COPPER MINE RULE
DISCUSSION DRAFT
(August 17, 2012)
With Freeport-McMoRan Comments as of 9/5/2012

TITLE 20 **ENVIRONMENTAL PROTECTION**
CHAPTER 6 **WATER QUALITY**
PART 7 **GROUND WATER PROTECTION - SUPPLEMENTAL PERMITTING REQUIREMENTS FOR COPPER MINE FACILITIES**

20.6.7.1 **ISSUING AGENCY:** Water Quality Control Commission.

20.6.7.2 **SCOPE:** All persons subject to the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq and specifically copper mine facilities and their operations.

20.6.7.3 **STATUTORY AUTHORITY:** Standards and regulations are adopted by the commission under the authority of the Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17.

20.6.7.4 **DURATION:** Permanent.

20.6.7.5 **EFFECTIVE DATE:** ??/??/????, unless a later date is cited at the end of a section.

20.6.7.6 **OBJECTIVE:** The purpose of 20.6.7 NMAC is to supplement the general permitting requirements of 20.6.2.3000 through 20.6.2.3114 NMAC to control discharges specific to copper mine facilities and their operations.

20.6.7.7 **DEFINITIONS:**

A. Terms defined in the Water Quality Act and 20.6.2.7 NMAC shall have the meanings as given in such.

B. A term defined in this part shall have the following meaning.

(1) "Acid rock drainage" means water that has been impacted by the oxidation of mined sulfide materials and is discharged from an area affected by mining exploration, mining, or reclamation, with a pH of less than 5.0 and in which total acidity exceeds total alkalinity as defined by the latest edition of *standard methods for the examination of water and wastewater*.

(2) "Affected discharge site" means the discharge site to which a variance petition applies.

(3) "Applicable standards" means either the standards set forth in 20.6.2.3103 NMAC ("3103 Standards") including, when applicable, the existing concentration; the background concentration approved by the department; or, for an existing copper mine facility, any alternative abatement standard approved by the commission pursuant to 20.6.2.4000 NMAC to 20.6.2.4115 NMAC.

(4) "Applicant" means the person applying for a new, renewed, modified, or amended discharge permit.

(5) "As-built drawings" means engineering drawings, which portray facilities as constructed.

(6) "Background" means the concentration of water contaminants naturally occurring from undisturbed geologic sources of water contaminants.

(7) "Below-grade tank" means a tank including sumps where a portion of the tanks side walls is below the surrounding ground surface elevation. A below-grade tank does not include an above ground tank that is located above or at the surrounding ground surface elevation and is surrounded by berms.

(8) "Construction quality assurance" or "CQA" means a planned system of activities necessary to ensure that standards and procedures are adhered to and that construction and installation meet design criteria, plans and specifications. A CQA includes inspections, verifications, audits, evaluations of material and workmanship necessary to determine and document the quality of the constructed impoundment or structure, and corrective actions when necessary.

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(9) "Construction quality control" or "CQC" means a planned system of operational techniques and activities used to preserve the quality of materials and ensure construction to specifications. Elements of a CQC include inspections, testing, data collection, data analysis and appropriate corrective actions.

(10) "CQA/CQC Report" means a report that summarizes all inspection, testing, data collection, data analysis and any corrective actions completed as part of CQA or CQC for a project.

(11) "Copper mine" means an operation classified under Standard Industrial Classification 1021 or 3331.

(11) "Copper mine facility" means all areas within which mining and its related activities that may discharge water contaminants occurs and where the discharge will or do take place including, but not limited to open pits, waste rock piles, ore stockpiles, leaching operations, solution extraction and electrowinning plants, ore crushing, ore milling, ore concentrators, tailings impoundments, smelters, pipeline systems, tanks or impoundments used to convey or store process water, tailings or impacted stormwater and truck or equipment washing facilities.

(12) "Copper mine rule" means 20.6.7 NMAC, as amended.

(13) "Cover System" means any engineered or constructed system designed as a source control measure to minimize to the maximum extent practicable the ingress of water or oxygen into a waste rock pile, leach stockpile or tailing material. A cover system may be comprised of a monolithic layer of, or any combination of, earthen materials, synthetic materials, vegetation, and amendments. Critical design elements to maximize the effectiveness of store and release type covers include the ability to store water, resist erosion and sustain native vegetation without augmentation.

(15) "Date of postal notice" means the date when the United States postal service first makes notice to the applicant or permittee of its possession of certified mail addressed to the applicant or permittee.

(16) "Discharge" means spilling, leaking, pumping, pouring, emitting, or dumping of a water contaminant in a location and manner where there is a reasonable probability that the water contaminant may reach ground water.

(17) "Discharge permit amendment" means a minor modification of a discharge permit that does not result in a significant change in the location of a discharge, an increase in daily discharge volume of greater than 10 percent of the daily discharge volume permitted for an individual discharge location, a significant increase in the concentration of water contaminants discharged, or introduction of a new water contaminant discharged.

(18) "Discharge volume" means the volume of discharged process water or tailings measured at a specific point at the copper mine facility over a specified period of time.

(19) "EPA" means the United States environmental protection agency.

(20) "Existing copper mine facility" means a copper mine facility operating under an approved discharge permit as of the effective date of the copper mine rule.

(21) "Existing impoundment" means an impoundment that is currently receiving or has ever received process water or collected impacted stormwater and that has not been closed pursuant to a discharge permit.

(22) "Expiration" means the date upon which the term of a discharge permit ends.

(23) "Factor of safety" means, for slope stability purposes, the ratio of the resisting forces to the driving forces.

(24) "Final CQA Report" means a report prepared by the CQA officer that includes as-built drawings and a detailed description of the installation methods and procedures that document that the work was conducted as designed.

(25) "Flow meter" means a measuring device or structure used to measure the volume of water, process water, tailings or stormwater that passes a particular reference section in a unit of time.

(26) "Freeboard" means the vertical distance between the elevation at the lowest point of the top inside edge of the impoundment and the design high water elevation of the water level in the impoundment.

(27) "Hearing clerk" means the person designated by the secretary to maintain the hearing record.

(28) "Hearing officer" means the person appointed by the secretary to conduct a proceeding under this Part.

(29) "Hearing record" means the record proper and the written transcript or recorded tape of the hearing, including all exhibits offered into evidence, whether or not admitted.

(30) "Highway" means any public road operated and maintained by the local, county, state or federal government.

(31) "Impacted stormwater" means direct precipitation and runoff that comes into contact with water contaminants within a copper mine facility which causes the stormwater to exceed the one or more of the standards

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of 20.6.2.3103 NMAC and includes overflow from a primary process solution impoundment or other collection facility resulting from a precipitation event.

(32) "Impoundment" means any structure designed and used for storage or containment of mine process water, or stormwater, or used for solids settling, excluding tailings impoundments. A tank, drum or process water or stormwater transfer sump or pit bottom is not an impoundment.

(33) "Interbench slope" means the outslope surface between terrace benches or between a terrace bench and any engineered conveyance system (i.e., a system to divert runoff).

(34) "Leach stockpile" means stockpiles of ore and all other rock piles associated with mining disturbances that have been leached, are currently being leached or have been placed in a pile for the purpose of being leached.

(35) "Liner system" means an engineered system required by the copper mine rule for the containment, management or storage of waste or other materials that has the potential to generate water contaminants and includes all constructed elements of the system including the foundations, subbases, leak detection systems, liners, overliners, solution collection systems, anchor trenches, and berms, as applicable.

(36) "Maximum daily discharge volume" means the total daily volume of process water (expressed in gallons per day) or tailings (expressed in tons per day) authorized for discharge by a discharge permit.

(37) "Mining and minerals division" means the mining and minerals division of the New Mexico energy, minerals, and natural resources department.

(38) "Mining Act" means the New Mexico Mining Act, NMSA 1978, Sections 69-36-1 through 69-36-20.

(39) "New copper mine facility" means a copper mine facility that is not operating under an approved discharge permit as of the effective date of the copper mine rule.

(40) "Non-impacted stormwater" means stormwater run-off generated as a result of direct precipitation at a copper mine facility that does not exceed the standards of 20.6.2.3103 NMAC.

(41) "Open pit" means the area within which ore and waste rock are exposed and removed by surface mining.

(42) "Open pit surface drainage area" means the area in which storm water drains into open pits and cannot feasibly 4be diverted by gravity outside the pit perimeter, and the underlying ground water is hydrologically contained by pumping or evaporation of water from the pit bottoms.

(43) "Operator" means the person or persons responsible for the overall operations of a facility.

(44) "Outslope" means the sloped perimeter of waste rock piles, leach stockpiles and tailings impoundments.

(45) "Owner" means the person or persons who own all or part of a copper mine facility.

(46) "Party" means the petitioner, the department, or a person who files an entry of appearance on or before the deadline set forth in the notice of hearing;

(47) "Permittee" means a person who is issued or receives by transfer a discharge permit for a copper mine facility, the holder of an expired discharge permit, or, in the absence of a discharge permit, a person who makes or controls a discharge at a copper mine facility.

(48) "Petition" or "variance petition" means a petition for variance from the copper rule;

(49) "Pipeline corridor" means all concentrate, tailing and process water pipelines, the associated spill containment structures, the pipeline subgrade and access roads.

(50) "PLS" means pregnant leach solution that is generated from leaching ore or rock stockpiles.

(51) "Process water" means any water that is generated, managed or used within a copper mine facility including raffinate; PLS; leachate collected from waste rock stockpiles, leach stockpiles, and tailings impoundments; tailings decant water; pit dewatering water; laboratory or other waste discharges containing water contaminants; and domestic wastes mixed with process water.

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(52) "Record proper" means all documents filed by or with the hearing clerk during the proceeding and includes the verbatim record of the hearing and all exhibits offered into evidence at the hearing, whether or not admitted.

(53) "Slope angle" means the horizontal run distance divided by the vertical rise, measured along the steepest gradient of the interbench slope's physical surface (for example, a 2.5:1 slope refers to 2.5 horizontal and 1 vertical).

(54) "Spillway" means a structure used for controlled releases from stormwater impoundment, in a manner that protects the structural integrity of the impoundment.

(55) "Stormwater" means all direct precipitation and runoff generated within a copper mine facility from a storm event.

[or reference 20.6.4.7 NMAC]. (57) "SX/EW" means solution extraction and electro winning.

(58) "Tailings" means finely crushed and ground rock residue and associated fluids discharged from an ore milling, flotation beneficiation and concentrating process.

(59) "Tailings impoundment" means an impoundment that is the final repository of tailings.

(60) "Unauthorized discharge" means a release of process water, tailings, leachate or seepage from individual copper mine facility components, impacted stormwater or other substances containing water contaminants not approved by a discharge permit.

(61) "Variance" means a commission order establishing requirements for a copper mine facility or a portion of a copper mine facility that are different than the requirements in the copper mine rule.

(62) "Variance period" means the time period for which the variance is approved.

(63) "Waste rock" means all material excavated from a copper mine facility that is not ore or clean top soil.

20.6.7.8 REQUIREMENTS FOR DISCHARGING FROM COPPER MINE FACILITIES:

A. No person shall discharge effluent or leachate from a copper mine facility so that it may move directly or indirectly into ground water without a discharge permit. A person intending to discharge from a copper mine facility shall submit an application for a discharge permit pursuant to 20.6.7.10 NMAC and remit fees pursuant to 20.6.7.9 NMAC.

B. Permittees, owners of a copper mine facility and holders of an expired permit are responsible for complying with the copper mine rule.

C. Unless otherwise noted in 20.6.7 NMAC, the requirements of 20.6.2.3101 through 20.6.2.3114 NMAC apply to a copper mine facility.

D. Complying with the requirements of 20.6.7 NMAC does not relieve a copper mine's owner, operator or permittee from complying with the requirements of other applicable local, state and federal regulations or laws.

20.6.7.9 FEES: An applicant or permittee shall pay fees to the department pursuant to this section in lieu of 20.6.2.3114.

A. The permittee of a copper mine shall remit an annual permit fee as follows: large copper mines, [$125,000]; medium copper mines [$62,500]; and small copper mines [$12,500]. Annual permit fees shall be due each August 1 after the effective date of the discharge permit until the discharge permit is terminated.

B. An applicant for a discharge permit, a discharge permit renewal, discharge permit and modification, or discharge permit modification for a copper mine facility shall remit an application fee of [$1000]. The application fee is not refundable and may not be applied toward future discharge permit applications.

C. An applicant for a discharge permit amendment separate from a discharge permit renewal or modification shall remit a fee of five hundred dollars ($500) with the application. The permit amendment fee is not refundable and may not be applied toward future discharge permit applications or amendments.

D. A permittee requesting temporary permission to discharge pursuant to Subsection B of 20.6.2.3106 NMAC shall remit with the request a temporary permission fee of one thousand dollars ($1000). The temporary permission fee is not refundable and may not be applied toward future discharge permit applications or requests for temporary permission to discharge.

20.6.7.10 GENERAL APPLICATION REQUIREMENTS FOR ALL COPPER MINE FACILITIES: This section specifies the general requirements for discharge permit applications for all types of copper mine facilities.

A. Before submitting an application for a new copper mine facility, a prospective applicant shall schedule a pre-application meeting with the department to discuss the proposed location of the facility, the operating plans for the proposed process components, the physical characteristics of the facility's proposed site and other information that is required to be submitted in an application for a permit. The pre-application meeting shall be held in Santa Fe, unless otherwise agreed by the department. The pre-application meeting should occur no less than 60 days before the submission of the application.

B. Instead of the information required by Subsection C of 20.6.2.3106 NMAC, an applicant shall provide information and supporting technical documentation pursuant to this section and 20.6.7.11 NMAC.

C. Notwithstanding Subsection F of 20.6.2.3106 NMAC, a permittee shall submit an application for renewal of a discharge permit for a copper mine facility or a portion of the facility to the department at least 270

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days before the discharge permit expiration date, unless closure of the facility is approved by the department before that date.

D. For a copper mine facility that has been issued a discharge permit but has not been constructed or operated, a permittee shall submit to the department at least 270 days before the discharge permit expiration date an application for renewal pursuant to Subsection B of this section or a statement certifying that the copper mine facility has not been and will not be constructed or operated and that no discharges have occurred or will occur. Upon the department's verification of the certification, the department shall terminate the discharge permit, if necessary, and retire the discharge permit number from use.

E. An application for a new, renewed, or modified discharge permit for a copper mine facility shall include the information and supporting documentation required by this section except that previously submitted materials may be included by reference in discharge permit renewal or modification applications provided that the materials are current, readily available to the secretary and sufficiently identified to be retrieved. The applicant shall attest to the truth of the information and supporting documentation in the application. The applicant shall provide to the department a hard copy (paper format) of the original signed completed application and all supporting documentation. The applicant shall also provide an electronic copy of the original signed application and all supporting documentation in portable document format (PDF) on a compact disc (CD) or digital versatile disc (DVD).

F. Within (60) days of the department notifying the applicant in writing that the application is deemed administratively complete pursuant to Subsection A of 20.6.2.3108 NMAC, the department shall review the application for technical completeness and shall issue a written notice by certified mail to the applicant indicating whether the application is technically complete or is deemed to be deficient. An application must include the information required by Subsection B of this section to be deemed technically complete. Submittals or supporting documentation that require the certification of persons specified in the copper mine rule are deemed technically complete if the documentation is prepared in accordance with the copper mine rule and is certified by persons specified in the copper mine rule.

G. If the department determines that an application is technically deficient, the applicant shall have (60) days from the date of postal notice of the technical deficiency notification to provide the information required by this section. Upon request by the applicant and for good cause shown, the department may grant one or more extensions of time for the applicant to provide the information required by the technical deficiency notification.

(1) If an applicant for a new discharge permit does not provide all information required by this section to the department within (60) days of the date of postal notice of the technical deficiency, or within any extension granted by the department, the department may deny the application. The department shall provide notice of denial to the applicant by certified mail.

(3) If an applicant for a renewed or modified discharge permit does not provide all information required by this section to the department within (60) days of the date of postal notice of the technical deficiency, or within any extension granted by the department, the department may deny the application or may propose a discharge permit for approval consistent with the requirements of the copper mine rule. If the department denies the application, the department shall provide notice of denial to the applicant by certified mail.

(4) An applicant may supplement an application at any time during the technical review period. The department shall review the information for technical completeness within 60 days of receipt.

H. Within 60 days after an application is deemed technically complete or all information has been submitted to the department pursuant to a technical deficiency notification, the department shall make available a proposed approval of a discharge permit and a draft discharge permit or a notice of denial of a discharge permit application pursuant to subsection H of 20.6.2.3108 NMAC. The draft discharge permit shall contain applicable conditions specified in the copper mine rule, any conditions based on a variance issued for the copper mine facility, and any additional conditions imposed under subsection I of this section. Requests for a hearing on the proposed approval of a discharge permit or denial of a discharge permit shall be submitted to the department pursuant to subsection K of 20.6.2.3108 NMAC.

I. The department may impose additional conditions on a discharge permit in accordance with Section 74-6-5 NMSA 1978. If the department proposes an additional condition in a discharge permit that is not included in the copper mine rule, the department shall include a written explanation of the reason for the additional condition with the copper of the draft permit and proposed approval sent to the applicant pursuant to Subsection H of 20.6.2.3108 NMAC. Pursuant to subsection K of 20.6.2.3108 NMAC, written comments regarding the additional condition may be submitted to the department during the comment period, and a hearing may be requested regarding the additional conditions.

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J. The secretary shall approve a discharge permit provided that it poses neither a hazard to public health nor undue risk to property, and:

(1) the requirements of the copper mine rule are met;

(2) the provisions of 20.6.2.3109 NMAC are met, with the exception of Subsection C of 20.6.2.3109 NMAC; and

(3) denial of an application for a discharge permit is not required pursuant to Subsection E of section 74-6-5 NMSA 1978.

20.6.6.11 APPLICATION REQUIREMENTS FOR DISCHARGE PERMITS FOR A COPPER MINE FACILITY:

A. An application for a new discharge permit or a renewal of an existing discharge permit shall include the applicable information in this section. An application for a modification of an existing discharge permit shall include the information in this section relevant to the proposed modification but need not include information listed in this section if the information was submitted to the department in the prior discharge permit application and the information has not changed since the discharge permit was issued. The department may require separate operational and closure discharge permits.

B. Contact information. An application shall include:

(1) applicant's name, title and affiliation with the copper mine facility, mailing address, and telephone number;

(2) copper mine facility manager's or operator's name, title and affiliation with the copper mine facility, mailing address and telephone number;

(3) application preparer's name, title and affiliation with the copper mine facility, mailing address, telephone number and signature; and

(4) mailing address and telephone number of any consultants authorized to assist the copper mine facility with compliance with the Water Quality Act and 20.6.2 NMAC and 20.6.7 NMAC.

C. Ownership and real property agreements.

(1) An application shall include the copper mine facility owner's name, title, mailing address and phone number.

(a) If more than one person has an ownership interest in the copper mine facility or a partnership exists, then the applicant shall list all persons having an ownership interest in the copper mine facility, including their names, titles, mailing addresses and telephone numbers.

(b) If any corporate entity holds an ownership interest in the copper mine facility, the applicant shall also list the name(s), as filed with the New Mexico public regulation commission, of the corporate entity, and the corporate entity's registered agent's name and address.

(2) If the applicant is not the owner of record of the real property upon which the copper mine facility is or will be situated, or upon which copper mine operations will occur, the applicant shall submit the name, address and telephone number of the owner(s), and a copy of any lease agreement or other agreement which authorizes the use of the real property for the duration of the term of the requested permit. Lease prices or other financial terms may be redacted

D. Setbacks. An application for a new copper mine facility shall include a scaled map of the proposed copper mine facility layout demonstrating that the copper mine facility meets the setback requirements of 20.6.7.16 NMAC. For an application for a new copper mine facility, the applicant shall certify that the setback requirements of 20.6.7.16 NMAC are met.

