

Written comment deadline for this draft – July 19, 2019

IDAPA 58.01.13
Rules for Ore Processing by Cyanidation

007. DEFINITIONS.

01. Beneficial Use. Any of the various uses which may be made of the surface and/or ground water of the state including, but not limited to, domestic water supplies, industrial water supplies, agricultural water supplies, navigation, recreation in and on the water, wildlife habitat, and aesthetics. Beneficial uses for specific stream segments are established in ~~Idaho Department of Environmental Quality Rules, IDAPA 58.01.02, “Water Quality Standards and Wastewater Treatment Requirements,”~~ (1-25-95) ()

02. Best Management Practices (BMPs). Practices, techniques or measures developed, or identified, by the designated agency or identified in the state water quality management plan, as described in IDAPA 58.01.02, ~~“Water Quality Standards and Wastewater Treatment Requirements,”~~ which are determined to be a cost-effective and practicable means of preventing or reducing pollutants generated from nonpoint sources to a level compatible with water quality goals. (3-30-06) ()

14. National ~~Idaho~~ Pollution ~~Pollutant~~ Discharge Elimination System (NIPDES) Permit. A permit issued by the ~~U.S. Environmental Protection Agency~~ Department for the purpose of regulating discharges into surface waters. (3-30-06) ()

~~XX. Outstanding Resource Water (ORW).~~ ~~A high quality water, such as water of national and state parks and wildlife refuges and water of exceptional recreational or ecological significance, which has been designated by the legislature and subsequently listed in IDAPA 58.01.02, “Water Quality Standards.” ORW constitutes an outstanding national or state resource that requires protection from point and nonpoint source activities that may lower water quality.~~ ()

17. Permanent Closure Plan. A description of the procedures, methods, and schedule that will be implemented to meet the intent and purpose of Section 39-118A, Idaho Code, and Chapter 15, Title 47, Idaho Code, ~~and the rules promulgated thereunder,~~ in treating and disposing of cyanide-containing materials including spent ore, tailings, and process water and in controlling and monitoring discharges and potential discharges for a reasonable period of time based on site-specific conditions. (4-11-06) ()

23. Post-Closure. The period of time after completion of permanent closure when the permittee is monitoring the effectiveness of the closure activities. Post-closure shall last a minimum of twelve (12) months but may extend until the cyanidation facility is shown to be in compliance with the stated permanent closure objectives and requirements of Chapter 15, Title 47, Idaho Code, ~~the rules promulgated thereunder,~~ and these rules. (3-30-06) ()

~~XX. Sensitive Resource Aquifer.~~ ~~Any aquifer or portion of an aquifer listed in Subsection 300.01 of the Ground Water Quality Rule, IDAPA 58.01.11.~~ ()

~~27. Special Resource Water.~~ Those waters of the state which are recognized as needing intensive protection: (1-1-88)

~~a. To preserve outstanding or unique characteristics; or (1-1-88)~~

~~b. To maintain current beneficial use (refer to Idaho Department of Environmental Quality Rules, IDAPA 58.01.02, “Water Quality Standards and Wastewater Treatment Requirements,” for a complete description; special resource waters for specific stream segments are established in Idaho Department of Environmental Quality Rules, IDAPA 58.01.02, “Water Quality Standards and Wastewater Treatment Requirements”). (1-25-95)~~

008. -- 009. (RESERVED).

010. APPLICABILITY TO FACILITIES WITH EXISTING PERMITS.

A cyanidation facility with an existing permit approved by the Department prior to July 1, 2005 shall be subject to the applicable laws and rules for ore processing by cyanidation in effect on June 30, 2005. Material modifications or material expansions of such facilities are subject to Section 39-118A, Idaho Code. ~~The rules for ore processing by cyanidation in effect on June 30, 2005 can be obtained by contacting the Department of Environmental Quality, Hearing Coordinator, 1410 N. Hilton, Boise, ID 83706 1255, (208)373-0502, www.deq.idaho.gov. (4-11-06) ()~~

011. -- 049. (RESERVED).

050. CONCEPTUAL DESIGN APPROVAL.

01. Information Required for Conceptual Design Approval. Submittal of a Conceptual Design Report is not mandatory, except for an alternative design proposal submitted under Section 201. The Director may, if requested, give initial approval of the basic operation, design concepts, and environmental safeguards proposed based on the information included in a Conceptual Design Report. Approval of the Conceptual Design Report shall not authorize the construction, modification or operation of the cyanidation facility. It is recommended that the Conceptual Design Report address the contents for a permit application as listed in Subsection 100.03, water quality protection criteria listed in Section 200, and if applicable, the alternative design criteria listed in Section 201.
(3-30-06) ()

02. Notice of Conceptual Design Approval or Disapproval. Unless otherwise provided in this Subsection 050.02, The the Director shall notify the applicant in writing of the decision for conceptual approval or disapproval within a period of thirty (30) days from receiving all information as required under Subsection 050.01. For alternative design proposals submitted under Section 201, the Director shall notify the applicant in writing of the decision for conceptual approval or disapproval within a period of ninety (90) days from receiving all information as required under Section 201. The time required to review and approve, if appropriate, a conceptual design shall be considered separate from and shall not be included as part of the one hundred eighty (180) day time period for processing the formal application and issuance of a Director's determination pursuant to these rules. (4-11-06) ()

03. Preapplication Conference. Prospective applicants are encouraged to meet with agents of the Department at least one (1) year in advance of the application submittal to discuss environmental baseline data requirements; waste characterization requirements; siting requirements for surface and ground water monitoring stations, mills, tailings impoundments, waste disposal sites and land application sites; monitoring well construction requirements; operation and maintenance plans; emergency and spill response plans; quality control/quality assurance plans for water quality sampling and analyses; required contents for permit applications; application procedures and schedules; any alternative design proposals; public review and comment periods; public meetings; and agency cyanidation facility visits. The preapplication conference may trigger a period of collaborative effort between the applicant, the ~~Idaho Department of Environmental Quality~~, and the Idaho Department of Lands in development of checklists to be used by the agencies in reviewing an application for completeness, accuracy and protectiveness.
(3-30-06) ()

051. -- 099. (RESERVED).

