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

January 4, 2022

Brad Fancher
Loveland Ready-Mix Concrete, Inc.
644 N. Namaqua Road
P.O. Box 299
Loveland, CO 80539

Re: Loveland Ready-Mix Concrete, Inc., Dunn Pit, File No. M-2021-059, 112c Permit Application Adequacy Review

Mr. Fancher,

The Division of Reclamation, Mining and Safety (Division/DRMS/Office) reviewed the contents of the Loveland Ready-Mix Concrete, Inc. (LRM) 112c permit application for the Dunn Pit, File No. M-2021-059 and submits the following comments. The Division is required to issue an approval or denial decision no later than January 30, 2022, therefore a response to the following adequacy review concerns should be submitted to the Division as soon as possible.

The review consisted of comparing the application contents with the specific requirements of Rules 1, 3, 6.1, 6.2, 6.4 and 6.5 of the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials effective date July 15, 2019. Any inadequacies are identified under the respective exhibit heading along with suggested actions to correct them.

Comments

1. The Division received state agency comments from History Colorado and the Division of Water Resources. The letters are attached for review. Please address the comments submitted for the application and revise the application accordingly.

1.6 Public Notice

2. Pursuant to Rules 1.6.2(1)(d) and 1.6.5(2), please submit proof of publication in a newspaper of general circulation in the locality of the proposed mining operation.

3. Pursuant to Rule 1.6.2(e), please submit proof of the notice to all owners of record of surface and mineral rights of the affected land and the owners of record of all land surface within 200 feet of the boundary of the affected land including all easement holders located on the affected land and within 200 feet of the boundary of the affected land. Proof of notice may be return receipts of a Certified Mailing or by proof of personal service.

6.4 Specific Exhibit Requirements - Regular 112 Operations

The following items must be addressed by the Applicant in order to satisfy the requirements of C.R.S. 34-32.5-101 et seq. and the Mineral Rules and Regulations of the Mined Land Reclamation Board:

6.4.1 Exhibit A - Legal Description

4. The main mine entrance location listed in Exhibit A - Legal Description, 40.341275, -104.872903, differs from the entrance location listed on the application form, 40.341276, -104.874737. Please explain this discrepancy the revise Exhibit A or the application form accordingly.

6.4.3 Exhibit C - Pre-Mining and Mining Plan Maps of Affected Land

5. The Applicant indicated the type of structures and the location of significant, valuable and permanent man-made structures contained on the area of affected land and within two hundred (200) feet of the affected land on the Exhibit C-17 map. Pursuant to Rule 6.4.3(g), please show the owner's name for the permanent man-made structures on the map.

6.4.4 Exhibit D - Mining Plan

6. On Page 6, Section 6.1.1, the Applicant states if the topsoil stockpiles will be in place for an extended amount of time it will be seeded to produce a vegetated cover. Please commit to seeding stockpiles which have been in place for 180 days and provide a seed mixture as pounds of pure live seed (PLS) per acre.

7. On Page 7, Section 6.1.2, the Applicant states since the material is mined "wet", mined slopes will be 1.5V:1H. Please explain how the Applicant will verify the "wet" mined slopes are mined at a 1.5V:1H slope.

6.4.5 Exhibit E - Reclamation Plan

8. On Page 12, Section 7.0, the Applicant states seeding/vegetating overburden and topsoil stockpiles that will be exposed longer than one year will occur. As noted in Item #6, please commit to seeding stockpiles which have been in place for 180 days and provide a seed mixture as pounds of pure live seed (PLS) per acre.

9. On Page 12, Section 7.0, the Applicant states the backfilling and sloping sides of mining cells with excess topsoil will occur during reclamation. Please explain the earthmoving processes the Applicant intends to implement to backfill and compact the mined slopes and shorelines with topsoil during reclamation.

10. On Page 12, Section 7.1, the Applicant states the Dunn Pit will be returned to a post-mining land use of wildlife habitat with groundwater sources ponds as each of the three phases are completed. Please commit to providing the Division with a copy of the final groundwater augmentation plan approved by the Division of Water Resources (DWR), when available.

11. The Applicant has not obtained the final augmentation plan for the groundwater exposure of the three groundwater ponds at the conclusion of the Dunn Pit reclamation. Therefore, the Division will require the Applicant to provide a reclamation bond to include the backfilling of the exposed groundwater until the final augmentation plan is obtained from the DWR. The Division calculated the reclamation bond based on this requirement.

12. On Page 12, Section 7.1, the Applicant states slopes of 3:1 will be established above the water surface and slopes of 2:1 will be established at or below the water surface. Rule 3.1.5(7) states, "In all cases where a lake or pond is produced as a portion of the Reclamation Plan, all slopes, unless otherwise approved by the Board or Office, shall be no steeper than a ratio of 2:1 (horizontal to vertical ratio), except from 5 feet above to 10 feet below the expected water line where slopes shall be not steeper than 3:1." Please revised Exhibit E to comply with the requirements of Rule 3.1.5(7).

