



1/13/2023

Brock Bowles  
Environmental protection Specialist  
Colorado Division of Mining Reclamation & Safety  
1313 Sherman St., Room 215  
Denver, Colorado 80202

Re: Goose Haven Reservoir M-2010-071 Response to Adequacy #4

Brock,

I have provided responses to the outstanding items from your Adequacy Review #4 letter dated Jan. 12, 2023.

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.

***Please see attached letter from the City of Lafayette regarding this matter.***

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.

***Please see attached letter from the City of Lafayette regarding this matter.***

*Mr. Zuber Wrote the following comment;*

**b)** 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.

***The City will commit to using best management practices (BMP's) to prevent erosion below the drop structure as well as repairing any erosion features that could develop.***

*Patrick Lennenberg Wrote the following comments 1-11:*

**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.

***Figure 1 from the McLaughlin Water Engineers Groundwater Monitoring & Mitigation Plan showing existing piezometers has been enclosed. Additionally, the same wells are shown in GW-1, GW-2. GW-3 has been replotted to adobe to now show both existing and proposed piezometers.***

**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 (2nd) 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 monitoring wells in a sufficient timeframe may result in an enforcement action for failure to protect the hydrologic balance.

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 2nd quarter 2023 with an updated timeline for well installation. Failure to install the

***The City will commit to installing the proposed piezometers prior to the end of June 2023 and will submit the boring logs, well construction diagrams, and copies of the proper DWR submittals to the DRMS.***

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.

***Unfortunately, dam safety has required that we plug and abandon this dewatering pipe.***

4. Please provide the details of how the Applicant plans on abandoning the underdrain north of reservoir 2A.

***The details are given in GOOSE HAVEN RESERVOIR CELL 2A STATE DAM ID NO.: 060340 CONSTRUCTION FILE NO.: C-2114 CITY OF LAFAYETTE BOULDER COUNTY, CO WATER DIVISION 1, DISTRICT 6 CONSTRUCTION SPECIFICATIONS Procedure***

***REMOVAL AND ABANDONMENT 31 23 19 section 3.4 as follows:***

***A. All elements of the dewatering system(s) shall be removed from the site at the completion of the dewatering work, or abandoned in place in a method acceptable to the Engineer.***

***B. All elements to be abandoned in place shall be abandoned in such a way that future dewatering using the infrastructure is not possible. Installed perforated or solid pipes shall be plugged or filled to prevent future pumping of water collected within the drain system. All dewatering pipes that are abandoned in place shall be fully backfilled with environmentally approved grout using tremie methods to the satisfaction of the Engineer.***

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.

***A renewal request has been submitted today 1/13/2023. The previously submitted plan did cover through 2023 and approval for that period was requested, however you are correct that the plan expired on 12/31/22. I expect approval to be this month since the plan was previously approved and nothing has changed.***

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.

***It does appear that the operator of the pit has been discharging to the wrong pipe. The operator of the pit has been instructed to place a pipe from Cell 2A to the correct outfall location as shown in the SWSP Figure 2 sheets 1-3 which I have enclosed.***

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.

***The applicant will agree to abiding by the terms of the mitigation triggers as described***

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.

***This statement has been removed from the Report and a revised report has been enclosed. The applicant also agrees to file a technical revision before 3Q2023 including an updated model based on information collected from the newly installed monitoring wells***

9. Please revise the model's maps to clearly show where the Grollman and Schneider properties are located.

***The maps have been updated with the properties shown.***

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.

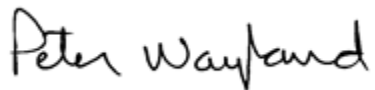
***GW-3 has been updated to show these piezometers.***



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

***This statement has been included on the revised GW-3.***

Sincerely

A handwritten signature in black ink that reads "Peter Wayland". The signature is written in a cursive, flowing style. It is contained within a thin black rectangular border.

Peter Wayland  
President

Encl. Letter from Melanie Asquith Re: DRMS Permit No. M-2010-071 AM-2 Adequacy Review Response No. 4, Figure 1 from the McLaughlin Water Engineers Groundwater Monitoring & Mitigation Plan, Goose Haven Reservoir Expansion Groundwater Modeling Report 1/13/2013.