E. Copper mine facility information and location. An application shall include:

(1) the copper mine facility name, physical address and county; and

(2) the township, range and section for the entire copper mine facility.

F. Public notice preparation.

(1) An application for a new, modified or renewed and modified discharge permit shall include the name of a newspaper of general circulation in the location of the copper mine facility for the display advertisement publication, the proposed public location(s) for posting of the 2-foot by 3-foot sign, and the proposed off-site public location for posting of the additional notice, as required by Subsection B of 20.6.2.3108 NMAC.

(2) An application for a renewed discharge permit without modification shall include the name of a newspaper of general circulation in the location of the copper mine facility for the future display advertisement publication as required by Subsection C of 20.6.2.3108 NMAC.

G. Pre-discharge total dissolved solids concentration in ground water. An application shall include the pre-discharge total dissolved solids concentration, or range of concentration, from analytical results of ground water obtained from on-site test data from the aquifer(s) that may be affected by discharges from the copper mine facility. A copy of the laboratory analysis stating the pre-discharge total dissolved solids concentration shall be submitted with the application.

H. Determination of maximum daily discharge volume. An application shall include the following information.

(1) The proposed maximum daily discharge volume of process water and tailings, and a description of the discharge locations and the methods and calculations used to determine that volume.

(2) The identification of all sources of process water and tailings.

(3) The estimated daily volume of process water and tailings generated.

(4) Information regarding other waste discharges (i.e., domestic or industrial) at the copper mine facility. Permit identification numbers shall be submitted for those discharges that are already permitted.

I. Process water and tailings quality. An application shall include estimated concentrations of process water and tailings slurry quality for the constituents identified in 20.6.2.3103 NMAC.

J. Identification and physical description of the copper mine facility. An application shall include the following information.

(1) A scaled map of the entire existing or proposed copper mine facility showing the location of all features identified in Paragraphs 2 through 11 of this Subsection. The map shall be clear and legible, and drawn to a scale such that all necessary information is plainly shown and identified. The map shall show the scale in feet or metric measure, a graphical scale, a north arrow, and the effective date of the map. Multiple maps showing different portions of the copper mine facility may be provided using different scales as appropriate to represent the facility. Documentation identifying the means used to locate the mapped objects (i.e., global positioning system (GPS), land survey, digital map interpolation, etc.) and the relative accuracy of the data (i.e., within a specified distance expressed in feet or meters) shall be included with the map. Any object that cannot be directly shown due to its location inside of existing structures, or because it is buried without surface identification, shall be identified on the map in a schematic format and identified as such;

(2) A description of each existing or proposed tailing impoundment, leach stockpile, process water and impacted stormwater impoundment, and waste rock stockpile including information about its location, purpose, liner material, storage or disposal capacity, and methods proposed or used to prevent pollution of ground water;

(3) A description of each existing or proposed open pit and underground mine within the proposed copper mine facility and information about its proposed location, depth, size, and acreage;

(4) A description of each existing or proposed material handling and processing facility including crushing, milling, concentrating, smelting and SX/EW facilities within the copper mine facility, and information about its location and proposed methods of process water handling and disposal;

(5) A description of existing or proposed sumps, tanks, pipelines and truck and equipment wash facilities, including information for each component regarding its location, purpose, construction material, dimensions and capacity. For portable tanks or pipelines or those subject to periodic relocation, identify the areas within which they may be used;

(6) A description of the proposed method(s) to manage stormwater runoff and run-on to minimize leachate that may be discharged;

(7) A description of water wells and monitoring wells, including information for each well regarding its location, construction material, dimensions and capacity;

(8) A description of flow meters and fixed pumps for discharge of process water, tailings and impacted stormwater;

(9) A description of any surface water(s) of the state and any other springs, seeps, ditch irrigation systems, acequias, and irrigation canals and drains known to be located within the boundary of the copper mine facility;

(10) A description of proposed sampling locations; and

(11) A description of all septic tanks and leachfields used for the disposal of domestic wastes.

K. Surface soil survey, geology and hydrology. An application shall include:

(1) the most recent regional soil survey map and associated descriptions identifying surface soil type(s);

(2) a geologic map covering the area within a one- mile radius of the copper mine facility and geological and lithological information which provides a geological profile of the subsurface conditions beneath the copper mine site, including the thickness of each geologic unit, identification of which geologic units are water bearing, and cross sectional diagrams. The sources of all information shall be provided with the application; and

(3) hydrologic information on any surface waters of the state located on or within one-half mile of the boundary of the copper mine facility to determine whether any such surface waters are gaining because of ground water inflow from the copper mine facility, and of subsurface conditions for all water bearing zones beneath the copper mine facility including maximum and minimum depths to ground water, direction of ground water flow,

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hydrologic gradients shown by potentiometric maps, transmissivity and storativity, and ground water quality. The sources of all information shall be provided with the application.

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L. Location map. An application shall include a location map with topographic surface contours identifying all of the following features located within a one-mile radius of the copper mine facility:

(1) watercourses, lakebeds, sinkholes, playa lakes, seeps and springs (springs used to provide water for human consumption shall be so denoted);

(2) wells supplying water for a public water system and private domestic water wells;

(3) irrigation and other water supply wells; and

(4) ditch irrigations systems, acequias, irrigation canals and drains.

M. Flood zone map. An application shall include, if available, the most recent 100-year flood zone map developed by the federal emergency management administration (FEMA), flood insurance rate map or other flood boundary and floodway map with the copper mine clearly identified along with all 100-year frequency flood zones for the copper mine facility, and a description of any engineered measures used for flood protection.

N. Engineering design, construction and surveying. Pursuant to 20.6.7.17 NMAC, 20.6.7.18 NMAC, 20.6.7.20 NMAC, 20.6.7.21 NMAC, 20.6.7.22 NMAC, 20.6.7.23 NMAC and 20.6.7.26 NMAC an application shall include:

(1) plans and specifications for proposed new or modified tailings facilities, leach stockpiles waste rock stockpiles, and process water and impacted stormwater impoundments and associated liners;

(2) plans and specifications for proposed new or modified tanks, pipelines, truck and equipment wash facilities and other containment systems; and

(3) a stormwater management plan.

O. Material characterization plan and material handling plan. An application shall include a material characterization plan for all waste rock excavated at the copper mine facility pursuant to Subsection A of 20.6.7.21 NMAC and, if applicable, a material handling plan pursuant to Subsection B of 20.6.7.21 NMAC.

P. Hydrologic conceptual model. An applicant for a discharge permit for new copper mine facility shall provide a site hydrologic conceptual model providing:

(1) a description of the hydrologic system at the copper mine facility including ground water and surface water flows, types of ground water and surface water recharge and its distribution, and hydrologic boundary conditions and divides;

(2) the site hydrogeological setting relative to both local and regional hydrology and geology;

(3) potential sources of water contaminants including discharge types and their distributions;

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(4) potential pathways for migration of water contaminants to ground water, and

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(5) any surface waters of the state that are gaining because of inflow of ground water that may be affected by water contaminants discharged from the copper mine facility.

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Q. Waste minimization plan. An application shall include a waste minimization plan to implement, as practicable, best management practices for minimization and recycling of process water and wastes generated at the copper mine facility to reduce the potential for impacts to ground water.

R. Monitoring wells. An application shall include the location of all existing and proposed ground water monitoring wells pursuant to 20.6.7.28 NMAC.

S. Flow metering. An application shall describe a copper mine facility's flow metering system pursuant to Paragraph 5 of Subsection C of 20.6.7.17 NMAC, Subsections E of 20.6.7.18, NMAC and Subsections C and E of 20.6.7.29 NMAC, including:

(1) the method(s) (i.e., pumped versus gravity flow) of process water discharge and stormwater transfer and handling;

(2) the proposed flow measurement devices for each flow method and information about its type, and capacity; and

(3) the location of all existing and proposed flow meter locations.

T. Closure plan. An application shall include a closure plan for all portions of a copper mine facility pursuant to Subsection A of 20.6.7.18 NMAC, 20.6.7.33 NMAC and 20.6.7.35 NMAC unless closure of the copper mine facility is covered by a separate discharge permit.

U. Financial Assurance. An application shall include a commitment to provide financial assurance for all required portions of a copper mine facility pursuant to 20.6.8 NMAC.

V. Variances. An application shall identify any issued or proposed variances for the copper mine facility and the sections of the copper mine rule affected by the variance(s).

20.6.6.12 RESERVED

20.6.7.13 RESERVED

20.6.7.14 REQUIREMENTS FOR A DISCHARGE PERMIT AMENDMENT:

A. A permittee may submit a request for a discharge permit amendment to the department at any time during the term of an approved discharge permit

B. A permittee shall remit a fee pursuant to Subsection C of 20.6.7.9 NMAC with the request for a discharge permit amendment.

C. A discharge permit amendment shall be administratively reviewed and evaluated by the department and is not subject to public notice or a public hearing.

D. The department shall approve, disapprove or request additional information necessary for a determination regarding a discharge permit amendment within 30 days of receipt of a request.

20.6.7.15 ADDITIONAL PUBLIC NOTICE REQUIREMENTS:

A. The requirements of this section shall apply to copper mine facilities whose application for a discharge permit, modification or renewal is received by the department after the effective date of the copper mine rule.

B. For an application for a new discharge permit, instead of the requirement for public notice in Paragraph (2) of Subsection B of 20.6.2.3108 NMAC, the applicant shall provide written notice of the discharge(s) and a copy of the map referenced in Subsection J of 20.6.7.11 NMAC by mail to owners of record of all properties within a one-half mile distance from the boundary of the property where the discharge site(s) is located. If there are not properties other than properties owned by the discharger within a one-half mile distance of the boundary of the property where the copper mining facility is located, the applicant shall provide notice to owners of record of the next nearest properties not owned by the discharger.

C. For an application for a modification of an existing discharge permit, renewal of an existing discharge permit or renewal and modification of an existing discharge permit, instead of the requirement for public notice in Paragraph (2) of Subsection B of 20.6.2.3108 NMAC, an applicant shall pay for the cost of the department publishing written notice of the proposed discharge permit modification, renewal, or renewal and modificiation in the New Mexico register. The department shall make the necessary arrangements to publish such notice in the New Mexico register.

20.6.7.17 GENERAL ENGINEERING AND SURVEYING REQUIREMENTS:

A. Practice of engineering. All plans, designs, drawings, reports and specifications, required by the copper mine rule that require the practice of engineering shall bear the seal and signature of a licensed New Mexico professional engineer pursuant to the New Mexico Engineering and Surveying Practice Act, NMSA 1978, Sections 61-23-1 through 61-23-33, and the rules promulgated under that authority.

B. Practice of surveying. All plans, drawings and reports required by the copper mine rule that require the practice of surveying shall bear the seal and signature of a licensed New Mexico professional surveyor pursuant to the New Mexico Engineering and Surveying Practice Act, NMSA 1978, Sections 61-23-1 through 61-23-33, and the rules promulgated under that authority.

C. Engineering plans and specifications requirements. The following engineering plans and specifications and associated requirements shall be submitted to the department with an application for a new, renewed or modified discharge permit for approval, as applicable.

(1) **Liner system plans and specifications.** An applicant or permittee proposing or required to construct a new or improve an existing liner system required by the copper mine rule or an existing discharge permit, including the repair, modification or replacement of a liner system, shall include the following elements in all liner system plans and specifications submitted to the department.

(a) **Construction plans and specifications.** Detailed and complete construction plans and specifications and supporting design calculations developed pursuant to this section and Section 18 and Sections 20 through 26 of 20.6.7 NMAC shall be submitted to the department.

(b) **Liner system CQA/CQC.** The construction and installation of all liner systems and the repair, modification or replacement of a liner system shall be conducted in accordance with a construction quality assurance/construction quality control (CQA/CQC) plan. A CQA/CQC plan shall be included as part of the design plans and specifications. The CQA/CQC plan shall specify the observations and tests to be used to ensure that construction of the liner system meets all design criteria, plans and specifications. All liner system testing and

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Deleted: D. Proof of notice required by Subsection D of 20.6.2.3108 NMAC shall include an affidavit of mailing(s) and a list of property owner(s) notified pursuant to Subsection B of this section.¶

Deleted: 20.6.7.16 PROCEDURES FOR REQUESTING PUBLIC HEARINGS ON PERMITTING ACTIONS FOR COPPER MINE FACILITIES:¶
A. Requests for a hearing on the proposed approval of a discharge permit or denial of a discharge permit application shall be submitted to the department pursuant to Subsection K of 20.6.2.3108 NMAC.¶
B. Copper mine facilities shall be subject to conditions contained in the copper mine rule. Pursuant to Subsection H of 20.6.7.10 NMAC, the department may impose additional conditions on a discharge permit. Requests for a hearing on the proposed approval of a discharge permit or denial of a discharge permit application shall identify any proposed additional conditions disputed or requested.¶

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evaluation reports shall be signed and sealed by a licensed New Mexico professional engineer with experience in liner system construction and installation. The CQA/CQC plan shall include the following elements;

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(i) The identity of persons responsible for overseeing the CQA/CQC program. The person responsible for overseeing the CQA/CQC plan shall be a qualified licensed New Mexico professional engineer with experience in liner system construction and installation;

(ii) An inspection protocol;

(iii) Identification of field and laboratory testing equipment and facilities proposed to be used, and calibration methods;

(iv) The procedures for observing and testing the liner, subbase and other liner system construction material;

(v) A protocol for verification of any manufacturers' quality control testing and procedures;

(vi) The procedures for reviewing inspection test results and laboratory and field sampling test results;

(vii) The actions to be taken to replace or repair liner material, subbase or other liner system construction materials should deficiencies be identified;

(viii) The procedures for seaming synthetic liners;

(ix) The reporting procedures for all inspections and test data; and

(x) The submission of a CQA/CQC report.

(c) **Management of process water, solids and sludge or impacted stormwater during liner system improvement.** An applicant or permittee proposing or required to improve a copper mine facility operational components that requires the use of a liner system, including re-lining or replacement of an existing liner system, shall submit a plan for managing process water, solids and sludges, or impacted stormwater during preparation and construction of the improvement. The plan shall be submitted as part of the design plans and specifications. The plan shall include the following minimum elements:

(i) A plan for handling and disposal of process water, solids and sludges and impacted stormwater discharges during improvement to the impoundment;

(ii) A plan for removal and disposal of process water, solids and sludges or impacted stormwater within the liner system prior to beginning improvement to the liner system;

(iii) A plan and schedule for implementation of the project; and

(iv) If the plan proposes a temporary location for the discharge of process water, solids and sludge, or impacted stormwater not authorized by the effective discharge permit, the applicant or permittee shall request temporary permission to discharge from the department pursuant to Subsection B of Section 20.6.2.3106 NMAC.

(d) **Dam Safety.** An applicant or permittee proposing or required to construct a tailings facility or impoundment shall submit documentation of compliance with the requirements of the dam safety bureau of the state engineer pursuant to Section 72-5-32 NMSA 1978, and rules promulgated under that authority, unless exempt by law from such requirements.

(2) **Tank, pipeline, sump or other containment system plans and specifications.** An applicant or permittee proposing or required to construct a new tank, pipeline, sump or other containment system for the management of tailings, process water or other water contaminants shall submit detailed and complete construction plans and specifications and supporting design calculations developed pursuant to this section and 20.6.7.23 NMAC. The construction plans and specifications for an improvement(s) or replacement of an existing tank, pipeline, sump or other containment systems shall address the management of solids, waste, process water or other water contaminants generated during preparation and construction of the improvements or replacement. This requirement does not apply to portable or temporary tanks, pipelines, sumps, or other containment systems that are subject to periodic relocation during mining operations.

(3) **Process water or impacted stormwater treatment system plans and specifications.** An applicant or permittee proposing or required to construct a treatment system for process water or impacted stormwater to be treated prior to discharge or water collected and treated during closure or post-closure activities shall submit detailed and complete construction plans and specifications and supporting design calculations developed pursuant to this section and 20.6.7.18 NMAC.

(4) **Impacted stormwater management plans and specifications.** An applicant shall submit stormwater management plans and specifications to limit run-on of stormwater and manage impacted stormwater in a manner which prevents water pollution that may cause an exceedance of the standards of 20.6.2.3103 NMAC. Non-impacted stormwater does not require management under the copper mine rule. The plans and specifications

shall be submitted with an application for a new or renewed discharge permit, or as applicable with an application for a modified discharge permit, and shall include the following information.

(a) A scaled map of the copper mine facility showing:

(i) the property boundaries of the copper mine facility and the mining areas;

(ii) all existing and proposed structures;

(iii) existing and proposed final ground surface contours outside of the open surface drainage area at appropriate vertical intervals; and

(iv) existing and proposed stormwater containment and conveyance structures, including construction materials, size, type, slope, capacity and inlet and invert elevation (or minimum and maximum slopes) of the structures, as applicable.

(c) A description of existing surface water drainage conditions.

(d) A description of the proposed post-development surface water drainage conditions.

(e) Supplemental information supporting the stormwater management plan including the following information:

(i) hydrologic and hydraulic calculations for design storm events;

(ii) hydraulic calculations demonstrating the capacity of existing and proposed stormwater impoundments;

(iii) hydraulic calculations demonstrating the capacity of existing and proposed conveyance channels to divert stormwater or contain and transport runoff to stormwater impoundment(s); and

(iv) a list of tools and references used to develop the hydrologic and hydraulic calculations such as computer software, documents, circulars, and manuals.

(f) A plan to manage impacted stormwater and to divert run-on of non-impacted stormwater where practicable. The plan shall include, as necessary, design, construction, and installation of run-on, run-off, and stormwater diversion structures, collection of impacted stormwater, and a description of existing surface water drainage conditions. The plan shall consider:

(i) the amount, intensity, duration and frequency of precipitation;

(ii) watershed characteristics including the size, topography, soils and vegetation of the watershed; and

(iii) runoff characteristics including the peak rate, volumes and time distribution of runoff events.

(5) **Flow metering plans.** An applicant or permittee proposing or required to install a flow meter(s) pursuant to the copper mine rule shall submit a flow metering plan to support the selection of the proposed device along with construction plans and specifications detailing the installation or construction of each device. Construction plans and specifications proposed by the applicant or permittee shall be submitted to the department with the application for a new, renewed or modified discharge permit.

D. New impoundment engineering design requirements. At a minimum, construction of a new impoundment or replacement of an existing impoundment, shall be in accordance with the applicable liner, design, and construction requirements of this Subsection. These requirements do not apply to tailing impoundments that are subject to the specific engineering design requirements of Paragraph 4 of Subsection A of 20.6.7.22 NMAC.

(1) **General design and construction requirements.**

(a) The outside slopes of an impoundment shall be a maximum of two (horizontal) to one (vertical) and shall meet a minimum static safety factor of 1.3 with water impounded to the maximum capacity design level, except where an impoundment is bounded by rock walls.

(b) The dikes of an impoundment shall be designed to allow for access for maintenance unless otherwise approved by the department.

(c) Liners shall be installed with sufficient slack in the liner material to accommodate expansion and contraction due to temperature changes. Folds in the liner material shall not be present in the completed liner except to the extent necessary to provide slack.

(d) Liners shall be anchored in an anchor trench. The trench shall be of a size and setback distance sufficient for the size of the impoundment.

(e) Liner panels shall be oriented such that all sidewall seams are vertical.

(f) Any opening in the liner through which a pipe or other fixture protrudes shall be sealed in accordance with the liner manufacturer's requirements. Liner penetrations shall be detailed in the construction plans and as-built drawings.

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(g) All liners shall be installed by an individual that has the necessary training and experience as required by the liner manufacturer.

(h) Liner manufacturer's installation and field seaming guidelines shall be followed.

