravel aquifer which it does not overlie, or pose an unreasonable threat to an underlying fractured bedrock aquifer. See 38 M.R.S.A. 1310-N.
8. An "unreasonable threat" to the quality of a significant sand and gravel aquifer or to an underlying fractured bedrock aquifer shall be determined to exist when a parameter in exceedance of a performance requirement under this rule is able to travel from the waste unit to the aquifer in 6 years or less.
9. The Department may modify the "unreasonable threat" standard above if the applicant demonstrates that the mine waste unit siting, design or operation afford a higher degree of protection than that afforded by the minimum siting, design and operation standards.

**B. Minimum Design Standards**

- 1. The design of waste units for the management of Group A mine waste shall provide for a liner system which includes a composite liner. If required by the Department, a leachate collection and removal system above the composite liner shall be incorporated into the design. A composite liner shall consist of the following:
  - a. A clay or compacted till bottom liner having a permeability of less than or equal to  $1 \times 10^{-6}$  cm/sec with a minimum 2-foot thickness; and
  - b. A flexible membrane liner having a minimum thickness of 40 mils.
- 2. The design of waste units for the management of Group B mine waste shall provide for a clay or till bottom liner having a permeability of less than or equal to  $1 \times 10^{-7}$  cm/sec with a

minimum 3-foot thickness. If required by the Department, a leachate collection and removal system above the liner shall be incorporated into the design.

3. Leachate ponds shall be provided with the composite liner system described in Section 33(B)(1) of this rule except that leachate collection and removal may be excluded.
  4. If stabilization of Group A and Group B mine waste may be ineffective in preventing pollutant release, the design shall include a system for detection of leaks and leak recovery, or other engineered system as may be required by the Department and/or Commission.
- C. Engineering Design. The mine waste unit design shall be based on the results of the subsurface investigation, hydrogeological conditions of the proposed site, waste characterization, and closure objectives. The design shall address site strengths and limitations identified in the investigation, evaluate methods to utilize these strengths or overcome these limitations, and discuss the selected engineered methods to overcome the limitations. The sophistication of the engineering and design will vary according to the type of mine waste unit; the physical characteristics of the site; and the characteristics, chemical and physical stability, and volume of the mine waste. An engineering design shall be submitted as part of the application and shall meet the following requirements:
1. Any flexible membrane proposed for use as a liner must:
    - a. Be supplied by a National Sanitation Foundation (NSF)\_certified manufacturer;
    - b. Meet or exceed NSF Standard #54 specifications; and
    - c. Meet required performance specifications for the proposed application.
  2. Clay or till proposed for use as a liner must:
    - a. Have a Liquid Limit (LL) greater than or equal to 20;
    - b. Have a Plasticity Index (PI) greater than or equal to 8;
    - c. Have a minimum in-place density of 90% of maximum as measured by the Standard Proctor test (ASTM-D-698);
    - d. Be compacted within 4% above optimum moisture content as determined by ASTM-D698;
    - e. Have a minimum fines content of 35%;
    - f. Have a maximum particle size less than or equal to 3 inches; and
    - g. Have a maximum compacted lift thickness of 9 inches.
  3. The base preparation grade material below the liner system shall:
    - a. Have a minimum in-place density of 90% of maximum as measured by the Standard Proctor test (ASTMD-698);
    - b. Not be comprised of sand, gravel, stone, peat, or muck;
    - c. Provide for, where necessary, the addition of fill material to the mine waste unit for grading purposes or to obtain the required separation of waste from bedrock, and demonstrate that:

