## IDAPA 37 – DEPARTMENT OF WATER RESOURCES

## Water Allocations Bureau

## 37.03.05 – Mine Tailings Impoundment Structures Rules

**Who does this rule apply to**?
*Owners of new or existing dam or mine tailings impoundment structures.*

**What is the purpose of this rule**?
*These rules establish acceptable construction standards and govern IDWR's design and technical review of mine tailing and water impoundment structures. The Rule also supports the collection of a fee to review plans, drawings, and specifications pertaining to any mine tailings impoundment structure.*

**What is the legal authority for the agency to promulgate this rule**?
*This rule implements the following statutes passed by the Idaho Legislature:*

Water Resource Board:

- Sections 42-1710, Idaho Code – Intent of Legislature – Construction, Maintenance and Operation of Dams and Mine Tailings Impoundment Structures
- Sections 42-1713, Idaho Code – Fees
- Sections 42-1714, Idaho Code – Rules

**Who do I contact for more information on this rule**?

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***This rule chapter will be reviewed in compliance with Section 67-5292, Idaho Code, and in accordance with the 8-year rule review schedule linked here.***

# *Table of Contents*

## 37.03.05 – Mine Tailings Impoundment Structures Rules


000. Legal Authority (Rule 0). ..... 3
001. Scope (Rule 1). ..... 3
002. -- 009. (Reserved) ..... 3
010. Definitions (Rule 10). ..... 3
011. -- 024. (Reserved) ..... 4
025. Authority Of Representative (Rule 25). ..... 4
026. -- 029. (Reserved) ..... 4
030. Forms (Rule 30). ..... 4
031. -- 034. (Reserved) ..... 4
035. Plans, Drawings, And Specifications (Rule 35). ..... 4
036. -- 039. (Reserved) ..... 7
040. Bonding (Rule 40). ..... 7
041. -- 044. (Reserved) ..... 8
045. Mine Tailings Impoundment Structures Design Criteria (Rule 45). ..... 8
046. -- 049. (Reserved) ..... 11
050. Dams Storing Tailing And Water (Rule 50). ..... 12
051. -- 054. (Reserved) ..... 12
055. Provisions Of Chapter 17, Title 42, Idaho Code (Rule 55). ..... 12
056. -- 999. (Reserved) ..... 12

**000. LEGAL AUTHORITY (RULE 0).**
These rules are adopted pursuant to Section 42-1714, Idaho Code. (3-30-23)

**001. SCOPE (RULE 1).**

**01. Scope**. (3-30-23)

**a.** These rules and standards will only apply to structures upon which construction, lift construction, enlargement, or alteration is underway on or after July l, 1978. Under no circumstances shall these rules be construed to deprive or limit the Director of the Department of Water Resources of any exercise of powers, duties and jurisdiction conferred by law, nor to limit or restrict the amount or character of data, or information which may be required by the Director from any owner of a mine tailings impoundment structure for the proper administration of the law. (3-30-23)

**b.** The design requirements listed are intended as a guide to establish acceptable standards of construction. They are not intended to restrict the application of other sound design principles by engineers. The Director will evaluate any deviation from the standards hereinafter stated as they pertain to the safety of any given mine tailings impoundment structure. Engineers are encouraged to submit new ideas which will advance the art and provide for the public safety. (3-30-23)

**002. -- 009. (RESERVED)**

**010. DEFINITIONS (RULE 10).**
Unless the context otherwise requires, the following definitions govern these rules. (3-30-23)

**01. Board**. The Idaho Water Resource Board. (3-30-23)

**02. Director**. The Director of the Idaho Department of Water Resources. (3-30-23)

**03. Department**. The Idaho Department of Water Resources. (3-30-23)

**04. Mine Tailings Impoundment Structure**. Any artificial embankment which is or will be more than thirty (30) feet in height measured from the lowest elevation of the toe to the maximum crest elevation constructed for the purpose of storing mine tailings slurry. (3-30-23)

**05. Mine Tailings Slurry**. All slurry wastes from a mineral processing or mining operation. (3-30-23)

**06. Mine Tailings Storage Capacity**. The total storage volume of the impoundment when filled with tailings to the maximum approved design storage elevation. (3-30-23)

**07. Borrowed Fill Embankment**. Any embankment constructed of borrowed earth materials and which is designed for construction by conventional earth moving equipment. (3-30-23)

