COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

May 24, 2021

Brian Briggs
Ouray Silver Mines, Inc.
PO Box 564
Ouray, CO 81427

RE: Revenue Mine, Permit No. M-2012-032, Technical Revision (TR-14), Adequacy Review-2

Dear Mr. Briggs:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced Technical Revision in order to ensure that it adequately satisfies the requirements of the Colorado Mined Land Reclamation Act (Act) and the associated Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations (Rules). During the review of the material submitted, the Division determined that the following issue(s) of concern need to be adequately addressed before the Technical Revision can be considered for approval. Please provide the following:

1. Table 4.
    a. Include the specific manufacturer for each chemical to be used. Rule 6.4.21(5)
    b. Alternative Names listed do not match those on the MSDS provided. Ensure that a different comparable chemical is not being referenced as approvals are for a specific chemical as provided by a specific manufacturer, not approval of an entire chemical suite. Rule 6.4.21(5).
    c. The corrosive nature of reagent chemicals and their potential impacts to property is not addressed in Table 4. Please revise Table 4 to include this information pursuant to Rule 6.4.21(5)(a).

2. Table 1/Table 5
    a. Revise table 1 to show the mixing tank volume, storage tank volume and total maximum amount of each reagent chemical to be stored on site. * For those chemicals stored in various locations, such as the reagent room of the Mill Building, indicate where the various amounts may be throughout the mine site. Total amounts stored in either location shall not exceed the site wide maximum total pursuant to Rule 6.4.21(5).
    b. The comment sections of table 1 provided during the initial submission does not match information provided in adequacy review #1. Please revise Table 1 for the

corrected volumes presented in the Adequacy Review Response in accordance with Rule 6.4.21(5).

c. Pursuant to Rule 6.4.21(5) please clarify on Table 1 if the day tank is storing mixed or concentrated chemicals? Is this volume in addition to the volume stored in the mixing and storage tanks?
d. The containment volumes, including tank volumes are included in Table 5. Also included are the chemical amounts being stored and their package size, however they are reported in pounds of dry chemicals or drums of liquid chemicals. Please revise table 5 including the volumetric conversions of dry chemicals into gallons in order to verify storage amounts and secondary containment volumes stored in each respective area pursuant to Rule 6.4.21(7)(f).

3. In order to track the volume of reagent chemicals on site please commit to submitting a quarterly milling activity report. Said report would include the tons of ore processed, volume of chemicals used to process the ore and a balance sheet describing the chemicals shipped to the site, consumed during mining and containers that were disposed of.

4. The adequacy response provided to question #3 states that "There are no known byproducts created from the combination of any of the 4 chemicals that are in the "common area" of the reagent room. SDS sheets do not indicate that it is dangerous to mix these substances together." However MSDS Sheets lists the hazardous ingredients of a product, its physical and chemical characteristics (e.g. flammability, explosive properties), its effect on human health, the chemicals with which it can adversely react, handling precautions, the types of measures that can be used to control exposure, emergency and first aid procedures, and methods to contain a spill. They do not analyze for potential reactivity of said chemical with any and all other chemicals they may come in contact with so the information would not be found on the MSDS Sheets. Please provide an evaluation of each chemicals stored in the common reagent room, or any other area where there is a mixing potential, including a discussion of the potential bi-products, including safety or environmental hazards that may be created if the chemicals were to mix in accordance with Rule 6.4.21(5).

5. Your response to Adequacy Review #1 question 10 indicates that Reagent chemicals may be stored in multiple locations; the Reagent Room currently under review and the existing Reagent Room area within the mill building. The focus of TR-14 is on the Reagent Building to be constructed, while the reagent room of the mill building was certified under the Mill Certification submitted on November 17, 2015, that certification as a whole has been nullified. If the reagent room of the mill building is to be used for storage address the following:

a. Clarify the maximum amount of reagents to be stored within the mill building reagent room. Rule 6.4.21(5) and 6.4.21(6)(b)(i),
b. Their location within mill building reagent room,
c. Provide supporting documentation to ensure the secondary containment capacity is sufficient for the room as a whole and details regarding any individual secondary containment structures that prevent possible mixing.

6. Please provide a more detailed explanation of Table 6.

7. Several of the chemicals are toxic to aquatic life, even the 10% tailings of the 10% diluted chemical could be toxic. Commit to conduct sampling of tailings for residual reagent chemicals once the mill is operational and provide the Division with the results. Any adjustments to chemicals used or ratios will require new testing pursuant to Rule 6.4.21(5)(b) and 6.4.21(6)(c).