13. On Page 13, Section 7.3.1, the Applicant states the final grading will be no steeper than 2H:1V below water surface and 3H:1V above water surface which will create a final topography that is appropriate for natural open space or wildlife habitat. As noted in Item #12, please commit to reclaiming the pond slopes at a 3H:1V grade from 5 feet above to 10 feet below the expected water line and revise Exhibit E accordingly.

14. On Page 15, Section 7.3.4, the Applicant states the stockpiles that will remain in place for more than one season will be seeded to stabilize them and minimize erosion. As noted in Item #6, please commit to seeding stockpiles which have been in place for 180 days and provide a seed mixture as pounds of pure live seed (PLS) per acre.

15. Pursuant to Rule 6.4.5(f)(iii), please provide a description of the fertilization to be implemented during reclamation, if applicable, and specify the types, mixtures, quantities and time of application.

16. On Page 16, Section 7.4.2, the Applicant states grass or straw will be crimped in place with a mechanical crimper made for such purposes or using a farm-type disc plow set straight with adequate weigh to crimp the material to a depth of approximately 4 inches. Please provide the tons per acre of mulching proposed during reclamation.

17. Please provide a Weld County approved Noxious Weed Management Plan including at minimum the target species, mitigation measures and treatment schedule.

6.4.5 Exhibit F - Reclamation Plan Map

18. On Exhibit F-1, Section A-A', the Applicant indicates a final reclamation slope of 1.5H:1V below the water line and 3H:1V above the waterline. As noted in Item #12, please commit to reclaiming the pond slopes at a 3H:1V grade from 5 feet above to 10 feet below the expected water line and revise Exhibit F-1 accordingly.

Additionally, in the proposed Reclamation Plan the Applicant states slopes of 3H:1V will be established above the water surface and slopes of 2H:1V will be established at or below the water surface. Please explain this discrepancy and revise Exhibit F-1 accordingly.

19. On Exhibit F-3, Sections B-B′ and C-C′, the Applicant indicates a final reclamation slope of 1.5H:1V below the water line and 3H:1V above the waterline. As noted in Item #12, please commit to reclaiming the pond slopes at a 3H:1V grade from 5 feet above to 10 feet below the expected water line and revise Exhibit F-3 accordingly.

    Additionally, in the proposed Reclamation Plan the Applicant states slopes of 3:1 will be established above the water surface and slopes of 2:1 will be established at or below the water surface. Please explain this discrepancy and revise Exhibit F-3 accordingly.

6.4.6 Exhibit G - Water Information

20. A constructed well is indicated on Figure 2 - Water Rights Structures located in the southeast corner of the site, however the owner of the well is not indicated on the map. Please revise the Figure 2 map to indicate the owner of the well and provide proof of notification to the well owner.

21. On Page 21, Section 9.2.3, the Applicant lists the constructed wells in the vicinity of the site. Please confirm the list includes all wells within 600 feet the permit boundary.

22. On Page 21, Section 9.2.3, the Applicant lists the constructed wells in the vicinity of the site. The following wells were not indicted on Figure F-2. Please explain this discrepancy and revise Exhibit G accordingly.

    a. Mad Russian Well (59968-F)
    b. Loveland Ready Mix (61849-MH and 61850-MH)

23. On Page 21, Section 9.2.3, the Applicant lists the constructed wells in the vicinity of the site. The Applicant did not submit proof of notification to the following well owners. Please explain this discrepancy and revise Exhibit G accordingly.

    a. Hall Irwin (248398)
    b. Mad Russian Well (59968-F)

24. The Applicant provided proof of notification for well no. 12892-R owned by Paul and James Nelson. Please revise the list of constructed wells in Section 9.2.3 of Exhibit G to include the well owners.

6.4.9 Exhibit I - Soils Information

25. The Applicant provided a figure and map of the NRCS soils report for the proposed mine site. Please provide a copy of the complete NRCS soils report for Division review.

6.4.12 Exhibit L - Reclamation Costs

26. The Division calculated the cost for an independent contractor to reclaim the site based on the information submitted by the Applicant in the application and the Division's requirement to include the cost to backfill the exposed groundwater until the final augmentation plan is obtained from the DWR at $3,018,000.00. A copy of the Division's bond estimate is attached for review.

6.4.13 Exhibit M - Other Permit and Licenses

27. Please commit to providing copies of all required and approved permits and licenses to the Division, when available.

6.4.18 Exhibit R - Proof of Filing with County Clerk and Recorder

28. Please provide an affidavit or receipt indicating the date on which the revised application information required to address this adequacy letter was placed with the Weld County Clerk and Recorder for public review, pursuant to Subparagraph 1.6.2(1)(c).