- i. Moisture will be controlled during filling;
      - ii. Density will be controlled during filling; and
      - iii. Attenuative capacity will be provided; and
    - d. Provide for a maximum compacted lift thickness of 9 inches.
- 4. If a mine waste unit will generate leachate, the applicant shall provide a description of the leachate management methods for the unit, including the process flow diagram for water use and reuse at the site, and a water balance for each unit.
  - a. If a mine waste unit will generate leachate in excess of the amount reused and the leachate management method will be to collect, store, and recirculate to the unit, the on-site storage shall be based on the following requirements:
    - i. Sufficient storage capacity is provided to contain the excess leachate generated as determined from the site water balance information.
    - ii. The calculated volume of leachate to be generated shall be based on the most recent historical annual precipitation data, with a minimum of a 15-year data base.
    - iii. Leachate storage shall include capacity for the precipitation from a 24-hour, 100-year storm falling on the mine waste unit and the leachate storage pond (if uncovered).
  - b. If a mine waste unit will generate leachate in excess of the amount reused and the leachate management method will be collection, storage, and transportation either on-site or off-site for treatment, the following requirements shall be met:
    - i. Sufficient storage capacity is provided to contain the leachate generated over 7 consecutive days based on the average daily flow during the worst-case design month without transport to the treatment facility.
    - ii. The calculated volume of leachate to be treated shall be based on the most recent historical annual precipitation data, with a minimum of a 15-year data base.
    - iii. The off-site treatment facility shall have capacity for treatment of the precipitation from a 24-hour, 100-year storm falling on the mine waste unit and the leachate storage pond (if uncovered).
  - c. Leachate storage ponds must incorporate the following:
    - i. A minimum of 2 feet of freeboard measured to the lowest spillway elevation or an additional capacity volume equal to 25% of the total required capacity, whichever provides greater storage volume. Additional freeboard or other measures may be required to contain wave action as necessary; and
    - ii. A staff gauge, or similar device, installed in the pond to measure leachate depth.
  - d. When leachate will be collected or transported by piping, the leachate piping system must incorporate the following:

- i. A minimum pipe diameter of 6 inches;
  - ii. Pipe materials physically and chemically compatible with the mine waste;
  - iii. Pipes designed and built to operate without clogging during the life of the mine waste unit and post-closure maintenance period; and
  - iv. Pipes designed with accessibility for routine cleaning and maintenance.
- e. For a mine waste unit where leachate will be collected in a sand drainage blanket, the sand drainage blanket must incorporate the following requirements:
- i. Each sand drainage layer used for leachate collection/detection must have a minimum thickness of 12 inches.
  - ii. The sand in the drainage layer must have a permeability of greater than or equal to  $1 \times 10^{-2}$  cm/sec.
- f. The leachate transport line leading into the leachate collection pond shall be designed for cleanout of the line and for leachate sampling without the need for human access.
- g. For a mine waste unit where leachate will be collected, the applicant shall submit collection system efficiency calculations.

D. Engineering Report. The engineering report for a mine waste unit shall present the basis for the engineering design and the proposed construction techniques and operational techniques, along with all data and calculations, and shall include, but is not limited to, the following where applicable:

1. An assessment of the mine waste unit site stability in relation to the proposed use of the mine waste unit site, including consolidation characteristics and a base failure analysis. The site stability shall be based on a minimum long-term factor of safety of 1.50 and a minimum short-term factor of safety of 1.25;
2. An assessment of the waste slope stability including the engineering properties of the waste and a failure analysis;
3. An assessment of the volume of leachate to be generated by the mine waste unit. As determined by the Department, a standard method for determining leachate quantity shall be used, such as "Hydrologic Evaluation of Landfill Performance (HELP) Model," (EPA/530-SW-84-009 and EPA/530-SW-84010);
4. If the applicant proposes to treat liquid mine waste or leachate derived from mine waste prior to disposal, a demonstration, to the satisfaction of the Department, that:
  - a. The mine waste or leachate is capable of being treated using the processes proposed, based upon trial tests and/or an engineering assessment that determine the treatment technique, its effectiveness, and any limiting factors.
  - b. The design measures and operating procedures will maximize the success of the treatment.
  - c. The mine waste unit design and components are compatible with the mine waste and the treatment process.