(i) All liner seams shall be field tested by the installer and verification of the adequacy of the seams shall be submitted to the department along with the as-built drawings.

(j) Concrete slabs installed on top of a liner for operational purposes shall be completed in accordance with manufacturer and installer recommendations to ensure liner integrity.

(2) **Impoundment Capacity.** Impoundments shall meet the following design capacities. Capacity requirements may be satisfied by a single impoundment or by the collective capacity of multiple interconnected impoundments and any interconnected tanks.

(a) **Capacity requirements for impoundments that contain leach solutions.** Process water systems that impound leach solutions shall be designed for adequate overflow capacity for upset conditions. Any impoundment that collects leach solutions and is routinely at capacity shall be designed to maintain a minimum of two feet of freeboard during normal operating conditions while conveying the maximum design process flows. These impoundment systems shall be designed with overflow capacity for upset conditions such as power outages, pump or conveyance disruptions and significant precipitation events. The appropriate overflow capacity design shall consider system redundancies such as backup power systems and pumps. The overflow capacity shall be designed to contain the maximum design flows for the collection system for the maximum period of time that is required for maintenance activities or restoration to normal operating conditions while maintaining two feet of freeboard. If the collection system receives direct precipitation runoff with little or no attenuation in the upgradient leach stockpile collection system, the overflow capacity shall be sized to contain the runoff from a 100 year, 24 hour storm event in addition to the upset condition capacity. For process water impoundments located within the open pit surface water drainage area, the open pit bottom may be utilized for a portion of the permitted impoundment capacity.

(b) **Other process water impoundment capacity requirements.** Process water impoundments intended to manage or dispose of process water, other than leach solutions, shall be designed to contain, at a minimum, the maximum daily discharge volume authorized by the discharge permit for management or disposal while preserving two feet of freeboard. For process water impoundments located within the open pit surface water drainage area of an existing copper mine facility, the open pit bottom may be utilized for a portion of the permitted impoundment capacity.

(c) **Combination process water/impacted stormwater impoundment capacity requirements.** Impoundments, other than impoundments for the containment of leach solutions, intended to dispose of a combination of process water and impacted stormwater shall be operated to contain, at a minimum, the volume authorized by the discharge permit and the volume of stormwater runoff and direct precipitation generated from the receiving surface area resulting from a 100 year, 24 hour storm event while preserving two feet of freeboard. For combination process water/impacted stormwater impoundments located within the open pit surface water drainage area of an existing copper mine facility, the open pit bottom may be utilized for a portion of the impoundment capacity.

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(d) **Evaporative impacted stormwater impoundment design requirements.** Impoundments intended to manage or dispose of impacted stormwater by evaporation shall be designed to contain, at a minimum, the volume of stormwater runoff and direct precipitation generated from the receiving surface area resulting from a 100 year, 24 hour storm event while preserving two feet of freeboard. For impoundments located within the open pit surface water drainage area of an existing copper mine facility, the open pit bottom may be utilized for a portion of the impoundment capacity.

(e) **Other impacted stormwater impoundment design requirements.** Other impacted stormwater impoundment systems shall be designed to prevent overflow resulting from a 100-year, 24-hour return interval storm event while maintaining two feet of freeboard and may use interconnected impoundments, gravity flow conveyances and pumping systems designed to remove water from individual impoundments at rates to prevent overflow during the design storm event. The appropriate overflow capacity design shall consider system redundancies such as backup power systems and pumps. For impacted stormwater impoundments located within the open pit surface water drainage area, the open pit bottom may be utilized for a portion of the permitted impoundment capacity.

(f) **Conveyance design requirement.** Open channel conveyance structures intended to transport stormwater to an impoundment shall be designed to convey, at a minimum, the peak flow from a 100-year, 24 hour storm event while preserving adequate freeboard. but not less than six inches of freeboard. Conveyances shall be designed to minimize ponding and infiltration of stormwater.

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(g) **Solids settling.** An impoundment designed and used for solids settling shall not be used to satisfy the impoundment capacity requirements of this paragraph.

(3) **Process water and impacted stormwater long-term storage impoundments.** Process water, and impacted stormwater impoundments that store impacted stormwater for greater than thirty (30) days shall meet the following design and construction requirements, except that an impoundment located within an open pit surface drainage area of an existing copper mine facility may be designed and constructed in accordance with the requirements of Paragraph (4) of this Subsection.

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(a) **Liner system.** At a minimum, impoundments subject to this Paragraph shall be designed and constructed as an engineered liner system consisting of a compacted subbase overlain by a secondary synthetic liner which is overlain by a leak collection system overlain by a primary synthetic liner, unless an alternate design is approved by the department pursuant to Subparagraph (e) of this Paragraph. The liner system shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC

(b) **Liner system sub-grade.** The liner system shall be placed upon a stable foundation and sub-grade. The sub-grade shall be free of sharp rocks, vegetation and stubble to a depth of at least six inches below the liner. Liners shall be placed on a sub-grade of sand or fine soil. The surface in contact with the liner shall be smooth to allow for good contact between liner and sub-grade. The surface shall be dry during liner installation. The liner installer shall provide the owner or permittee with a sub-grade acceptance certificate prior to installing the liner indicating acceptance of the earthwork.

(c) **Liner type.** The primary and secondary synthetic liners for the impoundment shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner system's tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposure and conditions.

(d) **Leak collection system.** A leak collection system shall be constructed between the primary and secondary synthetic liners for the purpose of collecting and rapidly removing fluids from leaks that may occur in the primary liner so that minimal hydraulic head is maintained on the secondary liner. The leak collection system shall consist of a drainage layer, fluid collection pipes and a fluid removal system to prevent hydraulic head transference from the primary liner to the secondary liner and shall meet the following requirements.

(i) The drainage layer shall be constructed of granular soil materials or geosynthetic drainage net (geonet) with a design slope of at least two percent. Drainage material shall have a coefficient of permeability of $1x10^{-2}$ centimeters/second or greater.

(ii) Perforated fluid collection pipes shall be installed to transmit fluid from the drainage layer to a fluid collection sump(s). Collection pipe material, diameter, wall thickness, and slot size and distribution shall be sufficient to prevent deflection, buckling, collapse or other failure. Collection pipes shall be installed with slopes equivalent to the slope of the drainage layer. Collection pipe systems shall be designed to allow for cleaning of all collection pipes with standard pipe cleaning equipment.

(iii) A fluid removal system shall be installed to remove fluid from the leak collection system. The fluid removal system shall consist of a sump(s), a dedicated pump(s), an automated pump activation system that activates the pump(s) when a specific fluid level is reached in a sump(s), a totalizing flow meter to measure to volume of leachate pumped from the system, and an automated alarm system that provides warning of pump failure. Alternately a gravity drain system may be utilized where practicable and approved by the department.

(e) An applicant or permittee may propose for department approval an alternative design for process water and impacted stormwater long-term storage impoundments that provides the same or greater level of containment as a double synthetically lined system with leak collection.

(4) **Impacted stormwater impoundments.** Impacted stormwater impoundments that store impacted stormwater for less than thirty (30) days shall meet the following design and construction requirements; except that any such impoundments located within an open pit surface drainage area at an existing copper mine facility may be designed and constructed in accordance with the requirements of Paragraph (5) of this Subsection.

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(a) **Liner system.** At a minimum, an impacted stormwater impoundment subject to this Paragraph shall be shall constructed as an engineered liner system consisting of a compacted subbase overlain by a synthetic liner. The liner system shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches of compacted soil. The top surface of

the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner and to allow for good contact between liner and subbase. The subbase surface shall be dry during liner installation. The liner installer shall provide the owner or permittee with a sub-grade acceptance certificate prior to installing the liner indicating acceptance of the earthwork.

(c) **Liner type.** Synthetic liners for an impacted stormwater impoundment shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner system's tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposure and conditions.

(d) **Wind protection.** Liner systems for impacted stormwater impoundments shall be designed and constructed with a weighting system to secure the liner and limit liner damage during periods of extreme wind events when the impoundment is empty.

(5) **Non-impacted stormwater impoundments.** Impoundments that store non-impacted stormwater and are not located over disturbed areas where the water has the potential to infiltrate and produce a leachate that may cause an exceedance of the standards of 20.6.2.3103 NMAC do not require a liner system.

(6) **Separation between impoundments and ground water.** Impoundments that require a liner pursuant to this Subsection shall not be constructed in a location where the vertical distance between the seasonal high ground water level and the finished grade of the floor of the impoundment is less than or equal to four feet unless the applicant or permittee submits an engineering evaluation from a qualified licensed New Mexico professional engineer that demonstrates that the impoundment design will not be affected by shallow ground water conditions.

(7) **Spillways.** Impacted stormwater impoundments shall have spillways to safely discharge the peak runoff of a 25-year, 24-hour precipitation event, or an event with a 90-percent chance of not being exceeded for the design life of the impoundment. Impoundments intended as primary containment for process water shall not be designed with a spillway that empties onto the ground surface.

20.6.7.18 GENERAL OPERATIONAL REQUIREMENTS:

A. Planning for closure. To the extent practicable, copper mine facility components shall be designed and operated in a manner that considers implementation of the facility closure plan submitted pursuant to 20.6.7.33 NMAC including:

(1) identifying mined material that is suitable for use to construct covers and, when feasible, segregating that material from other mined materials to preserve it for use to construct covers; and,

(2) consideration of closure grading and drainage plans in the design and construction of stockpiles.

B. Construction requirements. A permittee shall meet the following requirements for construction of a liner system for the containment of water contaminants, including repair or relining of a liner system.

(1) A permittee shall notify the department at least five working days before starting construction or repair or relining to allow for an inspection by the department, except in the case of an emergency repair.

(2) A permittee shall submit to the department a construction certification report bearing the seal and signature of a licensed New Mexico professional engineer, when required by the New Mexico Engineering and Surveying Practice Act, NMSA 1978, sections 61-23-1 through 61-23-33, and the rules promulgated under that authority, verifying that installation and construction was completed pursuant to Subsections C and D of 20.6.7.17 NMAC. The construction certification report shall include as-built drawings, final specifications, final capacity calculations and the CQA/CQC report.

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(3) The construction certification report shall be submitted to the department before discharging or placing ore or wastes in a liner system.

C. Notice of mining operations and discharge. A permittee shall provide written notice to the department of the commencement, or recommencement of operations as follows.

(1) **For new copper mine facilities.**

(a) **Commencement of construction.** A permittee shall provide written notice to the department a minimum of 30 days before commencing construction of facilities covered by a permit issued pursuant to the copper mine rule.

(b) **Commencement of discharge.** A minimum of 30 days prior to discharging or emplacement of ore or waste rock in a constructed impoundment, stockpile, or tailings facility a permittee shall provide written notice to the department of the anticipated date that discharge or emplacement of ore or waste rock will commence. A permittee shall provide written verification to the department of the actual date of commencement within 30 days of commencement.

(2) **For existing copper mine facilities.**

(a) **Commencement of a new discharge.** A minimum of 30 days prior to discharging or emplacement of ore or waste in a newly constructed impoundment, stockpile, or tailings facility the permittee shall provide written notice to the department of the anticipated date that discharge or emplacement of ore or waste will commence. A permittee shall provide written verification to the department of the actual date of commencement within 30 days of commencement.

(b) **Recommencement of mining.** If a permittee is on standby pursuant to the Mining Act, a permittee shall provide written notice to the department indicating the planned date of recommencement of operations at a copper mine facility that include operation of facilities covered by a permit issued pursuant to the copper mine rule. Written notification shall be submitted to the department a minimum of 30 days prior to the date mining is to recommence.

D. Stormwater management. A permittee shall divert and manage stormwater from the open pit, leach stockpiles, waste rock and tailings impoundments and other copper mine facility areas containing material that could generate or release water contaminants in accordance with a stormwater management plan as required by Paragraph (4) of Subsection C of 20.6.7.17 NMAC.

E. Flow meters. A permittee shall employ a flow metering system that uses flow measurement devices (flow meters, weirs or other department approved method) to measure the volume of process water and tailings discharged at a copper mine facility as follows.

(1) **Flow meter installation.** Flow meters shall be installed in accordance with the flow meter plans submitted with the application for a new, renewed or modified discharge permit pursuant to Paragraph (5) of Subsection C of 20.6.7.17 NMAC, and this section. Flow meters shall be permanently labeled with meter identification nomenclature, and the month and year of meter installation.

(2) **Flow meter inspection and maintenance.** A permittee shall visually inspect flow meters on a monthly basis for evidence of malfunction. If a visual inspection indicates a flow meter is not functioning to measure flow, the permittee shall repair or replace the meter within 30 days of or as soon as practicable following discovery. The repaired or replaced flow meter shall be installed and calibrated pursuant to this Subsection. The permittee shall submit a report of repaired or replaced meters to the department in the subsequent monitoring report which shall include:

(a) Information on repairs including a description of the malfunction; a statement verifying the repair, and a description of calibration of the flow meter pursuant to Paragraph (3) of this Subsection.

(b) For replacement meters, information demonstrating that the device is in accordance with the plan for flow metering devices submitted pursuant to Paragraph (5) of Subsection C of 20.6.7.17 NMAC, and that the device has been calibrated pursuant to Paragraph (3) of this Subsection.

(3) **Flow meter calibration.** All flow meters shall be calibrated to have their accuracy ascertained according to the flow metering plan submitted pursuant to Paragraph (5) of Subsection C of 20.6.7.17 NMAC and the approved discharge permit. Flow meters shall be calibrated to within plus or minus 10 percent of actual flow.

(4) **Excluded flow meters.** A permittee may utilize additional flow meters not required by the copper rule, and those flow meters are not subject to the copper rule requirements.

F. Impoundments.

(1) **New impoundments.** Construction of an impoundment pursuant to a discharge permit issued after the effective date of the copper mine rule shall be performed in accordance with the liner, design, and construction requirements of Subsection D of 20.6.7.17 NMAC

(2) **Existing impoundments.** An impoundment authorized by a discharge permit issued prior to the effective date of the copper mine rule and in existence on the effective date of the copper mine rule that does not meet the requirements of Paragraph (3) of Subsection D of 20.6.7.17 NMAC may continue to receive process water or impacted stormwater provided the requirements of Subparagraphs (a) and (b) or (c) of this Paragraph are met or the impoundment is located within the open pit surface drainage area. If the requirements of Subparagraphs (a) and (b) or (c) of this Paragraph are not met, the impoundment shall be replaced or improved in accordance with the liner, design, and construction requirements of Subsection D of 20.6.7.17 NMAC.

(a) Ground water monitoring data from monitoring wells downgradient of the impoundment does not indicate that the impoundment is not functioning as designed and specified in the authorized discharge permit.

(b) The impoundment has integrity and is capable of maintaining integrity for its operational life.

(c) The impoundment is covered by a variance granted pursuant to 20.6.7.31 NMAC.

(3) **Impoundment inspection and maintenance.** A permittee shall maintain impoundments to prevent conditions which could affect the structural integrity of the impoundments and associated liners during

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active operations. Such conditions include, but are not limited to, erosion damage; animal burrows or other animal damage; the presence of vegetation including aquatic plants, weeds, woody shrubs or trees growing within five feet of the top inside edge of a sub-grade impoundment, within five feet of the toe of the outside berm of an above-grade impoundment, or within the impoundment itself; evidence of seepage; evidence of berm subsidence; and the presence of large debris or large quantities of debris in the impoundments. A permittee shall inspect impoundments and surrounding berms on a monthly basis to ensure proper condition and control vegetation growing in and around the impoundments in a manner that is protective of the liners. Within 24 hours of discovery, a permittee shall report to the department any evidence of damage that threatens the structural integrity of a berm or liner of an impoundment or that may result in an unauthorized discharge. A permittee is not required to report routine berm maintenance to the department.

(4) **Freeboard.** The fluid level elevation in an impoundment shall be maintained such that a minimum of two feet of freeboard is preserved within the impoundment at all times.

(5) **Leak collection system inspection and maintenance:** A permittee shall inspect and maintain impoundments utilizing primary and secondary liners and equipped with leak collection systems as follows:

(a) leachate accumulation within the sump of the leak collection system shall be returned to the respective impoundment or the process water system to minimize hydraulic head on the secondary liner by insuring the interstitial space between the liners does not become saturated; and

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(b) the permittee shall inspect the sump(s), dedicated pump(s), any automated pump activation system, any automated alarm system and totalizing flow meter associated with the leak detection and collection system on a monthly basis for evidence of malfunction. If an inspection indicates malfunction of any of these components, the permittee shall repair the component(s) within 30 days of discovery or shall retain a record of why the repair took longer. The permittee shall notify the department of component malfunctions and repairs made in the subsequent quarterly report.

20.6.7.19 SETBACK REQUIREMENTS FOR A COPPER MINE FACILITY APPLYING FOR A DISCHARGE PERMIT:

A. The setback requirements of this section apply to a new copper mine facility, whose application for a discharge permit is received by the department after the effective date of the copper mine rule.

Deleted: or a proposed new component of an existing copper mine facility,

B. The setback requirements shall be measured as horizontal map distances.

C. The required setback distances shall be met as certified by the applicant as of the receipt date of the application.

D. If the setback requirements apply to a copper mine facility, an applicant or permittee shall not propose or construct a leach stockpile, waste rock stockpile, tailing impoundment, or process water and impacted stormwater impoundment that does not meet the setback as determined as of the receipt date of the application for a new discharge permit by the department.

E. Leach stockpile, waste rock stockpile, tailing impoundment, process water impoundment or impacted stormwater impoundment setback requirements.

(1) Leach stockpiles, waste rock stockpiles, tailing impoundments, process water impoundments or impacted stormwater impoundments shall be located:

(a) greater than 500 feet from a private domestic water well or spring that supplies water for human consumption; and

(b) greater than 1000 feet from any water well or spring that supplies water for a public water system as defined by 20.7.10 NMAC, unless a wellhead protection program established by the public water system requires a greater distance.

(2) The requirements of Subparagraph (a) of Paragraph (1) of this subsection shall not apply to wells or springs that supply water to the copper mine facility for human consumption and are located within the property boundary of the copper mine facility.

(3) The requirements of Paragraph (1) of this subsection shall not apply to wells that are constructed after a copper mine facility received a discharge permit for a leach stockpile, waste rock stockpile, tailing impoundment, process water impoundment or impacted stormwater impoundment.

(4) Setback distances shall be measured from the toe of the outer edge of a leach stockpile, waste rock stockpile, tailing impoundment, process water impoundment or impacted stormwater impoundment at its final design build out.

20.6.7.20 REQUIREMENTS FOR LEACH STOCKPILE FACILITIES:

A. Engineering design requirements. At a minimum, the following requirements shall be met in designing leach stockpiles at copper mine facilities. The department may impose additional requirements if the leach stockpile is to be installed in an area of fractured or faulted geologic conditions, inadequately abandoned exploratory boreholes underlying the site of the installation, or where the depth to ground water underlying the structure is less than 100 feet as additional conditions in accordance with Subsection J of 20.6.7.10 NMAC.

(1) **New leach stockpiles.** New leach stockpiles shall meet the following requirements.

(a) **Liner system.** A new leach stockpile shall be placed on an engineered liner system consisting of a compacted subbase overlain by a synthetic liner which is overlain by a solution collection system designed to transmit process fluids out of the leach stockpile. The liner system shall be approved by the department prior to installation and shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches of soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The top surface of the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner.

(c) **Liner type.** A synthetic liner for a leach stockpile shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner system's tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposures and conditions. A licensed New Mexico professional engineer with experience in liner system construction and installation shall identify the basis for the geomembrane composition and specific liner based upon:

(i) the type, slope and stability of the foundation;

(ii) the overliner protection and provisions for hydraulic relief within the liner system;

(iii) the load and the means of applying the load on the liner system;

(iv) the compatibility of the liner material with process solutions applied to the leach stockpile and temperature extremes of the location at which it will be installed; and

(v) the liner's ability to remain functional for five years after the operational life of the leach stockpile.