**08. Reservoir**. Any basin which contains or will contain the material impounded by the mine tailings impoundment structure. (3-30-23)

**09. Owner**. Includes any of the following who own, control, operate, maintain, manage, or propose to construct a mine tailings impoundment structure or reservoir. (3-30-23)

**a.** The state of Idaho and any of its departments, agencies, institutions and political subdivisions; (3-30-23)

**b.** The United States of America and any of its departments, bureaus, agencies and institutions; provided that the United States of America shall not be required to pay any of the fees required by Section 42-1713, Idaho Code, and shall submit plans, drawings and specifications as required by Section 42-1721, Idaho Code, for information purposes only; (3-30-23)

**c.** Every municipal or quasi-municipal corporation; (3-30-23)

**d.** Every public utility; (3-30-23)

**e.** Every person, firm, association, organization, partnership, business, trust, corporation or company; (3-30-23)

**f.** The duly authorized agents, lessees, or trustees of any of the foregoing; (3-30-23)

**g.** Receivers or trustees appointed by any court for any of the foregoing. (3-30-23)

**10. Alterations, Repairs or Either of Them**. Only such alterations or repairs as may directly affect the safety of the mine tailings impoundment structure or reservoir, as determined by the Director. (3-30-23)

**11. Enlargement**. Any change in or addition to an existing mine tailings impoundment structure or reservoir, which raises or may raise the storage capacity of the structure, as defined in Rule Subsection 010.06. (3-30-23)

**12. Days Used in Establishing Deadlines**. Calendar days including Sundays and holidays. (3-30-23)

**13. Certificate of Approval**. A certificate issued by the Director for the mine tailings impoundment structure listing restrictions imposed by the Director, and without which no new mine tailings impoundment structures shall be allowed to impound mine tailings slurry or water and no existing impoundment shall be allowed to impound water or continue deposition of mine tailings slurry. The structure will be recertified following the site inspection scheduled according to the Hazard Classification assigned by the Department, unless the Director determines that the structure is unsafe. (3-30-23)

**14. Engineer**. A registered professional engineer, licensed as such by the state of Idaho. (3-30-23)

**011. -- 024. (RESERVED)**

**025. AUTHORITY OF REPRESENTATIVE (RULE 25).**
When plans, drawings and specifications are filed by another person on behalf of an owner, written evidence of authority to represent the owner shall be filed with the plans, drawings and specifications. (3-30-23)

**026. -- 029. (RESERVED)**

**030. FORMS (RULE 30).**
Forms required by these rules. (3-30-23)

**01. Samples of Forms**. Samples of all forms required by these rules are available from the Department to interested parties upon request. (3-30-23)

**02. Form 1721**. Construction of a mine tailings impoundment structure requires the filing of Form 1721. (3-30-23)

**031. -- 034. (RESERVED)**

**035. PLANS, DRAWINGS, AND SPECIFICATIONS (RULE 35).**
The following provisions shall apply in submitting plans, drawings, and specifications. (3-30-23)

**01. Submission of Plans, Drawings, and Specification**. Any owner who shall desire to construct, or enlarge, or alter or repair any mine tailings impoundment structure shall submit duplicate copies of plans, drawings, and specifications prepared by an engineer for the proposed work to the Director with required fees. An owner who desires to construct a continuously raised tailings impoundment structure shall submit duplicate copies of plans, drawings, and specifications prepared by an engineer, showing the stages of lift height, by periods of time, and ultimate design height. (3-30-23)

**02. Application for and Receipt of Written Approval**. Construction of a new mine tailings impoundment structure or enlargement, or non-emergency alteration or repairs on existing mine tailings impoundment structures shall not be commenced until the owner has applied and obtained written approval of the

plans, drawings, and specifications covering the work. In emergency situations, the owner shall make the required alterations or repairs necessary to relieve the emergency, and notify the Director. (3-30-23)

**03. Preparation and Submission of Plans**. Plans must be prepared on a good grade of tracing linen or a good quality vellum or mylar. Transparent copies reproducible by standard duplicating processes, if accurate, legible and permanent, will be accepted. Plans may initially be submitted in the form of nonreproducible paper prints. After reviewing the plans, the Director will notify the owner of any required changes. (3-30-23)

