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May 13, 2019

Paula Wilson
Idaho Department of Environmental Quality
1410 N. Hilton, Boise, ID 83706

Submitted via email: paula.wilson@deq.idaho.gov

**Re: DEQ Negotiated Rulemaking - Ore Processing by Cyanidation,
Docket No. 58-0113-1901**

Dear Ms. Wilson:

The Idaho Mining Association (IMA) appreciates the opportunity to provide the following comments on the DEQ Rulemaking regarding ore processing by cyanidation.

Since 1903, IMA has represented miners and mining companies engaged in mineral exploration, mineral developments, and land reclamation throughout the state of Idaho. Our membership also consists of companies and industries that provide services to the mining industry within the state. IMA and its members are committed to responsible and sustainable mineral withdrawal in Idaho and our member companies continue to utilize and explore more innovative and science backed methods to extract minerals needed for everyday life while protecting and preserving the environment in Idaho for future generations.

On behalf of our membership, I am attaching revisions to the Cyanidation Rule in redline strikeout format for your consideration. The principal proposed changes apply to Section 200, Requirements for Water Quality Protection. As outlined in my letter of March 18, 2019, IMA believes it is appropriate for the Idaho Department of Environmental Quality (IDEQ) to evaluate alternative, performance based, design applications that consider updated technical engineering and practices for the specific location, type and use of a facility. We have outlined a variety of factors that IDEQ should consider in determining whether an alternative design is appropriate in lieu of following the existing minimum standards outlined in Section 200.03. We also suggest some minor changes in Section 200.03 to ensure natural material (clay) can be utilized more readily as a liner material. Finally, we have proposed removing some of the definitions in the Rule, and associated references throughout the Rule, because such definitions are no longer relevant.

IMA believes the proposed changes to the Rule are minor and provide IDEQ appropriate discretion to approve alternative design standards that are protective of human health and the environment.

At the Rule-making meeting on May 13, 2019, it was suggested that any changes to the Rule would need to comply with the requirements of Idaho Code Section 39-107D. Since the proposed changes to the Rule simply allow IDEQ discretion to approve alternative design standards based on a variety of facility-specific considerations, we are unclear how or if the statute would apply to IMA's proposed changes. IMA assumes that IDEQ would apply best available science in approving any alternative design. Nevertheless, IMA is in the process of gathering additional information on alternative designs for cyanidation facilities that have been successfully implemented in other states, and we will provide that information to IDEQ over the next few weeks.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. J. Davenport", with a large, sweeping flourish extending to the right.

Benjamin J. Davenport

- 2. 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," 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)
- 3. Cyanidation.** The method of extracting target precious metals from ores by treatment with a cyanide solution, which is the primary leaching agent for extraction. (4-11-06)
- 4. Cyanidation Facility.** That portion of a new ore processing facility, or a material modification or a material expansion of that portion of an existing ore processing facility, that utilizes cyanidation and is intended to contain, treat, or dispose of cyanide containing materials including spent ore, tailings and process water. (4-11-06)
- 5. Department.** The Idaho Department of Environmental Quality. (1-1-88)
- 6. Director.** The Director of the Department of Environmental Quality or his designee. (12-31-91)
- 7. Discharge.** When used without qualification, any spilling, leaking, emitting, escaping, leaching, or disposing of a pollutant into the waters of the state. (4-11-06)
- 8. Groundwater.** Any water of the state which occurs beneath the surface of the earth in a saturated geological formation of rock or soil. (4-11-06)
- 9. Impoundment.** For the purpose of these rules an impoundment means a structure such as a pond, reservoir, tank, or vat that collects and confines liquids or slurries. (7-1-97)
- 10. Land Application.** A process or activity involving application of process water, wastewater, surface water, or semi-liquid material to the land for the purpose of disposal, pollutant removal, or groundwater recharge. (3-30-06)
- 11. Liner.** A continuous layer of natural or man-made materials beneath and, if applicable, on the sides of a surface impoundment or leach pad which restricts the downward and lateral movement of liquids. (3-30-06)
- 12. Material Modification or Material Expansion.** (4-11-06)