- d. The treatment process can and will be controlled at all times so as to prevent unlicensed releases of mine waste or its constituents or derivatives and to protect the public health and safety and the environment.
      - e. A treatment system for mine waste identified as hazardous pursuant to 06-096 CMR 850 or other applicable law shall be designed, constructed, operated and closed in accordance with 06-096 CMR 854.
  5. An assessment of the failure of all engineered systems, including, without limitation, equipment, liners, leachate collection, treatment and transport, storage systems, and waste stability. The assessment shall include the following:
    - a. All potential modes of failure;
    - b. How each type of failure will be detected;
    - c. The impacts of each type of failure on the engineered system as a whole, as well as on the components of the engineered system;
    - d. Repair measures applicable for each type of failure; and
    - e. Associated costs and time schedules for repairs. This requirement shall only apply to items specifically identified by the Department; and
  6. A Quality Assurance/Quality Control (QA/QC) program, established and included with the application, to ensure that design concepts are implemented during construction. The QA/QC program shall include the following:
    - a. A narrative description of the need for and nature of the testing program;
    - b. A testing program to evaluate borrow materials, stockpiled materials, and in-place materials. The program shall also be used to evaluate manufactured products such as liners, geotextiles, and piping systems. The program is to include at least gradation, permeability, moisture/density, and destructive/nondestructive liner testing;
    - c. An assessment of construction equipment and manpower skills necessary to achieve design standards;
    - d. A list of required manufacturers' product certifications, installation certifications, and warranties; and
    - e. Provision for inspection of the installation of flexible membrane liners and appurtenances by a qualified independent inspection team. The application shall include the qualifications to be specified for such inspection team.
- E. Design Plans and Cross-Sections. As part of the engineering design for all mine waste units, the application shall include the following:
  1. Detailed plan views(s) of the site, at a scale of 1 inch=100 feet or larger, clearly indicating the following:
    - a. Existing grade of the mine waste unit, as established by a topographic survey, and the proposed initial and final grades. For slopes of 5% or greater, 5-foot contour intervals may be used; 2-foot contour intervals are required if the slope is less than 5%;
    - b. Location and elevation of the test pits and borings;

- c. Location and elevation of the permanent on-site surveying benchmarks;
  - d. Area and annual sequence of the mine waste unit planned to be utilized for the first 5 years and every 5th year thereafter throughout the total life of the mine;
  - e. Location and description of all existing and proposed utilities and structures;
  - f. Location of surface water bodies, existing drainage ways, bogs, swamps, marshes, and wetlands;
  - g. Location of existing and proposed water supply wells;
  - h. Location of existing and proposed access roads;
  - i. Location of the proposed drainage diversion system, including siltation basins, if any;
  - j. Location of borrow pits;
  - k. Location of all proposed environmental and waste monitoring points;
  - 1. Location and identification of buffer zones (strips) and visual screening provisions;
  - m. Location, if any, of areas for stumps and brush, areas for management of mine waste, and areas of ore storage;
  - n. Location of baselines for cross-section drawings of the site;
  - o. Location of fencing and gates;
  - p. Locations for storage and management of leachate; and
  - q. Locations of baseline monitoring points.
2. Detailed profile views of each mine waste unit are required as follows:
- a. Cross-sections and longitudinal cross-sections of the mine waste unit as required to adequately describe the unit;
  - b. Typical cross-sections of the various road and water drainage features; and
  - c. Detailed profile views of the mine waste unit including the bedrock level, the seasonal high water table level, the existing land surface, the base grade, proposed lifts, the proposed final grade and final elevation of the completed disposal unit, and the test pits and borings as applicable to the mine waste unit.

F. Construction Standards. The permittee shall meet the following requirements:

- 1. A preconstruction conference between the permittee, its contractor(s), and the Department is required unless waived in writing by the Department.
- 2. The Quality Assurance/Quality Control Program approved by the Department shall be implemented at the beginning of construction and shall include continuous site inspections by qualified professionals. The qualified professional shall inspect non-specialty aspects of construction for conformance with the approved plans and specifications. Specialty items,

such as flexible membrane liners, shall be inspected and tested by a qualified independent inspection team.

3. Before installation of any type of liner, an assessment shall be made of the impacts of climatic conditions, proposed installation procedures, and the proposed installation schedule on liner integrity. The liner, or liners, shall then be installed in a manner which minimizes seams and penetrations, and under conditions satisfactory to maintain the required characteristics of each liner. Flexible membrane liners are adversely affected by cold temperatures and shall be installed only during the period from April 15th through November 1st when the ambient temperature exceeds 40°F. Any deviation from these requirements shall require submittal of a specific cold-weather installation plan for review and approval by the Department prior to construction.
4. The engineer responsible for construction inspection shall keep weekly construction inspection reports. The reports shall be mailed to the Department upon request. The weekly reports shall include, but are not limited to, information generated during the week for the following areas, where applicable:
  - a. Test results;
  - b. Submittals and action taken;
  - c. Summary of work progress, problems encountered, and how the problems were resolved; and
  - d. Upcoming work items for the next 2 weeks.