100. PERMIT AND PERMIT APPLICATION.

01. Permit Required. No person shall construct a new cyanidation facility prior to obtaining a permit from the Director. No person shall materially expand or materially modify a cyanidation facility prior to obtaining a modified permit for such expansion or modification pursuant to Section 750. (3-30-06)

02. Permit Application. The owner or proposed operator of a cyanidation facility or the owner's or operator's authorized representative shall: (3-30-06)

a. Make application to the Director in writing and in a manner or form prescribed herein; and (4-11-06)

b. Provide five (5) paper copies of the application to the Director, unless otherwise agreed to by the Department and the applicant. (4-11-06)

03. Contents of Application. A permit application and its contents shall be used to determine if an applicant can locate, construct, operate, maintain, close and monitor the proposed cyanidation facility in conformance with these and other applicable rules including, but not limited to, ~~Idaho Department of Environmental Quality Rules~~, IDAPA 58.01.02, “Water Quality Standards ~~and Wastewater Treatment Requirements~~”; IDAPA 58.01.08, “Idaho Rules for Public Drinking Water Systems”; IDAPA 58.01.05, “Rules and Standards for Hazardous Waste”; IDAPA 58.01.06, “Solid Waste Management Rules”; ~~and~~ IDAPA 58.01.11, “Ground Water Quality Rule”; ~~and IDAPA 58.01.25, “Rules Regulating the Idaho Pollutant Discharge Elimination System Program.”~~ Information required shall include the following, in sufficient detail to allow the Director to make necessary application review decisions concerning design concepts and protection of human health and the environment, and shall meet the requirements of Section 200: ~~(3-30-06) ()~~

- a. Name, location, and mailing address of the cyanidation facility. (4-11-06)
- b. Name, mailing address, and phone number of the applicant, and a registered agent. (1-1-88)
- c. Land ownership status of the cyanidation facility (federal, state, private or public). (4-11-06)
- d. Name, mailing address, and phone number of the applicant’s construction and operations manager. (3-30-06)
- e. The legal structure (corporation, partnership, etc.) and residence of the applicant. (1-1-88)
- f. The legal description, to the quarter-quarter section, of the location of the proposed cyanidation facility. (3-30-06)
- g. Evidence the applicant is authorized by the Secretary of State to conduct business in the State of Idaho. (3-30-06)
- h. A general description of the operational plans for the cyanidation facility from construction through permanent closure. This description shall include any proposed phases for construction, operations, and permanent closure. (3-30-06)
- i. The design maximum daily throughput of ore through the cyanidation facility and the total projected volume of material to be processed during the life of the operation. (3-30-06)
- j. Cyanidation facility layouts including water management systems designed to segregate storm water from process water. (3-30-06)
- k. A geotechnical evaluation of all process water and process chemical containment systems within the proposed cyanidation facility. (3-30-06)
- l. A preconstruction topographic site map or aerial photos extending at least one (1) mile beyond the outer limits of the cyanidation facility, identifying and showing the location and extent of the following features: (3-30-06)
 - i. All wells, perennial and intermittent springs, adit discharges, wetlands, surface waters and irrigation ditches that may be affected by the cyanidation facility; (3-30-06)
 - ii. All process water supply source(s); (1-1-88)
 - iii. All public and private drinking water supply source(s) within at least one (1) mile of the cyanidation facility; (4-11-06)
 - iv. Identified floodplain areas (shown on USGS sectional Quadrangle maps); (3-30-06)
 - v. All service roads and public roads; (1-1-88)

- vi. All buildings and structures within a half (1/2) mile of the cyanidation facility; (4-11-06)
 - vii. All ~~special~~ outstanding resource waters and sensitive resource aquifers within one (1) mile of the cyanidation facility; ~~(4-11-06)~~()
 - viii. All Clean Water Act Section 303(d) listed streams, and their listed impairments, within ten (10) miles of the site boundary that may be affected by the cyanidation facility. (3-30-06)
 - m. To the extent such information is available, a description and location of underground mine workings and adits and a description of the structural geology that may influence ground water flow and direction. (3-30-06)
 - n. A description of the proposed land application site. The description shall include a potentiometric map, surface and subsurface soil characteristics, geology, hydrogeology and ground water quality. The description of these characteristics must be sufficient to determine anticipated impacts to the affected soils, associated vadose zone as well as anticipated changes in geochemistry that may affect surface and ground water quality. (3-30-06)
 - o. Siting diagram for land application sites, monitoring wells, lysimeters, surface or ground water discharge sites, or surface water monitoring locations. (3-30-06)
 - p. A description of measures to protect wildlife that may be affected by the facility. (3-30-06)
 - q. Proposed post-construction topographic maps. (3-30-06)
 - r. ~~Engineering Plans and Specifications.~~ Engineering plans and specifications for all portions of the cyanidation facility ~~intended to contain, treat, convey or dispose of all process water and pollutants~~ must be submitted to the Department for review and approval. Prior to construction, all cyanidation facility engineering plans and specifications must be signed and stamped by a professional engineer registered in the state of Idaho. These plans and specifications shall include: ~~(3-30-06)~~()
 - i. The water balance, ore flow and processing calculations demonstrating the logic behind sizing of facilities. (3-30-06)
 - ii. The general ore processing overview analyses of chemical compatibility of containment materials with process chemicals and wastes, including a chemical mass balance at inputs and outputs from the cyanidation facility. (3-30-06)
 - iii. Geotechnical data and analyses demonstrating the logic for plans and specifications of foundation materials and placement. (3-30-06)
 - iv. Requirements for site preparation. (3-30-06)
 - v. Pumping and dewatering requirements. (3-30-06)
 - vi. Procedures for materials selection and placement for backfilling foundation areas. (3-30-06)
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- XX. Cap and cover criteria. ()**
- vii. Criteria for ensuring slope stabilization of embankments for pads, ponds and tailings impoundment. (3-30-06)
 - viii. Procedures to classify and modify, if necessary, excavated fill, bedding and cover materials for buildings, pads, ponds, and tailings impoundment. (3-30-06)
 - ix. Plumbing and conveyance schematics and component specifications. ~~(3-30-06)~~()

