

**DEQ’s Response to Comments
Proposed Rule Docket 58-0000-2000F**

IDAPA 58.01.13, Rules for Ore Processing by Cyanidation

Commenters
Idaho Mining Association (IMA)
Idaho Conservation League (ICL)

1. IMA

Section 001.

There is a reference in this section to the term “process contaminated water containing cyanide” as well as in other subsections of the Proposed Rule (and in the 107D Statement). This is not a defined term but it clearly is intended to describe something beyond “process water” which is a broadly defined term in the Proposed Rule. We are not sure what is intended by use of this term and we do not think the Rule should be expanded beyond regulating process water. We suggest defining this term or striking it if the intent is to expand the scope of the Proposed rule beyond process water.

DEQ Response

The Department of Environmental Quality’s (DEQ’s) statutory authority under Idaho Code § 39-118A includes review and approval of cyanidation facility designs and permitting the construction, operation, and closure of cyanidation facilities. This statutory authority is not limited to process water. The potential for any water contaminated by the cyanidation process to impact human health and the environment makes it a legitimate matter of concern within DEQ’s statutory authority.

The text referring to “process-contaminated water containing cyanide” has been included in the rule since at least December 31, 1991. Only limited changes to Section 001 have occurred since this time, and changes to this specific text were not proposed by rulemaking participants during the ten rulemaking meetings held between May 2019 and June 2020. The scope of the proposed rule is no different than previous versions of the rule, and the scope of the rule was not expanded. The requested change was not incorporated into the rule.

2. IMA

Section 007.08.a.ii. Material Modification.

Please add the word “Significant” to the beginning of this subsection. Minor changes to the components of a facility can and will occur throughout construction and operations. For a large facility such minor changes can occur hundreds of times throughout construction and operations. Such minor changes should not trigger a permit modification.

DEQ Response

Section 007.08.a.ii. has been amended to clarify that a significant change to the capacity, location, or process of an existing cyanidation facility qualifies as a “material modification or material expansion.” The word “significant” was incidentally omitted from the requirement while addressing Idaho Division of Financial Management comments to streamline, clarify, and simplify the rule.

3. ICL

050.01 - Pre-Application Conference

The text currently states, “Any person who intends to apply....*should* contact the Department during the initial stages of site characterization to schedule a pre-application conference.” We recommend IDEQ change this to read “*must* contact the Department,” making the pre-application conference a requirement to begin the application process. This allows IDEQ and the application to have open conversations regarding the requirements, which facilitates the design planning, permitting process, and cost recovery agreements, reducing the chances of misinterpretation and providing the benefit of ensuring applications have current and correct information and possess a full understanding of the rule prior to investing time, materials, and funds in an untenable project. This supports the requirements of 050.02 - Information Required for Preliminary Design Report.

DEQ Response

The rule provides recommended timing for coordination with the Department prior to submittal of the preliminary design report and permit application. It is the responsibility of the applicant to coordinate with the Department before these mandatory submittals. The requested change was not incorporated into the rule.

4. ICL

200.04 - Siting and Preparation

We recommend adding avalanches and seismic activity such as tremors and earthquakes to the list of “adequately protected against factors.” Several potential mines or their primary access routes are located in avalanche-prone areas and the recent 6.5 magnitude earthquake in Central Idaho demonstrates the need to acknowledge this as a potential ongoing risk. Avalanche prone areas can be identified from previous observations and evidence. The USGS [United States Geological Survey] has an Earthquakes Hazards Program that tracks historic and recent earthquake activity.

DEQ Response

The list is illustrative only and not intended to be exhaustive. The recommended additions are not necessary because the concept is covered by the existing language “at a minimum” siting must ensure facilities are structurally sound and can be adequately protected. Avalanches and

seismic activity will be a significant consideration in evaluating if the facility is adequately protected. In addition, seismic activity is specifically addressed in Section 200.06.a.ii. of the proposed rule. The requested change was not incorporated into the rule.

5. IMA

IMA - Section 200.06.a.ii. Minimum Plans and Specifications.

Please revise that last portion of this subsection for clarity so the focus is on anticipated seismic conditions and it therefore should read "... for each component based on anticipated seismic activity considering the history of seismic events at the site."

DEQ response

The following changes were incorporated into Section 200.06.a.ii. for clarification:

ii. Preclude any differential movement or shifting of the subgrade, soil layer, liner or contained material that endangers containment integrity as a result of the proposed range of operating conditions for each component and ~~the history of anticipated~~ seismic ~~activity events~~ at the site.

The commenters proposed change eliminates the application of the requirement to facility components as a result of facility operation and limits the requirement strictly to seismic activity. The intent of the requirement is to preclude any differential movement or shifting of the subgrade, soil layer, liner or contained material as a result of both facility operation and seismic activity. This intent is consistent with the text of the rule prior to revisions addressing Idaho Division of Financial Management comments to streamline, clarify, and simplify the rule.