Proposed changes to the design may require permit modifications and shall be reported to the Department before implementation.

5. The permittee shall provide the Department with copies of significant, representative photographic documentation of each stage of construction in two forms: "instant" prints and 35-mm slides. The permittee shall provide 35-mm color slides of the completed construction with the final construction report.
6. The permittee shall provide record drawings, signed and stamped by a State of Maine registered Professional Engineer, to the Department and/or Commission within 30 days after construction completion for each phase.
7. A protected, permanent benchmark shall be established near the mine waste unit before the start of construction. This benchmark shall be shown on all record drawings and described in the first and the final construction reports.
8. A final construction certification and report shall be submitted by the permittee to the Department and/or Commission within 30 days following construction completion. The report shall include written certification, signed by the permittee's responsible officer and signed and stamped by the independent qualified professional supervising project inspection, that the mine waste unit has been constructed in accordance with the approved plans and specifications.

#### G. Operations

1. The permittee shall prepare and maintain an operations manual of current policies and procedures. A copy of the proposed operations manual shall be submitted to the coordinating agency with the application for any proposed mine waste unit. The operations manual provided with the application shall be as complete as possible. An up-to-date copy of the operations manual shall be available for inspection at the site at all times. The operations

manual shall include all the information necessary to enable supervisory and operating personnel and any persons evaluating the operation of the mine waste unit to determine the sequence of operation, plans, diagrams, policies, procedures, and legal requirements that must be followed for orderly and successful operation on a daily, yearly, and life cycle basis. As a minimum, the operations manual shall address each of the areas identified in the operating requirements of this rule. The permittee shall take whatever measures are necessary to familiarize all unit operating personnel with relevant sections of the operations manual.

2. A mine waste unit may receive only those materials approved for disposal, storage, or handling, as provided in the permit.
3. The permittee shall maintain equipment to ensure satisfactory performance capability for the various operations necessary for mine waste unit operation as necessary to meet the terms and conditions of the permit and this rule and provide for the prompt repair and replacement of such equipment.
4. The permittee shall have a contingency plan and shall effectively implement it by obtaining necessary back-up equipment and spare parts to be used during periods of equipment and power outages.
5. The permittee shall inspect mine waste unit structures on a regular basis and include these inspection reports in the annual report described in Section 26(F) of this rule. At a minimum, structures inspected shall include liners, leachate systems, pumps, berms, leachate ponds, drainage and erosion control devices, and cover systems, as appropriate. Regularly scheduled inspections and maintenance of the collection systems shall be performed. Specific inspection items to be included and frequency of inspections shall be proposed in the operating plan submitted with the application.
6. The permittee shall manage waste leachate in accordance with the standards of this rule and shall make every effort to control leachate production. A leachate monitoring plan shall be developed to monitor the quality and quantity of leachate and leachate treatment residue. The parameters to be monitored and the frequency of monitoring shall be proposed in the plan. All monitoring results of leachate and leachate treatment residue shall be submitted to the Department. The results shall be submitted in the environmental monitoring component of the annual report.
7. The permittee shall maintain a record of required operational information, including the quantity and characterization of waste received, the portion of the mine waste unit used, data from the monitoring program, and inspection records. The permittee shall submit an annual waste unit operating summary documenting all of this information. The operating manual shall include a format for and items to be covered in the operating summary.
8. The operation of the mine waste unit shall be under the supervision and direction of a person qualified and experienced in mine waste management.
9. The permittee shall ensure that mine waste is handled in accordance with the permit, this rule, and all applicable laws.

#### Section 34. Monitoring Program

The applicant shall prepare an integrated environmental monitoring plan for all waste units at the site. The plan shall detail how the applicant proposes to comply with this section and shall be submitted with the application.