- x. Manufacturers' specifications and warranties for all materials that will or may come in contact with process waters. (3-30-06)
- xi. Plan views and cross-section drawings of leach pad, permanent heaps, vats, process water storage ponds, tailings ponds impoundments and spent ore disposal areas. ~~(3-30-06)~~ ()
- xii. Leak detection and collection system plans and specifications including, but not limited to, schematics and narratives describing liner and geotextile material specifications, sumping capacity and layout, location of monitoring port(s), monitoring port components, construction operation and maintenance procedures for monitoring ports and pumping systems, including backup system, triggers for primary and secondary containment repairs, replacement or other contingency mitigation, frequency of monitoring, and monitoring parameters. (3-30-06)
- xiii. Provisions to protect primary and secondary containment systems from heavy equipment, fires, earthquakes and other natural phenomena. (3-30-06)
- xiv. Quality control and quality assurance procedures. (3-30-06)
- xv. The identity and qualifications of person(s) directly responsible for supervising construction and providing project quality control and quality assurance. (3-30-06)
- s. Operation and maintenance plans that includes: (3-30-06)
- i. Maintenance plans, including routine service procedures for primary and secondary containment systems, process chemical storage, and disposal of contaminated water or soils, including petroleum-contaminated soils. (3-30-06)
- ii. A water management plan that provides for handling and containment of process water including the methods to manage and/or treat all process water and pollutants, and run-off or run-on water, emergency releases, and excess water due to flood, rain, snowmelt, or other similar events. The plan shall include the basis for impoundment volumes and estimations of the need for and operation of a land application site, injection wells, infiltration galleries or leach fields, or the need for an ~~NPDES~~ IPDES permit. The plan shall be updated on a regular basis to reflect the reconciliation of the water balance changes in the project through construction, operation, maintenance, and permanent closure, including modifications to the cyanidation facility. ~~(3-30-06)~~ ()
- iii. A proposed water quality monitoring plan ~~that meets the requirements of Subsection 200.08.~~ ~~(3-30-06)~~ ()
- iv. An emergency and spill response plan that describes procedures and methods to be implemented for the abatement and clean up of any pollutant that may be discharged from the cyanidation facility during use, handling or disposal of processing chemicals, petrochemicals and/or fuels, and any other deleterious materials. (3-30-06)
- v. A seasonal/temporary closure plan, if applicable, that describes the procedures, methods, and schedule to be implemented for the treatment and disposal of process water and pollutants, the control of drainage from the cyanidation facility during the period of closure, the control of drainage from the surrounding area, and the secure storage of process chemicals. (3-30-06)
- t. ~~Permanent Closure Plan.~~ The permanent closure plan ~~may be the same as the plan submitted to approved by~~ the Idaho Department of Lands, ~~and evidence that the applicant has satisfied the financial assurance requirements relating to ore processing by cyanidation,~~ pursuant to the Idaho ~~Surface Mining Mined Land Reclamation~~ Act, Chapter 15, Title 47, Idaho Code, ~~and the rules promulgated thereunder.~~ ~~The permanent closure plan shall:~~ (4-11-06) ()
- i. ~~Identify the current owner of the cyanidation facility and the party responsible for the permanent closure and the long term care and maintenance of the cyanidation facility.~~ (3-30-06)
- ii. ~~Include a time line showing the schedule to complete permanent closure activities, including neutralization of process waters and material stabilization, and the time period for which the permittee shall be responsible for post-closure activities.~~ (3-30-06)

- ~~iii. Provide the objectives, methods and procedures, that will achieve neutralization of process waters and material stabilization during the closure period and through post closure. (4-11-06)~~
- ~~iv. Provide a water management plan from the time the cyanidation facility is in permanent closure through the defined post closure period. (4-11-06)~~
- ~~v. Include the schematic drawings for all BMPs that will be used during the closure period, through the defined post closure period, a description of how the BMPs support the water management plan, and an explanation of the water conveyance systems that are planned for the cyanidation facility. (4-11-06)~~
- ~~vi. Provide proposed post construction topographic maps and scaled cross sections showing the configuration of the final heap or tailing facility, including final cap and cover designs and the plan for long term operation and maintenance of the cap. Caps and covers used as source control measures for cyanidation facilities must be designed to minimize the interaction of meteoric waters, surface waters, and ground waters with wastes containing pollutants that are likely to be mobilized and discharged to waters of the state. Prior to issuance of a final permit, engineering plans and specifications for caps and covers must be signed and stamped by a professional engineer registered in the state of Idaho. (3-30-06)~~
- ~~vii. Include monitoring plans for surface and ground water during closure and post closure periods adequate to demonstrate water quality trends and to ensure compliance with the stated permanent closure objectives and requirements of these rules. (4-11-06)~~
- ~~viii. Provide an assessment of the potential impacts to soils and vegetation for all areas to be used for land application and provide a mitigation plan as appropriate. (4-11-06)~~
- ~~ix. Provide information on how the permittee will comply with the Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901 et seq.; the Idaho Hazardous Waste Management Act, Chapter 44, Title 39, Idaho Code; the Idaho Solid Waste Management Act, Chapter 74, Title 39, Idaho Code; and appropriate state rules, during operation and permanent closure. (3-30-06)~~
- ~~x. Provide sufficient detail to allow the permittee to prepare an estimate of the reasonable cost for the state of Idaho to hire a third party to implement the closure plan. (3-30-06)~~

u. The application shall be accompanied by a fee pursuant to Subsection 100.05. (3-30-06)