January 13, 2023

Mr. Brock Bowles  
Environmental Protection Specialist  
Colorado Division of Reclamation Mining & Safety  
1313 Sherman St., Room 215, Denver, CO 80203

**Re: DRMS Permit No. M-2010-071 AM-2 Adequacy Review Response No. 4**

Dear Mr. Bowles,

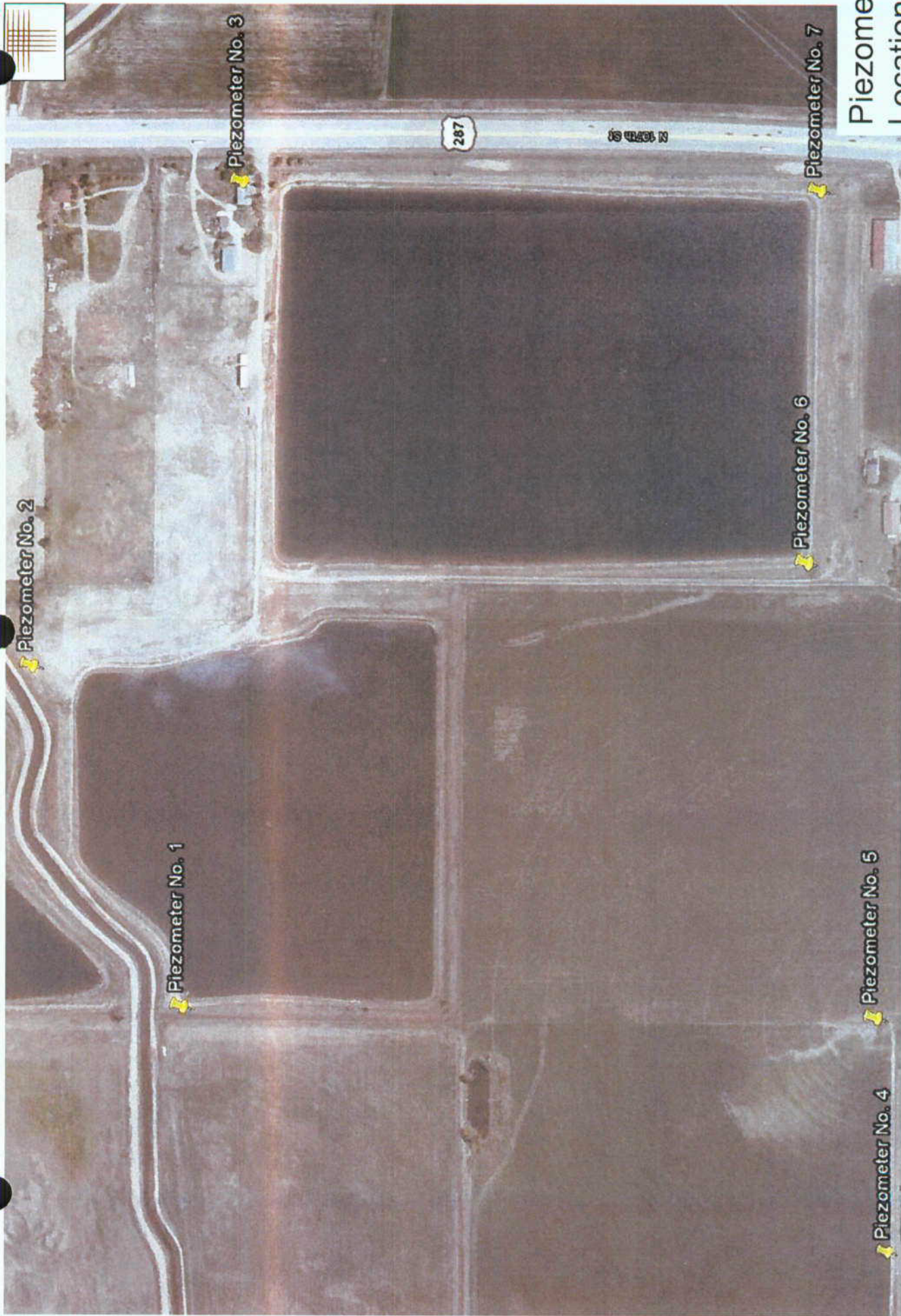
Adequacy Letter No. 4 dated 1/12/2023 for the Goose Haven Reservoirs project included comments from Boulder County regarding potential impacts to their property related to stormwater drainage around the proposed reservoir.

The City has directed its professional Engineer to prepare a design that manages stormwater drainage in a historical manner. We will continue to work with the County to ensure that our design meets applicable requirements established by law.

Sincerely,

A handwritten signature in black ink that reads "Melanie Asquith".