6.4.19 Exhibit S - Permanent Man-made Structures

Where the affected lands are within two hundred (200) feet of any significant, valuable and permanent man-made structures, the Applicant may either:

a. provide a notarized agreement between the Applicant and the person(s) having an interest in the structure, that the Applicant is to provide compensation for any damage to the structure; or

b. where such an agreement cannot be reached, the Applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or

c. where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.

The Division will require the Applicant to demonstrate they attempted to obtain notarized structure agreements with all owners of the structures within 200 feet of the affected area of the proposed mine site, pursuant to Rule 6.4.19, prior to the Division's consideration of a stability analysis.

29. The Division did not receive proof of notification for the following permanent man-made structures owners within 200 feet of the boundary of the affected land as identified by the Applicant in Exhibit S. Please provide proof of notification for the following owners of record:

    a. Telecommunications (TDS Telecom and Zayo Bandwidth)
    b. Overhead Powerline (Xcel Energy and Century Link)
    c. Natural Gas (Xcel Energy and DCP Midstream)

d. Water (Little Thompson Water District)
e. Coulson Excavating
f. Dunn Residence, outbuilding
g. Martin Del Campo Residence, outbuilding
h. Nelson Family LLC
i. Paul Wagner Residence
j. Mad Russian Golf Course

30. Please provide the Division with copies of all signed structure agreements with the owners of permanent man-made structures within 200 feet the proposed affected area boundary.

31. The Applicant submitted a copy of the structure agreement cover letter for Janice Knaub. Ms. Knaub is not listed as a permanent man-made structure owner in Exhibit S or on Exhibit C-17. Please explain this discrepancy and revise the Exhibits as required.

32. The Inlet Protection report submitted for the Dunn Pit application was reviewed by Rob Zuber with the Division. A copy of Mr. Zuber's review memo dated December 17, 2021 is attached. Please respond to the adequacy questions contained in the memo.

33. Exhibits F, G and Appendix D for the Dunn Pit application were reviewed by Patrick Lennberg with the Division. A copy of Mr. Lennberg's review memo dated December 9, 2021 is attached. Please respond to the adequacy questions contained in the memo.

6.5 Geotechnical Stability Exhibit

34. The Applicant submitted a Factor of Safety calculation based on assumed soil properties to demonstrate the geotechnical stability of the mined and reclaimed slopes. The Division will require the Applicant to provide an engineering stability analysis for the proposed mined and reclaimed slopes. The model must be performed using stability analysis software to allow verification of the models by the Division. The stability analysis model must assume the worst-case scenario for the mined and reclaimed slopes.

35. The Geotechnical Stability cover letter states the analysis shows that LRM can excavate the pits wet using a large excavator, but that the excavator will require a working platform roughly 16'x20' to distribute the load. The platform requirement is not discussed in Exhibit D - Mining Plan. Please revise Exhibit D to incorporate the requirements of the geotechnical stability report.

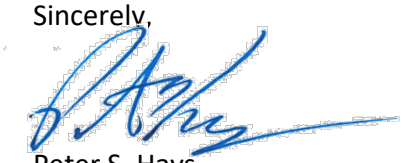
36. The Applicant selected a required factor of safety (FOS) of 1.3 from Table 1 – Recommended Minimum Factors of Safety for Slope Stability Analyses for Operations and Reclamation. The selected FOS is for strength measurements resulting from multiple tests. The Division does not agree the Applicant's utilization of the results of particle-size distributions and boring logs qualifies as tests. The Division will require the Applicant to meet a factor of safety of 1.5, unless laboratory strength tests were performed on soils at the site.

37. In the Conclusions section of the stability report, the Applicant states it is safe for DRMS's reclamation slope of 2H:1V, and can be steepened to 1.78H:1V during mining as long as a platform is used beneath the excavator to distribute the weight. The Applicant proposed a mining slope of 1.5H:1V in Exhibit D - Mining Plan. Please revise Exhibit D to incorporate the requirements of the geotechnical stability report.

Please be advised the Dunn Pit application may be deemed inadequate, and the application may be denied on January 30, 2022, unless the above mentioned adequacy review items are addressed to the satisfaction of the Division. If more time is needed to complete the reply, the Division can grant an extension to the decision date. This will be done upon receipt of a written waiver of the Applicant's right to a decision by January 30, 2022 and request for additional time. This must be received no later than the decision date.

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

Sincerely,



Peter S. Hays
Environmental Protection Specialist

Enclosures - History Colorado Comment Letter
Division of Water Resources Comment Letter
Reclamation Cost Estimate dated December 22, 2021
Zuber Review Memo dated December 17, 2021
Lennberg Review Memo dated December 9, 2021

Ec: Jared Ebert; Division of Reclamation, Mining & Safety
Stephanie Fancher-English; Loveland Ready-Mix Concrete, Inc.
Walt Niccoli; Telesto Solutions, Inc.