04. Application for a Small Cyanidation Processing Facility and Pilot Facility. The owner or proposed operator of a small cyanidation processing facility or the owner’s or operator’s authorized representative shall make application to the Director in writing of the intent to operate a small cyanidation processing facility or a pilot facility. The application shall include an explanation as to why the proposed small cyanidation processing facility qualifies as a small cyanidation processing facility or a pilot facility. The application must provide the information, plans and specifications identified in Subsection 100.03. (3-30-06)

05. Permit Application Fees. (3-30-06)

a. The application shall be accompanied by a fee as described below: (3-30-06)

i. Five thousand dollars (\$5,000) for a pilot facility; (3-30-06)

ii. Ten thousand dollars (\$10,000) for a small cyanidation processing facility; (3-30-06)

iii. Twenty thousand dollars (\$20,000) for a cyanidation facility that is neither a pilot facility nor a small cyanidation processing facility; or (3-30-06)

iv. In lieu of paying a fee at the time the application is submitted, an applicant may enter into an agreement with the Department for actual costs incurred to process an application and issue a final permit. If an applicant chooses to utilize the process in Section 201 for a preapplication alternative design proposal as part of the permit application, the applicant shall enter into an agreement with the Department for actual costs incurred to process the application, including the conceptual design report under Section 050. The applicant shall not commence

operations at the cyanidation facility until the terms of the agreement have been met, including that the Department has been reimbursed for all actual costs incurred for the permitting process. ~~(3-30-06)~~ ()

- b. Completeness of an application is contingent upon one (1) of the following: (3-30-06)
- i. Submission of the applicable fees as described in Subsections 100.05.a.i. through 100.05.a.iii.; or (3-30-06)
- ii. The applicant enters into an agreement with the Department as described in Subsection 100.05.a.iv. (3-30-06)

06. Exemptions to Fees. Requests made by the Department to the permittee for any permit modifications shall not be subject to application fees set forth in Subsection 100.05. Requests by the permittee for minor modifications to a permit shall not be subject to application fees set forth in Subsection 100.05. (3-30-06)

101. -- 199. (RESERVED).

200. REQUIREMENTS FOR WATER QUALITY PROTECTION.

The following design and performance standards are intended as the minimum criteria for protection of public health and the waters of the state. These standards shall apply to all facilities unless the Department determines that other site-specific criteria, including an alternative design approved under section 201, are appropriate to protect water quality and the public health. ~~(3-30-06)~~ ()

01. Cyanidation Facilities Siting and Preparation. All cyanidation facilities including, but not limited to, the process building, laboratories, process chemical storage and containment facilities, plumbing fixtures that support process water, untreated or treated process water ponds, tailings impoundments, ore stock piles, and spent ore disposal areas must be appropriately sited and prepared for construction. Siting criteria must ensure that, at a minimum, the facilities are structurally sound and that primary and secondary containment systems can be adequately protected against factors such as wild fires, floods, land slides, surface and ground water systems, equipment operation, subsidence of underground workings, public access and public activities. All sites must be properly prepared prior to construction of foundations and facilities. Vegetation, roots, brush, large woody debris and other deleterious materials, top soil, historic foundations and plumbing, or other materials that may adversely affect appropriate construction and long term stability, must be removed from the footprint of the cyanidation facility unless approved by the Department. (3-30-06)

02. Process Water Storage Sizing Criteria. All aspects of the cyanidation facility that entrain, utilize, treat, discharge, pump, or otherwise contain process water and pollutants shall be included in the water balance. The water balance shall include process water ponds, treated process water ponds, tailing impoundments, and water conveyance systems. The engineered containment criteria for each pond shall be incorporated into the water balance and must be designed to maintain a minimum two (2) foot freeboard at all times. At a minimum, a cyanidation facility shall be designed to contain the maximum expected normal operating water balance and the volume of run-on/run-off water associated with a climatic event that has a frequency of occurrence of one (1) year in one hundred (100) years or one percent (1%). Snowmelt events shall be considered in determining the containment capacity. Contingency plans for managing excesses of process water shall be described in the water management strategy. Each impoundment design must include a spillway, unless otherwise approved by the Department. (3-30-06)

03. Minimum Plans and Specifications for Impoundments, Leach Pads and Other Facilities Designed to Contain Process Water. ~~Engineering plans and specifications, which are signed and stamped by a professional engineer registered in the state of Idaho, must be approved and included in the final permit issued by the Department prior to construction of cyanidation facilities that are designed to contain process waters. Unless the Department approves an alternative design under Section 201, The~~ the plans and specifications for any portion of a cyanidation facility that will contain process water must provide for the following: ~~(3-30-06)~~ ()

~~a. A prepared subbase of compacted soil, which shall be a minimum of twelve (12) inches thick. The soil must be compacted to ninety five percent (95%) of Standard Proctor Test ASTM 698 or ninety five percent (95%) of Modified Proctor Test ASTM 1557. The compacted soil layers must be placed in a minimum of two (2) lifts; (3-30-06)~~