 - a.** The addition of a new beneficiation process, or a significant change in the capacity of an existing beneficiation process, which was not identified in the original application and that significantly increases the potential to degrade the waters of the state. Such process could include, but is not limited to, heap leaching and process components for milling; or (3-30-06)
 - b.** A significant change in the location of a proposed process component or site condition which was not adequately described in the original application; or (4-11-06)
 - c.** A change in the beneficiation process that alters the characteristics of the waste stream in a way that significantly increases the potential to degrade the waters of the state. (4-11-06)
 - d.** For a cyanidation facility with an existing permit that did not actively add cyanide after January 1, 2005, reclamation and closure related activities shall not be considered to be material modifications or material expansions of the cyanidation facility. (3-30-06)
- 13. Material Stabilization.** Managing or treating spent ore, tailings or other solids and/or sludges resulting from the cyanidation process to minimize waters or all other applied solutions from migrating through the material and transporting pollutants associated with the cyanidation facility to ensure that all discharges comply with all applicable standards and criteria. (3-30-06)
- 14. ~~National Idaho~~ Pollution Discharge Elimination System (~~NPDES~~~~IPDES~~) Permit.** A permit issued by the ~~U.S. Environmental Protection Agency~~ Department for the purpose of regulating discharges into surface waters. (3-30-06)

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

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

~~d. To maintain current beneficial use (refer to Idaho Department of Environmental Quality Rules, IDAPA 58.01.02, "Water Quality Standards," 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"). (1-25-95)~~

~~28.27. **State.** The state of Idaho. (12-31-91)~~

~~29.28. **Temporary Closure.** Any cessation of operations exceeding thirty (30) days, other than seasonal or permanent. (1-1-88)~~

~~30.29. **Treatment.** Any method, technique or process, including neutralization, designed to change the physical, chemical, or biological character or composition of a waste for the purpose of disposal. (1-1-88)~~

~~31.30. **Water Balance.** An inventory and accounting process, capable of being reconciled, that integrates all potential sources of water that are entrained in the cyanidation facility or may enter into or exit from the cyanidation facility. The inventory must include the water holding capacity of specific structures within the facility that contain process water. The water balance is used to ensure that all process water and other pollutants can be contained as engineered and designed within a factor of safety as determined in the permanent closure plan. (3-30-06)~~

~~32.31. **Water Management Plan.** A document that describes the results of the water balance and the methods that will be used to ensure that pollutants are not discharged from a cyanidation facility into waters of the state unless permitted or otherwise approved by the Department. (4-11-06)~~

~~33.32. **Waters of the State.** All the accumulations of water, surface and underground, natural and artificial, public or private, or parts thereof which are wholly or partially within, which flow through or border upon the state. These waters shall not include municipal or industrial wastewater treatment or storage structures or private reservoirs, the operation of which has no effect on waters of the state. (4-11-06)~~

~~34. **Weak Acid Dissociable (WAD) Cyanide.** The cyanide concentration as determined by Method C, Weak Acid Dissociable Cyanide, D2036 of American Society of Testing Materials Book of Standards, "Standard Methods for the Examination of Water and Wastewater," Method 4500 CN I, or other methods accepted by the scientific community and deemed appropriate by the Department. (4-11-06)~~

008. -- 009. (RESERVED)

10. 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)

11. -- 049. (RESERVED)

50. CONCEPTUAL DESIGN APPROVAL.

1. Information Required for Conceptual Design Approval. Submittal of a Conceptual Design Report is not mandatory. 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. (3-30-06)

2. Notice of Conceptual Design Approval or Disapproval. 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. 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)

3. 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, tailing 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)

51. -- 099. (RESERVED)

100. PERMIT AND PERMIT APPLICATION.

1. 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)

2. 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)

3. 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"; 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." 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: (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 resource waters within one (1) mile of the cyanidation facility; (4-11-06)~~
- ~~**viii-vii.**~~ 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)

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/DES/DES 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 the Idaho Department of Lands pursuant to the Idaho Surface Mining Act, Chapter 15, Title 47, Idaho Code. 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)

4. 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. 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 are appropriate to protect water quality and the public health~~ alternative design and performance standards to those specified in Subsection 03 are appropriate. Such an alternative design may be proposed by an owner or operator and shall apply best practical methods to protect water quality. In evaluating an alternative design, the Department shall consider cyanide concentrations and other materials contained in facilities, hydrogeology, practicability, advances in liner technology, alternative designs implemented at other facilities which protect water quality and any other site-specific factors.