(d) **Solution collection system.** A solution collection system shall be constructed in an overliner protection and drainage system. The solution collection system shall be designed to remain functional for five years after the operational life of the leach stockpile. The overliner protection shall be designed and constructed to protect the synthetic liner from damage during loading and minimize the potential for penetration of the synthetic liner. A sloped collection system shall be designed that will transmit fluids out of the drainage layer of the leach stockpile. The collection system shall be designed to maintain a hydraulic head of less than the thickness of the drainage layer but the drainage layer shall not exceed five feet in thickness. Any penetration of the liner by the collection system through which a pipe or other fixture protrudes shall be constructed in accordance with the liner manufacturer's requirements. Liner penetrations shall be detailed in the construction plans and as-built drawings.

(e) Solution containment facilities. PLS flows exiting the leach stockpile shall be collected, contained and conveyed to a process water impoundment(s) or tank(s) using pipelines or lined conveyance systems.

(f) An applicant may propose and the department may approve an alternative design for a leach stockpile located within an open pit surface drainage area provided that the stockpile and solution capture systems are designed to maximum leach solution capture considering the site-specific conditions of the open pit, underlying geology and hydrology, and leach solutions will not migrate outside of the open pit surface drainage area.

(2) **Solution extraction/electrowinning (SX/EW) facilities.** All SX/EW facilities shall be designed to contain all associated process fluids within impermeable vessels with secondary containment or process water impoundments meeting the requirements of Subsection D of 20.6.7.17 NMAC. All pipeline and tank systems associated with the SX/EW facilities shall be designed and operated pursuant to 20.6.7.23 NMAC.

B. Construction.

(1) **New leach stockpile and SX/EW facilities.** Construction of a new leach stockpile or SX/EW facility, including expansion of an existing leach stockpile beyond its ground surface footprint on the effective date of the copper mine rule, shall be performed in accordance with the applicable engineering requirements of Subsection A of 20.6.7.20 and 20.6.7.17 NMAC.

(2) **Existing leach stockpiles.** A leach stockpile system, including its associated solution collection or containment system, at an existing copper mine facility in existence on the effective date of the copper mine rule is not required to meet the design, and construction requirements of Subsection A of 20.6.7.20 NMAC and may

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continue to operate as previously permitted under a discharge permit, subject to compliance with the contingency requirements of 20.6.30 NMAC. A permit issued for such an existing leach stockpile system after the effective date of the copper mine rule may include the conditions of the existing discharge permit, which shall not be considered to be additional conditions.

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C. **Operational Requirements.**

(1) **Leach stockpile operating requirements.** A permittee operating a leach stockpile shall operate the stockpile pursuant to the following requirements.

(a) The stockpile shall remain within the area identified in the discharge permit.

(b) The perimeter of the stockpile and the solution collection system shall be inspected monthly.

(c) Any evidence of instability in the stockpile that could potentially result in a slope failure or an unauthorized discharge shall be reported to the department as soon as possible, but not later than 24 hours after discovery.

(d) Any leaks or spills of PLS or leach solutions outside the leach stockpile or containment system shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(e) If seeps occur, they shall be monitored on a monthly basis and an estimate of the seep flow rate shall be made. Monthly records of the seep inspections and flow rates shall be maintained and included in the site monitoring reports.

(f) The monthly volume of ore placed on the stockpile shall be recorded, maintained, and included in the site monitoring reports.

(g) Leach solution application rates shall not exceed the maximum rates approved in the discharge permit.

(h) The daily leach solution application and PLS collection rate shall be determined using flow meters installed in accordance with this section and Paragraph (5) of Subsection C of 20.6.7.17 NMAC.

(i) The daily rate and monthly volume of leach solution applied and PLS collected shall be recorded, maintained, and included in the site monitoring reports.

(2) **Solution extraction/electrowinning (SX/EW) facilities.** The following operation requirements apply to an SX/EW facility.

(a) All solution management and extraction operations shall be contained within pipeline and tank systems designed and operated pursuant to 20.6.7.23 NMAC or process water impoundments meeting the requirements of Subsection D of 20.6.7.17 NMAC.

(b) Sludge and spent electrolyte from the SX/EW facility shall be either placed upon the leach stockpile for leaching or disposed of at an approved facility.

20.6.7.21 REQUIREMENTS FOR COPPER MINE WASTE ROCK STOCKPILES

A. **Material Characterization Requirements:**

(1) **Material characterization and acid rock drainage prediction.** All waste rock stored, deposited or disposed of at a copper mine facility shall be evaluated for its potential to generate acid and to release water contaminants at levels in excess of the standards of 20.6.2.3103 NMAC. A plan for determining the potential of the material to release water contaminants, and the method for such evaluations shall be submitted to the department for approval in a material characterization plan that includes:

(a) The geologic, mineralogic, physical, and geochemical characteristics of the material stored, deposited or disposed of at the copper mine facility.

(b) A sampling and analysis plan to provide representative samples of the entire range of material stored, deposited or disposed of at the copper mine facility. The plan shall include quality assurance/quality control procedures to be implemented to ensure the validity of the sample results. The plan shall consider the following factors in collecting and establishing representative samples:

(i) lithological variations;

(ii) particle size distribution of each lithology;

(iii) hydraulic conductivity, water content or matrix suction relationship for each lithology;

(iv) mineralogical and textural variations;

(v) the nature and extent of sulfide mineralization;

(vi) color variation;

(vii) degree and nature of fracturing;

(viii) variations in oxidation and reducing conditions; and

(ix) the nature and extent of secondary mineralization.

(c) A static testing program using, at a minimum, acid/base accounting, or a department approved equivalent testing method, to evaluate the acid generation and neutralization potential of the material.

(d) If the results of static testing indicate that a material may be acid generating, a kinetic testing program to evaluate reaction rates, provide data to estimate drainage quality, the lag time to acidification of the material, and primary weathering and secondary mineral precipitation/dissolution as it may affect acidification and drainage quality. The length of and/or means of determining when kinetic tests will be discontinued shall be approved by the department prior to implementation of the kinetic testing program, provided that the maximum time that can be required for kinetic testing shall be 52 weeks.

(2) **Material handling plan.** A permittee shall manage waste rock that may generate or release water contaminants according to a material handling plan approved by the department. The material handling plan shall address:

(a) segregation of acid generating materials and materials that may generate or release water contaminants and the method for handling, storage or disposal of the materials in a manner designed to prevent an exceedance of the standards of 20.6.2.3103 NMAC;

(b) stockpiling of non-acid generating materials for potential use in neutralizing acid generating materials or in reclamation;

(c) blending or layering of material types to maximize the benefit of acid neutralizing material;

(d) disposal of all material types; and

(e) any chemical amendments of the waste rock.

(f) If the results of the static testing or kinetic testing indicate that the material is will be acid generating and the materials will be placed outside of an open pit surface drainage area, a plan shall be submitted to the department to evaluate whether discharges of leachate from the stockpile may cause an exceedance of the standards of 20.6.2.3103 NMAC, including an evaluation of the geologic and hydrogeologic area where the material is to be stored. The plan shall include either a department approved model or a monitored, large scale field testing program.

B. Engineering Design Requirements for new waste rock stockpiles. The following requirements shall be met in designing engineered structures for new waste rock stockpiles at copper mine facilities that may generate water contaminants or acid rock drainage that may cause an exceedance of the standards of 20.6.2.3103 NMAC, as determined through implementation of a material characterization and handling plan pursuant to Subsection A of 20.6.7.21 NMAC.

(1) **New waste rock stockpiles located outside an open pit surface drainage area.** New waste rock stockpiles located outside an open pit surface drainage area shall meet the following requirements unless the department determines that deposition of waste rock in accordance with an approved material handling plan prepared pursuant to Paragraph (2) of subsection A of this section, that the waste rock pile will not cause an exceedance of applicable standards.

(a) Stormwater runon shall be diverted or contained to minimize contact between precipitation runon and the stockpiled material. The permittee shall prepare an engineering plan to limit the contact of run-on and stormwater with any materials that have the potential to generate water contaminants. The plan shall include, as necessary, design, construction, and installation of run-on, run-off, and stormwater diversion structures, collection of stormwater containing water contaminants, and a description of existing surface water drainage conditions. The plan shall consider:

(i) the amount, intensity, duration and frequency of precipitation;

(ii) watershed characteristics including the area, topography, geomorphology, soils and vegetation of the watershed; and

(iii) runoff characteristics including the peak rate, volumes and time distribution of runoff events.

(b) Drainage from the base of the stockpile shall be collected by headwalls keyed to bedrock, where applicable, and contained in impoundments located outside the open pit surface drainage area to be lined consistent with the requirements for containment of impacted stormwater.

(c) Interceptor wells or other measures to reduce, attenuate or contain the discharge of leachate that may cause ground water to exceed the standards of applicable standards shall be installed and operated where applicable.

(d) If the permittee or the department determine that, with the measures described in paragraphs (a) through (c) of this subsection, discharges of leachate from at stockpile located outside of the open pit surface drainage area would cause ground water to exceed applicable standards at a monitoring well located pursuant to section 20.6.7.28 NMAC, the applicant may propose, or the department may require as an additional condition in accordance with 20.6.7.10.H NMAC, additional controls, including but not limited to, a liner system.

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(2) New waste rock stockpiles located inside an open pit surface drainage area. Stormwater runon shall be diverted or contained to minimize contact between precipitation runon and the stockpiled material.

C. Construction.

(1) **New waste rock stockpiles.** Construction of a new waste rock stockpile shall be performed in accordance with the applicable engineering requirements of Subsection B of 20.6.7.21 NMAC and 20.6.7.17 NMAC.

(2) **Existing waste rock stockpiles.** A waste rock stockpile in existence on the effective date of the copper mine rule is not required to meet the design and construction requirements of Subsection B of 20.6.7.21 NMAC and may continue to operate as previously permitted under a discharge permit unless ground water monitoring of the stockpile pursuant to 20.6.7.28 NMAC requires implementation of corrective action under 20.6.7.30A.

D. Operational Requirements. A permittee operating a waste rock stockpile shall operate the stockpile pursuant to the following requirements.

(1) The stockpile shall remain within the area identified in the discharge permit.

(2) The perimeter of the stockpile and the solution collection system facilities shall be inspected monthly.

(3) Evidence of mass instability in the stockpile that could potentially result in a slope failure that may result in an unauthorized discharge shall be reported to the department as soon as possible, but not later than 24 hours after discovery.

(4) Any leaks or spills of leachate outside the waste rock stockpile and any associated containment system shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(5) If seeps occur at the toe of the stockpiles, they shall be monitored on a monthly basis and an estimate of the seep flow rate shall be made. Records of the seep inspections and flow rates shall be maintained and included in the site monitoring reports.

20.6.7.22 REQUIREMENTS FOR COPPER CRUSHING, MILLING, CONCENTRATOR, SMELTING AND TAILINGS IMPOUNDMENT FACILITIES

A. Engineering design requirements. At a minimum, the following requirements shall be met in designing crushing, milling, concentrating, smelting and tailings facilities at copper mine facilities.

(1) **New crushing and milling facilities.** New crushing and milling facilities, including associated ore storage shall be designed to contain and manage all materials containing water contaminants that have the potential to migrate to ground water and cause an exceedance of the standards of 20.6.2.3103 NMAC on low permeability surfaces approved by the department.

(2) **New concentrator facilities.** New concentrator facilities shall be designed to contain and manage in tank and pipeline systems designed and operated pursuant to Section 23 of 20.6.7 NMAC all materials containing water contaminants that have the potential of migrate to ground water and cause an exceedance of the standards of 20.6.2.3103 NMAC. Tailing and concentrate thickener tanks may be constructed with concrete or low permeability bottoms consisting of a minimum of 12 inches of soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The tank designs shall be based on plans and specifications signed and sealed by a qualified licensed New Mexico professional engineer. For low permeability bottoms, such plans and specifications shall describe how process rates, material density and settling rates were considered in the design to minimize infiltration such that water contaminants in the tank will not migrate to ground water and cause an exceedance of the standards of 20.6.2.1303 NMAC.

(3) **New smelting facilities.** New smelting facilities shall be designed to contain and manage on impermeable surfaces all materials, including associated slag and flue dust, containing water contaminants that have the potential of migrate to ground water and cause an exceedance of the standards of 20.6.2.3103 NMAC.

(4) **New tailings impoundments.** Tailings impoundments shall be designed according to the following requirements.

(a) The applicant shall submit design plans signed and sealed by an engineer registered in New Mexico along with a design report that describes how the following features were considered in developing the design plans:

(i) the annual volumes and daily maximum design rates of tailings and effluent to be deposited in the impoundment;

(ii) the topography of the site where the impoundment will be located;

(iii) hydrologic characteristics of the site, including depth to and quality of ground water;

(iv) the geology of the site;

Deleted: (a) **Liner system.** A new waste rock stockpile shall be placed on an engineered liner system consisting of a compacted subbase overlain by a synthetic liner which is overlain by a solution collection system designed to transmit process fluids out of the waste rock stockpile. The liner system shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC ¶

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches of soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The subbase shall be compacted in lifts that are no more than six inches thick. The top surface of the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner.¶

(c) **Liner type.** A synthetic liner for a new waste rock stockpile shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner systems tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposures and conditions. A qualified licensed New Mexico professional engineer with ... [1]

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(a)

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(b) the stockpile has been granted a variance pursuant t ... [2]

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Deleted: (7) The monthly volume of fluid generated within the solution collection system shall be determined using flow meters installed in accordance with this section and Paragraph (5) of Subsection C of 20.6.7.17 NMAC ... [3]

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(v) the design of drainage collection systems, to be proposed based on consideration of site-specific conditions and if drainage will be collected or will report at or above the ground surface;

(vi) the design of seepage collection systems, to be proposed based upon consideration of site-specific conditions where substantial seepage may report to ground water, including a design report that includes an aquifer evaluation to demonstrate that interceptor wells will be able to efficiently capture seepage such that the standards of 20.6.2.3103 NMAC will not be exceeded at monitor well locations specified by 20.6.7.28 NMAC. The aquifer evaluation shall include a description of aquifer characteristics, hydrogeologic controls for seepage containment and capture, and an analysis of well spacing and capture rates. The interceptor well system shall be designed to maximize seepage capture and efficiency.

(vii) a hydrologic analysis of drainage and seepage from the tailings impoundment based on the proposed design.

(b) If the permittee or the department determine that the proposed tailings impoundment, when operated in accordance with the design plan specified in subparagraph (a) of this paragraph, would result in discharges of seepage or leachate that would cause ground water to exceed applicable standards at a monitoring well located pursuant to section 20.6.7.28 NMAC, the applicant may propose, or the department may require as an additional condition in accordance with 20.6.7.10.H NMAC, additional controls, including but not limited to, a liner system.

B. Construction.

(1) **New crushing, milling, concentrating, smelting, or tailings impoundment facility.** Construction of a new crushing, milling, concentrating, smelting, or tailings impoundment facility shall be performed in accordance with the applicable engineering requirements of Subsection A of 20.6.7.22 and 20.6.7.17 NMAC.

(2) **Existing crushing, milling, concentrating, smelting or tailings impoundments.** A tailings impoundment at an existing copper mine facility in existence on the effective date of the copper mine rule is not required to meet the liner, design, and construction requirements of Subsection A of 20.6.7.20 NMAC and may continue to operate as previously permitted under a discharge permit subject to compliance with the contingency requirements of 20.6.7.30 NMAC. Permit conditions contained in an existing discharge permit may be included in a discharge permit issued under the copper mine rule, and such conditions shall not be considered to be "additional conditions" under subsection I of 20.6.7.10 NMAC.

C. Operational Requirements.

(1) **Tailings impoundment operating requirements.** A permittee operating a tailings impoundment shall operate the impoundment pursuant to the following requirements.

(a) The tailings impoundment shall remain within the area identified in the discharge permit.

(b) The perimeter of the tailings impoundment and any associated solution collection system facilities shall be inspected monthly.

(c) Any evidence of instability in the tailings impoundment that could potentially result in a dam failure and an unauthorized discharge shall be reported to the department as soon as possible, but not later than 24 hours after discovery.

(d) Any leaks or spills outside the tailings impoundment or drainage containment system shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(e) If seeps occur, they shall be monitored on a monthly basis and an estimate of the seep flow rate shall be made. Monthly records of the seep inspections and flow rates shall be maintained and included in the site monitoring reports.

(f) The monthly volume of tailings placed in the impoundment shall be recorded, maintained, and included in the site monitoring reports.

(g) Tailings deposition rates shall not exceed the maximum rates approved in the discharge permit.

(h) The daily tailings deposition and associated solution system collection rate shall be determined using flow meters installed in accordance with Paragraph (5) of Subsection C of 20.6.7.17 NMAC.

(i) The average daily rate and monthly volume of tailings deposited and solution collected shall be recorded, maintained, and included in the site monitoring reports.

(j) The placement of tailings and effluent shall be in accordance with an operating plan that describes the sequencing of tailings deposition on an annual basis, measures to manage the surface impoundment area to maintain adequate freeboard, operation of drainage collection system, operation of systems to return water to the concentrator or other locations as appropriate, and any other water management features.

Deleted: (a) **Liner system.** A new tailings impoundment shall be placed on an engineered liner system consisting of a compacted subbase overlain by a synthetic liner which is designed to drain fluids out of the tailings impoundment. The liner system shall be approved by the department prior to installation and shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC ¶

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The subbase shall be compacted in lifts that are no more than six inches thick. The top surface of the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner.¶

(c) **Liner type.** A synthetic liner for a new tailings impoundment shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner systems tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposures and conditions. A qualified licensed New Mexico professional engineer with experience in liner system construction and installation shall identify the basis for the geomembrane composition and specific liner based upon:¶

(i) the type, slope and stability of the foundation;¶

(ii) the overliner protection and provisions for hydraulic relief within the liner system;¶

(iii) the load and the means of applying the load on the liner system;¶

(iv) the compatibility of the liner material with the tailings applied to the impoundment and temperature extremes of the lo ... [5]

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(a) ground water monitoring of the crushing, milling, concentrating smelting or tailings impoundment area pursuant to 20.6.7.28 NMAC demonstrates that the crushing, milling, concentrating smelting or tailings impoundment area has not caused an exceedance of the standards of 20.6.2.3103 NMAC, or other applicable standards, or;¶

(b) the crushing, milling, concentrating smelting or tailings impoundment area has been granted a variance pursuant to 20.6.7.31 NMAC.¶

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(k) If an interceptor well system to manage fluids that have migrated into ground water exists at a tailings impoundment that is operated pursuant to Paragraph (2) of Subsection B of this Section, the permittee shall submit an interceptor well management plan that shall include:

(1) well completion drawings and well performance information, recommended equipment including pumps and meters, recommended pump settings and pumping rates, and methods for data collection;

(2) a monitoring plan detailing the monitoring system, metering requirements and recordkeeping, a water level monitoring program including methods and frequency of monitoring; and

(3) an annual performance evaluation plan to evaluate the performance of individual wells, a review of the tailing facility water balance, evaluation of monitoring data to determine capture efficiency, and recommendations for maintaining and improving capture efficiency.

(2) **Smelting facilities.** A permittee operating a smelting facility shall operate pursuant to the following requirements.

(a) The smelting facility shall remain within the area identified in the discharge permit.

(b) Slag and flue dust generated as a result of smelting activities shall be characterized, managed, and properly stored and disposed of.

(c) Any leaks or spills outside the containment systems of the smelter facility shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(3) **Crushing, milling and concentrating operating requirements.** A permittee operating any crushing, milling, or concentrating facility shall operate pursuant to the following requirements.