- ~~b. A prepared subbase, which shall be free of plus three (3) inch rocks, roots, brush, trash, debris or other deleterious materials; (3-30-06)~~
- ~~c. Primary containment synthetic liners, which shall have a minimum thickness of eighty (80) milli-inches (2.0 mm) consisting of high density polyethylene (HDPE) material and a maximum coefficient of permeability of 10^{-11} cm/sec, or comparable liners approved by the Department; (3-30-06)~~
- ~~d. A final smoothed and compacted soil layer, which shall not contain particles in excess of point seven five (0.75) inches (nineteen (19) mm) in diameter and have a maximum coefficient of permeability of 10^{-6} cm/sec, or comparable liners approved by the Department; (3-30-06)~~
- a. A primary containment system consisting of the following:**
- ~~i. A prepared subbase of compacted soil, which shall be a minimum of twelve (12) inches thick. The soil must be compacted to ninety-five percent (95%) of Standard Proctor Test ASTM 698 or ninety-five percent (95%) of Modified Proctor Test ASTM 1557. The compacted soil layers must be placed in a minimum of two (2) lifts, which shall be free of plus three (3) inch rocks, roots, brush, trash, debris or other deleterious materials; ()~~
- ~~ii. A final smoothed and compacted soil layer with minimum compacted thickness of twenty four (24) inches between the subbase and primary liner, which shall not contain particles in excess of point seven five (0.75) inches (nineteen (19) mm) in diameter and have a maximum coefficient of permeability of 10^{-6} cm/sec, or comparable liners approved by the Department. Compacted clay liners (CCLs), when used for this layer, which shall be placed within two percent (2%) of optimum moisture content for the CCL to achieve specified compaction and permeability criteria; and ()~~
- ~~iii. Primary containment synthetic liners, which shall have a minimum thickness of eighty (80) milli-inches (2.0 mm) consisting of high-density polyethylene (HDPE) material and a maximum coefficient of permeability of 10^{-11} cm/sec, or comparable liners approved by the Department; ()~~
- b. Where process waters may place an average of twelve (12) inches or greater of hydraulic head pressure on primary containment liner, the plans and specifications must provide for a secondary containment system consisting of the following: ()**
- ~~i. Leak detection and collection system that provides material between primary and secondary containment liners to collect, transport and remove all process water that passes through the primary containment liner at such a rate as to prevent hydraulic head from developing on the secondary containment liner to the level at which it may be reasonably expected to result in discharges through the secondary containment synthetic liner; ()~~
- ~~ii. Secondary containment synthetic liners, which shall have a minimum thickness of eighty (80) milli-inches (two (2.0) mm) consisting of HDPE and a maximum coefficient of permeability of 10^{-11} cm/sec, or comparable liners approved by the Department; ()~~
- ~~iii. Provide routines and schedules for the evaluation of the efficiency and effectiveness of the removal of process waters from the leak collection system. The properly working system shall continually relieve head pressures on the secondary containment synthetic liner; ()~~
- ~~iv. Provide specific triggers for maintenance routines, which shall be initiated in response to inadequate performance of primary or secondary containment synthetic liners; and ()~~
- ~~v. Specify operation and maintenance procedures, which shall be initiated in response to inadequate performance of primary and secondary containment or leak detection and collection systems; ()~~
- ec. All ~~primary~~ primary and secondary liner systems, which shall be constructed according to manufacturers' standards, or Department-approved design standards, and which must protect against cracking, sun damage, ice, frost penetration or heaving, wildlife and wildfires, and damage that may be caused by personnel or equipment operating in or around these facilities; (3-30-06) ()**
- ~~f. Compacted clay liners (CCLs), which shall be placed within two percent (2%) of optimum moisture content for the CCL to achieve specified compaction and permeability criteria; (3-30-06)~~

gd. An appropriate interface friction strength plus a factor of safety when either a geosynthetic clay liner (GCL) or CCL is used with a geomembrane liner on a slope; (3-30-06) ()

he. Minimum factors of safety, and the logic behind their selection, for the stability of the earthworks and the lining systems of heap leach pads and ponds; (3-30-06) ()

if. Redundant systems, which shall be available if there are failures in primary power and/or pumping systems; **and** (3-30-06) ()

ig. Procedures for loading ore onto the leach pads which will minimize tensile stresses in the primary and secondary containment liners that may result in failure of the liners; **and**. (3-30-06) ()

~~**k.** Leak detection and collection systems, which shall be designed and installed for all facilities, or portions thereof, where process waters may place an average of twelve (12) inches or greater of hydraulic head pressure on primary containment. The engineering plans and specifications shall: (3-30-06)~~

~~**i.** Provide a material between primary and secondary containment synthetic liners to collect, transport and remove all process water that passes through the primary containment synthetic liner at such a rate as to prevent hydraulic head from developing on the secondary containment synthetic liner to the level at which it may be reasonably expected to result in discharges through the secondary containment synthetic liner; (3-30-06)~~

~~**ii.** Provide routines and schedules for the evaluation of the efficiency and effectiveness of the removal of process waters from the layer placed between primary and secondary containment synthetic liners. The properly working system shall continually relieve head pressures on the secondary containment synthetic liner; (3-30-06)~~

~~**iii.** Provide specific triggers for maintenance routines, which shall be initiated in response to inadequate performance of primary or secondary containment synthetic liners; (3-30-06)~~

~~**iv.** Specify operation and maintenance procedures, which shall be initiated in response to inadequate performance of primary and secondary containment or leak detection and collection systems; and (3-30-06)~~

~~**v.** Provide secondary containment synthetic liners, which shall have a minimum thickness of eighty (80) milli inches (two (2.0) mm) consisting of HDPE and a maximum coefficient of permeability of 10^{-14} -cm/sec, or comparable liners approved by the Department. (3-30-06)~~

04. Process Buildings, Process Chemical Storage Containment Areas and General Facility Criteria. Storage, handling and use of all process chemicals, process wastes, process water and pollutants must be conducted within a clean, safe and secure work space to prevent unauthorized discharges to soils, ground water or surface water. The plans and specifications must contain sufficient detail, including pump capacity and plumbing for evacuation of collection sumps, triggering systems for sump evacuation, and monitoring and reporting requirements. ~~Plans and specifications must be submitted with the application for the Department's review and approval. Prior to construction, plans and specifications for the process buildings and auxiliary facilities, including process chemical storage and containment facilities and laboratories, must be signed and stamped by a professional engineer registered in the state of Idaho.~~ Where appropriate, these plans and specifications must provide for: (3-30-06)

a. Structural integrity of the foundation, walls and roof for process and process chemical storage buildings. (3-30-06)

b. Restriction of public access. (3-30-06)

c. Protection of wildlife. (3-30-06)

d. Internal sumps and spill cleanup plans. (3-30-06)

e. Grouted and sealed concrete stemmed walls and floors in the process and process chemical storage and containment facilities. (3-30-06)

