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

1313 Sherman Street, Room 215
Denver, CO 80203

May 8, 2017

Ben Langenfeld
Greg Lewicki and Associates
3375 W. Powers Circle
Littleton, CO 80123

RE: Detroit City Mine; DRMS File No. M-2017-003; Adequacy Review No. 2

Dear Mr. Langenfeld,

The Division has identified several other comments and questions that must be addressed prior to the Division's decision due date. **Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, it will be your responsibility to request an extension of the review period. If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division will deny this application.**

1. The Division intends to conduct a pre-operation inspection of the site prior to approval of the 110(1) Reclamation Permit Application. If weather conditions prohibit an inspection of the site prior to approval, then an inspection of the site will be scheduled as soon as weather conditions allow.

2. The Applicant submitted a Certified Mail Receipt as proof of notice to owners of record of all land surface within 200 feet of the boundary of the affected land. Pursuant to Rule 1.6.2(e), proof of notice must be in the form of a return receipt of Certified Mailing. Please submit a return receipt of Certified Mailing as proof of notice to land owners within 200 feet of the boundary of the affected land.

6.3.3 Exhibit C – Mining Plan

3. The Applicant has stated the secondary escapeway will be via an existing portal. Please provide the dimensions of the portal to be used for the secondary escapeway and describe any existing closures present at the escapeway. In addition, describe how the secondary escapeway will be closed during final reclamation and include all costs associated with final closure in the financial warranty cost estimate.

4. The Applicant has indicated the mine will be operated more than 180 days per year. Please note that if the Operator does not designate the mine as an intermittent operation, then the operation will need to comply with the provisions of Rule 1.13.1.

5. Under Section 10.1 – Surface Water, the Applicant has stated the diversion ditch has been designed to convey the uphill runoff of a 100-YR/24HR storm event. However, the SEDCAD Reports show that the diversion ditch, collection ditches and sediment pond are designed for a 10YR/24HR storm event. The Division will require all storm water control features to be designed for a 100YR/24HR storm event. Please make the appropriate changes to the design of the stormwater control features.

6. The Applicant has indicated a steel door with a lock will be installed on the portal. Any closures which are not currently in place must be included in the financial warranty estimate. Please revise the financial warranty estimate accordingly.

7. The Applicant has stated water for the mining operation will be purchased from the Town of Alma. However, Section 8 of the revised Mining Plan still states that water will be pumped from Buckskin Creek. Please revise the Mining Plan accordingly.

8. The Applicant is proposing to advance the existing portal by 400' and the portal will intersect several veins and faults. The Applicant has stated that groundwater will not be intercepted, but has not made any further demonstration that water will not be produced from mining activities. According to the Colorado Upper Mine Assessment Project Report (2010) provided by the Applicant, many of the portals in Buckskin Gulch discharge water. In addition, the mineral targets for Detroit City Mine are veins and faults which can act as conduits for water. Therefore, the Applicant shall provide a plan addressing a potential discharge of water from the mine. The plan shall specify how the Applicant will comply with the requirements of Rule 3.1.7, as well as the requirements of the Water Quality Control Division.

9. In response to the Division's Preliminary Adequacy Review Letter, the Applicant has committed to conducting geochemical testing of the waste rock to determine the potential for acid generation. The geochemical characterization of the waste rock must be conducted prior to any placement of waste rock in the WRL. Please provide a sampling plan for both acid-base accounting and whole rock analysis. The plan shall also include a proposed timeline for conducting and reporting the results of the geochemical tests.

6.3.4 Exhibit D – Reclamation Plan

10. The Applicant is proposing to construct the WRL in stages from the bottom to the top. The Reclamation Plan calls for clearing topsoil from a stage and windrowing the topsoil at the top of the stage. The Reclamation Plan states that once placement of waste rock is complete for a stage, the stripped topsoil will be replaced. The current Reclamation Plan will involve

running equipment over areas which have had topsoil replaced. The topsoil should be handled as little as possible and once replaced, the topsoil should be seeded as soon as practically possible. Please describe how the Operator will construct the WRL without impacting fully or partially reclaimed areas and clarify if seeding will be done at the end of each stage or when construction of the WRL is complete.

11. The Reclamation Plan calls for constructing the WRL in stages. Please clarify what constitutes a stage and specify how many stages are required to construct the WRL.

12. As noted under Item No. 7, the Division believes the development of the portal will result in a new discharge point. Therefore, the Reclamation Plan must include a provision as to how any potential discharges will be eliminated at the end of the life of the mine, i.e. hydraulic bulkhead.