**04. Scale of Plans and Drawings**. Plans and drawings shall be of sufficiently large scale with an adequate number of views and proper dimensions, so that drawings may be readily interpreted and studied. (3-30-23)

**05. Dimensions of Plans**. All sheets for a set of plans shall have an outside dimension of twenty-four by thirty-six (24 x 36) inches. A margin of two (2) inches on the left-hand end and a margin of one-half (1/2) inch on the other three sides must be provided, making the available work space twenty-three (23) x thirty-three and one-half (33 1/2) inches. (3-30-23)

**06. Plans**. The plans shall include the following: (3-30-23)

**a.** A topographic map of the mine tailings impoundment structure site showing the location of the proposed mine tailings impoundment structure by section, township and range, and location of spillway or diversion structures, outlet works, and all borings, test pits, borrow pits; (3-30-23)

**b.** A profile along the mine tailings impoundment structure axis showing the locations, elevations, and depths of borings or test pits, including logs of bore hole and/or test pits; (3-30-23)

**c.** A maximum cross-section of the mine tailings impoundment structure showing elevation and width of crest, slopes of upstream and downstream faces, thickness of any proposed riprap, zoning of the earth embankment (if any), location of cutoff and bonding trenches, elevations, size and type of decant systems, valves, operating mechanism, and dimensions of all other essential structural elements such as cutoff walls, filters, embankment zones, etc.; (3-30-23)

**d.** Detailed drawings describing the outlet system, i.e., decant line, barge pump system, siphon system; (3-30-23)

**e.** If a spillway is used, a curve showing the discharge capacity in cubic feet per second of the spillway vs. gage height of the storage pool level above the spillway crest up to the maximum high-water level, and the formula used in making such determinations; (3-30-23)

**f.** If a stream diversion is created, a tabulation of the discharge capacity in cubic feet per second of any diversion works and of the diversion channel vs. flow depth through the diversion works or channel up to maximum capacity of the system, and the formulas used in making such determinations; (3-30-23)

**g.** Where staged construction will take place and no spillway exists, a curve showing maximum safe operating level for the tailings as a function of embankment height and the design criteria used to arrive at this; (3-30-23)

**h.** Detailed plans, including cross-sections and profile, of the spillway or diversion works and any associated channels; (3-30-23)

**i.** Plans for monitoring and/or recovering seepage from the reservoir in those instances where safety of the impoundment may be affected; (3-30-23)

**j.** An operation plan; (3-30-23)

**k.** An emergency procedure plan for protection of life and property; (3-30-23)

**l.** An abandonment plan that assures the Director to his satisfaction that, upon completion of the

mining operation, the site will be in a safe maintenance-free condition. (3-30-23)

**07. Specifications**. Specifications shall include provisions acceptable to the Director for adequate observation, inspection and control of the work by a registered professional engineer during the period of construction. (3-30-23)

**08. Provision Included with Plans**. The specifications shall provide that the plans and specifications may not be materially changed without prior written consent of the Director. (3-30-23)

**09. Provisions Included with Specifications**. The specifications shall provide that certain stages of construction shall not proceed without the approval of the Director. Those stages requiring approval are as follows: (3-30-23)

**a.** After clearing and excavation of foundation and prior to placing any fill material; (3-30-23)

**b.** After installation of the decant conduit and any proposed collars and before placing any backfill material around conduit; (3-30-23)

**c.** After construction is completed (first stage starter dike if staged construction) and before any water or mine tailings slurry is stored in the reservoir; (3-30-23)

**d.** Before each successive enlargement of the impoundment structure; (3-30-23)

**e.** After each stage of enlargement of the impoundment structure is completed and before storage is allowed to exceed the level approved for the previous approved stage; (3-30-23)

**f.** At such other times as determined necessary by the Director. The Director will, within seven (7) days after notification by the engineer, inspect and if satisfactory, approve the completed stage of construction. Owners are encouraged to give prior notice to the Department, so that the inspection can be scheduled to prevent delays. (3-30-23)

**10. Inspections, Examinations, and Tests**. All materials and workmanship may be subject to inspection, examination and test by the Director at any and all reasonable times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. (3-30-23)

**11. Rejection of Defective Material**. The Director shall have the right to require the owner or engineer to reject defective material and workmanship or require its correction. Rejected workmanship shall be corrected and rejected material shall be replaced with proper material. (3-30-23)