- f. Vapor barriers and frost protection. (3-30-06)
- g. Segregation of process chemicals according to compatibility. (3-30-06)
- h. Communication systems. (3-30-06)
- i. Fire suppression systems, internal and external. (3-30-06)
- j. Quality assurance and quality control for construction activities and construction materials.(3-30-06)

05. Cap and Cover Criteria. Caps and covers used as source control measures for facilities must be designed and constructed to minimize the interaction of meteoric waters, surface waters, and ground waters with wastes containing pollutants that are likely to be mobilized and discharged to waters of the state. Caps and covers designed for permanent closure must demonstrate permanence applicable to the permittee's designed and approved permanent closure plan. ~~Prior to issuance of a final permit, engineering plans and specifications for caps and covers must be signed and stamped by a professional engineer registered in the state of Idaho.~~ (3-30-06)

06. Plumbing and Conveyance Criteria. ~~Engineering plans and specifications must be submitted to the Department for review and approval.~~ Plumbing and conveyance systems shall be structurally sound and chemically compatible with the materials being conveyed; shall provide adequate primary and secondary containment; and shall be protected against heat, cold, mechanical failures, impacts, fires, and other factors which may cause breakage and result in unauthorized discharges. ~~Prior to construction, engineering plans and specifications of all conveyances of materials containing process water must be signed and stamped by a professional engineer registered in the state of Idaho.~~ (3-30-06)

07. Operation and Maintenance Plans. Operation and maintenance plans must be submitted to the Department for review and approval. Operation and maintenance plans must include, but are not limited to:(3-30-06)

- a. An overall plan that includes techniques for evaluating the integrity and performance of all primary and secondary containment systems. (3-30-06)
- b. Schedule for inspections of all primary and secondary containment systems. (3-30-06)
- c. Schedule for inspections on piping and conveyance systems that carry process water. (3-30-06)
- d. Response plans that detail specific actions that will result in mitigation of compromised or damaged containment systems. (3-30-06)

08. Water Quality Monitoring and Reporting. The water quality monitoring plan submitted with the application shall be reviewed and, if appropriate, approved by the Department. The approved water quality monitoring plan shall: (3-30-06)

- a. Provide for physical, chemical and biological monitoring, including surface water flow measurements, in potentially affected surface and ground water, as appropriate. (3-30-06)
- b. Provide for sampling locations and frequency. (3-30-06)
- c. Provide an assessment of the existing surface and ground water conditions prior to construction of the proposed cyanidation facility. (3-30-06)
- d. Be site specific and dependent on location, design and operation of the cyanidation facilities included in the overall operating plan. (3-30-06)
- e. Specify compliance points and associated water quality compliance criteria. (3-30-06)
- f. Specify monitoring points, which will provide for early detection of discharges of pollutants. (3-30-06)

- g.** Provide analytical methods and method detection limits for chemical analysis used in the determination of water quality. (3-30-06)
 - h.** Provide a quality assurance quality control plan for data collection and analysis. (3-30-06)
 - i.** Provide for appropriate and timely analytical data analyses including evaluations of water quality and quantity trends. (3-30-06)
 - j.** Provide an annual environmental monitoring and data analysis report of water quality and quantity trends. (3-30-06)
 - k.** Provide for the reporting and re-sampling of monitoring locations where detectable and statistically significant changes in water quality are found. The permittee shall propose a statistical method to determine the significance of the changes in water quality. (3-30-06)
 - l.** Provide for anticipated changes or modifications to monitoring plans, which may be the result of a phased approach to cyanidation facility construction, operations and permanent closure. (3-30-06)
- 09. Monitoring Wells Siting and Construction Plans.** The applicant is encouraged to submit the purpose, objectives, location and proposed construction of monitoring wells to the Department for review and comment during the initial stages of site characterization. (3-30-06)
- a.** Monitoring well siting and construction plans shall provide for a minimum of three (3) monitoring wells. One (1) shall be located up gradient and two (2) shall be located down gradient of primary components of the cyanidation facility to determine ground water flow direction. (3-30-06)
 - b.** Siting and planning for additional wells or replacement wells may be required in the permit application and final permit. Specifically, additional wells may be required for: (3-30-06)
 - i.** Large areas with multiple potential sources for pollutants; (3-30-06)
 - ii.** Areas with complex geology, fractured bedrock; and (3-30-06)
 - iii.** Areas with insufficient background hydrogeology. (3-30-06)
 - c.** All monitoring well construction must also conform to the well construction rules listed in IDAPA 37.03.09, "Well Construction Standards Rules". (3-30-06)
 - d.** Record diagrams along with a detailed geologic log shall be provided to the Department for each monitoring well. (3-30-06)
- 10. Land Application.** ~~Prior to issuance of a final permit, plans and specifications for the construction or modification of land application of process water disposal systems shall be submitted to and approved by the Department. All plans and specifications for the construction, operation and closure of land application or other waste treatment or disposal facilities or modification must be signed and stamped by a registered professional engineer licensed in the state of Idaho.~~ Plans and specifications shall include: (3-30-06)
- a.** An operation and maintenance plan including: (3-30-06)
 - i.** Water balance for the land application site. (3-30-06)
 - ii.** Pretreatment requirements and procedures. (3-30-06)
 - iii.** Operating season for land application. (3-30-06)
 - iv.** Seasonal closeout procedures. (3-30-06)
 - v.** Special soils or vegetative amendments. (3-30-06)