8. In response to the answers to questions 10 and 11 of adequacy review 1. What sort of secondary containment structures will be employed to protect against spills during the loading and unloading process of chemicals? Rule 6.4.21(6)
    a. Example: Trucks will deliver chemicals to the site. If a storage container were to be damaged during loading and unloading it would not be within the Reagent Room secondary containment. The forklift would be holding onto a leaking reagent container outside adjacent to the facilities.
    b. Example: Eventually the process water will need to be disposed of. How will the system be drained into trucks for transport off site? The Trucks cannot drive into either of the facilities and this means the fluid transfers would be occurring outside of secondary containment.
    c. Will any sort of concrete loading apron be installed outside of the reagent room? Said apron could contain a drain/sump. Detoxification of a solid surface would be easier as well as avoid the need for removal of contaminated soil.

9. Please provide information regarding where empty containers or those containing spilt chemicals that are to be returned to the manufacturer or disposed of as hazardous waste be stored while awaiting transport pursuant to Rule 6.4.21(6)(b)(i). Please note that a container is never truly empty and shall remain in secondary containment at all times.

10. In response to the answer to question 13 of adequacy review 1. Several of the MSDS sheets state that all PPE, tools and equipment used shall be decontaminated prior to disposal. Your response indicates a disregard or dismissal of guidance provided in the MSDS's sheets. Commit that all PPE, tools or equipment that comes in contact with any

of the reagent chemicals will be detoxified in order to protect the human health and safety to the environment in accordance with Rule 6.4.21(6)(b)(i) and 6.4.21(7)(e)

11. In addition to Item 10 of this review please describe How/where PPE, tools and equipment be decontaminated. Presumably, the decontamination wash water will become contaminated and treated as a hazardous material, please indicate how the contaminated water will be handled.

12. Throughout TR-14 and its additional materials No sources of clean water are indicated. Please indicate if water will be available for clean-up and chemical mixing within the reagent room and the source of that water.

13. Please identify the location of safety equipment within the reagent room including but not limited to, safety eyewash/ shower station, first aid equipment, etc.

14. Given that most of these chemicals are harmful to breath and/or cause eye damage, please indicate if the storage and mixing tanks are completely enclosed so that PPE is not required once chemicals have been transferred to the storage tanks or provide information clarifying why PPE would not be required when entering the reagent building Pursuant to Rule 6.4.21(5)(a)

15. Sump/Contaminated Water
    a. If chemicals were to be reported to the sump that would constitute a “spill”. The MSDS’ explicitly states “Never return spills in original containers for re-use” however the sump system for the flocculant detailed in drawing 700-PI-002 shows the spilled material would be re-introduced to the system. In general once a chemical has escaped from the system and comes into contact with the floor it should not be incorporated into the system. That's taking a spilled chemical and not disposing of it properly. Chances for cross contamination are increased exponentially. This is a direct contradiction to the MSDS sheets, Please Justify why this is an acceptable practice in accordance with Rule 6.4.21(6)(b).
    b. In order to detoxify containment areas from where chemicals have spilled the washed liquid would be taken from the sump and re-introduced into the system. The material would be chemically different from that in the flocculant mixing tank (or tailings thickener tank) as well as potentially contain contaminants that could have been brought in from other areas. What is the rationale for having the sumps drain back into the system rather than reporting to a waste disposal storage area that would be taken off site?

c. Throughout adequacy review #1 various references have been made to process water, contaminated water and sump water. The description as to what this water consists of and where it is all collected is inconsistent. Rule 6.4.21(6)(b)
    i. The drawings (700-PI-002) indicate that the Flocculant sump goes back into the flocculant mixing tank. The lime sump goes into the tailings thickener tank. Neither of these sump locations feed back into the process of water tanks as stated in response to 13a. Please clarify this discrepancy.
    ii. Response to 14 states that contaminated water will go to the sumps but if the tanks that those sumps report to are removed that liquid has nowhere to go. Please provide more information regarding the handling of contaminated water after the equipment has been removed.
d. Based on drawing 700-PI-002 the hydrated lime sump is indicated as being the Reagent Building Sump. The containment wall is 2'10" and requires cross over stairs to access. This suggests that the lime area sump is strictly for the lime containment area, please clarify if there will be a sump for areas outside the designated containment areas, and if there is, indicate where that sump reports to.
e. Provide drawing 500-PI-001 referenced for the lime sump taking materials to the Tailings Thickener Tank.

16. Please indicate the anticipated total volume of processed water to be stored on site at any given time pursuant to Rule 6.4.21(6)(b)(i). Is there a storage tank location or is the total volume stored throughout the piping of the facility and the various equipment?

17. It is assumed that "Pronto" is some form of a computer system designed for the tracking of materials. Please provide more information regarding this system and how it works.