**12. Suspension of Work**. The Director may order the engineer to suspend any work that may be subject to damage by climatic conditions. (3-30-23)

**13. Responsibility of Engineer**. These provisions shall not relieve the engineer of his responsibility to assure that construction is accomplished in accordance to approved plans and specifications or to suspend work on his own motion. (3-30-23)

**14. Detailing Provisions of Specifications**. The specifications shall state in sufficient detail, all provisions necessary to ensure that construction is accomplished in an acceptable manner and provide needed control for construction to ensure that a safe structure is constructed. (3-30-23)

**15. Required Information**. The following information shall be submitted with the plans and specifications. (3-30-23)

**16. Engineer's Report**. An engineer’s report giving details necessary for analysis of the structure and appurtenances. Included as a part of the report where applicable shall be the following: (3-30-23)

**a.** Formulas and assumptions used in designs; (3-30-23)

**b.** Hydrologic data used in determining runoff from the drainage areas; (3-30-23)

**c.** Engineering properties of each type of material to be used in the embankment and of the foundation areas; (3-30-23)

**d.** Stability analysis, including an evaluation of overturning, sliding, upstream and downstream slopes and foundation stability; (3-30-23)

**e.** Geologic description of reservoir area, including evaluation of landslide potential; (3-30-23)

**f.** Chemical analysis of all materials composing the slurry; (3-30-23)

**g.** Earthquake design loads must be evaluated at all sites located east of Range 22 E., Boise Meridian. This area corresponds to Seismic Zone 3 as designated by the Recommended Guidelines of the National Dam Safety Program. Earthquake analysis may be required at other impoundment structure sites if deemed necessary by the Director; (3-30-23)

**h.** A seepage analysis of the embankment and reservoir bottom; (3-30-23)

**i.** A hydraulic analysis of the outlet system and spillway, diversion work or diversion channel; (3-30-23)

**j.** Engineering properties and the weathering characteristics of the proposed tailings to be stored in the impoundment; (3-30-23)

**k.** Other information which would aid in evaluating the safety of the design. (3-30-23)

**17. Filing of Additional Information**. The Director may require the filing of such additional information which in his opinion is necessary to assess safety or waive any requirement herein cited if in his opinion it is unnecessary. (3-30-23)

**036. -- 039. (RESERVED)**

**040. BONDING (RULE 40).**
An active surety bond or other means of acceptable surety payable to the Director of the Department of Water Resources shall be on file with the Director throughout the active life of the tailings disposal site. The purpose of this bond is to provide a means by which the tailings impoundment can be placed in a safe maintenance-free condition if abandoned by the owner without conforming to an abandonment plan approved by the Director. (3-30-23)

**01. Filing of Bond**. The bond shall be filed prior to any issuance by the Director of a certificate of approval for use of the mine tailings impoundment structure to impound mine tailings slurry and shall run for the approval period covered on the certificate of approval. (3-30-23)

**02. Provisions of Bond**. Bond provisions shall provide that the surety may be held liable for a period of up to five (5) years following notice of default on the bond. (3-30-23)

**03. Amount of Bond**. The bond amount will be set by the Director and is subject to revision each time it is renewed. The owner must obtain approval for the amount of his surety bond prior to each renewal. (3-30-23)

**04. Cost Estimate Submitted by Engineer**. In order to provide a basis for setting the bond amount, the engineer shall submit a cost estimate acceptable to the Director, together with conceptual details needed to arrive at the estimate, for abandonment of the facility at each proposed stage of its construction. (3-30-23)

**05. Current Costs for Abandonment**. Bond amount will be based on current costs for abandonment of the facility based on the approved cost estimate for abandonment at the present construction condition or the next approved proposed stage, whichever represents the larger bond amount. (3-30-23)

**06. Determination of Bond Amount**. If the final abandonment is determined to be the most costly condition, the owner may elect to use this as a basis for bonding throughout the life of the project. The Director may, however, revise the bonding amount to reflect updated costs when he feels it is necessary in order to maintain a realistic bond. (3-30-23)

**07. Filing Initial Bond**. The initial bond shall be filed upon completion of the first stage of construction and before the required certificate of approval is issued to allow storage of mine tailings slurry in the impoundment. No certificate of approval shall be renewed prior to filing by the owner of a bond renewal in an amount approved by the Director. (3-30-23)