(3-30-06)

1. 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)

2. 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)

3. 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. The plans and specifications must provide for: (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; with the upper six (6) inch lift of the prepared subbase, which shall be free of plus three (3) inch rocks, roots, brush, trash, debris or other deleterious materials; (3-30-06)

b. ~~A The upper six (6) inch lift of the prepared subbase, which shall be free of plus three (3) inch rocks, roots, brush, trash, debris or other deleterious materials;~~ (3-30-06)

e.b. Primary containment synthetic liners when used, 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.c. A final smoothed and compacted soil layer, which Compacted clay liners (CCLs) when used shall be smoothed and 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 and shall be placed within two percent (2%) of optimum moisture content for the CCL to achieve specified compaction and permeability criteria; (3-30-06)

e.d. ~~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.d. ~~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)

g.d. 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)

h.c. 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)

f. All primary and secondary liner systems 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)

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

h. 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)

i. 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^{-11} cm/sec, or a smoothed compacted clay liner, which shall not contain particles in excess of point seven five (0.75) inches (nineteen (19) mm) in diameter and have maximum coefficient of permeability of 10^{-6} cm/sec, or comparable liners approved by the Department. (3-30-06)

4. 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)

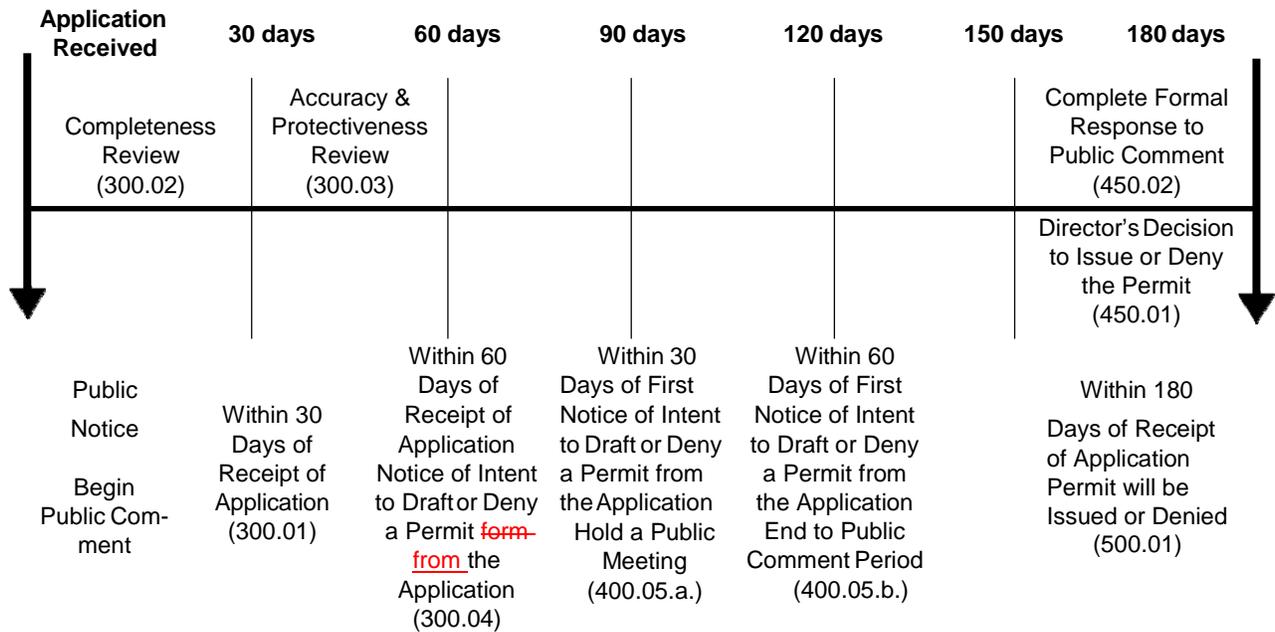
d. Internal sumps and spill cleanup plans. (3-30-06)

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.



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