18. While the chemicals in storage tanks may be able to be drained, and returned to their original packaging and returned to the manufacturer, once the chemicals are mixed into solution they will not be able to be returned to the manufacturer. How will the disposal of the solution be handled? Please provide a table of the volume of solution of each of the chemicals that would need to be drained, stored and disposed of as a hazardous material pursuant to Rule 6.4.21 (6)(b)(i). Include volumes and draining methods of piping. The reclamation cost estimate is not being updated at this time, however these details will be necessary to ensure an accurate estimate can be performed.
19. Similar to Item 15, b of this review, once chemicals and solutions are drained and removed from the site how will the equipment be cleaned? Response to #14 of adequacy review #1 indicated the equipment will be sold or recycled however it needs to be detoxified first.

20. With regards to detoxification of the reagent room, what is the estimated volume of contaminated water to be generated from the cleaning storage containers, delivery lines/piping, containment areas or any other surface in contract with the reagent chemicals upon final reclamation? It is understood that the exact volume of wash water that will become contaminated cannot be known until the task is completed, however an estimate will need to be provided as this contaminated water must be handled as hazardous waste in accordance with Rule 6.4.21(6)(b)(i).

21. The response to item 12 of the Division's Adequacy review indicates that "within 6 months of entering TC then the reagent chemicals would be removed for the site. The chemicals would either be returned to the manufacturer or disposed of by a certified waste disposal service." However Pursuant to Rule 1.13.2 an Operator must file for Temporary Cessation if mining activity has ceased for 180 days or more. This puts the commitment of chemical removal of up to 1 year from the last date of activity. Please commit to removing all designated chemicals within 30 days of the date of approval of any period of Temporary Cessation.

22. Further clarify how the SPCC and ERP will both be implemented to control, prevent and mitigate releases of the designated chemicals from the containment facility outside the permit area during mining and reclamation operations pursuant to Rule 6.4.21(7)(e). If secondary containment structures were to fail, how will a potential release be addressed?

23. The Materials Containment Plan (MCP) is mentioned in both the SPCC Plan and ERP however the reference document was not provided. Please provide this document.

24. SPCC
    a. Who is the designated person/ environmental specialist indicated in section 1.1 of the SPCC? The title is given but the actual designated person was not indicated.
    b. Page 18 Of the SPCC plan (section 3.6.4) indicates that a 1000 gallon unleaded fuel tank was installed in 2021. The Division has no record of this tank. Please provide details as to the location, construction type and secondary containment measures relating to this fuel storage.

25. ERP
    a. The ERP should function as a stand-alone document in the event of an emergency. The ERP plan does not include a complete list of possible chemicals to be encountered on site during an emergency, nor does it indicate the anticipated quantities of chemicals stored on site that could be encountered.

b. The ERP specifically addresses responding to spills or fires of flammable or corrosive chemicals. No response was provided regarding the other 4 chemicals housed in the Reagent Room.
c. The ERP should include cleanup/disposal measures for split liquids, and water used to fight fire or clean up afterwards that has come in contact with chemicals. Specifically the plan mentions contaminated soil clean up but not water. Any material that comes in contact with a chemical will require hazardous waste disposal.
d. To aid in emergency response the Division recommends that MSDS' are stored in a location on the mine site a safe distance away from where chemicals are expected to be encountered, preferably near the entrance. For example a typical practice is to store their MSDS's and Emergency Response Plans in a mailbox at the primary site entrance in addition to muster locations.
e. Upon approval of this revision (and specifically this Emergency Response Plan) commit to providing each organization listed in section 1.2.1 of the emergency response plan with a copy of said plan.

26. Epoxy Sealant
    a. The basic information sheet for the Pro Industrial High Performance Epoxy was attached to the response, however the sheet does not provide any details regarding its application instructions, ratings or other specific information. Please provide more details of the Epoxy including application instructions, cure times, any QA/QC measures taken to ensure correct installation and details regarding it's rating as a protectant for chemical spills. Please also include details on how long the concrete surfaces that the epoxy will be applied to will need to be cured, prior to the application of the coating.
    b. What is the life expectancy of this barrier? Will it need to be reapplied after so many years? Rated for so many spills or cleanings?
    c. Address how repairs to the epoxy can be made. For example if something gets dropped and the concrete or epoxy chips the containment is no longer impervious.

27. It is understood that the double walled piping will be an additional redundancy that will be field fit and is not included in the engineered drawings, and that the as built certifications will include more details of the double walled construction of the piping. However, the information provided thus far is too vague to be fully evaluated. Please provide a narrative discussing the general construction materials that will be used, field fit methods and areas along the length of the delivery lines that will be double walled. This information can be updated and modified in the as built certifications, but general plans should be addressed prior to construction.