**08. Filing Copy of Performance Bond**. Upon the filing of a copy of a performance bond with the Director, covering the terms and conditions of a state of Idaho mineral lease or an approved reclamation plan, in which these documents specify compliance with a plan of restoration of all mining operations, including the tailings impounding structure, the Director may determine the bond required of this section has been met, if the amount of the bond accurately reflects the cost associated with the abandonment plan provided by the owner. (3-30-23)

**041. -- 044. (RESERVED)**

**045. MINE TAILINGS IMPOUNDMENT STRUCTURES DESIGN CRITERIA (RULE 45).**
The following minimum design criteria shall be used for all mine tailings impoundment structures designed for installation in Idaho. These limitations are intended to serve as guidelines for a broad range of circumstances, and engineers should not consider them as a restriction to the use of other sound design criteria. Deviation from this established criteria will be considered by the Director in approving plans and specifications. (3-30-23)

**01. Embankment Slopes**. (3-30-23)

**a.** For construction of borrowed fill embankments, in the absence of a stability analysis, the slopes shall be:

| | |
|---|---|
| Upstream slope | 2:1 or flatter |
| Downstream slope | 2:1 or flatter |

(3-30-23)

**b.** Construction by the upstream method shall not be used in the area of the state east of Range 22 E., Boise Meridian, unless the engineer can provide evidence that the construction and operation of the tailings impoundment will achieve a relative density of sixty percent (60%) or greater in the embankment and tailings to prevent liquefaction during earthquake loading. (3-30-23)

**c.** Safety factors for the embankment shall be at least one and five-tenths (1.5) for static loads and a minimum of one (1) for the static plus the appropriate earthquake load. (3-30-23)

**d.** To insure sufficient permeability and stability of the embankment, designs will require utilizing materials other than the tailings, when the tailings materials: (3-30-23)

i. Contain greater than seventy-five percent (75%) passing the #200 standard U.S. sieve, or fifty percent (50%) passing the #325 standard U.S. sieve; (3-30-23)

ii. Contain phosphate clays; (3-30-23)

iii. The design calls for the water to be impounded against the embankment; (3-30-23)

iv. Have other properties which makes them unsuitable for use as construction materials. (3-30-23)

**e.** Embankments designed for the storage of hazardous levels of radioactive materials shall, in addition to any requirements of these regulations, meet the criteria outlined in the Nuclear Regulatory Commission

Regulatory Guide 3.11 and the Idaho Radiation Control Regulations administered by the Idaho Department of Environmental Quality. (3-30-23)

**f.** The design shall consider the need for drains and/or operational procedures to promote consolidation and insure that a low phreatic surface is maintained within the embankment. Drainage pipe shall not be used beneath embankments where excessive or differential settlement may cause failure of the pipes and subsequent piping of the tailings or embankment. When the quality of the mine tailings slurry is such that it will adversely affect the quality of the existing ground water, the design should be coordinated with the Department and the Department of Environmental Quality to insure that all applicable permits are obtained. (3-30-23)

**g.** Instrumentation of the embankment and/or foundation will be required to insure that the structure is functioning satisfactorily. Standpipe piezometers with an inside diameter greater than one-half (1/2) inch will not be acceptable for use in fine-grained or cohesive soils in order to minimize response time. (3-30-23)

**h.** Tailings impoundment structures which are constructed using the tailings shall not be constructed or raised during freezing weather to prevent frost lenses in the embankment. Sufficient freeboard must be provided during the summer construction season if the disposal operation is to continue during the winter. (3-30-23)

**i.** If tailings are to be discharged during times of freezing weather and the embankment is to be constructed using either the upstream or centerline method, the pond shall be of sufficient size to insure that any ice formed in the tailings pond area melts during the next warm season. (3-30-23)

**02. Top Width Embankment**. (3-30-23)

**a.** In the absence of a stability analysis, the minimum top width for mine tailings impoundment structures shall be:

W = 2 (H to 1/2 power) + 4, minimum
W = Top width
H = Embankment height (3-30-23)