13. In the Division's Preliminary Adequacy Review Letter, the Division asked the Applicant to clarify if Ferry's oatgrass, a species listed in the seed mix to be used for reclamation, was intended to be listed as Parry's oatgrass. The revised seed mix still lists Ferry's oatgrass. The Division will assume the Applicant intended to list Parry's oatgrass as the species to be planted. This species is typically found on mid-elevation montane grasslands. A more appropriate species would be Timber oatgrass, which is found in alpine and subalpine grasslands. Please consider replacing Parry's oatgrass with Timber oatgrass.

14. The Applicant has provided a revised seed mix which includes Prairie junegrass, Red clover, White clover and Birdsfoot trefoil. These species are not suited to alpine conditions. The Division recommends replacing these species with others which are more suitable for alpine conditions. If the Applicant does not replace these species, then the Reclamation Plan must be revised to include a plan for inoculation of Red clover, White Clover and Birdsfoot Trefoil prior to planting.

15. The revised Reclamation Plan, on Page D-2, still states that tree tublings will be planted. Please revise the Reclamation Plan to reflect that trees will not be planted.

6.3.6 Exhibit F – List of Other Permits and Licenses Required

16. The Division has consulted with the Colorado Water Quality Control Division and it has been determined that a stormwater discharge permit will be required for the operation. Please commit to obtaining a stormwater discharge permit.

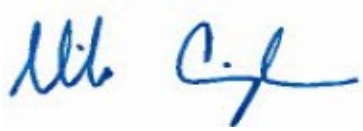
6.5 Geotechnical Stability Exhibit

17. The Division's engineering staff has prepared additional comments regarding slope stability of the WRL. Please address the comments in the attached memorandum.

As previously mentioned, if you are unable to provide satisfactory responses to any inadequacies prior to May 24, 2017, it will be your responsibility to request an extension of time to allow for continued review of this application. If there are still unresolved issues when the decision date arrives and no extension has been requested, the application will be denied.

If you have any questions, please contact me at (303)866-3567 x8116.

Sincerely,



Michael A. Cunningham
Environmental Protection Specialist

Enclosures (1)

CC: Wally Erickson, DRMS

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

1313 Sherman Street, Room 215
Denver, CO 80203

Date: May 5, 2017

To: Michael Cunningham; Division of Reclamation, Mining & Safety

From: Peter Hays; Division of Reclamation, Mining & Safety

Re: Review of Geotechnical Stability Exhibit, Colorado Calumet Co Inc., Detroit City Mine, File No. M-2017-003

The Division of Reclamation, Mining and Safety (Division/DRMS) staff has reviewed the geotechnical stability exhibit included with the Detroit City Mine 110(1) permit application. The following list describes the information used by the Division as presented in the permit application to evaluate slope stability for the proposed waste rock landform (WRL). Please review the list and confirm the list is accurate.

- The maximum reclaimed WRL slope will be 3H:1V
- The WRL material will be end-dumped on the ground surface in 4' to 6' lifts
- No permanent structures are near the waste rock landform
- No laboratory strength tests were performed on the WRL material
- The trees and topsoil in the WRL area will be stripped ahead of material placement in the WRL
- The WRL material is blasted granite with a friction angle of 45-50 degrees based on SME Mining Reference Handbook, Table 2.5, provided by the Applicant
- Approximately 32,000 cubic yards of material will be placed in the WRL
- The WRL will be built from the bottom up, in stages by end dumping material and grading the material with a dozer
- A Factor of Safety Evaluation was performed using the formula; Factor of Safety (FOS) = Tangent of Internal Angle of Friction / Tangent of Actual Angle of Failure Surface. Using a friction angle of 45 degrees and an 18.4 degree slope angle, a 3.0 factor of safety was calculated by the Applicant.

1. The Factor of Safety calculation provided by the Applicant is not sufficient to elevate the slope stability for the proposed waste rock stockpile. Please perform a stability analysis model on the critical slope configurations for the waste rock stockpile during mining (material placement) and after final reclamation for the proposed stockpile.

2. The Applicant did not describe the compaction methods to be used during placement of the WRL material. Please describe the earthmoving techniques to be used during the placement and compaction of the WRL material.

3. Please include the material properties for the native material underlain by the WRL as part of the stability analysis model.

4. Please provide the waste rock material properties lab data, if available, for Division review.

5. Please provide the Division with the slope stability monitoring plan to be used during mining and reclamation activities at the site.

The Division will verify the Applicant's stability analysis models using Clover Technology's Galena v6.1 slope stability software following the Applicant's response to this letter.

If you have any questions, please contact me at peter.hays@state.co.us or (303) 866-3567 Ext. 8124.

Ec: Wally Erickson; Division of Reclamation, Mining & Safety