6. ICL

200.06.a.v. - Minimum Plans and Specifications (wildlife exclusions)

IDEQ is electing to use 50 mg/L [milligrams per liter] WAD [weak acid dissociable] as the standard for wildlife protection because it is considered an international standard. Under this justification, IDEQ must incorporate all other aspects of the international standards into this rule. In addition to the 50 mg/L numeric criteria, the International Cyanide Management Code¹ (Cyanide Code) also includes matters such as training staff, QA/QC [Quality Assurance/Quality Control], water balance contingency, monitoring regimes, real-time WAD cyanide measures, management contingencies in place, etc. In order to be effective, the Cyanide Code should be incorporated in its entirety; anything less would be ineffective at adequately protecting wildlife.

¹Available online: www.cyanidecode.org

Further, IDEQ adds that they "may require additional measures if wildlife mortality is observed." Section 4.4 of the Cyanide Code explicitly requires facilities to "Implement

measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.”² These requirements are not contingent upon observing wildlife mortality because the general presumption is that adverse effects to wildlife or wildlife mortality will occur. We remind IDEQ that industry standards call for netting over process ponds rather than fencing to provide protections for bats and birds; netting around tailings impoundments is not adequate to protect birds and bats. Perimeter netting should be designed to prevent large mammals such as elk and deer as well as smaller vertebrates such as amphibians from accessing ponds. This may require incorporating two different netting designs. Further, numerous studies have expounded upon the difficulties of appropriately monitoring and quantifying the impacts to wildlife at cyanidation facilities (e.g. - Donato et al., 2007; Donato et al., 2017). Given the explicit requirement in the Cyanide Code, and peer-reviewed studies indicating the difficulties associated with monitoring, it is inappropriate for IDEQ to rely on reactive policies to wildlife deaths. Instead these rules should be proactive in requiring wildlife interactions and cyanide monitoring protocols, such as those implemented in Australia as a leading practice (Griffiths, 2014a; M.E. Smith et al., 2008; G.B.Smith et al., 2008; Adams et al., 2008; Smith et al., 2010; Donato and Smith, 2007). Management measures, in addition to specific WAD Cyanide Thresholds are critically important. These should include closely monitoring inflow into all process wastewater ponds to identify whether spikes in concentrations occur and to implement specific measures to respond immediately to any of these events.

² See Id.

According to Dr. David Donato³, an expert in matters of wildlife toxicology and ecology associated with mine tailings impoundments and industry risks, there are four industry Best Management Practices he recommends for cyanide processing:

1. Install Auto Free CN (Cyanide) analysers on the tank immediately after the dosage tank, auto FCN analyzer installed on the last CI:L tank and the desired set point (in free CN) automates the dosage rate in the dosed tank. QA and QC performed by manual 4-hourly titration of tanks to check on auto analyzer.
2. AutoWAD analyzer sampling and recording every 15 minutes on the last CIL tank or thickened underflow is one installed. This represents the Tailings Storage Facility (TSF) spigot sample.
3. If the AutoWAD analyzer reaches 45 mg/L (a management trigger value) then they implement their controls.
4. Controls can be:
 - a. Reduce CN addition by changing dosage tank set point
 - b. Introduce the TSF (Tailings Storage Facility) return water back into the discharge stream (diluting effect)
 - c. Hydrogen peroxide polishing of TSF return water tank is introduced back into the discharge stream (improved diluting effect)
 - d. Turn on cyanide destruction circuit if one exists

ICL recommends that IDEQ adopt these four management practices for cyanide processing facilities, placing an emphasis on management practice as opposed to regulatory stipulations. We also recommend incorporating an SO₂/INCO cyanide destruct system to help achieve the recommended 45 mg/L management trigger value.

³Dr. Donato is Principal of Donato Environmental Services (DES) and has 25 years' experience consulting to industry on a wide range of environmental management issues. Donato is widely regarded by industry peers as an expert in matters of wildlife toxicology and ecology associated with mine tailings impoundments and industry risks. Dr. Donato, an accredited environmental auditor (ISO19011), and an accredited Lead Auditor with the International Cyanide Management Code, has focused on environmental toxicological risks and Code compliance in industry in Australia, USA, Africa and New Zealand. Over the last 20 years Donato has published relevant papers on cyanide code management, environmental auditing, toxicology, mine wastewater management, threatened species management, as well as more widely on ecology. Through DES, Donato has produced about 100 consult reports and presented at numerous international conferences.