History Colorado

Peter Hays
Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203

Re: Dunn Pit, File No. M-2021-059 (HC# 80573)

Dear Mr. Hays:

We received your letter dated November 01, 2021 initiating consultation with our office on the subject action pursuant to the Colorado State Register Act – Colorado Revised Statute (CRS) 24-80.1 et. seq.

A search of our database indicates that two sites (5WL.10 and 5WL.841) are located within or adjacent to the permit area. Site 5WL.10 did not have an assessment provided on the form, and site 5WL.841 is a segment of the officially eligible Great Western Railroad. As there are no properties of historical significance included or nominated for inclusion in the state register currently documented within the proposed permit area, a finding of no adverse effect to significant properties is appropriate. As most of Colorado has not been inventoried for cultural resources, our files contain incomplete information. Consequently, there is the possibility that as yet unidentified cultural resources exist within the proposed permit area. The requirements under CRS 24-80 part 13 apply and must be followed if human remains are discovered during ground disturbing activities.

Please note that if the fill or disposal site location is associated with a Federal undertaking, it is the responsibility of the federal agency to meet the requirements of Section 106 as set forth in 36 CFR Part 800 titled "Protection of Historic Properties". This includes not only reasonable and good faith identification efforts of any historic properties located within the area of potential effects, but determining whether the undertaking will have an effect upon such properties. The State Historic Preservation Office, Native American tribes, representatives of local governments, and applicants for federal permits are entitled to consultative roles in this process.

We thank you for the opportunity to comment. If we may be of further assistance, please contact Holly McKee-Huth, Cultural Resource Information/Section 106 Compliance at (303) 866-4670/holly.mckee@state.co.us.

Sincerely,

Dawn DiPrince
State Historic Preservation Officer

COLORADO
Division of Water Resources
Department of Natural Resources

Response to Consideration Construction Materials Reclamation Permit Conversion Application

DATE: November 16, 2021

TO: Peter S. Hays, Environmental Protection Specialist

FROM: Javier Vargas-Johnson, Water Resources Engineer

RE: Dunn Pit, Permit No. M-2021-059
Applicant/Operator: Loveland Ready-Mix Concrete, Inc.
Phone Number: (970) 667-1108
NE¼ Section 3, Twp. 4 North, Rng. 67 West, 6th P.M., Weld County
Water Division 1, Water District 4

CONDITIONS FOR APPROVAL

☒ The proposed operation will consume groundwater by: ☒ evaporation, ☒ dust control, ☒reclamation, ☒ water removed in the mined product, ☐ processing, ☐ other.

☒ Prior to initiation of these uses of groundwater, the applicant will need to obtain either a gravel pit or other type of well permit, as applicable. However, prior to obtaining a permit, an approved substitute water supply plan or decreed plan for augmentation is required.

☒ Prior to approving a well permit, the applicant must conduct a field inspection of the site and document the locations of wells within 600 feet of the permit area. The applicant must then obtain a waiver of objection from all well owners with wells within 600 feet of the permit area or request a hearing before the State Engineer.

☒ Any stormwater runoff intercepted by this operation that is not diverted or captured in priority must be released to the stream system within 72 hours; otherwise the operator will need to make replacements for evaporation.

COMMENTS: The subject application is for a surface mining operation on 118 permitted acres located approximately 1 mile northwest of the Town of Milliken. The primary commodities to be mined at the site are sand and gravel. The site is proposed to be reclaimed to a land use of wildlife habitat, groundwater sourced ponds, and mitigated wetlands and open space.

The site is proposed to be wet mined. An excavator will be used to mine material wet down to the bedrock, estimated to be approximately 30 feet below ground surface. Prior to the exposure of any groundwater at the site, the applicant must first obtain a well permit and valid substitute water supply plan or decreed plan for augmentation. The applicant has submitted a request for a substitute water supply plan to this office and an application for a gravel pit permit. The requested start date of the substitute water supply plan is January 2023, when the applicant expects to have obtained approval of all necessary permits. The consumptive use of groundwater at the site by evaporation, dust control, water retained in the mined product, and reclamation vegetation establishment is estimated total 21.80 acre-feet during the first year of operation. The applicant has an agreement with the City of Loveland for the supply of replacement water necessary for the operation and approval of the substitute water supply plan.

The final reclamation plan includes unlined ponds of exposed groundwater at the site. The ponds will be required to be included in a plan for augmentation prior to final release of the site.

Stormwater will be diverted into the mining cells or be allowed to flow through the site using historical channels in undisturbed portions of the site. If stormwater runoff is intercepted by this operation and is not diverted or captured in priority, it must be released to the stream system or infiltrate into the ground within 72 hours; otherwise the operator will need to make replacements for evaporation from the surface area of the intercepted stormwater.