- vi. Storm water run-on/run-off controls. (3-30-06)
 - vii. Best management practices for all areas impacted by the land application system. (3-30-06)
 - viii. A topographic map of the land application site and adjacent affected areas, of sufficient scale to facilitate site-specific analysis of soils, vegetation, surface water and ground water. (3-30-06)
 - b. Chemical, physical, and volumetric characteristics of the process water to be land applied.(3-30-06)
 - c. A complete description of the chemical and physical characteristics of the soils and applicable geology of the land application site. (3-30-06)
 - d. Methods of process water treatment, distribution and disposal. (3-30-06)
 - e. Hydraulic loading capacity of the soils. (3-30-06)
 - f. Constituent loading capacity of the site. (3-30-06)
 - g. Attenuation capacity of the vegetative covers and soils. (3-30-06)
 - h. Evapotranspiration capacity of the site. (3-30-06)
 - i. Testing and analytical procedures for water quality and soils samples prior to, during, and following the land application process. (3-30-06)
 - j. Trend analysis of the constituent loading in the affected soils, vegetation and water quality of the affected surface or ground water systems. (3-30-06)
 - k. Reporting requirements including both frequency and form. (3-30-06)
 - l. Standby power and pumps sufficient to maintain all treatment and distribution works. (3-30-06)
- 11. Temporary or Seasonal Closure.** Temporary and seasonal closure plans for the entire cyanidation facility must be submitted by an applicant to the Department for review and approval prior to issuance of a final permit. Temporary and seasonal closure plans may, subject to Department approval pursuant to Section 750, be modified to provide for changes in operating conditions of the facilities and must incorporate a water management plan for the period of inactivity as well as during shut down and reactivation. (3-30-06)
- a. Prior to seasonal closure, process buildings, process chemical storage, process water ponds, tailings ponds-impoundments, spent ore disposal areas and other ancillary facilities must be stabilized and/or conditioned to prevent any emergency or unauthorized discharges to surface or ground water. (~~3-30-06~~)()
 - b. Subsequent to seasonal closure, process buildings, process chemical storage, process water ponds, tailings ponds-impoundments, spent ore disposal areas and other ancillary facilities must be maintained to prevent any emergency or unauthorized discharges to surface or ground water. Cyanidation facilities shall be conditioned and maintained to provide: (~~3-30-06~~)()
 - i. Material stabilization for all solids affected by process waters. (3-30-06)
 - ii. Optimum freeboard in all ponds, as dictated by the water management plan. (3-30-06)
 - iii. Fully functional power and pumping systems that are ready for use; both power and pumps shall have incorporated redundant systems to allow for failure of either power or a pumping system. A failed power supply or pump is not an acceptable reason for an unauthorized discharge. (3-30-06)
 - iv. Protection of all primary and secondary containment. (3-30-06)

v. Sufficient availability of qualified staff to restrict public access, fully implement the water quality monitoring plan, and initiate the emergency and spill response plan. (3-30-06)

12. Employee Education Program. Operators and staff of facilities must be properly oriented and trained to operate, maintain and protect primary and secondary containment systems; waste disposal and discharge systems; and to implement monitoring and emergency and spill response plans. An applicant must submit an employee orientation and continuing training plan to the Department for review prior to issuance of a final permit. The plan must provide the format and contents for training, the general qualifications of the person(s) responsible for training and testing, and the person(s) or positions which should receive such training. (3-30-06)

201. ALTERNATIVE PLANS AND SPECIFICATIONS FOR TAILINGS IMPOUNDMENTS DESIGNED TO CONTAIN PROCESS WATER

An applicant may propose an alternative to the tailings impoundment design requirements identified in Subsection 200.03 based on site-specific conditions and best practical methods to protect water quality and human health. All other requirements in Section 200, except for Subsection 200.03, apply to alternative design proposals. ()

01. Alternative Design Proposal. The applicant must demonstrate that the alternative design proposal will protect water quality and human health by validating that the alternative to the minimum design criteria in Subsection 200.03 is appropriate based on the WAD cyanide concentration and chemical characteristics of materials contained; the physical characteristics of the materials contained; site-specific soil, geology, hydrology, and hydrogeology characteristics; degree to which hydraulic head on the impoundment liner is minimized; impoundment area and volume; depth to groundwater; methods employed in depositing the impounded material; potential for leaks and impacts to water quality; and risk to human health and the environment. The alternative design proposal must provide an evaluation based on site-specific data and supported by best available science demonstrating that process water and process-contaminated water are safely contained, controlled and treated to not interfere with the beneficial uses of the waters of the state, not endanger public safety or the environment, and achieve all applicable water quality and ground water quality standards. The alternative design proposal must, at a minimum, include: ()

a. An hydrogeology assessment of site characteristics including depth to groundwater; distance to surface water; hydrogeology and stratigraphy of the site; groundwater and surface water interaction; and the quality, characteristics and existing and future beneficial uses of groundwater and surface water that may be potentially affected by the proposed facility; ()

b. An engineering assessment including proposed design of each component of the containment system including type and thickness of the liner and base; types of materials to be used and methods of placement of those materials; structures, devices and techniques for controlling drainage and minimizing solution loss; method to control internal hydraulic head; and a system to detect and monitor leaks; and ()

c. A water quality assessment providing an analysis of potential for the facility to degrade waters of the state including the effect of groundwater and surface water interactions, the potential for process water to reach waters of the state, and the potential impact. ()

02. Alternative design proposals shall be provided to the Department during Conceptual Design Approval (Section 050) and evaluated for approval or disapproval under Subsection 050.02. ()

03. Department Review. In evaluating alternative design proposals, the Department shall consider the WAD cyanide concentration and other materials contained in facilities receiving process water, site hydrogeology, advances in liner technology, alternative designs implemented at other facilities receiving process water, and other site-specific factors in determining if a proposed alternative is appropriate to protect water quality and the public health. ()

04. Cost Recovery Agreement. As provided in Subsection 100.05.a.iv, the applicant shall enter into an agreement with the Department for actual costs incurred to process an alternative design proposal under this subsection. The Department may utilize a third-party to support Department review of the alternative design proposal. ()

202 -- 299. (RESERVED).

