



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

February 17, 2021

Melissa Harmon  
Cripple Creek & Victor Gold Mining Company  
P.O. Box 191  
Victor, CO 80860

**Re: Review of Fourth Quarter 2020 GW/SW Report and Water Monitoring Program  
Cresson Project, Permit No. M-1980-244**

Dear Melissa Harmon,

On January 28, 2021, the Division of Reclamation, Mining and Safety (Division) received the Fourth Quarter 2020 Ground Water and Surface Water Monitoring Report for the Cresson Project, File No. M-1980-244. The Division has reviewed the report and monitoring data as well as the approved Groundwater and Surface Water Monitoring Program. Please see the attached Review Memo outlining the adequacy items. Please note, the responses to Items #1 - #3 will likely result in a change to the permit and therefore, should be addressed in a Technical Revision. Please submit your responses to the review items on or before **April 19, 2021**.

If you have any questions or need further information, please contact me at (303) 866-3567 x8132.

Sincerely,

Elliott R. Russell  
Environmental Protection Specialist

Attachment: Cresson Project; M1980-244, Fourth (4th) Quarter 2020 GW/SW Report – Review Memo

Ec: Katie Blake, CC&V  
Michael Cunningham, DRMS  
Patrick Lennberg, DRMS





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Division of Reclamation,  
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**Date:** February 17, 2021

**To:** Michael Cunningham, DRMS and Elliott Russell, DRMS

**From:** Patrick Lennberg, DRMS

**RE: Cresson Project; M1980-244, Fourth (4<sup>th</sup>) Quarter 2020 GW/SW Report – Review Memo**

On January 28, 2021, I was requested to review the 4th Quarter 2020 GW/SW Report for the CC&V mine site. In general the sample results were consistent with previous quarterly sample results. However, it appears that monitoring well CRMW-3B is becoming fouled again and following a similar trend to last year at this time. The operator did not address this in the narrative of the report. It was also determined that the operator is not following various aspects of their own QAPP. The following is a list of items that need to be addressed by the operator:

**GENERAL:**

**RESPONSES TO THESE QUESTIONS WILL NEED TO BE COMPLETED THROUGH A TECHNICAL REVISION**

1. Please commit to submitting the quarterly reports no later than 30 days after the last day of the quarter. If additional time is required to submit the quarterly reports please notify the Division as soon as time allows.
2. In Amendment 13 Exhibit G it states that there are 53 active wells used for various monitoring activities at the site and of those 27 wells are monitored on a quarterly basis or more frequently. It is also stated that there are 27 monitoring wells in the Cresson Project Area with an additional 29 monitoring wells in the Grassy Valley Area. The Division, using the provided maps, was only able to determine that there are 49 monitoring wells and of those only 25 (DRMS compliance monitoring wells) are monitored on a quarterly basis.
  - Clarify the number of total active monitoring wells at the site on a basin by basin basis and explain the difference between a non-DRMS monitoring well and DRMS compliance monitoring well.
  - What are the non-DRMS compliance monitoring wells sampled for and how often are they sampled? Why are the sample results for these wells not provided to the Division?



3. It does not appear, from review of the permit record, that any of the DRMS compliance monitoring well locations were identified as specific points of compliance to satisfy the conditions of Rule 3.7.1. The Division requests the operator propose a specific point of compliance for each basin.