(a) The crushing, milling and concentrating operations shall remain within the area identified in the discharge permit.

(b) All containment system structures shall be inspected monthly.

(c) Any leaks or spills of process water outside the containment system shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

20.6.7.23 REQUIREMENTS FOR NEW PIPELINES AND TANKS

A. Engineering design requirements. At a minimum, the following requirements shall be met in designing new pipeline or tank systems at copper mine facilities that contain process solutions or impacted stormwater with water contaminants in excess of the standards of 20.6.2.3103 NMAC.

(1) **New Pipelines.** New pipelines shall:

(a) be constructed of impermeable materials that are compatible with the particular contents that are contained and carried in the pipeline and are resistant to degradation by ultraviolet light if they will be exposed to sunlight;

(b) for pipelines located outside of the open pit surface drainage area and outside an area authorized for discharge of process water, impacted stormwater or tailings, incorporate a mechanism for monitoring the integrity of the pipeline system including visual inspections, pressure change sensors, or other appropriate means; and

(c) for pipelines located outside of the open pit surface drainage area and outside an area authorized for discharge of process water, impacted stormwater or tailings, incorporate a mechanism of secondary containment to contain and control leaks and spills including berms, placement within or drainage toward areas authorized for discharge of the conveyed fluids, and impoundments that are constructed consistent with the requirements of Subsection D of 20.6.7.17.D NMAC.

(2) **Tanks.** New tank systems shall meet the following requirements.

(a) Tanks shall be designed and constructed of steel, concrete or other low-permeability materials that are compatible with the particular contents that are contained within the tank and resistant to degradation by ultraviolet light where exposed to sunlight.

(b) A tank system shall have a constructed foundation consisting of a stable, level base free of rocks, debris, sharp edges or irregularities that could puncture, crack or indent the tank materials.

(c) A tank system shall be designed to prevent overflow and the collection of surface water run-on.

(d) An above-ground tank system shall be bermed to contain 110 percent of the volume of the largest tank within the system or the largest interconnected tanks.

(e) A below-grade tank system shall either be placed in such a manner that the side walls are open for visual inspection or the tank shall be designed with a secondary containment and leak detection system.

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(1) **New pipeline and tank facilities.** Construction of a new pipeline or tank system shall be performed in accordance with the applicable requirements of Subsection A of 20.6.7.23 NMAC and 20.6.7.17 NMAC.

(2) **Existing pipeline and tank facilities.** A pipeline or tank system in existence on the effective date of the copper mine rule is not required to meet the design requirements of Subsection A of 20.6.7.23 NMAC and may continue to operate as previously permitted under a discharge permit provided that, if located outside an open pit surface drainage area, it is inspected and tested at least once every five years for integrity pursuant to Subsection C of 20.6.7.23 NMAC. If an existing tank or pipeline system cannot maintain integrity it shall be replaced in accordance with the engineering requirements of Subsection A of 20.6.7.23 NMAC and 20.6.7.17 NMAC as applicable.

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C. Operational Requirements. A permittee operating a pipeline or tank system shall operate the system pursuant to the following requirements, as applicable.

(1) Pipelines and tanks shall remain within the area identified in the discharge permit.

(2) Pipelines, tanks and secondary containment systems shall be inspected on a monthly basis.

(3) The permittee shall maintain and operate a below-grade tank(s) to prevent overtopping of the tank(s).

(4) Any evidence of leaks or spills of fluids, process water or tailings from a pipeline or tank system outside of permitted secondary containment systems or outside an area authorized for discharge shall be reported to the department and shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(5) Existing pipelines that do not meet the engineering requirements of Subsection A of 20.6.7.23 shall be tested for integrity at least once every five years. A pipeline testing plan for such pipelines shall be included in an application for renewal of a discharge permit for a copper mine facility.

(6) Existing below-grade tanks that do not meet the engineering requirements of Subsection A of 20.6.7.23 NMAC shall be emptied and visually inspected for integrity at least once every five years.

(7) A written record of all pipeline and tank system inspections and integrity testing shall be maintained by the permittee for a period of at least five years.

(8) Any wastes generated from the cleaning of pipeline or tank systems shall be disposed of offsite in accordance with applicable laws or onsite in a manner approved by the department.

20.6.7.24. REQUIREMENTS FOR OPEN PITS

A. Operational Requirements. A permittee operating an open pit shall operate the open pit pursuant to the following requirements, as applicable.

(1) The open pit shall remain within the area identified in the discharge permit.

(2) Stormwater shall be diverted outward and away from the perimeter of the open pit and, to the extent practicable, shall not be directed into the open pit.

(3) Water generated from within the perimeter of the open pit and pit dewatering activities shall be managed according to a mine operation water management plan. The water management plan shall be submitted to the department for approval in a discharge plan application for a new copper mine facility or in an application for a discharge permit renewal.

(4) During operation of an open pit, the standards of 20.6.2.3103 NMAC do not apply within the area of hydrologic containment.

20.6.7.25 REQUIREMENTS FOR UNDERGROUND COPPER MINE FACILITIES:

A. Material Characterization Requirements: All waste rock, removed from an underground mine and taken to the surface shall be characterized and managed pursuant to the copper mine rule. Any waste rock removed from an underground copper mine facility that is intended to be re-deposited back in the mine shall be evaluated for its potential to generate acid and to release water contaminants above the standards of 20.6.2.3103 NMAC. A plan for determining the potential of the material to release water contaminants, and the method for such evaluations, shall be submitted to the department for approval in a material characterization plan pursuant to Paragraph (1) of Section A of 20.6.7.21 NMAC.

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B. Deposition of Material in an Underground Copper Mine. A permittee of an underground copper mine facility shall not:

(1) re-deposit any waste rock in an underground mine that may generate a leachate that may cause an exceedance of the water quality standards of 20.6.2.3103 NMAC as determined by Subsection A of this Section.

(2) deposit any other wastes in an underground mine unless deposition of the waste is expressly authorized by a discharge permit approved by the department

C. Operational Requirements. A permittee re-depositing waste rock in an underground copper mine shall maintain records of the monthly volume of waste rock placed in the mine, and include this information in the site monitoring reports submitted pursuant to 20.6.7.29 NMAC.

20.6.7.26 REQUIREMENTS FOR TRUCK AND EQUIPMENT WASHING FACILITIES

A. Engineering design requirements. At a minimum, the following requirements shall be met in designing new truck and equipment washing facilities at copper mine facilities.

(1) Truck and equipment washing shall be conducted on a concrete pad or a pad constructed of materials of equivalent or lower permeability designed to capture all wash water.

(2) Captured wash water shall freely drain from the containment pad and when necessary be conveyed to an oil water separator to remove oil and grease from the wash water.

(3) Wash water from the oil water separator shall be conveyed to a tank system designed and constructed pursuant to 20.6.7.23 NMAC, an impoundment meeting the requirements of Subsection D of 20.6.2.7.17 NMAC, or may be directed to the mine process water circuit for use.

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B. Construction.

(1) **New truck or equipment wash facilities.** Construction of new truck or equipment wash facility shall be performed in accordance with the applicable engineering requirements of Subsection A of 20.6.7.26 NMAC and 20.6.7.17 NMAC.

(2) **Existing truck and equipment wash facilities.** A truck or equipment wash facility in existence on the effective date of the copper mine rule and located outside of the open pit surface drainage area shall meet the design requirements of Subsection A of 20.6.7.26 NMAC within one year of the approval of a discharge permit renewal pursuant to the copper mine rule.

C. Operational Requirements. A permittee operating a truck or equipment wash facility at a copper mine facility shall operate pursuant to the following requirements.

(1) The truck or equipment wash facility shall remain within the area identified in the discharge permit.

(2) Wash water generated at the facility shall be contained within the designed containment pad, separator and tank system, impoundment or conveyance to the process water circuit.

(3) The tank systems associated with the facility shall meet the operational requirements of 20.6.7.26 NMAC

(4) Any evidence of leaks or spills of wash water from the pad, separator, tank system or impoundment shall be reported to the department and shall be recorded and reported pursuant to 20.6.2.1203 NMAC.

(5) Any wastes generated from the oil water separator or the tank system shall be disposed of offsite in accordance with applicable laws or onsite in a manner approved by the department.

20.6.7.27 RESERVED

20.6.6.28 WATER QUALITY MONITORING REQUIREMENTS FOR ALL COPPER MINE FACILITIES: The following water quality monitoring requirements apply to all copper mine facilities unless otherwise specified.

A. Monitoring wells - location proposals. An applicant for a new, renewed or modified discharge permit or permittee shall submit a plan for department approval identifying the proposed location of monitoring wells required pursuant to Subsection B of this section, and shall include the following information.

(1) The location of each monitoring well relative to the component of the copper mine facility it is intended to monitor shall be indicated on the scaled map required by Subsection J of 20.6.7.11 NMAC

(2) The ground water flow direction beneath the copper mine facility used to determine the monitoring well location(s), including supporting documentation used to determine ground water flow direction.

B. Monitoring wells - required locations. A permittee shall monitor compliance with applicable standards for ground water quality around the perimeter of each open pit, and downgradient of leach stockpiles, waste rock stockpiles, tailings impoundments, process water impoundments, and impacted stormwater impoundments. The department may require additional monitoring wells at any other component of a copper mine facility that has the potential to cause an exceedance of the standards of 20.6.2.3103 NMAC as additional permit conditions in accordance with Subsection J of 20.6.7.10 NMAC. Monitoring wells shall be located pursuant to this section to detect an exceedance(s) or a trend towards exceedance(s) of the applicable standards at the earliest

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possible occurrence, so that investigation of the extent of contamination and actions to address the source of contamination may be implemented as soon as practicable.

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(1) **Use of existing monitoring wells.** For existing copper mine facilities, a monitoring well in existence before the effective date of the copper mine rule shall be deemed to be in an approved location for ground water monitoring purposes provided the following requirements are met.

(a) The monitoring well location was previously approved by the department; and,

(b) The monitoring well is constructed as previously approved by the department.

(c) The permittee may cease monitoring of any existing monitoring well if the monitoring well location would not be required by the copper mine rule and is not required by an approved abatement plan.

(2) **Ground water monitoring – leach stockpiles, waste rock stockpiles, tailings impoundments.** A permittee shall install a sufficient number of monitoring wells located outside of the open pit surface drainage area and hydrologically downgradient of the perimeter of each new leach stockpile, waste rock stockpile and tailings impoundment, including its leachate and solution capture and containment systems, to adequately monitor ground water that may be impacted by water contaminants from those components. Each monitoring well shall be installed as close as practicable to the proposed final design toe of the leach stockpile, waste rock stockpile or tailings impoundment, including its leachate and solution capture and containment systems, that is to be monitored considering the slope of the land surface, hydrogeological conditions, geological controls, infrastructure, design plans, depth to groundwater, working distance and safety.

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(a) For a new copper mine facility, monitoring wells shall be installed before emplacement of ore, waste rock or discharge of tailings at an individual leach stockpile, waste rock stockpile or tailings impoundment.

(b) A permittee constructing a new leach stockpile, waste rock stockpile or tailings impoundment at an existing copper mine facility, or expanding the footprint of an existing leach stockpile, waste rock stockpile, or tailings impoundment, shall install the monitoring well(s) required to monitor ground water hydrologically downgradient of the leach stockpile, waste rock stockpile or tailings impoundment before emplacement of ore, waste rock or discharging of tailings unless an existing monitor well network adequately monitors water quality in the area of the new leach stockpile, waste rock stockpile or tailings impoundment.

(3) **Ground water monitoring – process water and impacted stormwater impoundments.** A minimum of two monitoring wells shall be located hydrologically downgradient and within 75 feet (measured as horizontal map distance), or as close as practicable considering the slope of the land surface, hydrogeological conditions, infrastructure, working distance and safety of each new process water or impacted stormwater impoundment located outside of the open pit surface drainage area.

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(a) For a new copper mine facility, monitoring wells shall be installed before discharging to an individual process water or impacted stormwater impoundment at the copper mine facility.

(b) A permittee constructing a new process water or impacted stormwater impoundment at an existing copper mine facility shall install the monitoring well(s) required to monitor ground water hydrologically downgradient of the impoundment before discharging process water to the impoundment, before collecting impacted stormwater in the impoundment unless an existing monitor well network adequately monitors water quality in the area of the new process water or impacted stormwater impoundment.

(4) **Ground water monitoring – open pit.**
A permittee shall install a sufficient number of monitoring wells around the perimeter of an open pit to adequately monitor ground water quality and the hydrologic gradient around the pit.

(a) For a new open pit, an applicant or permittee shall submit an installation plan to the department for approval. The plan shall include proposed locations of monitoring wells and a statement of the reasons for selection of the monitoring well locations.

(5) **Ground water monitoring – upgradient of each potential contaminant source.** A minimum of one monitoring well shall be located hydrologically upgradient of each new leach stockpile, waste rock stockpile, tailings impoundment, and process water and impacted stormwater impoundment at a copper mine facility to establish upgradient ground water quality conditions not likely to be affected by each contamination source that is being monitored. If an applicant or permittee has obtained sufficient background data from monitoring wells at a copper mine facility to establish upgradient conditions, the department may waive the requirement for additional upgradient wells.

(a) For a new copper mine facility, upgradient source monitoring wells shall be installed before emplacement of ore, waste rock or discharge of tailings or other water contaminants at an individual leach stockpile, waste rock stockpile, tailings impoundment or other impoundment.

(b) A permittee constructing a new leach stockpile, waste rock stockpile, tailings impoundment or other impoundment at an existing copper mine facility shall install the monitoring well(s) required to monitor ground water quality upgradient of a leach stockpile, waste rock stockpile, tailings impoundment or other impoundment before emplacement of ore, waste rock or discharging of tailings or water contaminants into the individual source required to be monitored unless an existing monitor well network adequately monitors water quality upgradient of the area of the new leach stockpile, waste rock stockpile, tailings impoundment, process water impoundment or impacted stormwater impoundment.

(6) **Ground water monitoring – upgradient of the copper mine facility.** A sufficient number of monitoring wells shall be located hydrologically upgradient of all potential ground water contamination sources at a copper mine facility to establish upgradient ground water quality conditions that are not affected by any potential contamination sources at the copper mine facility.

(a) For a new copper mine facility, upgradient monitoring wells shall be installed before emplacement of ore, waste rock or discharge of tailings or other water contaminants at an individual leach stockpile, waste rock stockpile, tailings impoundment or other impoundment.

C. Monitoring wells - identification tags. A permittee shall clearly identify all monitoring wells required by the copper mine rule with a permanent well identification tag that contains well identification nomenclature specified in a discharge permit.

D. Monitoring wells - construction and completion. A permittee shall construct monitoring wells pursuant to 19.27.4 NMAC and the following requirements.

(1) All well drilling activities shall be performed by an individual with a current and valid well driller license issued by the state of New Mexico pursuant to 19.27.4 NMAC.

(2) The well driller shall employ drilling methods that allow for accurate determinations of water table locations unless otherwise approved by the department in advance of drilling. All drill bits, drill rods, and down-hole tools shall be thoroughly cleaned immediately before drilling. The borehole diameter shall allow a minimum annular space of two inches between the outer circumference of the well materials (casing or screen) and the borehole wall to allow for the emplacement of sand and sealant.

(3) The well shall be developed so that formation water flows freely through the screen and is not turbid, and sediment and drilling disturbances are removed from the well to the maximum extent practicable.

(4) Unless otherwise approved by the department, schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, or carbon steel pipe shall be used as casing. The casing shall have an inside diameter not less than two inches. The casing material selected for use shall be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the copper mine facility. The casing material and thickness selected for use shall have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts.

(5) Casing sections shall be joined using welded, threaded, or mechanically locking joints. The method selected shall provide sufficient joint strength for the specific well installation.

(6) The casing shall extend from the top of the screen to at least 18 inches above ground surface. The top of the casing shall be fitted with a removable cap, and the exposed casing shall be protected by a locking steel well shroud. The shroud shall be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing shall extend from the top of the screen to six to twelve inches below the ground surface; the monitoring wells shall be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads shall be emplaced around the wellhead; and the cover shall be secured with at least one bolt. The vault cover shall indicate that the wellhead of a monitoring well is contained within the vault.

(7) **Well Screen.**

(a) **For water table monitoring wells.** A maximum 20-foot section of continuous well screen shall be installed across the water table with at least five feet of well screen placed above the water table interface to allow for seasonal fluctuations. The department may approve a greater screen length based on the hydraulic properties of the aquifer, the hydrogeologic setting, predictable water level decline rates, or the depth of the well. Screen shall consist of continuous-slot, machine slotted, or other manufactured schedule 40 (or heavier) PVC or stainless steel. Screens created by cutting slots into solid casing with saws or other tools, other than as performed by the manufacturer, shall not be used. The screen material selected for use shall be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the copper mine facility. The screen slot size shall be selected to retain 90 percent of the filter pack.

(b) **For deep or confined aquifer monitoring wells.** Monitoring wells installed in confined aquifers or below the water table elevation of the shallowest aquifer to monitor ground water conditions in different aquifers at depth shall be installed with a ten foot section (maximum) of continuous well screen. The department may approve a greater screen length based on the hydraulic properties of the aquifer, the hydrogeologic setting, or the depth of the well. The top of the screen shall be placed at the location of the geologic boundary between the top of the aquifer and the bottom of confining aquifers. Screen shall consist of continuous-slot, machine slotted, or other manufactured schedule 40 (or heavier) PVC or stainless steel. Screens created by cutting slots into solid casing with saws or other tools shall not be used. The screen material selected for use shall be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the copper mine facility. The screen slot size shall be selected to retain 90 percent of the filter pack.

(8) Screen sections shall be joined using welded, threaded, or mechanically locking joints. The method selected shall provide sufficient joint strength for the specific well installation and shall not introduce constituents that may reasonably be considered contaminants of interest at the copper mine facility. A cap shall be attached to the bottom of the well screen.

(9) Casing and well screen shall be centered in the borehole by installing centralizers near the top and bottom of the well screen.

(10) A filter pack shall be installed around the screen by filling the annular space from the bottom of the screen to at least two feet above the top of the screen with clean silica sand using methods that prevent bridging. The filter pack shall be properly sized to exclude the entrance of fine sand, silt, and clay from the formation into the monitoring well. The well shall be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.

(11) A bentonite seal shall be constructed immediately above the filter pack by emplacing bentonite chips or pellets in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal shall be three feet in thickness and hydrated with clean water. Adequate time shall be allowed for expansion of the bentonite seal before installation of the annular space seal.

(12) The annular space above the bentonite seal shall be sealed with cement grout or bentonite-based sealing material acceptable to the state engineer in accordance with 19.27.4 NMAC. Annular space seals shall extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level three to six inches below the top of casing (for wells completed below grade).

(13) A concrete pad (two-foot minimum radius, four-inch minimum thickness) shall be poured around the shroud or well vault and wellhead. The concrete and surrounding soil shall be sloped to direct rainfall and runoff away from the wellhead.

E. Monitoring wells - office of the state engineer requirements. A permittee shall obtain any well permits required by the office of the state engineer prior to well drilling.

F. Ground water sample collection procedure. A permittee shall perform all ground water sample collection, preservation, transport and analysis according to the following procedure.

(1) Depth to ground water shall be measured from the top of well casing at point of survey to the nearest tenth of a foot using an electronic water level indicator consisting of dual conductor wire encased in a cable or tape graduated to one tenth of one foot, a probe attached to the end of the conductor wire, and a visual or audible indicator; pneumatically or by using a fiberglass or steel measuring tape using the chalk method.

(2) Monitoring wells shall be purged before sample collection by one of the following methods, unless otherwise approved by the department.