- A. Groundwater. The following groundwater monitoring criteria apply to all mine waste units:

1. The monitoring system must have a sufficient number of groundwater wells, at appropriate depths and locations, to detect the presence of pollutants that may migrate from a mine waste unit. The downgradient component of the monitoring system must be placed as close to the mine waste unit, or units, if monitoring more than one unit, as practicable, based on the site hydrogeology, to determine on a representative basis the quality of groundwater adjacent to the unit(s).
2. Background groundwater quality monitoring well(s) shall be established in an area unaffected by mining activities or waste units and hydrologically upgradient of the units to be monitored.
3. Wells must be cased to maintain the integrity of the bore hole. Casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of samples. Annular space (i.e., space between bore hole and casing) above the sampling depth must be sealed to prevent contamination of samples and groundwater.
4. Design, location, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be documented in the annual operating summary required under Section 33(G)(7). All these factors are subject to review and approval by the Department.
5. Monitoring wells, piezometers, and other measurement sampling, and analytical devices must be operated and maintained so that they conform to design specifications throughout the life of the monitoring program.
6. The number, spacing, location and depths of monitoring systems shall be proposed by the applicant and must be approved by the Department prior to installation. The applicant shall consider the following in its monitoring system design:
  - a. Characterization of saturated and unsaturated geologic units and fill materials overlying and underlying the uppermost aquifer including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, and porosities;
  - b. Characterization of the uppermost aquifer including, but not limited to, the thickness, flow rate, and flow direction;
  - c. Proximity, withdrawal rates, and uses by other current and potential future users of the aquifer potentially affected by the unit;
  - d. Physical and chemical characteristics and rates of release from the unit; and
  - e. Groundwater quality classification in the area.
7. Parameters for which the applicant must monitor shall include those for which groundwater performance requirements are established. Changes in parameters to be monitored may be made as determined by the Department.
8. Monitoring shall be at least quarterly during the life of the mine waste unit, including any post-closure maintenance period. Less frequent monitoring may be performed as approved by the Department. The monitoring results shall be submitted to the Department within 30 days of the end of each quarter in a format approved by the Department.
9. The groundwater monitoring plan shall include a sampling and analysis plan, which shall include, but is not limited to, frequency of monitoring, parameters to be analyzed for, sample collection methods, sampling equipment, field analysis and preservation methods, sample holding times, sample handling procedures, sample data sheets, analytical methods, detection limits for each parameter, data validation and reporting methods, sampling and analytical

quality assurance, quality control procedures, and sampling location map. The groundwater monitoring plan and any revisions to the plan are subject to review and approval by the Department.

B. Surface Water and Sediments

1. The applicant shall establish a surface water monitoring system that is capable of detecting releases from the mine waste unit including, but not limited to, discharges licensed under 38 M.R.S.A. 413, of any parameter for which a performance requirement has been established. This system must be capable of detecting exceedances of performance requirements.
2. The applicant shall establish a sediment monitoring system capable of detecting accumulations of pollutants in sediments within water bodies affected by the site.
3. Surface water and sediment monitoring programs required pursuant to Section 34(B)(1) and (2) above must, at a minimum, meet the following criteria, all subject to review and approval of the Department:
  - a. Inclusion of consistent sampling and analysis procedures that are designed to ensure monitoring results that will provide a reliable indication of surface water and sediment quality. At a minimum, the program must include procedures and techniques for:
    - i. Sample collection;
    - ii. Sample preservation and shipment;
    - iii. Analytical procedures;
    - iv. Chain-of-custody control; and
    - v. Level of detection;
  - b. Provision for surface water and sediment monitoring to determine background in the receiving water. Background samples shall be collected as close in time as possible to the collection of samples at the monitoring point; and
  - c. For the surface water and sediment monitoring program, specification of the monitoring frequencies for each parameter and media. Monthly monitoring shall be required for all monitored parameters in surface water unless a change in parameters or frequency of monitoring is approved by the Department. At a minimum, annual monitoring shall be required of sediments.

C. Air. Ambient air quality monitoring shall be as required by 38 M.R.S.A. 590 and 592-A.

Section 35. Closure and Post-Closure Maintenance Criteria

A. Closure Maintenance Criteria

1. Performance Standards

- a. The applicant shall design the closure of each mine waste unit to minimize the need for maintenance, and to control the release of mine waste and constituents into the air and the groundwater and surface water, and to ensure protection of health and the environment. Closure activities must:
  - i. Meet performance requirements.