300. APPLICATION PROCESSING PROCEDURE.

(BREAK IN CONTINUITY)

03. Accuracy and Protectiveness Review. Within sixty (60) days of receipt of an application and upon determination by the Department that the application is complete, the Department will review the application for accuracy and protectiveness based on these and other applicable rules including, but not limited to, IDAPA 58.01.02, “Water Quality Standards ~~and Wastewater Treatment Requirements,~~” and IDAPA 58.01.11, “Ground Water Quality Rule.” ~~(3-30-06)~~ ()

(BREAK IN CONTINUITY)

450. FINAL PERMIT DECISION.

(BREAK IN CONTINUITY)

- 04. Basis for Permit Denial.** The Director shall deny a permit if: (3-30-06)
- a. The application is incomplete or inaccurate; (3-30-06)
 - b. The cyanidation facility as proposed cannot be conditioned for construction, operation, and closure so as to comply with applicable state law; or (3-30-06)
 - c. The Idaho Department of Lands has determined that the permanent closure plan does not meet the requirements of Chapter 15, Title 47, Idaho Code, and the rules promulgated thereunder. ~~(3-30-06)~~ ()
- 05. Immediate Effect of the Permit.** A valid permit authorizes the construction and operation of a cyanidation facility. (1-1-88)

451. -- 499. (RESERVED).

500. PERMIT CONDITIONS.

(BREAK IN CONTINUITY)

- 06. Reporting.** It shall be the permittee’s responsibility to report to the Director: (1-1-88)
- a. Orally, as soon as possible but no later than twenty-four (24) hours from the time the permittee knows or should reasonably know of any noncompliance which may endanger the public health or the environment. (1-1-88)
 - b. In writing, within five (5) working days from the time a permittee knows or should reasonably know of any event which may be or which may result in a violation of these rules, or ~~Idaho Department of Environmental Quality Rules,~~ IDAPA 58.01.02, “Water Quality Standards ~~and Wastewater Treatment Requirements,~~” or IDAPA 58.01.11, “Ground Water Quality Rule.” This report shall contain: ~~(3-30-06)~~ ()
 - i. A description of the event and its cause; if the cause is not known, steps taken to investigate and determine the cause; (1-1-88)
 - ii. The period of the event including, to the extent possible, the individual(s) involved in the incident(s) and the time(s) and date(s) of the incidents; (3-30-06)
 - iii. Measures taken to mitigate or eliminate the event and protect the public health; and (3-30-06)
 - iv. Steps taken to prevent recurrence of the event. (3-30-06)

(BREAK IN CONTINUITY)

10. Permanent Closure. The permanent closure plan, as approved by the ~~Idaho Department of Environmental Quality~~ in coordination with the Idaho Department of Lands, shall be incorporated by reference into the Department-issued permit as a permit condition and shall be enforceable as such. The Department may evaluate permanent closure based on different performance standards than those used by the Idaho Department of Lands.

~~(3-30-06)~~ ()

501. COMPLETION OF PERMANENT CLOSURE.

(BREAK IN CONTINUITY)

02. Submittal of a Permanent Closure Report. The permittee shall submit a permanent closure report to the Department for review and approval. A permanent closure report shall be of sufficient detail for the directors of the ~~Idaho Department of Environmental Quality~~ and the Idaho Department of Lands to issue a determination that permanent closure, as defined in Section 007 of these rules, has been achieved. The permanent closure report shall address:

~~(3-30-06)~~ ()

(BREAK IN CONTINUITY)

650. FINANCIAL ASSURANCE.

01. Financial Assurance Required. The permittee is required to provide financial assurance pursuant to the Idaho ~~Surface Mining~~ Mined Land Reclamation Act, Chapter 15, Title 47, Idaho Code, and the rules promulgated thereunder. The Department shall not issue a permit under these rules to a cyanidation facility unless the cyanidation facility has satisfied such financial assurance requirements.

~~(4-11-06)~~ ()

02. Insufficiency. In the event the financial assurance is forfeited as described in the Idaho ~~Surface Mining~~ Mined Land Reclamation Act, Chapter 15, Title 47, Idaho Code, the Department may seek to recover the amount necessary to implement permanent closure under the Department-issued permit and these rules as provided by law.

~~(4-11-06)~~ ()

(BREAK IN CONTINUITY)

850. PERMIT REVOCATION.

(BREAK IN CONTINUITY)

02. Revocation Hearing. If the Director decides to revoke a permit, he shall issue a notice of intent which shall become final within thirty-five (35) days of service upon the permittee, unless the permittee requests in writing an administrative hearing. The hearing shall be conducted in accordance with IDAPA 58.01.23, "Rules of Administrative Procedure Before the Board of Environmental Quality."

~~(5-3-03)~~ ()

(BREAK IN CONTINUITY)

APPENDIX A

APPLICATION PROCESSING TIME LINE FOR DIRECTOR'S FINAL DECISION

IDAPA 58.01.13, RULES FOR ORE PROCESSING BY CYANIDATION

The following chart illustrates the time line for processing a permit application and references the corresponding sections from IDAPA 58.01.13.



| Application Received | 30 days | 60 days | 90 days | 120 days | 150 days | 180 days |
|------------------------------------|---|--|---|--|-----------------|--|
| Completeness Review (300.02) | Accuracy & Protectiveness Review (300.03) | | | | | Complete Formal Response to Public Comment (450.02) |
| | | | | | | Director's Decision to Issue or Deny the Permit (450.01) |
| Public Notice Begin Public Comment | Within 30 Days of Receipt of Application (300.01) | Within 60 Days of Receipt of Application Notice of Intent to Draft or Deny a Permit form from the Application (300.04) | Within 30 Days of First Notice of Intent to Draft or Deny a Permit from the Application Hold a Public Meeting (400.05.a.) | Within 60 Days of First Notice of Intent to Draft or Deny a Permit from the Application End to Public Comment Period (400.05.b.) | | Within 180 Days of Receipt of Application Permit will be Issued or Denied (500.01) |