(a) Three well volumes of water shall be purged from the well before sample collection; or,

(b) The monitoring well shall be purged using conventional pumping methods or low-flow purging until measurements of indicator parameters (pH, specific conductance, and temperature) have stabilized. Low-flow purging shall be conducted with a low-flow pump using a low-stress approach, micro-purge method or minimal drawdown method. The pump intake for low-flow purging shall be situated within the screened portion of the well at a predetermined flow rate between 0.1 to 0.5 liters per minute such that a minimal drawdown of the water table elevation of less than ten centimeters occurs in the well and the drawdown has stabilized. Indicator parameters shall be measured periodically during purging. A parameter stabilization log shall be kept during each sampling event for each monitoring well and include: date; water quality indicator parameter measurements; time for all measurements; and the purge volume extracted. Indicator parameters are considered stable when three consecutive readings made no more than five minutes apart fall within the following ranges: temperature plus or minus 10 percent; pH plus or minus 0.5 units; specific conductance plus or minus 10 percent; or,

(c) For low yield wells, the well shall be purged of all available water.

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(3) Following purging and immediately before sample collection the following field parameters shall be measured and recorded: pH, specific conductance, and temperature.

(4) In-line flow-through cells shall be disconnected or by-passed during sample collection, if used during purging.

(5) Samples from the well shall be obtained, prepared, preserved and transported to an analytical laboratory for analysis pursuant to the methods authorized by Subsection B of 20.6.7.29 NMAC.

G. Ground water sampling and reporting - routine. A permittee shall collect ground water samples quarterly, or a reduced frequency approved by the department pursuant to Subsection H of this section, from all monitoring wells specified in a discharge permit and required by Subsection A of this section and Section 30 of 20.6.7 NMAC and any other location specified in the discharge permit or record and report the reason for being unable to collect a sample. A permittee shall also collect water samples quarterly from all springs and seeps on a copper mine facility. Samples shall be analyzed for arsenic, cadmium, chromium, fluoride, lead, chloride, copper, iron, manganese, sulfate, total dissolved solids, zinc, pH, aluminum, cobalt, nickel, alkalinity-bicarbonate, alkalinity-carbonate, calcium, magnesium, sodium, and potassium, pursuant to Subsection B of 20.6.7.29 NMAC. A permittee shall submit to the department in the semi-annual monitoring reports the depth to ground water, the field parameter measurements, the parameter stabilization log (if applicable), the analytical results (including the laboratory quality assurance and quality control summary report) and a map showing the location and number of each well in relation to the contamination source it is intended to monitor.

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H. Ground water sampling and reporting – reduction of sampling analytes routine. A permittee may reduce the sampling frequency of individual water quality analytes specified in Subsection G of this Section if the analyte has either not been detected in ground water from a particular monitoring well or is below the standards of 20.6.2.3103 NMAC for eight consecutive quarters. In such a case, the permittee may reduce the sampling frequency for a particular analyte from a quarterly basis to a frequency of once every five years and shall submit the results of the sampling to the department in the subsequent semi-annual monitoring reports following the collection of the sample.

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I. Ground water sampling - new monitoring wells. A permittee shall collect ground water samples from each newly installed monitoring well specified in the discharge permit. Samples shall be analyzed for arsenic, cadmium, chromium, fluoride, lead, chloride, copper, iron, manganese, sulfate, total dissolved solids, zinc, pH, aluminum, cobalt, nickel, alkalinity-bicarbonate, alkalinity-carbonate, calcium, magnesium, sodium, and potassium, pursuant to Subsection B of 20.6.6.29 NMAC.

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(1) Samples shall be collected from each newly installed monitoring well specified in the discharge permit for a copper mine facility before emplacement of ore, waste rock or discharge of tailings or other water contaminants at an individual leach stockpile, waste rock stockpile, tailings impoundment or other impoundment.

(2) For copper mine facilities installing a new monitoring well during the term of a discharge permit, during construction of a new impoundment, or as a result of required corrective actions, samples shall be collected from the newly installed monitoring wells within 30 days of well completion.

J. Monitoring well survey and ground water flow determination. The permittee shall survey or otherwise locate monitoring wells and provide location information as required by this section. The coordinate location (northing and easting) shall be provided in the established coordinate system for the copper mine facility with an accuracy (rounded to the nearest foot/ tenth meter) and shall also be provided to the department in one of the following coordinate systems: NM State Plane (NAD 83) to the nearest foot, UTM (NAD 83) to the nearest tenth of a meter, or Latitude/Longitude (Lat/Long - WGS84) to the nearest tenth of a second. Elevation of the ground surface at the well location shall be provided to the nearest foot above mean sea level. Elevation of the water level measuring point shall be provided to the nearest tenth of a foot above mean sea level. The water level measuring point for monitoring wells shall be clearly marked on the casing. Depth-to-most-shallow ground water shall be measured from the point of survey to the nearest tenth of a foot in all surveyed wells pursuant to Subsection F of this section, and the data shall be used to develop a map showing the location of all monitoring wells and the direction and gradient of ground water flow at the copper mine facility.

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K. Monitoring well completion report. A permittee shall submit to the department a monitoring well completion report for all newly installed monitoring wells. For a new copper mine facility, the report shall be submitted before placement of ore, waste rock or tailings, process water or impacted stormwater, at the individual component being monitored. For an existing copper mine facility, the report shall be submitted within 60 days of completion as specified in a discharge permit. The report shall contain the following information.

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(1) Construction and lithologic logs for the new monitoring wells including well record information specified by 19.27.4 NMAC.

(2) Depth to ground water measured in each new monitoring well.

(3) Survey data and a survey map showing the locations of each new monitoring well and a ground water elevation contour map developed pursuant to Subsection L of this section.

(4) Analytical results of ground water samples collected from the new monitoring wells, including laboratory quality assurance and quality control summary reports, and field parameter measurements.

L. Ground water elevation contour maps. A permittee shall develop ground water elevation contour maps on a semi-annual basis using data associated with all monitoring wells specified in the discharge permit for ground water monitoring at the copper mine facility. Top of casing elevation data, obtained from monitoring well surveys completed pursuant to this section and quarterly depth-to-most-shallow ground water measurements in monitoring wells shall be used to calculate ground water elevations at monitoring well locations. Ground water elevations between monitoring well locations shall be estimated using common interpolation methods. Ground water elevations shall be expressed in feet. A contour interval appropriate to the data shall be used. Ground water elevation contour maps shall depict the ground water flow direction, using arrows, based on the orientation of the ground water elevation contours, and the location and identification of each monitoring well and monitored structure or impoundment. A permittee shall submit ground water elevation contour maps to the department in the semi-annual monitoring reports.

M. Perennial stream sampling and reporting - routine. A permittee shall collect quarterly surface water samples from each perennial surface waters of the state within a copper mine facility at locations specified in the discharge permit as necessary to monitor ground water inflow to the perennial surface water. Samples shall be analyzed for arsenic, cadmium, chromium, fluoride, lead, chloride, copper, iron, manganese, sulfate, total dissolved solids, zinc, pH, aluminum, cobalt, nickel, alkalinity-bicarbonate, alkalinity-carbonate, calcium, magnesium, sodium, and potassium, pursuant to Subsection B of 20.6.7.29 NMAC. A permittee shall submit to the department in the semi-annual monitoring reports the field parameter measurements, the analytical results (including the laboratory quality assurance and quality control summary report) and a map showing the location of each sampling location in relation to the copper mine facility.

20.6.7.29 GENERAL MONITORING REQUIREMENTS FOR ALL COPPER MINE FACILITIES:

A. Monitoring reports - schedule of submittal. A permittee shall submit monitoring reports to the department on a semi-annual schedule that shall contain all quarterly monitoring data and information collected pursuant to the copper mine rule. Semi-annual monitoring reports shall be submitted according to the following schedule:

(1) January 1 through June 30 (first and second quarter sample periods) - report due by August 31; and

(2) July 1 through December 31 (third and fourth quarter sample periods) - report due by February 28.

B. Sampling and analysis methods. A permittee shall sample and analyze water pursuant to Subsection B of 20.6.2.3107 NMAC.

C. Process water, leach solutions, tailings and liner solution collection system volume measurement and reporting. A permittee shall measure the volume of process water, leach solutions applied, and tailings discharges and solution collection system fluids collected using flow meters at locations specified in the discharge permit. Meter readings shall be recorded at intervals no less than monthly. The average daily discharge volume for each recording interval shall be calculated by dividing the difference between the meter readings by the number of days between meter readings. The permittee shall provide the meter readings including the date, time and units of each measurement, and calculations for the average daily volumes discharged and collected in gallons per day, in the semi-annual monitoring reports submitted to the department.

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D. Impacted stormwater sampling and reporting. A permittee shall collect stormwater samples on an annual basis from each impacted stormwater impoundment that collected stormwater during the year. The samples shall be collected as soon as possible after a storm event. The samples shall be analyzed for pH, and total dissolved solids pursuant to this section. The permittee shall include in the semi-annual monitoring reports submitted to the department the analytical results, or a statement that stormwater was not collected in the impoundment during the year in a sufficient volume to be sampled.

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E. Flow meter accuracy. Flow meters shall be monitored for accuracy by comparing flow meter readings with prior readings and noting any significant variations in readings that are not consistent with changes in operating conditions. If a flow meter shows inconsistent readings or otherwise appears to be non-operational, the permittee shall make a record of the inconsistent readings and shall repair or replace a flow meter that does not appear to be operating properly with a flow meter calibrated according to the flow metering plan pursuant to Paragraph (5) of Subsection C of 20.6.7.17 NMAC. The permittee shall submit the results of any inconsistent meter

readings and the repair or replacement of any flow meter(s) to the department annually in the monitoring report due by February 1, including information on the location and meter identification nomenclature specified in the discharge permit.

20.6.7.30 CONTINGENCY REQUIREMENTS FOR COPPER MINE FACILITIES:

A. Exceedance of ground water standards - all monitoring wells except impoundment monitoring wells. If monitoring of a water contaminant source other than an impoundment indicates that applicable standards are exceeded, or the extent or magnitude of existing ground water contamination is significantly increasing, the permittee shall collect a confirmatory sample from the monitoring location(s) within 15 days to confirm the initial sampling results, unless the permittee chooses to accept the original results. Within 30 days of the confirmation of exceedance of applicable standards or significant increases in existing contamination, the permittee shall take the following actions.

Deleted: ground water or surface water contamination

(1) A corrective action plan shall be submitted to the department for approval. The corrective action plan shall describe any repairs made or proposed to address the cause of the exceedance or increase and shall propose source control measures and a schedule for implementation. The department shall approve or disapprove the corrective action plan within 60 days of receipt. Following the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan according to the approved schedule. If the department does not approve the corrective action plan, the department shall notify the permittee of the deficiencies by certified mail. The permittee shall submit a revised corrective action plan to the department within 60 days of the date of postal notice of the notice of deficiency. The department shall approve or disapprove the revised corrective action plan within 60 days of receipt.

(2) The permittee may be required to submit to the department for approval an abatement plan, which includes a site investigation to define the source, nature and extent of contamination; a proposed abatement option, and a schedule for its implementation. The site investigation and abatement option shall be consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC.

(3) A corrective action plan or abatement plan approved or submitted prior to the date of the copper mine rule that shall satisfy the requirements of this subsection provided that any substantial change in monitoring results after the effective date of the copper mine rule may require additional action under this subsection or modification of a previously approved or submitted corrective action plan or abatement plan.

B. Exceedance of ground water standards - impoundment monitoring well. If monitoring from a monitoring well(s) intended to monitor an impoundment indicates that applicable water standards are exceeded, or the extent or magnitude of existing ground water contamination is significantly increasing, the permittee shall collect a confirmatory sample from the monitoring location(s) within 15 days to confirm the initial sampling results unless the permittee elects to accept the initial results. Within 30 days of the confirmation of exceedance of applicable standards or significant increases in existing contamination, the permittee shall take the following actions.

Deleted: ground water or surface water contamination

(1) A corrective action plan shall be submitted to the department for approval. The corrective action plan shall describe any repairs or changes in practices made or proposed to address the cause of the exceedance or increase and shall propose source control measures and a schedule for implementation. The department shall approve or disapprove the corrective action plan within 60 days of receipt. If the corrective action plan proposes actions to correct deficiencies with the liner, the proposed actions shall include repair or replacement of the existing liner, or construction and lining of a new impoundment. If liner repair is practicable, repairs shall be made pursuant to 20.6.7.17 NMAC or using a material that is equivalent to the existing liner with respect to material thickness and composition. Repairs shall be completed in accordance with the approved schedule. If liner repair is not practicable, the corrective action plan shall propose reconstruction and relining of the impoundment pursuant to 20.6.7.17 NMAC or construction and lining of a new impoundment pursuant to 20.6.7.17 NMAC. Reconstruction or construction plans and specifications for the impoundment shall be completed pursuant to 20.6.7.17 NMAC and submitted with the corrective action plan. If a new impoundment is constructed the existing impoundment shall be closed pursuant to 20.6.7.33 NMAC.

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(2) Following the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan according to the approved schedule. If the department does not approve the corrective action plan, the department shall notify the permittee of the deficiencies by certified mail. The permittee shall submit a revised corrective action plan to the department within 60 days of the date of postal notice of the notice of deficiency. The department shall approve or disapprove the revised corrective action plan within 60 days of receipt.

(3) The permittee may be required to submit to the department for approval an abatement plan, which includes a site investigation to define the source, nature and extent of contamination; a proposed abatement

option, and a schedule for its implementation. The site investigation and abatement option shall be consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC.

(4) A corrective action plan or abatement plan approved or submitted prior to the date of the copper mine rule that shall satisfy the requirements of this subsection provided that any substantial change in monitoring results after the effective date of the copper mine rule may require additional action under this subsection or modification of a previously approved or submitted corrective action plan or abatement plan.

C. **Monitoring well replacement.** If information available to the department indicates that a monitoring well(s) required by 20.6.7.28 NMAC is not located hydrologically downgradient of the contamination source it is intended to monitor, is not completed pursuant to 20.6.7.28 NMAC, or contains insufficient water to effectively monitor ground water quality, a permittee shall install a replacement monitoring well(s). The replacement monitoring well(s) shall be installed within 120 days of the date of postal notice of notification from the department and a survey of the replacement monitoring well(s) shall be performed within 150 days of the date of postal notice of notification from the department. The replacement monitoring well(s) shall be located, installed, completed, surveyed and sampled pursuant to 20.6.7.28 NMAC. The permittee shall develop a monitoring well completion report pursuant to Subsection J of 20.6.7.28 NMAC and submit it to the department within 180 days of the date of postal notice of notification from the department.

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D. **Exceedance of permitted maximum daily discharge volume.** If the maximum daily discharge volume authorized by the discharge permit is exceeded by more than ten percent for any three average daily discharge volumes within any one year period, the permittee shall submit within 60 days of the third exceedance a corrective action plan for reducing the discharge volume or an application for a modified or renewed and modified discharge permit pursuant to 20.6.7.10 NMAC. Within 30 days of postal notice of department approval, the permittee shall initiate implementation of the corrective action plan.

E. **Insufficient impoundment capacity.** If a survey or capacity calculations indicate an existing impoundment or impoundment system is not capable of meeting the capacity requirements in Subsection D of 20.6.7.17 NMAC, within 90 days of the effective date of the discharge permit the permittee shall submit a corrective action plan for department approval. The plan may include, but is not limited to, proposals for constructing an additional impoundment, reducing the discharge volume, removing accumulated solids, or changing process water or impacted stormwater management practices. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan. Should the corrective action plan include removal of accumulated solids, solids shall be removed from the impoundment in a manner that is protective of the impoundment liner. The plan shall include the method of removal, and locations and methods for storage and disposal of the solids.

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F. **Inability to preserve required freeboard.** If a minimum of two feet of freeboard cannot be preserved in the process water or impacted stormwater impoundment, the permittee shall submit a corrective action plan to the department for approval. The corrective action plan shall be submitted within 30 days of the date of the discover of the initial exceedance of the freeboard requirement. The plan may include, but is not limited to, proposals for constructing an additional impoundment, reducing the maximum daily discharge volume, or changing process water or impacted stormwater management practices. The corrective action plan shall include actions to be immediately implemented to regain and maintain a minimum of two feet of freeboard until permanent corrective actions have been completed. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan.

G. **Impoundment - structural integrity compromised.** Within 24 hours of discovery, a permittee shall report to the department, any damage to the berms or the liner of an impoundment or any condition that may compromise the structural integrity of the impoundment. Within 15 days of the report of discovery, the permittee shall submit to the department a corrective action plan describing any actions taken or proposed to be taken to repair the damage or condition. Within 30 days of receipt, the department shall approve or disapprove the proposed corrective action plan. Repairs to the impoundment liner or berms shall be completed pursuant to 20.6.7.17 NMAC. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan.

H. Unauthorized discharge - reporting and correction. In the event of a spill or release that is not authorized by the discharge permit, the permittee shall notify the department and take corrective actions pursuant to 20.6.2.1203 NMAC. Process water or impacted stormwater or other material that is spilled or released that has the potential to impact water quality shall be contained and pumped to a sump, impoundment, or leach stockpile permitted pursuant to the copper mine rule. The permittee shall repair or replace failed components within 48 hours from the time of failure or as soon as practicable.

I. Leach stockpiles, tailings impoundment or waste rock stockpiles – unstable slopes. Within 24 hours of discovery, a permittee shall report to the department, any evidence of instability of the slope of a leach stockpile or tailings impoundment or any condition that may compromise the structural integrity of the leach stockpile, tailings impoundment or waste rock stockpile. Within 15 days of the report of discovery, the permittee shall submit to the department a corrective action plan describing any actions taken or proposed to be taken to repair the damage or condition. Within 30 days of receipt, the department shall respond to the proposed corrective action plan. Repairs to the slopes shall be completed consistent with the requirements of 20.6.7.20 NMAC, 20.6.7.21 NMAC, 20.6.7.22 NMAC, and 20.6.7.33 NMAC, as applicable. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan.

J. Erosion of cover system or compromised stormwater conveyance structure, ponding of stormwater, or other conditions. Within 24 hours of discovery, a permittee shall report to the department, any evidence of significant erosion of a cover system required by section 20.6.7.33 NMAC or compromise of a stormwater conveyance structure; any significant ponding of stormwater on the cover system; or any other condition that may significantly compromise the cover system or stormwater conveyance structure. Within 15 days of the reported discovery, the permittee shall submit to the department a corrective action plan describing any actions taken or proposed to be taken to repair the damage or condition. Within 30 days of receipt, the department shall respond to the proposed corrective action plan. Repairs to the cover system or stormwater conveyance structure shall be completed consistent with the applicable requirements of 20.6.7.33 NMAC. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan.

K. Water management and water treatment system failure. Within 24 hours of discovery, a permittee shall report to the department, any significant failure of a water management or water treatment system constructed and operated pursuant to 20.6.7.33 NMAC or any condition that may cause a significant failure of the water treatment system. Within 15 days of the reported discovery, the permittee shall submit to the department a corrective action plan describing any actions taken or proposed to be taken to repair the damage or condition. Within 30 days of receipt, the department shall respond to the proposed corrective action plan. Repairs to the water treatment system shall be completed consistent with the applicable requirements of 20.6.7.33 NMAC. The corrective action plan shall include a schedule for implementation. The schedule shall propose completion within one year from the submittal date of the initial corrective action plan. Within 30 days of the date of postal notice of the department's approval of the corrective action plan, the permittee shall initiate implementation of the plan.