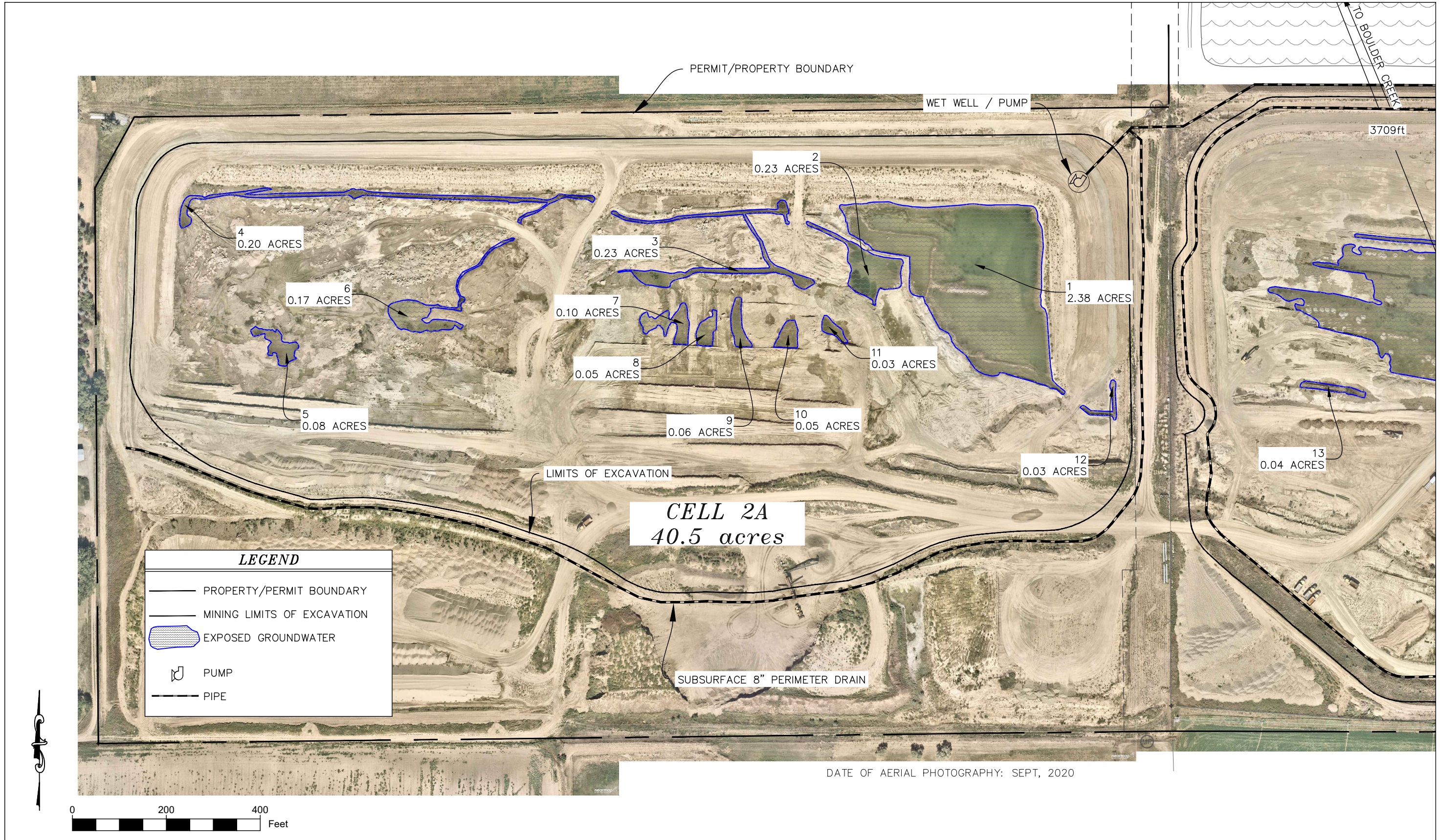
Melanie Asquith, P.E.  
Principal Utility Engineer and Water Resources Manager



Piezometer  
Locations

FIGURE 1





REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

**WSE** **Weiland, Inc.**  
Environmental & Engineering  
  
PO BOX 18087  
BOULDER, CO, 80308  
ph 303-443-9521

**GOOSE HAVEN RESERVOIR #2 - COMPLEX EXPANSION**  
**TEMPORARY SUBSTITUTE WATER SUPPLY PLAN**

LAFAYETTE, CO

PREPARED FOR:

ROCK PRODUCTS, LLC

**FIGURE 2**  
**SITE PLAN SHEET-1**

SCALE 1"=200'	DWG NO. FIGURE 2.DWG	REV. REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 04/15/2021
SHEET 1 OF 3		





REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



**Weiland, Inc.**  
Environmental & Engineering

PO BOX 18087  
BOULDER, CO, 80308  
ph 303-443-9521

**GOOSE HAVEN RESERVOIR #2 - COMPLEX EXPANSION**

**TEMPORARY SUBSTITUTE WATER SUPPLY PLAN**

LAFAYETTE, CO

PREPARED FOR: ROCK PRODUCTS, LLC

**FIGURE 2**

**SITE PLAN SHEET-2**

SCALE 1"=200'	DWG NO. FIGURE 2.DWG	REV. REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 04/15/2021
SHEET 2 OF 3		





REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



PO BOX 18087  
BOULDER, CO. 80308  
ph 303-443-9521

GOOSE HAVEN RESERVOIR #2 - COMPLEX EXPANSION  
TEMPORARY SUBSTITUTE WATER SUPPLY PLAN

LAFAYETTE, CO

PREPARED FOR:

ROCK PRODUCTS, LLC

FIGURE 2  
SITE PLAN SHEET-3

SCALE 1"=200'	DWG NO. FIGURE 2.DWG	REV. REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 04/15/2021
		SHEET 3 OF 3