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

1313 Sherman Street, Room 215
Denver, CO 80203

November 23, 2015

Mr. Jack Henris
Cripple Creek & Victor Gold Mining Company
100 N. 3rd Street
P. O. Box 191
Victor, CO 80860

Re: Cripple Creek & Victor Mining, Co., Cresson Project, M-1980-244;
Review Comments for Quality Assurance Monitoring & Test Results Final Report for Squaw Gulch VLF Phase 1 (9,450 to 9,550 Bench)

Dear Mr. Henris:

The Division of Reclamation, Mining and Safety (Division) has completed the review of the Quality Assurance Monitoring and Test Results for the Squaw Gulch VLF Phase 1 (9,450 to 9,550 Bench) dated October 2015. Pursuant to Rule 7.3.1(5), no chemicals used in the extractive metallurgical process or toxic or acid-forming materials … shall be placed in constructed facilities until the Board or Office accepts the certification of the facility, or phase thereof, that precedes placement. The following comments need to be addressed prior to the Division accepting the submitted report:

Report text:

1. Sect 2.1.1, Collapsed Workings: The presented discussion related to the thickness of the layers: coarse shaft backfill (CSB), 3-foot concrete plug (CP), minimum 7-foot cemented rockfill (CRF), and structural fill (SF) appear to result in a mound of CRF unless there is at least seven feet of soil everywhere above the soil/bedrock interface. Please confirm the soil/bedrock interface was at least seven feet below finished grade everywhere or clarify the narrative.
2. Sect 6.3.2, Seaming Observations: The Division requests clarification on adequate overlap for geomembrane seams. Technical specification 2776.0 does not specify a minimum overlap for the purpose of seaming. Appendix J consistently lists six inches of overlap. Please clarify what dictates adequate overlap for the purpose of seaming.
3. Sect 7.1, 5th bullet: The text states "The SLF containment berms on the southwest limits are greater than 2H:1V". Being steeper than specified may result in erosion problems or local sloughing. Please provide clarification as to why this deviation should be accepted by the Division.
4. Sect 7.2, 2nd bullet: The text states "The resin certificates provided for the welding rod do not match the resin lots used during production of the 80-mil DSMS LLDPE geomembrane". Please

clarify whether the "Extrusion weld integrity was verified with trial welds and destructive tests" or some other criterion were used to determine the resin lots used were acceptable.

Drawings:

5. The revision number and date listed for Drawing A400 is not consistent with the revision number and date on Drawing A400. No response is necessary.

Appendices:

6. Appendix A – Appendix A is adequate as submitted.
7. Appendix B – Appendix B is adequate as submitted.
8. Appendix C – Appendix C is adequate as submitted.
9. Appendix D – One weekly report has the wrong dates and three are missing signatures:
    a. Week ending 1/10/2014 (sic). The year is listed as 2014 instead of 2015. However, the dates accompanying the signatures are correct, so no response is necessary.
    b. Week ending 3/28/2015. There are no signatures. Please submit signed copies.
    c. Week ending 6/20/2015. There are no CC&V signatures. Please submit signed copies.
    d. Week ending 9/12/2015. There are no CC&V signatures. Please submit signed copies.
10. Appendix E – Appendix E is adequate as submitted.
11. Appendix F – Appendix F is adequate as submitted.
12. Appendix G – Appendix G is adequate as submitted.
13. Appendix H – Appendix H is adequate as submitted.
14. Appendix I – Appendix I is adequate as submitted.
15. Appendix J – Appendix J is adequate as submitted.
16. Appendix K – Appendix K is adequate as submitted.
17. Appendix L – Appendix L is adequate as submitted.
18. Appendix M – Please address the following Appendix M comments:
    a. M.1 Tables: The six "Approximate Quantities" columns appear to be incomplete. There are numerous instances where backfill or other quantities are stated in the "Comments" column and all six columns under the "Approximate Quantities" heading are listed as "zero". Given the number of discrepancies, what is the purpose of the "Approximate Quantities" volumes?
    b. M.1 Figures:
        i. Note 2 on Figures UG4, UG5, UG7, UG8, UG9, UG12, UG14, UG15, UG17, UG18, UG20, UG21, UG22, UG23, UG26 and UG27 state "Embankment fill used

as structural fill in remediation effort." The specifications in Appendix E contain no reference to "Embankment Fill". This is not discussed in section 7.2, Project Technical Specification Deviations of the report. Please provide justification for using unspecified material in place of structural fill.

ii. Note 3 on Figure UG27 states "25 CY of approved 4020 mix concrete and 45 CY of 300 psi mix concrete was placed as substitution for cemented rockfill." This is not discussed in section 7.2, Project Technical Specification Deviations of the report. There is no mention of 4020 mix in Appendix M.3. The "300 psi" mix is presumably flowable fill (spec no. 3330). Please provide justification for using unspecified material in place of cemented rockfill.

iii. Survey data graphics on Figures UG11 and UG25 suggest three layers of geogrid were placed, but the quantities listed on these figures indicate only 2 layers of geogrid were placed. Please address this discrepancy.

c. Appendices M.2 – M.6: Appendices M.2 – M.6 are adequate as submitted.

d. Appendices M.7 and M.8: All the geogrid tests appear to be Tensar's UX180060 geogrid. The technical specification (2776.1) in Appendix E lists Tensar's UX1800HS geogrid or equivalent. Unfortunately, the 2776.1 specification does not specify values for two of the conformance tests performed and documented in Appendix M.8 that might demonstrate the UX180060 is equivalent to the UX1800HS (i.e., mass/unit area, aperture size). Please provide some discussion as to why the UX180060 is equivalent to the specified UX1800HS.

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,

Timothy A. Cazier, P.E.
Environmental Protection Specialist

ec: Wally Erickson, DRMS
Amy Eschberger, DRMS
Elliott Russell, DRMS
DRMS file