28. Quality Assurance and Quality Control - Rule 6.4.21(16)
    a. Contractors Quality Control Program Manual provided by Western Refractory Construction, Inc,
        i. This document is dated January 3, 2012. Please provide a more recent version of the piping and components manual, as well as identify who the QC administrator will be.
        ii. Commit to providing all QA/QC documentation including change orders or alteration documentation for each respective phase of construction as it is completed. These should be provided in addition to the as built drawings and certifications for the components it applies to.
        iii. The QA/QC measures described in the manual are extremely generic, please explain how these measures will be specifically applied and implemented to the construction of the Reagent Room.
        iv. What percentage of welds will receive the NDE testing described in the manual?
        v. The QA/QC manual does not address additional or increased testing as the result of a failed NDE test. If a welder fails, what is the increased testing percentage for that welder?
        vi. At what point in construction will hydro-testing be implemented? Describe the details and evaluation for success criteria.
        vii. The testing procedures described relate specifically to metal piping. What method(s) will be employed to PVC piping to ensure connections?
        viii. The document includes an inspection and maintenance form from Hess Corporation indicating that a "Pig Launcher" system will be used and references equipment size of an 8 in internal diameter. All information including construction drawings for the Reagent Building indicate that the piping system will consist of 2 inch or smaller diameter piping. Please clarify why this form was included and what its applicability is to the Reagent Building.
    b. Sheet 100-SS
        i. Please commit to retaining and submitting all QA/QC documentation for each respective phase of construction as it is completed. These should be provided in addition to the as built drawings and certifications for the components it applies to.
    c. QA/QC criteria is given in several different documents throughout the revision. For ease of reference, please submit a table of all QA/QC tests to be conducted during construction, including the location or phase, success criteria, the results of each test and a "Pass / Fail" indication. This running table can be used as a

summary table, to be submitted with full documentation of the QA/QC tests as an appendix to the Table. This will allow the Operator and the Division to actively track all QA/QC tests effectively and clearly.

29. For the list of possible independent review personnel please provide a brief discussion of the applicable qualifications of each proposed independent reviewer pursuant to Rule 7.4.3 (3)(a).

30. Throughout the Adequacy Review Response it is stated that the Operator will provide QA/QC documentation to the Division monthly. Upon final review of the revision, the Division will identify the phases of construction that include the critical inspection points to be completed by the Division. Notification of completion of the current construction phase and request for inspection shall be provided to the Division at least 72 hours prior to the requested inspection, and can be sent via email. QA/QC documentation including the running table for the completed phase shall be provided to the Division at the time of request for inspection.

31. Please provide a description of the abbreviated piping types listed on Drawing 700-MP-207/8.

32. Drawing 700-MP-207/8 indicates the materials and sizing of piping used throughout the reagent room. However it is unclear as to what material the various tanks within the facility will be made of, their wall thicknesses, any coatings, etc.
    a. Specifically the MSDS for Copper Sulfate under section 7 states “solutions are mildly corrosive to steel. Store in plastic or rubber or 304, 347 or 316 stainless steel”. Provide documentation to ensure that once chemicals are transferred to the tanks in the reagent room they will continue to be properly stored in a compatible container.
33. Drawings 700-GA-001 and 700-MP-205 both reference a septic tank adjacent to the compressor room. What waste is discharging into this tank? Is there a leach field associated with it? If so, please identify the location and type of the leach field. Provide assurances that no waste that has come in contact with milling chemicals will discharge into the tank.

34. Are all concrete containment structures to be completed as a monolithic pour? If not, indicate what sealant will be used between pours to ensure adequate binding between concrete layers.

On May 20, 2021 The Division received your request for a 30 day extension to the Decision Date for TR-14 via email. That request has been **approved** and an official Decision Date Extension Approval letter will be sent under a separate cover. The new Decision Date for TR-14 is **Wednesday June 23, 2021**.

Please submit your responses to the above listed issues by Friday June 11, 2021 in order to allow the Division sufficient time for review. If you cannot address the above issues by June 11, 2021 please request an extension to the decision due date to ensure adequate time for the Division to review materials. A decision due date of June 23, 2021 has been set. If any adequacy issues remain by the decision due date the Division may deny the Technical Revision.

The Division will continue to review your Technical Revision and will contact you if additional information is needed. If you require additional information, or have questions or concerns, please feel free to contact me.

Sincerely,

Lucas West
Environmental Protection Specialist
Division of Reclamation, Mining and Safety

Cc: Travis Marshall, Senior EPS, DRMS
Amy Yeldell, DRMS

Ec: Brian Briggs, OSMI
Brianna Greer, OSMI
Todd Jesse, OSMI