The Applicant has conducted a baseline groundwater assessment to determine support geotechnical analyses, wetland mitigation decisions, and to assess potential impacts associated with the proposed sand and gravel mine. As part of the baseline groundwater assessment the applicant has constructed four monitoring wells.

The Division of Reclamation Mining & Safety and/or the applicant may contact the State Engineer's Office with any questions.

COST SUMMARY WORK

Task description: **Dunn Pit Bond Estimate**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-000
User: PSH

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Revegetate C1 Shoreline	REVEGE	1	40.00	$1,884
002	Topsoil C1 Shoreline	TRUCK1	1	13.06	$6,114
003	Revegetate C1 Wetlands	REVEGE	1	20.00	$1,110
004	Slope C1 West Slope	DOZER	1	3.72	$629
005	Rip Access Road	RIPPER	1	0.73	$132
006	Revegetate Access Road	REVEGE	1	20.00	$564
007	Mob / Demob	MOBILIZE	1	5.37	$3,649
008	Bond to Backfill C1 until Augmentation Decree	SITEMAINTENANCE	1	160.00	$2,420,000
		SUBTOTALS:		**262.88**	**$2,434,082**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$49,168
Performance bond:	1.05	Total =	$25,558
Job superintendent:	131.44	Total =	$9,468
Profit:	10.00	Total =	$243,408
		TOTAL O & P =	$327,602
		CONTRACT AMOUNT (direct + O & P) =	$2,761,684

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	4.25	Total =	$117,372
Reclamation management and/or administration:	5.00		$138,084
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$583,558
		TOTAL BOND AMOUNT (direct + indirect) =	**$3,018,000 (Rounded)**

REVEGETATION WORK

Task description: **Revegetate C1 Shoreline**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 12/21/2021 County: Weld Filename: M059-001
User: PSH

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$96.50
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$386.90**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	0.75	12.24	$11.98
Alkali Sacaton	1.00	39.03	$28.48
Alkaligrass, Fult's	0.50	13.77	$1.81
Canada Wildrye	3.00	7.92	$32.52
Bottlebrush Squirreltail	2.25	9.92	$36.51
Western Wheatgrass - Arriba	10.00	25.25	$65.00
Saltgrass, Inland	0.50	6.93	$21.40
		115.06	**$197.70**

Totals Seed Mix	18.00		

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Hay, delivered {MEANS 31 25 14.16 1200)	10.00	BALE	$12.28	$122.80
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	$2.98	$5.96
Total Mulch Materials Cost/Acre				**$128.76**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$71.57
Weed spray, truck, non-aquatic area, nox. [DMG]	$62.72
Weed spray, truck, non-aquatic areas, ann. [DMG]	$22.81
Total Mulch Application Cost/Acre	**$157.10**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
					$
Totals Nursery Stock Cost / Acre					**$0.00**

JOB TIME AND COST

No. of Acres: 1.47 Cost /Acre: $1,102.46
Estimated Failure Rate: 25% Cost /Acre*: $715.56
*Selected Replanting Work Items: SEEDING,MULCHING

Initial Job Cost: **$1,620.62**
Reseeding Job Cost: **$262.97**
Total Job Cost: **$1,884**
Job Hours: **40.00**

TRUCK/LOADER TEAM WORK

Task description: **Topsoil C1 Shoreline**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-002
User: PSH

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Generic 7-8 cy, 4x4
-Loader:	CAT 928Hz
Support Equipment -Load Area:	Cat D6T XL
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	15	50	NA	75	NA
Ownership cost/hour:	$16.03	$30.09	$64.38	NA	$85.80	NA
Operating cost/hour:	$25.50	$4.48	$32.31	NA	$45.30	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$0.00	NA	$0.00	NA
Ripper op. cost/hour:	NA	$0.00	$0.00	NA	$0.00	NA
Operator cost/hour:	$0.00	$35.97	$40.04	NA	$46.87	NA
Unit Subtotals:	$41.53	$70.54	$136.73	NA	$177.97	NA
Number of Units:	2	1	1	0	1	0
Group Subtotals:	Work:	$153.60	Support:	$136.73	Maint:	$177.97

Total work team cost/hour: **$468.30**

MATERIAL QUANTITIES

Initial volume: 2,378 CCY Swell factor: 1.000
Loose volume: **2,378** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook
Material Purchase Cost: $0.00
Total Cost: $0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 1,600 Pounds/LCY
Description: Top Soil
Rated Payload: 20,300 Pounds

Payload Capacity: 12.69 LCY

Truck Bed (volume) Basis:

Struck Volume:	7.00	LCY
Heaped Volume:	8.00	LCY
Average Volume:	7.50	LCY
Adjusted Volume:	8.00	LCY

Final Truck Volume Based on Number of Loader Passes: **5.85** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.000	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	**2.925**	LCY

