



January 12, 2023

Peter Wayland  
Weiland, Inc.  
PO Box 18087  
Boulder, CO 80308

**RE: Goose Haven Reservoirs (Permit No. M-2010-071)  
Amendment No. 2 (AM-2)  
Adequacy Review #4**

Dear Mr. Wayland:

On January 6, 2023, the Division of Reclamation, Mining and Safety received your adequacy response to the Division's adequacy letter of October 26, 2022 for the Goose Haven Reservoirs AM2 application, File No. M-2010-071. The following questions address adequacy issues and missing information that is needed to complete the application. This information needs to be addressed and/or received before the Division can approve the application.

Rule 1.6.2(1)(d) and 1.6.5(2) – Proof of Publication

1. Item Resolved.

Rule 1.6.2.(e) Notice of Land Owners –

2. Item Resolved.

Rule 6.2.1(2) Maps and Exhibits –

3. Item Resolved.

Rule 6.4 - Specific Exhibit Requirements - 112 Reclamation Operation

6.4.1 EXHIBIT A - Legal Description - Adequate as submitted.

6.4.2 EXHIBIT B - Index Map - Adequate as submitted.

6.4.3 EXHIBIT C - Pre-mining & Mining Plan Map(s) of Affected Lands

4. Item Resolved.

6.4.4 EXHIBIT D - Mining Plan



5. Please see the attached memo from Robert Zuber (DRMS surface water specialist) and address the issues he raise concerning the drainage swale.
6. The City of Lafayette has committed to submitting the final dam construction report, as-built plans and final certification for inclusion into the permit when the documents are obtained.

6.4.5 EXHIBIT E - Reclamation Plan - Adequate as submitted.

6.4.6 EXHIBIT F - Reclamation Plan Map - Adequate as submitted.

6.4.7 EXHIBIT G - Water Information -

7. Item Resolved.
8. Please see the attached memo from Patrick Lennberg (DRMS groundwater specialist) and address the issues he raised concerning groundwater.
9. This item is being addressed in the memo prepare by Patrick Lennberg in #8 above.

6.4.8 EXHIBIT H - Wildlife Information - Adequate as submitted.

6.4.9 EXHIBIT I - Soils Information - Adequate as submitted.

6.4.10 EXHIBIT J - Vegetation Information - Adequate as submitted.

6.4.11 EXHIBIT K - Climate- Adequate as submitted.

6.4.12 EXHIBIT L - Reclamation Costs – Adequate as submitted.

6.4.13 EXHIBIT M - Other Permits and Licenses (Statement Req'd) - Adequate as submitted.

6.4.14 EXHIBIT N - Source of Legal Right to Enter – Adequate as submitted.

6.4.15 EXHIBIT O - Owner(s) of Record of Affected Land and Substance to be Mined - Adequate as submitted.

6.4.16 EXHIBIT P - Municipalities Within Two Miles - Adequate as submitted.

6.4.17 EXHIBIT Q - Proof of Mailing of Notices to Board of County - Adequate as submitted.

6.4.18 EXHIBIT R - Proof of Filing with County Clerk and Recorder - Adequate as submitted.

6.4.19 EXHIBIT S - Permanent Man-made Structures -

10. Item resolved.

Boulder County submitted comments regarding the updated swale outlet design. Please address Boulder County comments below:

1. Boulder County does have concerns about potential impacts to its MMS Open Space Property to the north. Those potential impacts include, but are not limited to, crop damage and other damages

from stormwater runoff, erosion, and sediment loading. To address those concerns, Boulder County requests that the City of Lafayette does commit, in writing, to mitigate potential issues that could impact Boulder County property and that the City of Lafayette will remediate and/or compensate (or reimburse) Boulder County for costs due to impacts and damage to Boulder County property as well as for perennial planting re-establishment.

2. Per design drawing page B-1: It appears that virtually the entire stormwater drainage basin being calculated for the stormwater channel is also irrigated agricultural fields. This design changes everything about the historic flow of tailwater: where it enters Boulder County property, how it flows across Boulder County property and where it leaves Boulder County property. Therefore, Boulder County requests confirmation of this channel's functionality relating to irrigation tailwater from those properties. If those properties' tailwater is conveyed through this channel, Boulder County's MMS property's infrastructure has no ability at the channel's designed discharge location to direct tailwater flows around the field and back to the Lower Boulder Ditch. Boulder County requests an estimate of peak tailwater volume and potential tailwater path to Lower Boulder Ditch.

The AM2 application is scheduled for a Formal Public Hearing before the Board on January 18, 2023. The Division will continue to review any submitted materials with the intention of getting all materials in approvable form before the January 18, 2023 Board meeting.

All corrected pages must also be provided to Boulder County Clerk & Recorder.

If you have any questions, please contact me at (720) 774-0040 or [brock.bowles@state.co.us](mailto:brock.bowles@state.co.us).