- ii. Comply with design, monitoring and operating criteria approved in the closure plan for the unit.
  - iii. Comply with the general technical requirements below.
- b. The permittee shall undertake the following activities:
  - i. Provide certification by a qualified professional(s) that the mine waste unit, given its location, composition, and construction, is designed to meet current standards of practice for geotechnical engineering.
  - ii. Institute or maintain a run-on/runoff control system that meets the requirements of this rule.
  - iii. Implement and maintain monitoring systems as approved in the closure plan.
  - iv. Close surface impoundments used to manage Group C mine wastes in a manner that will minimize erosion and the threat of water quality degradation from sedimentation.
- c. For surface impoundments, ore leaching facilities including associated solution ponds, and collection systems including trenches, piping, leachate collection systems, and equipment, which contain leach solutions, the permittee shall ensure the following:
  - i. Water that is not to be recycled for processing or used for closure purposes under Section 35(A)(3)(d) shall be treated and disposed of in a manner that ensures compliance with the performance requirements and shall in any event comply with the terms and conditions of the permit.
  - ii. Run-on/runoff control and leachate collection and management systems shall continue until runoff and leachate no longer shall contain constituents in concentrations above those described in the performance requirements for a period of time specified in the permit or otherwise provided by the Department.

## 2. Closure Plan

- a. A closure plan shall be submitted at the time of application for a permit. At a minimum, the plan must include the following information for each mine waste unit:
  - i. The methods, designs, procedures, and processes necessary to satisfy the closure performance standards for each mine waste unit;
  - ii. An estimate of the maximum capacity and maximum rate of mine waste that can be managed in the unit at any time during the life of the mine waste unit;
  - iii. A description of activities required to close leaching operations, including compliance with the standards at the time of closure;
  - iv. A schedule of closure activities; and
  - v. A detailed cost estimate of closure activities.

- b. Closure plans shall be amended to reflect applicable changes in unit design, operations, or mine waste management technology, and applicable legal requirements, at intervals not to exceed 5 years.
- c. The closure plan for each mine waste unit shall minimize the on-site and off-site use or contact with mine waste if such use or contact would pose a significant risk to public health or the environment.
- d. A copy of the closure plan shall be kept at the site or at an alternate location approved by the Department until the post-closure maintenance period has ended.

3. Closure Design Requirements

- a. Closure design shall be based on the following factors:
  - i. The geology and geologic setting of the unit;
  - ii. The character of the waste, including waste treatment;
  - iii. The potential for and degree of contamination of the environment at the unit, if applicable;
  - iv. Corrective action in place or planned, if applicable;
  - v. The operating practices at the waste unit;
  - vi. The geographic location of the unit; and
  - vii. Any other factors which are necessary for an informed determination of an appropriate design.
- b. The closure design shall minimize maintenance and control the release of parameters to ensure that performance requirements are met.
- c. Final closure requirements for dry mine waste management units are as follows:
  - i. Final cover for a mine waste unit shall have a permeability less than or equal to the permeability of the primary liner system.
  - ii. The cover shall be designed and constructed to function with the minimum maintenance possible.
  - iii. Closed mine waste units shall be graded and maintained to prevent ponding and to divert surface drainage from covered wastes.
  - iv. Areas with slopes greater than 10%, surface drainage courses, and areas subject to erosion by water and wind shall be protected to prevent such erosion.
- d. Final closure requirements for wet mine waste management units are as follows:
  - i. Depth of water and saturated cover, if applicable, over the waste shall be maintained.
  - ii. Embankments around the closed unit shall be maintained.

- iii. Water column mixing through wave action and turnover shall be minimized as necessary to control acid generation and leaching of pollutants.
- iv. No discharge to surface or groundwaters shall be allowed except as licensed by the Department.
- e. A protected, permanent benchmark shall be established on each closed mine waste unit. This benchmark shall be shown on all record drawings.

#### 4. Closure Trigger

- a. Closure must begin if for the preceeding 12 months the mine waste unit has not received for disposal more than 10% of the average annual volume of waste received during the mine life to date, unless the permittee has applied for the extension described in Section 35(A)(4)(b) below.
- b. The Department may grant an extension to the initiation of closure if the permittee demonstrates that:
  - i. The mine waste unit is planned to be used within the next 7 years.
  - ii. The mine waste unit is in compliance with performance, design, and operating requirements.
  - iii. The mine waste unit will continue to comply with performance, design, and operating requirements during the extension.
- c. The Department may grant a 12-month extension, up to a maximum of seven extensions.