DEQ Response

DEQ adopted a WAD cyanide threshold concentration of 50 mg/L for wildlife exclusion based on multiple references, including the International Cyanide Code, that indicate this concentration is generally protective of wildlife. Rulemaking participants did not provide any additional supporting information suggesting that a higher or lower concentration would be more appropriate. Although the WAD cyanide threshold concentration is generally thought to be protective of wildlife, the proposed rule requires the implementation of measures to protect birds, other wildlife, and livestock, and DEQ may require additional measures if wildlife mortality is observed. This approach will be protective of wildlife without prescribing exclusion measures that may not be appropriate for every cyanidation facility.

The cyanide code is for the manufacture, transport and use of cyanide in the production of gold, and addresses matters outside DEQ's statutory authority to issue permits for cyanidation facility design, construction, operation, and closure. Therefore, DEQ cannot incorporate all aspects of the international code into these rules. Idaho's proposed rule already includes many of the provisions for the protection of wildlife included in the international cyanide management code and described by ICL in the comment.

- Section 200.15 of the proposed draft rule includes requirements for Employee Education Programs.
- QA/QC requirements for facility construction and monitoring are included in many sections including Sections 200.12; 100.03.r.xvii and 200.11.h.
- Sections 100.03.s. and 200.05 require a water management plan that includes contingency plans for managing excesses process water.
- Section 200.11 requires water quality monitoring and reporting
- Section 200.06.a.v. requires exclusion of wildlife from impoundments containing more than 50mg/L WAD cyanide in the liquid fraction and allows for additional measures if wildlife mortality is observed below 50mg/L.
- Section 200.11.a. requires monitoring and reporting of wildlife and bird mortality
- Section 200.06.vi. requires measures to protect birds, other wildlife and livestock from adverse effects of cyanide process water and other pollutants.

In addition the proposed rule includes several proactive provisions to protect wildlife.

- Section 200.06.a.v. requires measures for preventing wildlife contact with process water having a WAD cyanide concentration in liquid fraction exceeding fifty 50 mg/L.
- Section 200.06.a.vi. requires measures to protect birds, other wildlife and livestock from adverse effects of cyanide process water and other pollutants.
- Section 200.11 requires DEQ approval of a water quality monitoring and reporting plan.
- Section 200.11.b. requires the water quality monitoring and reporting plan to include sampling locations and frequency
- Section 200.11.e. requires the water quality monitoring and reporting plan to include compliance points and water quality compliance criteria.
- Section 200.11.f. requires inclusion of monitoring points and threshold concentrations that will provide for early detection of discharge of pollutants.
- Section 200.10.e. requires response plans that detail specific threshold concentrations and actions that will result in mitigation of an exceedance of any threshold concentration. This additional text was added to the rule as a result of comments provided by ICL in December 2019.

ICL requests that the rule require four additional management practices for all cyanidation facilities. These prescriptive measures may not be necessary or appropriate for all facilities, however. Compliance points, threshold concentrations and corrective actions are required as part of the permit application and will be addressed in any permit approved by DEQ. DEQ will review the permit application in the context of the site specific operations and determine if the proposed monitoring and operational plans are consistent with the rules and requirements for protection of wildlife. The public has the opportunity to comment on permit applications and can raise concerns with the specific facility monitoring and operations plans at that time.

The cyanide destruction methods identified in the comment are prescriptive and may not be necessary or appropriate for all facilities. There are a number of technologies available for cyanide destruction and its metal complexes. The choice of the best method for a particular application is complex. Inclusion of prescriptive requirement eliminates the flexibility to select approach that may provide better results.

No changes were incorporated into the rule as a result of this comment.

7. ICL

200.12 - Monitoring Wells Siting and Construction Plans

The current language reads, “The applicant is encouraged to submit a report...”. This should not be an opt-in requisite, it should be a requirement of the Water Quality monitoring plan. In fact, it forms the foundation for an operators monitoring plan. ICL recommends changing the language to, “The applicant is required to submit a report...” This ties directly to Subsection 151.02.

Further, by submitting a report describing the purpose, objectives, location and proposed

construction of monitoring wells, the applicant is further protected from misguided or misinterpreted information distribution, and ensures a line of communication between the applicant and IDEQ to highlight potential problem areas prior to investing capacity, funds, time, and materials, and collectively protects and assures the general public that IDEQ continues working to protect the public's interests and Idaho's Water Quality.

DEQ Response

The proposed rule provides recommended timing for coordination with the Department prior to application submittal but it is not mandatory because it may not be appropriate, necessary, or possible for all applicants. A monitoring well siting and construction plan must be provided upon submittal of the preliminary design report required under Section 050.02. It is the responsibility of the applicant to coordinate with the Department before applying for a permit. The requested change was not incorporated into the proposed rule.