L. Interim Emergency Water Management: An applicant or permittee shall develop and submit to the department an interim emergency fluid management plan. The purpose of the interim emergency water management plan is to provide information to the department on how process water systems, interceptor wells, seepage collection systems and storm water management systems are operated and maintained to prevent discharges in the event the department must take over management of the copper mine facility. An applicant or permittee shall include in the plan process water flow charts showing electrical system requirements, pump operations, seepage collection and interceptor well operations and applicable operation and maintenance requirements. The interim process water management plan shall be updated as major process water system changes occur that would affect the interim emergency water management plan. The interim emergency water management plan shall be maintained on site and available for department review. The plan will be completed 180 days after permit renewal for an existing mine and 60 days prior to the start-up of a new facility.

20.6.7.31 VARIANCES PETITIONS

A. Any person seeking a variance pursuant to Section 74-6-4 (H) NMSA 1978 for a copper mining facility or a component of a copper mine facility shall do so by filing a written petition with the commission.

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B. A petition for a variance from the copper mine rule or any provision of 20.6.2 NMAC shall be

submitted to the commission in accordance with this section instead of the requirements in 20.6.2.1210 NMAC.

C. The petitioner shall provide the commission with all documents and information that are material to the commission's consideration of the petition. At a minimum, petitions shall:

(1) state the petitioner's name and address;

(2) state the date of the petition;

(3) describe the facility, discharge or activity for which the variance is sought;

(4) identify the location of the affected discharge site, including the address, legal description and a location map;

(5) describe the ground water and any surface water body or watercourse that will or may be affected if the variance is granted;

(6) identify the provisions of the copper mine rule or 20.6.2 NMAC for which the variance is requested;

(7) describe in detail the extent to which the petitioner wishes to vary from the copper mine rule or 20.6.2 NMAC;

(8) describe in detail how compliance with the copper mine rule will impose an unreasonable burden upon the discharger's lawful business, occupation or activity, including the supporting data, reports, and any other relevant information;

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(9) identify the requested variance period, including the reasons, data, reports, and any other information demonstrating that such time period is justified and reasonable; and,

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(10) identify any alternative facility design, alternative measuring device, or other variation from the regulation of the commission and describe why variation from the regulation is warranted based upon site-specific conditions.

(11) if the petition requests a variance to allow the discharge of water contaminants that will or may cause ground water pollution above any applicable standards, the petition shall also include the following:

(a) if the petition:

(i) involves a discharge that existed on the effective date of the copper rule, a demonstration that it is technically and economically infeasible to stop the discharge; or,

(ii) involves a new discharge, a demonstration that the discharge is essential to the discharger's mining operation and that the proposed location of the discharge will minimize the operation's footprint and environmental impact;

(b) information on the nature and extent of the existing water quality at the site;

(c) information on the maximum extent and subsequent abatement of water pollution that is projected to occur if the variance is granted, assuming implementation of all controls proposed by the discharger;

(d) information on how water pollution will be minimized to the extent practicable and that the water pollution at the discharge site will be fully contained onsite and abated to meet applicable standards;

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(e) a description of all water uses and users within one mile down-gradient of the discharge site; and

(f) such other information as the commission may reasonably request.

D. Public Notice of Petition: Within ten days of submitting a petition for variance the petitioner shall provide public notice of the submittal of its petition pursuant to this Subsection. The content of the notice and location of postings shall be submitted for prior approval by the department and include a summary of the contents of the petition and the manner in which copies of the petition may be obtained. The petitioner shall provide public notice of the petition as provided below.

(1) The petitioner shall post (a) at or near the affected discharge site in a place conspicuous to the public a copy of the notice that is at least 2 feet by 3 feet in size, in English and in Spanish, and (b) a second copy of the public notice at another place conspicuous to the public.

(2) If the petition requests to discharge water contaminants in excess of applicable standards, the petitioner shall mail the notice to the owners of record of all properties located within 1 mile of the boundary of the property where the affected discharge site is located. If there are no properties other than properties owned by the discharger or its affiliates within the 1 mile distance from the boundary of property where the discharge site is located, the petitioner shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger or its affiliates;

(3) The petitioner shall provide notice by certified mail, return receipt requested, to the owner of the discharge site if the petitioner is not the owner; and

(4) The petitioner shall publish the notice in English and in Spanish in a newspaper of general circulation in the location of the affected discharge site in a display ad at least three inches by four inches. The notice shall not be published in the classified or legal advertisements section but in a place in the newspaper reasonably calculated to give the general public the most effective notice.

E. Within 15 days of completion of the public notice requirements in Subsection C of 20.6.7.X NMAC, the petitioner shall submit to the department proof of notice, including an affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

F. The variance petition shall be reviewed in accordance with the adjudicatory procedures of 20.1.3 NMAC.

G. The commission may grant the requested variance, in whole or in part, may grant the variance subject to conditions, or may deny the variance based upon the hearing record in accordance with Section 74-6-4.H NMSA 1978. **H.** A variance from the copper mine rule or 20.6.2 NMAC may be granted for a period of time in excess of five years and may be granted for the operational life of the facility.

I. For variances granted for a period in excess of five years, the department shall review the variance at least every five years in conjunction with the discharge permit renewal to determine whether the conditions of approval are being met. The existence and nature of the variance shall be disclosed in all public notices otherwise applicable to the discharge permit. If the department determines that such conditions are not being met, the department may request a hearing before the commission to revoke, modify or otherwise reconsider the variance. On appeal from a decision by the department to renew or modify a facility's discharge permit, any party may present argument and evidence to the commission to reconsider the granting of an existing variance for the same facility.

J. An order of the commission is final and bars the petitioner from petitioning for the same variance without special permission from the commission. The commission may consider, among other things, the development of new information and techniques to be sufficient justification for a second petition. A variance may not be extended or renewed unless a new petition is filed and processed in accordance with the procedures established by this Section.

20.6.7.32 VARIANCE HEARINGS

A. Except as otherwise provided in this Section, variance hearings, including public notice of the hearings, shall be conducted pursuant to 20.1.3 NMAC.

B. Upon motion of the hearing officer or any party, the commission or the hearing officer may consolidate pending variance petitions for a given copper mine, provided that the petitions to be consolidated involve common issues and that consolidation will not prejudice any party.

20.6.7.33 CLOSURE REQUIREMENTS FOR COPPER MINE FACILITIES: An applicant or permittee shall submit a closure plan that addresses the following requirements.

A. Design Storm Event. Permanent storm water conveyances, ditches, channels and diversions required for closure of a discharging facility at a copper mine facility shall be designed to convey the peak flow generated by the 100 year return interval storm event. Storm duration shall be selected based on the maximum peak flow generated using generally accepted flood routing methods. Sediment traps or small basins intended as best management practices may be exempt from this requirement.

B. Slope Stability. At closure, tailing impoundment(s) not regulated by the New Mexico office of the state engineer, leach stockpile(s) or waste rock stockpile(s) shall be constructed to promote the long-term stability of the structure. The closure design shall include long term stability analyses for these structures which shall be certified by a professional engineer pursuant to section 20.6.7.17 NMAC.

C. Surface Re-grading: Following closure of any tailing impoundment, waste rock pile or leach stockpile at a copper mine facility, the surface shall be re-graded to a stable configuration that minimizes ponding and promotes the conveyance of surface water off the facility. The operator may propose for department approval a grading plan that allows ponding as an appropriate part of closure provided additional ground water protection measures, such as synthetic liner systems are included as part of the design.

(1) The top surfaces of all tailing impoundments at a copper mine facility shall be constructed to a minimum final grade of 0.5% after accounting for the estimated magnitude and location of large-scale settlement due totaling consolidation or differential settlement. Prior to final re-grading activities, the permittee shall ensure that adequate drainage of the tailing impoundment has occurred to ensure that large-scale settlement following grading is minimized. The CQC and CQA plan shall provide the methods and proceduresto ensure that the design and construction activities will be completed according to the approved final design and specifications, including design aspects related to potential future settlement.

Deleted: In making its decision, the commission shall consider whether:¶
(a) the variance will endanger public health or welfare;¶
(b) the variance will adversely affect other uses of water or property;¶
(c) the copper rule, if enforced during the requested variance period, will cause an unreasonable burden upon the discharger's lawful business, occupation or activity;¶
(d) the discharger will implement controls to minimize water pollution in excess of applicable standards to the extent practicable, fully contain the water pollution at the discharge site during the variance period, and prevent further migration of water pollution; and¶
(e) the discharger can and will abate the water pollution to meet applicable standards following closure; all required financial assurance is or will be in place to insure that the water pollution will be abated.¶

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Deleted: Closure of all critical structures at a copper mine facility shall be designed for a long-term static factor of safety of 1.5 or greater and non-critical structures shall be designed for a long-term static factor of safety of 1.3 or greater. The facilities being closed shall also be designed for a factor of safety of 1.1 or greater under pseudostatic analysis. A stability analysis shall be conducted for the facility that shall include evaluation for static and seismic induced liquefaction.

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(2) The top surfaces of all waste rock and leach stockpiles at a copper mine facility shall be constructed to a minimum final grade of 1%. (3) The outslopes of all tailing impoundments, waste rock and leach stockpiles at a copper mine facility shall be constructed to an interbench slope no steeper than three (3) horizontal to one (1) vertical (3H:1V). Alternative slope gradients may be allowed within an open pit surface drainage area, or if the permittee provides information showing that the cover performance objectives in Subsection F of this Section and the exception is approved by the department.

(a) At existing copper mine facilities, where re-grading of individual outslopes would intersect a highway, cultural resource, physical infrastructure or a surface water of the state, , outslopes may be re-graded no steeper than 2.5:1 or as otherwise approved by the department in Paragraph (3) of this subsection.

(b) At existing copper mines, the waste rock and leach stockpile outslopes within an open pit surface drainage area are not required to be graded and covered.

(4) Uninterrupted slope lengths shall be based on the final slope angle and a generally accepted erosion estimation method. The maximum uninterrupted slope lengths shall be no greater than 300' for 4.0:1, 200' for 3:1 slopes and 175' for 2.5:1 slopes. Alternative slope lengths may be allowed if the permittee provides information showing that the cover performance objectives specified in Subsection F of this section will be achieved and the exception is approved by the department.

D. Open Pits: The applicant or permittee shall provide detailed information and a closure plan for open pits that demonstrates how the following criteria will be addressed through water management and/or other activities at these facilities to minimize the potential to cause an exceedance of applicable water quality standards:

(1) Open pits in which the evaporation from the surface of an open pit water body is predicted to exceed the water inflow shall be considered to be a hydrologic evaporative sink. If an open pit is determined to be a hydrologic evaporative sink, the standards of 20.6.2.3103 NMAC do not apply within the area of hydrologic containment. (2) After closure, if water within an open pit is predicted to flow from the open pit into ground water and the discharge from an open pit may cause an exceedance of applicable standards at a designated monitoring well location, then the open pit shall be considered a flow-through pit and the open pit water quality must meet ground water standards of 20.6.2.3103 NMAC or be managed to mitigate exceedances of applicable standards outside the area of hydrologic containment.

E. Surface Water Management: The permittee of a copper mine facility shall maintain and implement a plan for the management of all stormwater and sediment generated from the facility during reclamation and following closure.

F. Cover System: At closure, a permittee shall install a cover system on waste rock piles, leach stockpiles, tailing impoundments and other facilities that have the potential to generate leachate and cause an exceedance of the standards of 20.6.2.3103 NMAC at a designated monitoring well location using the following criteria, as appropriate. Any soil cover systems installed before the publishing of this rule are not subject to the rule unless the department determines that impacts to ground water have occurred or are likely to occur as a result of the existing installed cover system, and that modification of the cover will prevent further impacts to ground water. Any cover system installed at an existing copper mine facility after the adoption of this rule shall be a monolithic store and release earthen cover system with a thickness of 36 inches subject to the criteria outlined in paragraphs 1 through 3 below. For an existing copper mine facility inside the open pit surface drainage area a 36-inch cover is only required on the top surfaces of leach and waste rock stockpiles.

(1) The cover system shall be constructed of 36 inches of earthen materials that are capable of sustaining plant growth without continuous augmentation and have erosion resistant characteristics. Erosion rates shall be equal to or less than stable slopes in the surrounding environment after the vegetation has reached near-equilibrium cover levels. Erosion will be estimated using generally acceptable methods.

(2) Soil cover systems shall be designed to limit net-percolation by having the capacity to store with at least 95 percent probability the precipitation that is likely to fall over a seven day period during the wettest time of the year. The water holding capacity of the cover system will be determined by multiplying the thickness of the cover times the incremental water holding capacity of the approved cover materials. Appropriate field or laboratory test results or published estimates of available water capacity shall be provided by the permittee to show that the proposed cover material meets this performance standard.

(3) Cover thickness or other design criteria may be reduced or modified if:

(a) The cover system is installed over a lined facility and the design and function of the liner system will compliment the cover system, or the permittee proposes a composite, layered or an alternate cover system with an equal or greater level of ground water protection described in Section F (1) and (2) above.

Deleted: (a) At existing copper mine facilities, the top surfaces of a tailing impoundment shall be constructed to a minimum final grade of 0.5% after accounting for large-scale settlement due to de-watering or overall waste mass compressibility or differential settlement of the waste. Prior to final re-grading activities, the permittee shall ensure that adequate drainage of the tailing impoundment has occurred to ensure that large-scale settlement following grading is minimized.¶

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Deleted: The department may approve a lesser slope at a minimum grade of 1% provided the permittee can demonstrate that it has the materials, equipment and expertise necessary to achieve such slope.¶ (a) At existing copper mine facilities, the top surfaces of waste rock and leach stockpiles shall be constructed to a minimum final grade of 1%.¶

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(b) A demonstration is made that an alternate proposed cover system will ensure that an exceedence of the standards of 20.6.2.3103 NMAC will not occur in ground water. Such a demonstration shall include:

(i) A comprehensive modeling study to estimate the quantity of net-percolation through a cover system that will not result in an exceedence of applicable standards in ground water;

(ii) A plan for performance monitoring of the cover system, including ground water monitoring;

(iii) An agreement to pay the cost of a third party review of the modeling study and performance monitoring plan.

(4) A CQA/CQC plan shall be submitted for agency review. The plan shall identify a qualified licensed professional engineer as the designated CQA officer and include his or her supervision of the CQA plan and shall identify the methods proposed to ensure that the closure construction will be completed in accordance with the design and specifications. Following the completion of the work, the CQA officer shall prepare a Final CQA Report. The Final CQA Report will provide a detailed description of the installation methods and procedures and document that the work was conducted as designed.

[Moved to contingency section] **H. Process Solution Reduction Plans:** The closure plan shall include a process solution reduction plan for the copper mine facility. The process solution reduction plan is a conceptual engineering document that describes the processes and methods that are expected to be used at a copper mine to reduce the quantities of process water in storage and circulation inventory at the end of copper production in preparation for long-term water management and/or treatment. The plan shall describe and list the current or proposed process water management facilities and inventories of process water. The plan shall describe the modifications to the process water management system required to create an efficient process water reduction system and the operation and maintenance requirements for the system with material take-offs of sufficient detail to prepare an engineering-level cost estimate equivalent to the cost estimate to be provided with the closure plan. The plan shall provide an estimate of the required water reduction period based on the water reduction calculations provided in the plan to be used for planning and operation and maintenance cost calculations. **I. Closure Water Management and Treatment Plan:** The applicant or permittee shall submit a closure water management and treatment plan. The closure water management and treatment plan is a conceptual engineering document that describes the processes and methods that are expected to be used at a copper mine for long-term management and/or treatment of process water. The plan shall describe the long-term water management and treatment facilities with sufficient detail (including locations of key components) to prepare an engineering-level cost estimate equivalent to the cost estimate to be provided with the closure plan (providing material take-offs, capital and operation and maintenance costs). The plans will provide sufficient detail to estimate capital and operating costs to provide the basis for financial assurance for these activities.

J. Impoundments: The permittee shall close all reservoirs and impoundments in a manner that ensures that the requirements of the Water Quality Act, commission rules and the discharge permit are met. Closure activities shall meet the following requirements:

(1) Fluids from reservoirs and impoundments shall be drained and appropriately disposed of.

(2) Sediments in the reservoir or impoundment shall be characterized and abated or appropriately disposed of in a manner will not cause an impact on ground water or surface water quality.

(3) Materials underlying the reservoir or impoundment shall be characterized to determine if releases of water contaminants have occurred if the liner system is damaged.

(4) Where characterization results show materials remaining within or beneath any reservoir or other impoundment that are not naturally occurring to be a source or potential source of ground water contamination outside the open pit surface drainage area, the reservoir or impoundment, shall be covered and re-vegetated pursuant to this section.

(5) Based on the characterization in Paragraph (4) of this subsection, further characterization of ground water beneath and adjacent to the reservoir or impoundment may be required to determine if abatement is necessary.

Deleted: G. **Interim Emergency Water Management:** An applicant or permittee shall develop and submit to the department an interim emergency fluid management plan. The purpose of the interim emergency water management plan is to provide information to the department on how process water systems, interceptor wells, seepage collection systems and storm water management systems are operated and maintained to prevent discharges in the event the department must take over management of the copper mine facility. An applicant or permittee shall include in the plan process water flow charts showing electrical system requirements, pump operations, seepage collection and interceptor well operations and applicable operation and maintenance requirements. The interim process water management plan shall be updated as major process water system changes occur that would affect the interim emergency water management plan. The interim emergency water management plan shall be maintained on site and available for department review The plan will be completed 180 days after permit renewal for an existing mine and 60 days prior to the start-up of a new facility.

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(6) Reservoirs and impoundments located outside the open pit surface drainage area shall be closed in a manner that creates positive drainage away from the impoundments, unless needed during closure and post closure for storm water retention or seepage interception, post-closure water management and treatment, or unless otherwise approved by NMED. If reservoir or impoundment locations are to be used during the post-closure period for the collection of clean storm water and residual vadose zone or ground water contamination remain, a synthetically lined clean storm water reservoir must be constructed pursuant to 20.6.7.17 NMAC. Large reservoirs located in the Open Pit Surface Drainage Area of an existing copper mine are exempt from the requirement to establish positive drainage.

(7) The department may approve alternative plans for closure of these facilities based on site-specific conditions when the alternative closure method will provide the same level of ground water protection as the methods specified in paragraphs (1) through (6) of this subsection.

K. Pipelines, tanks and sumps: The permittee shall remove and/or properly dispose of the tailing, process water, or other materials contained in pipelines, tanks or sumps as soon as they are no longer needed for site operations, water treatment, or other post-closure water management. Any residual tailing, process water, sediments or contaminated water shall be removed from the pipelines, tanks or sumps prior to closure and dispose of the material in a department approved manner. Pipelines may be removed for appropriate disposal or cleaned and buried in place. Sumps may be removed for disposal or cleaned and broken up and buried in place. During pipeline, tank or sump closure, the permittee shall inspect the entire pipeline, tank or sump area for evidence of past spills and characterize the impacts and potential impacts of such spills. The permittee shall document all areas where there is evidence of spills and propose to the department appropriate corrective actions pursuant to the provisions of Section 20.6.2.1203 NMAC. Following pipeline, tank or sump removal, the permittee shall remove for disposal or reclaim in place all acid generating pipeline, tank or sump bedding material that has the potential to impact water quality in excess of the applicable standards.

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L. Crushing, milling, concentrating and smelting: The permittee shall close all crushing, milling, concentrating or smelting areas in a manner that ensures that the requirements of the Water Quality Act, commission rules and the discharge permit are met. Any remaining materials containing water contaminants that may cause an exceedance of the applicable standards shall be removed or disposed of in a department approved manner or covered as described below. The permittee shall characterize the crushing, milling, concentrating or smelting area for the presence of any remaining potential water contaminants. If water contaminants area present that may with reasonable probability move directly or indirectly into ground water and cause an exceedance of the applicable standards, the area shall be covered pursuant to this section.

M. Closure Monitoring and Maintenance: During closure the permittee shall continue monitoring pursuant to 20.6.7.28 NMAC and 20.6.7.29 NMAC. The permittee may propose and the department may approve modifications to the required monitoring to reflect changes in conditions during closure, such as abandonment of monitoring wells.