Job Condition Corrections: Site Altitude (ft.): 4745 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	**0.830**	**0.830**	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 2 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description:

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.475 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.050	minutes
	Adjusted Loader Cycle Time:	**0.425**	minutes
	Net Load Time per Truck:	**0.525**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.525	Minutes	Adjusted for site altitude:	0.525	Minutes
Truck Maneuver and Dump Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	5.00	3.00	8.00	1381	0.898

Haul Time: **0.898** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	-5.00	3.00	-2.00	2938	0.476

Return Time: **0.476** minutes
Total Truck Cycle Time: **3.199** minutes

Loading Tool unit Production 342.44 LCY/Hour Adjusted for job efficiency: 284.22 LCY/Hour
Truck Unit Production 109.72 LCY/Hour Adjusted for job efficiency: 91.07 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 182.14 LCY/Hour
Adjusted single truck/loader team production: 182.14 LCY/Hour
Adjusted multiple truck/loader team production: **182.14** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **13.06** Hours

Unit cost: $2.571 /LCY Total job cost: **$6,114**

REVEGETATION WORK

Task description: **Revegetate C1 Wetlands**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-003
User: PSH

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$96.50
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$386.90**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	1.20	3.66	$13.56
Switchgrass - Blackwell	1.50	13.40	$17.25
Alkali Bulrush	1.50	14.81	$60.75
Creeping Spike Rush	0.60	8.54	$108.60
Needle Spike Rush	0.40	5.69	$90.80
Canada Wildrye	1.50	3.96	$16.26
Softstem Bulrush	0.60	7.58	$78.63
Hardstem Bulrush	0.60	5.58	$89.82
Three Square Bulrush	0.60	4.13	$103.05

Cordgrass, Prairie	0.70	2.94	$56.00
Nebraska Sedge	0.60	12.57	$99.90
Woolly Sedge	0.20	1.48	$30.30
Totals Seed Mix	10.00	84.33	**$764.92**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Hay, delivered {MEANS 31 25 14.16 1200)	10.00	BALE	$12.28	$122.80
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	$2.98	$5.96
Total Mulch Materials Cost/Acre				**$128.76**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$71.57
Weed spray, hand, aquatic area, annuals [DMG]	$199.47
Weed spray, hand, aquatic area, nox. [DMG]	$183.16
Total Mulch Application Cost/Acre	**$454.20**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
					$
Totals Nursery Stock Cost / Acre					**$0.00**

JOB TIME AND COST

No. of Acres: 0.47
Estimated Failure Rate: 25%
*Selected Replanting Work Items: SEEDING,MULCHING

Cost /Acre: $1,966.78
Cost /Acre*: $1,579.88

Initial Job Cost: **$924.39**
Reseeding Job Cost: **$185.64**
Total Job Cost: **$1,110**
Job Hours: **20.00**

BULLDOZER WORK

Task description: **Slope C1 West Slope**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-004
User: PSH

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D6T XL
Horsepower: 185
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$64.38	NA
Operating Cost/Hour:	$64.62	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $169.04
Total Fleet Cost/Hour: **$169.04**

MATERIAL QUANTITIES

Initial Volume: 1,564
Swell factor: 1.000
Loose volume: **1,564** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 444.6 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: -30 %
Average site altitude: 4,745 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)

Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9459

Adjusted unit production: 420.55 LCY/hr

Adjusted fleet production: **420.55** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $0.402/LCY

Total job time: **3.72** Hours

Total job cost: **$629**

BULLDOZER RIPPING WORK

Task description: **Rip Access Road**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-005
User: PSH

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D6T XL Horsepower: 185
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$64.38	NA
Operating Cost/Hour:	$64.62	100
Ripper Ownership Cost/Hour:	$5.99	NA
Ripper Operating Cost/Hour:	$4.30	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$179.33	
Total Fleet Cost/Hour:	**$179.33**	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 0.44 acres Rip Depth (ft): 0.50 Volume: 355 BCY or CCY

Source of estimated quantity: Permit Application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	1.64	feet/pass
Average Ripping Width:	6.58	feet/pass
Average Ripping Length:	200.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.719	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.719	Acres/hr
Site Altitude:	4,745	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier
Adjusted Hourly Unit Production:	0.60	Acres/hr
Adjusted Hourly Fleet Production:	**0.60**	Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **0.74** Hours

Unit cost: $300.695 Per acre Total job cost: **$132**

REVEGETATION WORK

Task description: **Revegetate Access Road**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-006
User: PSH

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$96.50
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$386.90**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	0.75	12.24	$11.98
Alkali Sacaton	1.00	39.03	$28.48
Alkaligrass, Fult's	0.50	13.77	$1.81
Canada Wildrye	3.00	7.92	$32.52
Bottlebrush Squirreltail	2.25	9.92	$36.51
Western Wheatgrass - Arriba	10.00	25.25	$65.00
Saltgrass, Inland	0.50	6.93	$21.40
		115.06	**$197.70**