8. ICL

201.01 - Minimal Hydraulic Head

We appreciate IDEQ limiting process water hydraulic head to twelve (12) inches or less on the liner systems. However, this sole reference to hydraulic head limits may create confusion in later sections referring to hydraulic head. We recommend IDEQ repeat this standard in appropriate sections of the proposed rule to avoid confusion and misinterpretation.

DEQ Response

The hydraulic head limits referenced in the comment are only applicable to Section 201, which provides the design criteria for leach pads and other non-impounding surfaces that contain and promote horizontal flow of process water. The hydraulic head limits applicable to each facility type are specified separately in each respective section unless otherwise specified under Section 200. The requested change was not incorporated into the rule.

9. ICL

202.02 - Temporary Containment

IDEQ does not provide liner specifications for temporary containment facilities in this section. ICL recommends the Department include specifications for a potential single-liner here to avoid potential confusion and plainly state the Department expectations. Any liner system or microdrain liner/leak detection configuration should be functional over the length of time that the liner will be needed to protect water quality standards.

DEQ Response

Use of a single liner for ponds used to temporarily contain excess quantities of process water as a result of storm events requires the approval of the Department. The operation and use of the pond must be described by the applicant in the water management plan required in Section 100.03.s.ii. DEQ will evaluate the information submitted to support the use of a single liner and determine if the proposed single liner system is appropriate based on the site-specific

circumstances. The requested change was not incorporated into the rule.

10. ICL

203 - Design Criteria for Containers that Confine Process Water

This section contains a grammatical error. The language currently states, “a double liner *in* not required.” We believe this should read, “a double liner *is* not required.”

DEQ Response

DEQ appreciates the comment; the correction was incorporated into the proposed rule.

11. IMA

Section 205.01 Alternative Plans.

Suggest striking the phrase “supported by best available science”. It should not be an applicant’s responsibility to identify what best available science and would likely invite disputes as to what is the best available science in any given situation.

DEQ Response

The prescriptive requirements included in section 200 through 204 of the rules were developed during the negotiated rulemaking process and are supported by best available science. At the request of the Idaho Mining Association and its members, Section 205 was incorporated into the rule to provide additional operational flexibility by allowing applicants to propose an alternative approach to the prescriptive requirements. If an applicant chooses to take the alternative approach to facility design it is incumbent upon the applicant to demonstrate that the proposed alternative design is appropriate for protection of water quality and human health. The requirement that the alternative design be supported by best available science is necessary to ensure the proposed design meets the same standard established for the prescriptive requirements of the rule. The rule encourages applicants considering alternative design proposals to provide details of the design during the pre-application conference. The use of best available science in demonstrating the protectiveness of the design can be addressed at this time. The requested change was not incorporated into the rule.

12. ICL

800.01 - Transfer of Permits Allowed

We recommend adding a fourth (4th) stipulation in this section (d), that indicates that a permit cannot be transferred to a new permittee that is currently or in the recent past in violation of Federal or Idaho State Water Quality standards or is involved in ongoing litigation regarding violations of Federal, Idaho State, or local regulations, or if a new permittee has a previously revoked permit for facilities within the U.S. The addition of this stipulation would work towards limiting liability for the original permittee and IDEQ and helps ensure a responsible party receives the transferred permit.

DEQ Response

The requested limitations on transfers to new permittees are unnecessary. The mere existence of litigation—regardless of the litigation’s status, forum, outcome, or specific subject matter—is not a sound basis for denying a cyanidation permit transfer. Likewise, the previous revocation of a permit for a facility within the United States—regardless of the nature of the permit, the cause for revocation, or the nature of the permitted facility—is not a sound basis for denying a cyanidation permit transfer. The requested change was not incorporated into the proposed rule.

13. ICL

Transparency and Accountability

Inspection reports and permit compliance records need to be publicly available on the IDL (Idaho Department of Lands) website. Posting this already-existing information on the agency webpages will eliminate the need for Public Records Requests and increase both project transparency and applicant accountability.

DEQ Response

DEQ has no control over the information posted on IDL’s website. In addition, the existing public records request process is the appropriate way for the public to seek inspection reports and permit compliance records. This comment does not request any change to the proposed rule and no change was made in response.

14. IMA

Idaho Code Section 39-107D Statement

In section 107D(3)(a) reference is made to “chlorine” as a contaminant of concern and later there is a suggestion that algal blooms could be a concern. We do not believe that either of these concerns should be associated with cyanidation facilities.

DEQ response

Alkaline chlorination is a method used to detoxify cyanide. This process may leave residual chlorine in solution which could be a concern if not properly treated. Similarly the end result of some methods used to detoxify cyanide can result in residual nitrate. Release of nitrate to surface water is linked to algal blooms. The information provided in the 39-107D statement is within the scope of 107D(3)(a) and the potential environmental effects associated with cyanidation facilities. This comment does not request any change to the proposed rule and no change was made in response.