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

September 14, 2020

Dan Long
Platte Valley Real Estate, LLC
36415 US Hwy 385
Wray, CO 80758

RE: PVRE Pit #1 (Permit No. M-2017-009)
Technical Revision 1 (TR-1)
Adequacy Questions 1

Dear Mr. Long:

The Division of Reclamation, Mining and Safety (Division) received your application for a Technical Revision (TR-1) on August 27, 2020. TR-1 was submitted to address the possible problems noted in the July 15, 2020 inspection report. After a review of the application, the Division has the following comments and questions:

1. The decree documents that were provided to the Division regarding the Logan Well Users Augmentation Plan were sent to the Colorado Division of Water Resources (DWR) for review to determine if the groundwater exposed at the PVRE #1 Pit was in compliance. DWR has determined that augmentation plan is adequate to cover the evaporation for 6.5-acres of exposed groundwater and mining operations. The current permit is approved for 9.9 acres of disturbance with the ½ acre Jack's Lane being a permanent feature. The permit needs to be updated to address the reclamation plan for the remaining 2.9 acres. The following items need to be updated:
   - Cost estimate for the remaining 2.9 acres (enclosure)
   - Updated maps showing the mining plan, reclamation plan and final reclamation contours.

2. The second Possible Problem noted in the July 15, 2020 inspection report was the wave action from the water in the pit needs to be controlled to protect the topsoil stockpiles that are staged on the eastern bank of the of the pit. This item was not address in the TR-1 application. Please submit a plan that addresses the potential wave action erosion on the eastern bank to the Division for review.

3. PVRE has purchased the seed for the topsoil stockpile and submitted a photos of the seed tag. The seed mix shown on the seed tag is the mix that was approved in the original permit application submitted to the Division in 2017. PVRE has committed to planting the seeds when the conditions are favorable and committed to notifying the Division when the seeds are planted. No further action is required at this time.

<u>The decision date for TR-1 is September 28, 2020</u>. Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period**. If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division may deny this Technical Revision.

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

Sincerely,

Brock Bowles
Environmental Protection Specialist

Enclosure: TR1CostEstimate

CC: Michael Cunningham, DRMS

COST SUMMARY WORK

Task description: ______________________

Site: **PVRE Pit #1** Permit Action: TR-1 Permit/Job#: M2017009

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 9/9/2020 County: Logan Filename: M009-001
User: BFB

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
100	Backfill and Grade Affected Area	DOZER	1	2.85	$982
101	Replace Topsoil	TRUCK1	1	18.37	$10,586
102	Revegetation of the affected area	REVEGE	1	2.90	$3,607
103	Mobilization of Equipment	MOBILIZE	1	2.20	$4,655
			SUBTOTALS:	**26.32**	**$19,830**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$401
Performance bond:	1.05	Total =	$208
Job superintendent:	10.87	Total =	$756
Profit:	10.00	Total =	$1,983
		TOTAL O & P =	$3,348
		CONTRACT AMOUNT (direct + O & P) =	$23,178

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$1,159
CONTINGENCY:	0.00	Total =	$0

TOTAL INDIRECT COST = $4,507

TOTAL BOND AMOUNT (direct + indirect) = $24,337

BULLDOZER WORK

Task description: **Backfill and Grade Affected Area**

Site: **PVRE Pit #1** Permit Action: TR-1 Permit/Job#: M2017009

PROJECT IDENTIFICATION

Task #: 100 State: Colorado Abbreviation: None
Date: 9/9/2020 County: Logan Filename: M009-100
User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$156.88	NA
Operating Cost/Hour:	$127.87	100
Ripper own. Cost/Hour:	$15.59	NA
Ripper op. Cost/Hour:	$2.56	25
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $344.19
Total Fleet Cost/Hour: **$344.19**

MATERIAL QUANTITIES

Initial Volume: 2,340
Swell factor: 1.000
Loose volume: **2,340** LCY

Source of estimated volume: 6 inches over 2.9 acres
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,243.2 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 0 %
Average site altitude: 3,940 feet

Material weight: 2,100 lbs/LCY

Weight description: Earth - Loam

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6598

Adjusted unit production: 820.26 LCY/hr
Adjusted fleet production: **820.26** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.420/LCY

Total job time: **2.85** Hours
Total job cost: **$982**

TRUCK/LOADER TEAM WORK

Task description: **Replace Topsoil**

Site: **PVRE Pit #1** Permit Action: TR-1 Permit/Job#: M2017009

PROJECT IDENTIFICATION

Task #: 101 State: Colorado Abbreviation: None
Date: 9/9/2020 County: Logan Filename: M009-101
User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 725
-Loader:	CAT 962H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-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	100	NA	50	NA	NA
Ownership cost/hour:	$56.08	$28.67	NA	$116.22	NA	NA
Operating cost/hour:	$45.18	$37.06	NA	$44.88	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	NA	$0.00	NA	NA
Operator cost/hour:	$32.54	$40.71	NA	$41.30	NA	NA
Unit Subtotals:	$133.80	$106.44	NA	$202.40	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	$374.04	Support:	$202.40	Maint:	$0.00