Totals Seed Mix	18.00		

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Hay, delivered {MEANS 31 25 14.16 1200)	10.00	BALE	$12.28	$122.80
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	$2.98	$5.96
Total Mulch Materials Cost/Acre				**$128.76**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$71.57
Weed spray, truck, non-aquatic area, nox. [DMG]	$62.72
Weed spray, truck, non-aquatic areas, ann. [DMG]	$22.81
Total Mulch Application Cost/Acre	**$157.10**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
					$
Totals Nursery Stock Cost / Acre					**$0.00**

JOB TIME AND COST

No. of Acres: 0.44 Cost /Acre: $1,102.46
Estimated Failure Rate: 25% Cost /Acre*: $715.56
*Selected Replanting Work Items: SEEDING,MULCHING

Initial Job Cost: **$485.08**
Reseeding Job Cost: **$78.71**
Total Job Cost: **$564**
Job Hours: **20.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mob / Demob**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 007 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-007
User: PSH

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D6T XL	25.01	$70.37	$68.37	1	$138.74	$68.37	$250.00
CAT 14M	23.57	$85.80	$68.37	1	$154.17	$68.37	$250.00
CAT 928Hz	13.91	$30.09	$68.37	1	$98.46	$68.37	$250.00
Subtotals:					**$391.37**	**$205.11**	**$750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 7-8 cy, 4x4	$66.35	2	$132.70	$132.70
Light Duty Pickup, 4x4, 1 T. Crew	$121.54	1	$121.54	$121.54
Subtotals:			**$254.24**	**$254.24**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GREELEY, CO	
Total one-way travel distance:	12.00	miles
Average Travel Speed:	35.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$3,474.49
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$174.34

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.34	0.34
Return Time (Hours):	0.34	0.34
Loading Time (Hours):	1.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	2.69	0.69

JOB TIME AND COST

Total job time:	**5.37**	Hours
Total job cost:	**$3,649**	

SITE MAINTENANCE

Task description: **Bond to Backfill C1 until Augmentation Decree**

Site: **Dunn Pit** Permit Action: Bond Estimate Permit/Job#: M2021059

PROJECT IDENTIFICATION

Task #: 008 State: Colorado Abbreviation: None
Date: 12/22/2021 County: Weld Filename: M059-008
User: PSH

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Backfill C1	160.00	USER PROVIDED ITEM	242,000.00	1	$10.00	$2,420,000.00

Job Hours: 160.00 **Total Cost: $2,420,000.00**

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

Interoffice Memorandum

Date: December 17, 2021
From: Rob Zuber *RDZ*
To: Peter Hays

Subject: Dunn Pit (Permit No. M-2021-059), Adequacy review of application with focus on inlet protection design and HEC-RAS 2D model

The submittal for this new application requires additional information for the inlet protection design and associated 2D HEC-RAS model. This includes the following adequacy items:

1. Please explain why the 9,000 cfs event is used for determining maximum velocities for weir designs. Were flows and velocities for larger storms not considered? In particular, the 100-year storm is listed as 20,309 cfs.
2. Please provide design drawings for the pit inlet weirs, or reference other reports associated with this submittal that contain the drawings.
3. Please explain why bridge decks and piers are not included in the model. It appears that these structures could impact the velocities of flows into Cell 3, which is relatively close to the railroad bridge (approximately 200 feet upstream).
4. Please explain why there is no outlet protection for flood flows at the lower end of Cell 1. Include a discussion of velocities estimated with the 2D HEC-RAS model.
5. Please explain why no inlet protection is needed in areas other than the control points for each cell (shown on page 6 of the Inlet Protection Calculations). For example, for Cell 1 there is an area 250 - 300 feet east of the southwest corner where velocities in RAS Mapper (9,000 cfs) are greater than 13 feet per second.
6. Please explain the apparent discrepancies between pages 6 and 7 in terms of the sequence of flooding of the three cells. The table on page 6 suggests that flooding of Cell 2 occurs during smaller storm events than flooding of Cell 3; flooding of Cell 2 starts at 2000 cfs and flooding of Cell 3 starts at 4000 cfs. The discussion on page 7 states that flooding of Cell 2 and flooding of Cell 3 begin with approximately the same storm, approximately the 8-year event.
7. The last page of the Inlet Protection Calculations (page 7) states that “riprapped inlet weirs were sized and included in Exhibit C of the mine plan.” Can you be more specific where this is in the application?
8. Please elaborate on item 6 on page 7. Do the modeling results indicate the flows from backwater conditions will be low enough that additional bank protection (e.g., riprap) will not be needed, and vegetation will be sufficient?