**b.** The minimum top width for any tailings embankment is ten (10) feet. (3-30-23)

**03. Cutoff Trenches or Walls**. (3-30-23)

**a.** Cutoff trenches, if needed, shall be used to bond the fill through relatively pervious material to an impervious stratum or zone. The bond area shall extend up the abutments to the maximum high water or tailings impoundment elevation. Cutoff (keylock) trenches which are to be backfilled with compacted fill shall be wide enough to allow the free movement of excavation and compaction equipment. Side slopes shall be no steeper than 1:1 for depths up to twelve (12) feet, and no steeper than one and one-half (1 1/2) to one (1) for greater depths to provide for proper compaction. Flatter slopes may be required for safety and stability. (3-30-23)

**b.** Concrete cutoff walls may be used to bond fills to smooth rock surfaces in a similar manner as cutoff trenches and they shall be entrenched in the rock to a depth approximately one-half (1/2) the thickness of the cutoff wall. Concrete cutoff walls shall be doweled into the rock a minimum of twelve (12) inches with a maximum spacing of eighteen (18) inches for three-quarter (3/4) inch steel dowels. Concrete walls shall have a minimum projection of three (3) feet perpendicular to the rock surface and shall have a minimum thickness of twelve (12) inches. (3-30-23)

**04. Borrowed Fill Embankment**. (3-30-23)

**a.** The approved earth materials (silt soils are seldom acceptable) shall be zoned as shown in the plans and placed in the embankment in continuous, approximately level layers. Compaction shall be based on ASTM D-698 for cohesive soils and a minimum compaction of ninety-five percent (95%) of the laboratory Standard Proctor dry density is required. Compaction of cohesionless soils shall insure a relative density of sixty percent (60%) or greater. (3-30-23)

**b.** An acceptable working range of moisture content for the fill material shall be established and maintained. (3-30-23)

**c.** The material shall be compacted by means of a loaded sheepsfoot roller, vibratory roller, or other acceptable means, to the required density. (3-30-23)

**d.** No rock shall be left in the fill material which has a maximum dimension exceeding the lift thickness. The fill material shall be free of brush and organic materials. (3-30-23)

**e.** The fill shall be carried up simultaneously the full design width of the structure, and the top of the fill shall be kept substantially level at all times or slope slightly toward the reservoir. (3-30-23)

**f.** No frozen or cloddy fill material shall be used, and no material shall be place upon frozen, muddy or unscarified surfaces. (3-30-23)

**g.** All materials used in the embankment shall meet all the stability and seepage requirements as shown by a design analysis of the structure and shall be properly installed to meet these requirements. (3-30-23)

**05. Riprap**. (3-30-23)

**a.** All dams shall be protected from wave action. In cases where water is stored directly against the mine tailings impoundment structure or where wave action at maximum pool level during design inflow events would affect the integrity of the embankment, the Director may require use of riprap or other protective measures. (3-30-23)

**b.** If riprap is used the design shall specify the rock size and extent of blanket required to prevent erosion. (3-30-23)

**06. Outlet Systems**. (3-30-23)

**a.** Reservoirs must safely handle the design inflow for all areas draining into the reservoir. This may be done either by storing the entire design inflow or by having an outlet system or combination of systems adequate to safely pass the design inflow. If the tailings reservoir is situated on a stream channel, an outlet system or an approved alternative system capable of meeting downstream flow requirements must be provided. (3-30-23)

**b.** The minimum design inflow for all reservoirs shall be the flood with one percent (1%) probability of occurrence. The Director may require a greater design inflow be used in instances of high hazard, for larger mine tailings impoundment structures, or when the inflow is to be entirely stored in the reservoir during the flood period. (3-30-23)

**c.** The outlet system may be composed of one (1) or a combination of the following: decant line, spillway, or stream channel diversion to bypass the reservoir. The system will be determined by individual reservoir conditions. Unless removal of the mine tailings impoundment structure and reservoir is part of the abandonment plan, the outlet system shall be maintained in perpetuity, unless it is demonstrated that an outlet system is not needed. (3-30-23)

**d.** Outlet systems will not be allowed if their use would release toxic, highly turbid, radioactive or otherwise hazardous flows from the reservoir. In these cases the design inflow must either be entirely stored or diverted around the reservoir. (3-30-23)

**e.** All spillways shall be stabilized to discharge flow through the use of concrete, masonry, riprap or sod, if not constructed in resistant rock. (3-30-23)