#### **FOURTH QUARTER 2020 MONITORING REPORT:**

#### **RESPONSES TO THESE QUESTIONS WILL NEED TO BE COMPLETED THROUGH AN ADEQUACY LETTER**

4. In the QAPP, Appendix 7 of Amendment 13 Table 3-1, it shows that chloride (dissolved) will be a groundwater monitoring parameter. All groundwater samples collected in 2020 were analyzed for total chloride. Explain why dissolved chloride was not analyzed in collected groundwater samples. Provide the dissolved chloride results for all groundwater samples for all 2020 quarterly sampling events.
5. The Division requests an updated table be provided that lists the groundwater and surface water parameters and the corresponding applicable standard concentration to which the parameter is being compared and/or any site specific standards that currently exist.
6. In the QAPP, Appendix 7 of Amendment 13 Section 5.1, it states "A trip blank is submitted quarterly to the contracted laboratory for analysis. One well per quarter will have a duplicate sample collected and submitted to the contracted laboratory for analysis. The field technician will collect a minimum of 5 rinse blanks per quarter to submit to our contracted laboratory for analysis." The Division considers these QA/QC samples as collected samples and should be reported as part of the quarterly report. Provide the results for these samples. Additionally, provide the relative percent difference between the parent sample and the duplicate sample. It should be noted that it is industry standard practice to indicate on the field sheets where QA/QC samples were collected. In the future include this information on the field sheets.
7. A review of the previous 2020 quarterly groundwater and surface water reports it was determined that the aforementioned QA/QC samples were not reported to the Division. Provide the results of these samples and provide the relative percent difference between all parent and the duplicate samples.
8. On the field sheets there is a section titled "O/G Visible" what is the definition of this item?
9. The section on the field sheets related to equipment decontamination clarify what three (3) rinse means and please address whether or not Alconox, Liquinox or similar detergent was used in the decontamination procedure? If so this needs to be reflected on the field sheets.
10. Why were wells CRMW-3B and -3C not purged for casing volumes or parameter stabilization but had samples collected via "grab"?

11. Wells CRMW-3A and 3B both report an odor emanating from the wells. The Division considers this an anomalous reading for the wells and should have been covered in the text of the report. Considering the recent history of these wells related to bio-fouling please elaborate what, if anything, is being done at these wells.
12. The field sheet for CRMW-3A states that the pump has shut off. Does this affect the pump back system that is in place to mitigate potential off-site impacts? Additionally, the field sheet appears to indicate that there may have been insufficient water to pump or was the pump fouled and unable to pump, this requires further explanation? What is the total depth of the well?
13. What is the total depth of CRMW-5D, ESPMW-1, PGMW-2, PGMW-4, SGMW-5, SGMW-6A, and SGMW-7A? According to the QAPP submitted with Amendment 13 Appendix 7 a dry well should be recorded as "Dry at X feet" to assure the indicator did not hang up in the well.
14. Well GVMW-8B and -25 were pumped dry, this is considered a low yielding well, was there an attempt to collect a sample within 24 hours of purging in accordance with the QAPP submitted with Amendment 13, Appendix 7, Section 8.5 Well Sampling?
15. For the following wells PGMW-3, SGMW-7B, and VIN-2A the field sheets state there insufficient volume to pump. For these wells provide both the water level and total depth of the well to verify there was insufficient volume to collect a sample. Also, what is the criteria for insufficient volume to sample?
16. Explain why no sample was collected at SGMW-7B and the well was labeled dry when the field sheet indicates a water level of 58.9 feet and at the bottom of the sheet it states the pump is at 399.94 feet, showing there was at least 341 feet of water in the well?
17. Explain why the field sheets for CRMW-5B and 5C indicate there are dedicated pumps yet a 3 rinse decontamination was done, compared to the field sheets for GVMW-8A and SGMW-6B which indicate dedicated pumps yet no decontamination was completed.
18. Clarify why the field sheet for well VIN-2B was not completely filled out.
19. Clarify what the 3 bucket decontamination procedure is, as indicated on the field sheets for WCMW-3 and WCMW-6.
20. Field sheets for surface water sampling locations AG-2.0, GV-02, GV-03, T2 and WC5W-1 were completed on groundwater sampling forms. Please create a separate surface water sampling field sheet to be used in future sampling campaigns and resubmit on the new form the 4th quarter 2020 surface water sampling field sampling records.

If you need additional information or have any questions, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrick Lennberg". The signature is fluid and cursive, with the first name "Patrick" written in a larger, more prominent script than the last name "Lennberg".

Patrick Lennberg  
Environmental Protection Specialist

ec: Michael Cunningham, DRMS  
Elliott Russell, DRMS  
Tim Cazier, DRMS  
Brock Bowles, DRMS  
Jared Ebert, DRMS