Sincerely,



Brock Bowles  
Environmental Protection Specialist

CC: Jared Ebert, DRMS



## MEMORANDUM

Date: January 10, 2023  
To: Brock Bowles, DRMS  
From: Rob Zuber, DRMS  
RE: Goose Haven Pit (permit M-2010-071), AM-02, Surface water management, Item #4,  
Review of adequacy response received January 2023

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Per your email of January 6, 2023, I reviewed the adequacy response from Weiland, Inc. that is related to Item #4 in the Division adequacy letter of August 2, 2022. I have the following comments (my initial comment is shown, followed by my new comment in bold type):

- a) In the adequacy response to Item #4, the applicant states that post-mining stormwater flows from the site will not exceed pre-mining flows. (The Division understands this statement to be relevant to the swale at the northwest corner of the site.) The applicant should provide proof that flow is less than or equal to pre-disturbance flow in the form of a hydrology model or other type of hydrologic analysis.
  - **Weiland, Inc. has given evidence why the post-mining stormwater flows will not be greater than the pre-disturbance flow. However, because the flow will be concentrated in a channel, the velocity of the flow may be increased. This is one of the reasons for my response in part b. below.**
- b) I find the drop structure, wing wall, and cutoff wall concept and design to be sound. However, it is a somewhat unusual approach. Therefore, the applicant needs to provide a written commitment to repairing any erosion on or addressing sediment loading to adjacent properties. This includes the property north of the site, which is owned by Boulder County. If erosion or sediment problems persist, the applicant will need to redesign the stormwater system, perhaps constructing a detention pond with an embankment and adequate spillways that do not cause damage to the downstream property.
  - **While the model indicates that the water in the swale will spread out after flowing over the drop structure, it appears to the Division that the possibility of erosion was not directly modeled. Furthermore, experience suggests that rills or gullies could form in this area over time due to erosion of the unarmored soil. I recommend that**



**the Division require the City to commit to: 1) the use of Best Management Practices (BMPs) to prevent erosion below the drop structure and 2) repairing any erosion features that do develop.**

- **Furthermore, I stand by the position that it would be prudent to ask the City of Lafayette to sign a written commitment to mitigate erosion or sediment loading that impacts the property owned by Boulder County, north of the City's permit site. However, this is not necessary if the above requirements (BMPs and repairs) are added as stipulations related to the amendment.**

**Date:** January 12, 2023

**To:** Brock Bowles, DRMS

**From:** Patrick Lennberg, DRMS

**RE: Goose Haven Site, Amendment No.2 (AM-2) Application, Adequacy Review No. 4 Questions, File No. M2010-071**

On January 6, 2023, the Division received the responses to the Division's Adequacy Review No. 3 for the Goose Haven Site, AM-2 application, M2010-071 which included responses to my follow-up questions 1-5. Below are additional questions that should be addressed.

1. The Division could not locate the requested map that depicts the current monitoring well locations and the locations of the proposed monitoring wells. Please provide the missing map and the Division will evaluate the proposed locations for adequacy.
2. What is the timing of installing the proposed monitoring wells? The Division wants the Applicant to commit to installing the proposed monitoring wells by the end of second (2<sup>nd</sup>) quarter 2023 or no later than June 30, 2023. The Applicant shall submit to the Division within 30 days of completion of monitoring well installation activities the boring logs, well construction diagrams, and copies of the proper DWR submittals. If the Applicant is unable to meet the aforementioned timeline, the Applicant must notify the Division in writing 30 days prior to the end of the 2<sup>nd</sup> quarter 2023 with an updated timeline for well installation. Failure to install the monitoring wells in a sufficient timeframe may result in an enforcement action for failure to protect the hydrologic balance.
3. Why will the underdrain along the northern boundary of the lined reservoir (2A) be plugged and abandoned? It appears from the groundwater model that groundwater elevations will drop up to 7 feet north of the reservoir. Keeping the drain may offset the depressed groundwater levels north of 2A and help mitigate any mounding issues along the west side of 2A.
4. Please provide the details of how the Applicant plans on abandoning the underdrain north of reservoir 2A.
5. The provided SWSP expired on December 31, 2022, was a renewal request submitted by November 1, 2022 deadline? If not please state if a renewal request has been submitted and the date it was submitted. If no renewal request has been submitted please state why.



6. The map provided showing the dewatering outfall to the Lower Boulder Ditch needs additional clarification. In the SWSP provided it is stated that water will ultimately be “discharged into Boulder Creek via Lafayette’s return flow canal from the Boulder and Weld County Ditch Headgate. The return flow canal is a concrete lined canal that discharges to Boulder Creek into the initial reach of the Boulder & Weld County Ditch downstream of the diversion structure, but upstream of the headgate and overflow canal back to Boulder Creek.” It is unclear to the Division if the Applicant is discharging to the correct ditch. Please provide additional documentation that shows the location of the structures mentioned in the SWSP and that the Applicant is discharging at the correct location.

### **Groundwater Modeling Report**

7. In the Applicant’s response to item #1 it is asserted that mitigation trigger may not be needed because an underdrain has already been installed. The Division does not agree and the approved mitigation trigger will be applied to all site monitoring wells. The currently approved mitigation trigger states “If a change in groundwater elevation greater than two feet beyond the seasonal baseline plus the anticipated (modeled) change in ground water elevations occurs then an intermediate second measurement will be taken 45 days after the initial reading. If the reading is still outside the mitigation trigger and an impact is imminent (i.e. a flooded basement or field), mitigation will be performed.” The mitigation trigger can be revised in the future through a separate permit technical revision.
8. In the report’s introduction the Applicant states the current groundwater model supersedes the previous groundwater model for the site. The Division does not agree with the statement at this time. At this time, the provided groundwater model may be used in conjunction with the currently approved model. The Applicant shall by the end of the 3Q2023 submit a Technical Revision to update the site wide groundwater model based on information collected from the newly installed monitoring wells at the site.
9. Please revise the model’s maps to clearly show where the Grollman and Schneider properties are located.
10. The Division could not find on GW-3 the locations of P-11, 12, and 13, update and resubmit a new GW-3 map showing these locations.
11. Map GW-3 needs to be updated or a new map provided that depicts the Applicant’s statement “The variable behavior of the model in this area can be attributed to the variable nature of the bedrock elevations and low transmissivity of the stratigraphy in this area.”, when discussing where mounding and shadowing areas are predicted to occur at the site.

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

cc: Jared Ebert, DRMS  
Brock Bowles, DRMS