**f.** Wherever possible, the spillway shall be constructed independent of the impoundment structure. It shall lead the water far enough away from the mine tailings impoundment structure so as not to endanger the structure. (3-30-23)

**g.** A diversion system must not subject the mine tailings impoundment structure to erosion during the

design inflow event. All stream diversions shall conform to the minimum standards for stream channel alterations as written by this Department. (3-30-23)

**h.** Decant conduits, if under the embankment, shall be laid on a firm, stable foundation and normally must not be placed on fill. They shall have a minimum inside diameter of twelve (12) inches and one (1) of the following provisions included in the design: (3-30-23)

i. The owner shall have the conduit inspected by photographic or video tape equipment and a copy of the inspection provided to the Department, if a problem is suspected; or (3-30-23)

ii. The conduit shall be completely plugged with concrete and/or suitable material, for that portion which extends through the embankment, if a nonrepairable problem occurs within the conduit. The conduit shall consist of material which has been shown to possess the qualities necessary to perform in the environment of the specific tailings impoundment. The design life of the conduit shall be greater than the life of the mine tailings impoundment structure. The portion of the conduit through the embankment shall be completely filled with concrete, or other suitable material, and the riser portion of the conduit capped, upon abandonment of the mine tailings impoundment structure. (3-30-23)

**i.** All decant conduits, if under the embankment, shall have a seepage path through the impervious zone at least equivalent in length to the maximum head above the downstream end of the system. Only one third (1/3) the horizontal distance through the impervious zone will be utilized when calculating the length of the seepage path. Collars may be used to satisfy this requirement, but all collars shall extend a minimum of three (3) feet outside the conduit. Collars shall be spaced at intervals of at least seven (7) times their height and no collar may be closer to the outer surface of the impervious zone than the distance it extends out from the conduit. (3-30-23)

**j.** More than two (2) decant conduits are not to be used, unless special conditions warrant. (3-30-23)

**07. Freeboard**. A minimum freeboard of two (2) feet plus wave height (H) shall be provided on the crest of the mine tailings impoundment structure during passage of the design inflow.

H = 1.95 (F to 1/2 power)
F = Fetch in miles across water surface at a design maximum level. (3-30-23)

**08. Records**. All instrumentation shall be read and recorded on a regular basis, and all records must be available for inspection by Department personnel on request. (3-30-23)

**09. Inspection and Completion Reports**. (3-30-23)

**a.** It is the responsibility of the engineer to submit test reports along with periodic inspection and progress reports to the Director. (3-30-23)

**b.** Upon completion of each approved stage of construction, a letter shall be sent to the Director, giving a short, narrative account covering all items of work. As-built plans shall be submitted to the Director if the completed project was substantially changed from the plans originally approved. (3-30-23)

**10. Abandonment**. An abandonment plan which provides a stable, maintenance-free condition when the mine tailings impoundment is no longer being regularly maintained by the owner or the owner has ceased to use the site for disposal of mine tailings slurry, shall be submitted to the Director by the owner. The plan shall provide a safe condition by providing for removal of the tailings, or construction of a maintenance-free spillway or diversion works where needed to accommodate runoff. The plan shall include provisions to prevent water storage behind, and erosion of, the mine tailings impoundment structure and the impounded tailing. A conceptual plan which includes an engineering design report, detailed enough to provide the required cost estimate for bonding purposes, will be required prior to the approval of the proposed project. Detailed construction plans must be approved by the Director prior to implementation of any abandonment work. The Director shall notify the owner upon acceptance of completion of abandonment in accordance with the approved plan. (3-30-23)

**046. -- 049. (RESERVED)**

**050. DAMS STORING TAILING AND WATER (RULE 50).**
Construction of dams intended to store water in excess of the water being decanted in the tailing placement operation shall also meet the requirements for water storage reservoirs specified in the Department's Rules for the Safety of Dams. The Director may waive any or all of these requirements if, in the opinion of the Director, sound engineering design supplied by the owner indicates such requirements are not applicable. (3-30-23)

**051. -- 054. (RESERVED)**

**055. PROVISIONS OF CHAPTER 17, TITLE 42, IDAHO CODE (RULE 55).**
The provisions of Sections 42-1709 through 42-1721, Idaho Code, are a part of these rules. (3-30-23)

**056. -- 999. (RESERVED)**