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

Date: December 9, 2021

To: Peter Hays, DRMS

From: Patrick Lennberg, DRMS

RE: **Dunn Pit New Permit Application, Exhibits F, G and Appendix D Review Memo, File No. M2021-059**

On September 25, 2021, I was requested to review Exhibits F, G and the Groundwater Baseline Study (Appendix D) of the Dunn Pit new permit application M2021-059, below are follow-up questions that should be addressed.

Exhibit F

1. Please show the Hill and Brush Ditch orientation on the Reclamation Plan Map.

Exhibit G

1. On Figure 2 the decreed surface water feature for the Hill and Brush Ditch is missing, please update the figure.

2. On Figure 2 the decreed groundwater feature for the Mad Russian Well (0405661) and constructed well (59968-F), and the 10 monitoring wells are missing please update.

Appendix D

1. The applicant states, page 6, they will measure water levels in the 10 monitoring wells, installed in Summer 2021, monthly for one year then quarterly thereafter. The Division believes monthly water level monitoring should occur for at least one year after mining activities have begun to verify the numerical models predictions and monitor the effects of mining on the surrounding groundwater system.

2. How will the proposed open groundwater pond effect the surrounding ditches, Brush Ditch and the Big T and Platte Ditch in both the near term and long term?

3. What is the supposed source of toluene that was detected in MW-5?

4. In Section 5.3.1, it is stated the drawdown in the Dunn well is not expected to be greater than 2 feet. However, in Figure 16 the graphed drawdown approaches 4 feet. Please reconcile this discrepancy.

5. In Figure 16 three of the four wells graphed have a starting point that indicates increased water levels, shouldn't all wells begin at 0.0 indicating no mining influence?

6. All groundwater sample results need to be compared to the Water Quality Control Commission's (WQCC) Regulation No. 41 – The Basic Standards for Groundwater (Reg 41) and the most conservative values in Tables 1 thru 4 for all analytes listed for minimum of five consecutive quarters. The sample results from the June/August 2021 sampling event only compared results to WQCC Reg 41 Tables 1 and 2. Table 3 of Reg 41 are agriculture standards which contain a few analytes that Tables 1 and 2 omit.

7. Did the applicant sample for radionuclides that are part of Reg 41 Table 1?

8. Nitrate/Nitrite as N was sampled, Appendix B, in some wells but not others, why?

9. Nitrate, Nitrite, and Total Nitrate + Nitrite are Reg 41 Table 1 values that appear to have not been sampled in all wells, please comment.

10. The Division recognizes there will become a point when a reduction in groundwater level and quality monitoring frequency becomes reasonable. The reduction requests and approvals will be completed through submittal of a Technical Revision.

11. Section 6.1.5, the Dunn well is not an on-site monitoring well but rather an adjacent private well that may be influenced by mining. Is it the applicant's intent to extend the 5 foot trigger to this well? If so, are there historic groundwater level data to support this trigger value?

12. In Monitoring Well Drilling Summary Report, Section 2.1, it is stated during drilling soil samples were collected for SPLP testing. Please provide the results of these analysis?

13. In the text, Section 2.2, it is stated the monitoring well screen size used was 0.01" but on the boring logs the screen size indicated is 0.1", please clarify. Please note the discrepancy appears to have made onto the forms submitted to DWR.

14. In the Groundwater Sampling and Analysis Plan Section 1 it references a water management pond. Please provide more details of the pond and clearly show it on Figure 1.

15. Please update Table 2 to include the WQCC Reg 41 concentrations each analyte is compared to.

16. Please provide copies of the completed groundwater data sheet(s) for each well sampled. In the future the Division will require submittal of these sheets along with other sample data.

17. Field blanks, Section 7.2.2, the applicant proposes to collect a field blank once annually and the Division does agree this is appropriate. The purpose of the field blank is to assess contamination from field conditions during sampling. At least one field blank should be collected during each sampling event. Please revise to reflect at least one field blank will be collected during each sampling event.

18. Rinsate sample, Section 7.2.3, the applicant proposes to collect a rinsate sample twice annually and the Division does agree this is appropriate. The purpose of the rinsate sample is to assess the adequacy of the decontamination process. It assess contamination from the total sampling, sample preparation and measurement process, when decontaminated sampling equipment is used to collect samples. Please revise to reflect at least one rinsate sample will be collected during each sampling event as appropriate.

19. As mentioned in #6 above, the Division will require at least five consecutive quarters of baseline water quality measurements with samples results compared to the most conservative values in Reg 41 Tables 1-4. Additionally, quarterly groundwater monitoring will continue for at least one year after the mining activities started at the site. After one year of mining the operator may, through a Technical Revision, request decreasing both the list of analytes samples are analyzed for and the frequency of monitoring.

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

Sincerely,

Patrick Lennberg
Environmental Protection Specialist

cc: Jared Ebert, DRMS