Total work team cost/hour: **$576.44**

MATERIAL QUANTITIES

Initial volume: 6,644 CCY Swell factor: 1.215
Loose volume: **8,072** 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: 52,000 Pounds
Payload Capacity: 32.50 LCY

Truck Bed (volume) Basis:

Struck Volume:	14.50	LCY
Heaped Volume:	18.70	LCY
Average Volume:	16.60	LCY
Adjusted Volume:	18.70	LCY

Final Truck Volume Based on Number of Loader Passes: **16.77** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	4.300	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - uniform aggregates to 1/8" (95-100%) 0.975
Adjusted Capacity:	**4.193**	LCY

Job Condition Corrections: Site Altitude (ft.): 3940 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: 4 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): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" 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:	-0.090	minutes
	Adjusted Loader Cycle Time:	**0.410**	minutes
	Net Load Time per Truck:	**1.330**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	1.330	Minutes	Adjusted for site altitude:	1.330	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	4.00	4.00	1817	0.622

Haul Time: **0.622** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	4.00	4.00	2742	0.448

Return Time: **0.448** minutes
Total Truck Cycle Time: **3.800** minutes

Loading Tool unit Production: 549.84 LCY/Hour — Adjusted for job efficiency: 456.36 LCY/Hour

Truck Unit Production: 264.79 LCY/Hour — Adjusted for job efficiency: 219.78 LCY/Hour

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

Adjusted hourly truck team production: 439.55 LCY/Hour
Adjusted single truck/loader team production: 439.55 LCY/Hour
Adjusted multiple truck/loader team production: **439.55** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) — Total job time: **18.37** Hours

Unit cost: $1.311 /LCY — Total job cost: **$10,586**

REVEGETATION WORK

Task description: **Revegetation of the affected area**

Site: **PVRE Pit #1** Permit Action: TR-1 Permit/Job#: M2017009

PROJECT IDENTIFICATION

Task #: 102 State: Colorado Abbreviation: None
Date: 9/9/2020 County: Logan Filename: M009-102
User: BFB

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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$107.16
Total Tilling Cost/Acre	**$107.16**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	0.40	1.93	$1.02
Sideoats Grama - Butte	1.37	4.50	$12.33
Intermediate Wheatgrass - Oahe	3.00	6.40	$8.40
Tall Wheatgrass - Jose	5.10	9.25	$17.21
Western Wheatgrass - Arriba	4.80	12.12	$31.20
Totals Seed Mix	14.67	34.20	**$70.16**

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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$301.00	$602.00
Total Mulch Materials Cost/Acre				**$602.00**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$70.17
Power mulcher (MEANS 32 91 13.16 0350)	$101.93
Total Mulch Application Cost/Acre	**$172.10**

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: 2.9
Estimated Failure Rate: 20%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $1,183.42
Cost /Acre*: $302.16

Initial Job Cost: **$3,431.92**
Reseeding Job Cost: **$175.25**
Total Job Cost: **$3,607**
Job Hours: **2.90**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization of Equipment**

Site: **PVRE Pit #1** Permit Action: TR-1 Permit/Job#: M2017009

PROJECT IDENTIFICATION

Task #: 103 State: Colorado Abbreviation: None
Date: 9/9/2020 County: Logan Filename: M009-103
User: BFB

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:	$17.20	$29.63	$38.69
Operating Cost/Hour:	$26.56	$47.02	$55.69
Operator Cost/Hour:	$23.63	$23.63	$23.63
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$67.39	$123.81	$141.54

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 D8T - 8SU	53.08	$128.22	$141.54	1	$269.76	$141.54	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$6.72	$67.39	1	$74.11	$67.39	$250.00
Power Mulcher (Bowie LD-90)	6.00	$11.19	$67.39	1	$78.58	$67.39	$250.00
CAT 962H	20.95	$28.67	$67.39	1	$96.06	$67.39	$250.00
Cat 725	24.54	$56.08	$67.39	2	$246.94	$134.78	$500.00
				Subtotals:	**$765.45**	**$478.49**	**$1,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
		Subtotals:	**$0.00**	**$0.00**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	STERLING	
Total one-way travel distance:	1.00	miles
Average Travel Speed:	20.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$4,655.29	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$0.00	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.05	0.05
Return Time (Hours):	0.05	0.05
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.10	0.10

JOB TIME AND COST

Total job time: **2.20** Hours

Total job cost: **$4,655**