N. Exceptions to Design Criteria: The closure design criteria listed above, may be modified if approved by the department. Design criteria required by the New Mexico Office of the State Engineer Dam Safety Bureau for regulated facilities, such as jurisdictional impoundments (including tailing impoundments), shall supersede the criteria listed above.

20.6.7.34 IMPLEMENTATION OF CLOSURE

A. Notification of intent to close. A permittee shall notify the department in writing of its intent to implement the closure plan for a copper mine facility or a component of a facility. Notification shall be given at least 30 days prior to implementation of closure construction activities.

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B. Initiation of Closure. Upon notice of intent to implement a closure plan, a permittee shall commence closure in accordance with the approved closure plan. Implementation of closure includes preparation and submittal of a final design and CQA/CQC plan. The permittee shall submit the final design and CQA/CQC plan to the department for approval within 180 days of submission of a notice of intent to implement the closure plan. The permittee shall commence final closure construction of the facility within 180 days of receipt of written approval of the final design and CQA/CQC plan. These timelines may be modified by the agency upon request by the permittee for good cause shown, including allowance for time for procurement and mobilization of construction services and materials prior to actual closure construction.

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C. Notification of change in operational status. Whenever operation of a copper mine facility subject to closure requirements under the copper mine rule is suspended or resumed, the permittee shall provide the department written notification within thirty days of the date operation is suspended or resumed. Each subsequent semi-annual report submitted during suspension of operation of a copper mine facility shall state whether the

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permittee intends to resume operations and the anticipated date of resumption of operations or the conditions under which operations will resume.

D. Department Notice Regarding Suspended Operations and Enforcement Action. If operation of leaching operations or milling operations at a copper mine facility has been suspended for more than two years and copper production also is suspended at the copper mine facility, the department may issue a written notice to the permittee requesting that the permittee provide objective evidence that the permittee is capable of and intends to resume operation of the facility. If the permittee does not respond within 30 days, or if the permittee does not evidence that the facility is capable of resuming operation; that the permittee intends to resume operation of the facility; and, that the facility does not pose a threat to public health or cause undue damage to property, the department may determine that the permittee is in violation of the copper mine rule for failure to implement closure of the copper mine facility in a timely manner and may take appropriate enforcement action pursuant to 74-6-10 NMAC including requiring implementation of closure in accordance with 20.6.7.33 NMAC.

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E. Deferral of Closure. If a component of a copper mine has reached the end of its useful life with no intent to resume operations, but closure of the component would be at risk of becoming contaminated due to the proximity of active operations, closure would require relocation or replacement of infrastructure that supports ongoing operations, or for other good cause shown, the permittee may request closure be deferred until nearby facilities are closed or the supporting infrastructure is no longer needed. The department shall approve a deferral of closure as long as adequate water management measures are being implemented to protect groundwater quality during the period of deferral.

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F. Final Design. The permittee shall submit a final design and CQA/CQC plan to the department for approval at least sixty days prior to construction, including commencement of surface shaping activities of any area subject to a closure plan under the copper mine rule including, but not limited to, tailing impoundments, waste rock piles, leach stockpiles, and any other area where cover is required under the approved closure plan. The CQA/CQC plan must include detailed engineering designs for storm water management structures and associated conveyance systems, cover design specifications, a cover material suitability assessment, a borrow source location, a rip rap suitability assessment, a rip rap source location, a post reclamation storm water management plan, and a schedule for completion. In addition, the final design and CQA/CQC plan shall include best management practices that will be employed during reclamation to address erosion and storm water management in a manner that meets the requirements of the Water Quality Act and commission regulations. The final design and CQA/CQC plan shall bear the signature and seal of a licensed professional engineer in accordance with subsection A of 20.6.7.17 NMAC.

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G. CQA/CQC Report. Within 180 days after project completion, the permittee shall submit a final CQA/CQC report to the department. The CQA/CQC Report shall include, at a minimum, as-built drawings of the entire reclaimed area including test pit locations and cover thickness data, a final survey report and topographic map following cover placement, a summary of work conducted, construction photographs, the location of reclaimed borrow areas, soil testing results, and laboratory analytical reports. The contour intervals on topographic maps shall be no greater than two feet for the top surfaces and no greater than ten feet for the outslopes for closure of tailing impoundments, leach stockpiles or waste rock stockpiles. The CQA/CQC report shall provide summaries of the quality assurance data, documenting that the project was completed according to the approved final design and CQA/CQC plan with significant exceptions explained. The CQA/CQC report shall bear the signature and seal of a licensed professional engineer in accordance with subsection A of 20.6.7.17 NMAC.

20.6.7.35 POST-CLOSURE REQUIREMENTS: For each component closed at a copper mine facility, the closure period shall cease, and the post-closure period shall commence, following the permittee's submission of a Final CQA/CQC Report that includes as-built drawings and a closure report documenting completion of regrading, covering, seeding, and construction of any other elements required for closure of a component. The post-closure period for a copper mine facility shall begin when the Final CQA Report is submitted and only monitoring, inspections, maintenance, and/or operation of a closure water treatment and management plan remain to be conducted. During the post-closure period, a permittee shall conduct post-closure monitoring, inspection, reporting, maintenance, and implementation of contingency actions as specified by this subsection. The post-closure period shall end for a component of a copper mine facility upon the completion of post-closure monitoring, inspection and maintenance for the unit as required by this section. The post-closure period shall cease when all monitoring, inspections, maintenance, and operation of the water management and treatment plan required under this section may cease. For components of a copper mine facility subject to an abatement plan, monitoring, inspection, reporting, and operation of abatement systems shall be conducted in accordance with the approved abatement plan rather than this section.

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A. Seepage interceptor system inspections. A permittee shall perform quarterly inspections and

annual evaluations of all seepage interceptor systems and perform maintenance as necessary to ensure that the systems are operated as required by the copper mine rule and the discharge permit. The inspection results and any maintenance performed by the permittee on seepage interception system components shall be reported pursuant to Subsection D of this section.

B. Water Quality Monitoring and Reporting. A permittee shall perform water quality monitoring and reporting during the post-closure period pursuant to 20.6.7.28 NMAC and 20.6.7.29 NMAC, as applicable and modified by this section. Ground water elevation contour maps under 20.6.27.L NMAC shall be submitted annually during the post-closure period. A permittee may request to reduce the frequency of or cease sampling a water quality monitoring location if the water contaminants in a monitoring well have been below the standards of 20.6.2.3103 NMAC for eight consecutive quarters. If sampling of a monitoring well may cease in accordance with this subsection, the monitoring well shall be abandoned in accordance with applicable requirements unless the permittee requests and the department approves the monitoring well to remain in place for an alternative use or future monitoring.

C. Reclamation Monitoring, Maintenance, and Inspections

(1) **Re-vegetation.** To ensure that vegetated covers required by the copper mine rule are protective of water quality, a permittee shall perform post-closure monitoring of vegetated pursuant to schedules and monitoring requirements approved by the mining and minerals division. Any proposed changes to the closure or post-closure re-vegetation monitoring plan to meet New Mexico Mining Act requirements shall be submitted to the department to ensure monitoring is protective of water quality. The permittee shall provide the department with a copy of monitoring results for vegetated covers, including photographic documentation as required by the mining and minerals division. At such time as the mining and minerals division vegetation success requirements under the New Mexico Mining Act have been met the permittee shall provide a final report to the department and vegetation monitoring may cease.

(2) **Erosion, Subsidence, Slope Instability, Ponding, and Other Features.** The permittee shall visually inspect closed discharge permit areas where a cover was installed for signs of excessive erosion, subsidence features, slope instability, excessive ponding, development of fissures, or any other feature that may compromise the functional integrity of the cover system or drainage channels. Drainage channels, diversion structures, retention ponds, and auxiliary erosion control features shall be inspected in accordance with professionally recognized standards (e.g., Natural Resource Conservation Service standards). The inspections shall be conducted monthly for the first year following completion of drainage channels and seeding for the component, and quarterly thereafter until the end of post-closure monitoring, provided the department may approve a schedule allowing less-frequent monitoring. Discharge permit areas where covers were installed shall also be inspected for evidence of excessive erosion within 24 hours (Ir the next working day) following storm events of one inch or greater as measured at the nearest rain gauge. The permittee shall report and take corrective action pursuant to 20.6.2.7.30 regarding signs of excessive erosion, subsidence features, slope instability, excessive ponding, development of fissures, or any other feature that may compromise the functional integrity of the cover system or drainage channels. Monitoring and inspection results shall be reported as required in Subsection D of this section.

(3) **Entry.** A permittee shall inspect and maintain the fencing or other management systems required by the discharge permit to prevent access of wildlife and unauthorized humans to an open pit, reservoirs, impoundments or any sump that contains water that may be harmful or toxic.

(4) **Cover maintenance.** A permittee shall perform maintenance on all areas where a cover system was installed as required by the copper mine rule, including associated drainage channels and diversion structures if their performance may affect cover system function. Based on monitoring of vegetation and erosion required by Paragraphs (1) and (2) of this Subsection, a permittee shall provide recommendations for maintenance work in semiannual monitoring reports described in Subsection D of this section, including a schedule for completion of work.

(5) **Other inspection and maintenance**. A permittee shall routinely inspect and maintain all structures, facilities, and equipment whose failure may impact ground water quality. Water collected that exceeds the ground water quality standards in Section 20.6.2.3103 NMAC shall be stored, conveyed, treated and discharged in a manner that is consistent with the closure water treatment and management plan any other applicable regulatory requirements. The inspection results shall be reported as required in Subsection D of this section. Inspections and maintenance shall include but are not limited to:

i) storm water retention reservoir(s);
ii) water treatment plant(s);
iii) pumps and pipelines to deliver water to water treatment plant(s); and
iv) seepage collection ponds.

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Deleted: For facilities with discharges to process solution ponds or seepage interceptor systems following completion of reclamation activities, ground water monitoring associated with such facilities shall continue for a minimum of five years following cessation of active management of process solutions or seepage water.

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(6) **Implementation of water management and treatment plan**. The permittee shall continue to implement the water management and treatment plan required by 20.6.7.33.I NMAC during the post-closure period. The water management and treatment plan may be modified in accordance with its terms or by approval of the department, as may be modified to reflect changes in site conditions.

D. Reporting. A permittee shall submit to department semi-annual reports on or before May 15 and November 15 of each year until the post-closure period ends for the copper mine facility. The reports shall contain:

(1) a description and the results of all post-closure monitoring conducted pursuant to this section.

(2) a description of any work completed during the preceding semi-annual period, including but not limited to:

(i) the status of post-closure activities for the copper mine facility; and

(ii) any maintenance and repair work conducted for any closure component.

(3) semi-annual potentiometric maps including data from all monitoring wells, extraction wells, piezometers, seeps and springs appropriate to the water table being mapped.

E. The contingency requirements of 20.6.7.30 NMAC apply to any deficiencies in the implemented closure systems discovered during the post-closure monitoring and inspections required pursuant to this section.

20.6.7.36 RESERVED

20.6.7.37 RECORD RETENTION REQUIREMENTS FOR ALL COPPER MINE FACILITIES:

A. A permittee shall retain a written record at the copper mine facility of all data and information related to field measurements, sampling, and analysis conducted pursuant to the copper mine rule and the discharge permit. The following information shall be recorded and shall be made available to the department upon request.

(1) The dates, exact location and times of sampling or field measurements.

(2) The name and job title of the individuals who performed each sample collection or field measurement.

(3) The date of the analysis of each sample.

(4) The name and address of the laboratory and the name and job title of the person that performed the analysis of each sample.

(5) The analytical technique or method used to analyze each sample or take each field measurement.

(6) The results of each analysis or field measurement, including raw data.

(7) The results of any split, spiked, duplicate or repeat sample.

(8) A description of the quality assurance and quality control procedures used.

B. A permittee shall retain a written record at the copper mine facility of any spills, seeps, or leaks of effluent, and of leachate or process fluids not authorized by the discharge permit. Records shall be made available to the department upon request.

C. A permittee shall retain a written record at the copper mine facility of the operation, maintenance, and repair of all features/equipment used as required by the copper mine rule to treat, store or dispose of process water, tailings, and impacted stormwater, measure flow rates, monitor water quality, or collect other data as required by the copper mine rule. Records shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the process water, tailings or impacted stormwater discharge system and required by the copper mine rule. Records shall be made available to the department upon request.

D. A permittee shall retain records of all monitoring information at the copper mine facility required by the copper mine rule, including all sampling results and other monitoring, calibration and maintenance records, copies of all reports, and the application for the discharge permit. Records shall be retained for a period of at least ten years from the date of the sample collection, measurement, report or application.

20.6.6.38 TRANSFER OF COPPER MINE DISCHARGE PERMITS:

A. Transfer of discharge permits for copper mine facilities shall be made pursuant to 20.6.2.3111 NMAC and this section.

B. The transferor(s) shall notify the department, in writing, of the date of transfer of ownership, control or possession and provide contact information for the transferee(s) pursuant to Subsection B of 20.6.7.11 NMAC and Subsection B of 20.6.7.12 NMAC. Notification shall be submitted to the department of the transfer within 30 days of the ownership transfer.

20.6.7.39 CONTINUING EFFECT OF PRIOR ACTIONS DURING TRANSITION:

A. A discharge permit issued pursuant to 20.6.2.3109 NMAC that has not expired on or before the

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effective date of the copper mine rule shall remain in effect and enforceable pursuant to the conditions of the discharge permit and for its term as designated by the permit. If an effective discharge permit contains a permit condition with a time period for submittal of a renewal application that is different from the time period contained in Subsection C of 20.6.7.10 NMAC that condition will remain in effect for two years following the effective date of the copper mine rule

B. An application for a new discharge permit or an application for a renewed or modified discharge permit for an existing copper mine facility submitted to the department before the effective date of the copper mine rule and for which a draft permit has not been provided to the applicant shall be processed by the department pursuant to the copper mine rule. The applicant shall submit applicable permit fees to the department pursuant to 20.6.7.9 NMAC within 90 days of the effective date of the copper mine rule.

C. An application for a new discharge permit or an application for a renewed or modified discharge permit for an existing copper mine facility submitted to the department before the effective date of the copper mine rule and for which a draft permit has been provided to the applicant shall be processed by the department pursuant to 20.6.2.3000 NMAC through 20.6.2.3113 NMAC. The applicant shall submit applicable permit fees to the department pursuant to 20.6.7.9 NMAC within 90 days of the effective date of the copper mine rule.

D. If a discharge permit for a copper mine facility is expired on the effective date of the copper mine rule and an application for renewal has not been received by the department, the permittee or owner of the copper mine facility:

(1) shall within 90 days of the effective date of the copper mine rule submit to the department an application for a discharge permit renewal, renewal and modification or closure pursuant to 20.6.7.10 NMAC and applicable permit fees pursuant to 20.6.7.9 NMAC; or

(2) if the copper mine facility has not been constructed or operated, the permittee or the owner of record of the copper mine facility may submit a statement to the department instead of an application for renewal certifying that the copper mine facility has not been constructed or operated and that no discharges have occurred. Upon the department's verification of the certification, the department shall retire the discharge permit number from use.

E. The permittee or owner of record of any copper mine facility discharging, capable of recommencing discharging, or that has ceased discharging within the term of its most recent discharge permit shall continue all monitoring and submittal of monitoring reports as prescribed in the most recent discharge permit until the department issues a renewed or renewed and modified discharge permit.

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(a) **Liner system.** A new waste rock stockpile shall be placed on an engineered liner system consisting of a compacted subbase overlain by a synthetic liner which is overlain by a solution collection system designed to transmit process fluids out of the waste rock stockpile. The liner system shall be installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches of soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The subbase shall be compacted in lifts that are no more than six inches thick. The top surface of the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner.

(c) **Liner type.** A synthetic liner for a new waste rock stockpile shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner systems tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposures and conditions. A qualified licensed New Mexico professional engineer with experience in liner system construction and installation shall identify the basis for the geomembrane composition and specific liner based upon:

(i) the type, slope and stability of the foundation;

(ii) the overliner protection and provisions for hydraulic relief within the liner system;

(iii) the load and the means of applying the load on the liner system;

(iv) the compatibility of the liner material with leached solutions generated in the waste rock stockpile; and

(v) the liner's ability to remain functional for five years after the operational life of the waste rock stockpile.

(d) **Solution collection system.** A solution collection system shall be placed in an overliner protection and drainage system. The solution collection system shall be designed to remain functional for five years after the operational life of the waste rock stockpile. The overliner protection shall be designed and constructed to protect the synthetic liner from damage during loading and minimize the potential for penetration of the synthetic liner. A sloped collection system shall be designed that will transmit fluids out of the waste rock stockpile for management and/or disposal. The collection system shall be designed to freely drain fluids as they collect on the liner such that there is minimal hydraulic head maintained on the liner. Any penetration of the liner by the collection system through which a pipe or other fixture protrudes shall be constructed in accordance with the liner manufacturer's requirements. Liner penetrations shall be detailed in the construction plans and as-built drawings.

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demonstrates that the stockpile has not caused an exceedance of the standards of 20.6.2.3103 NMAC, or other applicable standards, or;

(b) the stockpile has been granted a variance pursuant to 20.6.7.31 NMAC.

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(7) The monthly volume of fluid generated within the solution collection system shall be determined using flow meters installed in accordance with this section and Paragraph (5) of Subsection C of 20.6.7.17 NMAC.

(8) The monthly volume of fluid generated within the solution collection system shall be recorded, maintained, and included in the site monitoring reports.

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The department may require additional engineering containment systems if the system is to be installed in an area of fractured or faulted geologic conditions, inadequately abandoned exploratory boreholes underlying the site of the installation, or where the depth to ground water underlying the structure is less than 100 feet as additional conditions in accordance with Subsection H of 20.6.7.10 NMAC..

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(a) **Liner system.** A new tailings impoundment shall be placed on an engineered liner system consisting of a compacted subbase overlain by a synthetic liner which is designed to drain fluids out of the tailings impoundment. The liner system shall be approved by the department prior to installation and shall be

installed in accordance with a department approved CQA/CQC plan pursuant to Paragraph (2) of Subsection C of 20.6.7.17 NMAC

(b) **Liner system subbase.** A liner system subbase shall be prepared and placed upon a stable foundation. The prepared subbase shall consist of a minimum of 12 inches soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec. The subbase shall be compacted in lifts that are no more than six inches thick. The top surface of the subbase shall be smooth and free of sharp rocks or any other material that could penetrate the overlying synthetic liner.

(c) **Liner type.** A synthetic liner for a new tailings impoundment shall provide the same or greater level of containment, including permeability, as a 60 mil HDPE geomembrane liner system. The liner systems tensile strength, tear and puncture resistance and resistance to degradation by ultraviolet light shall be compatible with design loads, exposures and conditions. A qualified licensed New Mexico professional engineer with experience in liner system construction and installation shall identify the basis for the geomembrane composition and specific liner based upon:

(i) the type, slope and stability of the foundation;

(ii) the overliner protection and provisions for hydraulic relief within the liner system;

(iii) the load and the means of applying the load on the liner system;

(iv) the compatibility of the liner material with the tailings applied to the impoundment and temperature extremes of the location at which it will be installed; and

(v) the liner's ability to remain functional until five years after the operational life of the impoundment.

(d) **Drainage collection system.** A drainage collection system shall be installed to collect solutions drained from the liner system for management of fluids for reuse and/or disposal. The drainage collection system shall be designed to remain functional until five years after the operational life of the impoundment. Any penetration of the liner by the collection system through which a pipe or other fixture protrudes shall be constructed in accordance with the liner manufacturer's requirements. Liner penetrations shall be detailed in the construction plans and as-built drawings.