#### 5. Certification of Closure

- a. Within the 90-day period following closure of the mine waste unit, the permittee shall submit certification to the Department verifying that closure has been completed in accordance with an approved closure plan.
- b. Certification shall be based on a review of the mine waste facility by a qualified professional approved by the Department, and also made by a responsible officer of the permittee.

#### B. Post-Closure Maintenance Criteria

- 1. Applicability. Following certification of the closure, the permittee shall commence post-closure maintenance for the closed mine waste unit.
- 2. Performance Standards
  - a. The permittee shall conduct post-closure maintenance activities to ensure the continued protection of public health and the environment, and to ensure the performance requirements continue to be met.
  - b. Site access during the post-closure maintenance period must be controlled as necessary to prevent the removal of mine waste and ensure continued effectiveness of closure and post-closure maintenance activities.
  - c. Post-closure land uses shall not impair the integrity of containment structures.

### 3. Requirements

- a. The Department may require the applicant to conduct, at a minimum, any or all of the following activities during post-closure maintenance:
  - i. Periodic sampling of the mine waste as necessary to characterize the mobilization or conversion of mine wastes or parameters;
  - ii. Inspection and maintenance activities necessary to maintain the structural and chemical stability of the mine waste unit;
  - iii. Continued operation and maintenance of runoff control systems and leachate management systems, if any;
  - iv. Continued operation and maintenance of groundwater and surface water monitoring stations; and
  - v. Any other measure necessary to prevent a violation of a performance or other legal requirement and otherwise to protect public health and the environment.
- b. Mine waste units that have been closed may be reactivated or re-utilized only under a permit. The applicant shall ensure that:
  - i. Operations conform to the performance requirements, design operating criteria, and monitoring requirements of this rule; and
  - ii. If mining wastes remain in the mine waste unit following the removal of materials for additional beneficiation, or at the completion of additional storage or disposal activities, the mine waste unit is closed in compliance with the requirements of this section.
- c. If any performance requirement is not met, the permittee shall develop and implement a corrective action plan pursuant to Section 27.

### 4. Post-Closure Maintenance Plan

- a. The applicant shall prepare and submit a detailed post-closure maintenance plan as part of the application. At a minimum, the plan must include the following information:
  - i. Description of activities and frequency of activities necessary to satisfy the performance standards;
  - ii. A detailed estimate of post-closure maintenance costs;
  - iii. Description of the planned use of the property to satisfy the post-closure maintenance performance standards, including the following information:
    - AA. Prevention of exposure of mine waste or constituents to the environment, unless such exposure would pose no significant risk to health or environment and is within licensed limits; and
    - BB. Continued maintenance of the structural and operational components of closure and post-closure; and

- iv. Name, address, and telephone number of the person to contact during the post-closure maintenance period.
  - b. A copy of the post-closure maintenance plan shall be kept at the mine waste unit or alternate location as approved by the Department throughout the post-closure maintenance period.
- 5. Length of the Post-Closure Care Period. The post-closure care period for Group A and Group B wastes shall end 30 years from the time of closure certification, provided the Department and/or Commission then determines the mine waste unit has been in compliance with the performance requirements of this rule and the post-closure performance standards of this section, and that the site will continue to remain in compliance with such standards. The post-closure care period for Group C waste shall be 5 years from the time of closure certification.
- 6. Deed Notation
  - a. During the first year following closure certification the permittee shall record a notation on the deed to property, or other instrument normally examined during a title search, if any mine waste or constituent remain at the site.
  - b. The deed notation shall state that the land has been used for the management of mine waste, that mine waste or constituents remain at the mine waste unit and, if applicable, that land use is restricted.
- 7. Post-Closure Certification
  - a. After completion of post-closure maintenance for the mine waste unit, the permittee shall submit certification to the Department and/or Commission verifying completion of post-closure maintenance. All inspection records and reports pertaining to certification shall be submitted to the Department and/or Commission.
  - b. The certification shall be based on a review of the mine waste unit by a qualified professional approved by the Department and executed by a responsible officer of the applicant.
  - c. Approval of certification of the completion of postclosure maintenance of a waste unit by the Department does not release the permittee from any subsequent corrective action requirements or other legal responsibility.

Authority: 38 M.R.S.A. 349-A

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