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

January 16, 2025

Meghan Way
GCC Rio Grande, Inc.
3372 Lime Rd
Pueblo, CO 81004

RE: GCC Rio Grande, Inc., Pueblo Cement Plant and Limestone Quarry, Permit No. M-2002-004, Technical Revision No. 13 (TR-13) Beneficial Use of Coal Reject Material and Update to Financial Warranty Cost Estimate, Adequacy Review #2

Dear Ms. Way,

The Division of Reclamation, Mining, and Safety (DRMS/Division) received the Technical Revision 13 (TR-13) application on March 28, 2024, requesting the beneficial use of coal reject material as backfill and an update to the financial warranty cost estimate. On December 16, 2024, the Division received your response to the preliminary adequacy review sent on April 16, 2024. The following items listed are the original items identified in the Division's preliminary adequacy review of TR-13 application with the Division's response provided below each item (*italic dark red text*). The Division's additional adequacy item(s) are added below (**bold dark blue text**). Please provide additional/complete information on the items that have not been satisfied.

Part 1: Beneficial Use of Coal Reject Material

1. The TR-13 application requests the use of coal reject material to be incorporated with backfill material. How was this material handled, stored, and being disposed of currently?

   This information was not adequately provided; please give details on how this material is currently being handled and disposed of.

2. The TR-13 application states that the coal material is rejected due to metal contamination; what is the nature of the contamination that causes this material to be rejected (and would now be incorporated into the backfill material if this is approved)?

   This item was satisfactorily answered, no response necessary.

3. Results of one composite sample that was tested was provided from a height of 3-4 feet from the ground surface around the current coal reject pile. The Division believes additional samples should be taken from the reject pile to characterize this material. For this TR, please develop a sampling plan that follows an incremental sampling methodology (ISM). The ISM is a structured composite sampling and processing protocol

that reduces data variability and provides a reasonably unbiased estimate of mean contaminant concentrations in a volume of medium targeted for sampling. Provide the ISM based sampling plan to the Division for review and approval prior to implementation.

The ISM sampling plan provided is satisfactory to the Division, no response is necessary.

4. The sample tests produced results of eight contaminants; the Division believes that additional parameters should be analyzed. After conducting the ISM sampling, SPLP and TCLP testing should be conducted to assess the samples. The TCLP analysis should be run for the most restrictive standards in Tables 1-4 of Regulation No. 41 – The Basic Standards for Groundwater (Reg. 41). This parameter list is included in Appendix A of the Divisions September 2023 guidance document, "Groundwater Monitoring: Sampling and Analysis Plan Guidance Construction Materials and Hard Rock Sites". This document is included in the attachments.

   The ISM sampling plan submitted accounts for additional contaminants to be tested and prescribes the most restrictive standards per Regulation No. 41 – The Basic Standards for Groundwater and is satisfactory; no response is necessary.

5. The Division believes samples collected using the developed ISM plan discussed above and the results of the testing of the samples should be completed and analyzed before incorporating any additional or future coal reject as backfilling material. Please develop a sampling, analysis and reporting plan for future coal reject material that will document and ensure future coal reject material will be non-toxic and acid forming. Clearly define what sampling results would deem the coal reject material as ineligible for backfilling material.

   The ISM sampling plan provides information about the EPA Methods that will be implemented; however, it does not explicitly give parameters of the results that would deem the coal reject material ineligible for use as backfill material. Please define what sampling results would deem the coal reject material as disqualifying for use as backfill material.

Part 2: Update to Financial Warranty Cost Estimate

6. Please review and comment on the attached reclamation cost estimate calculated based on the proposed changes made to Tasks #1 and #3.

   No comments were made regarding the cost estimate provided. Please provide a statement regarding the cost estimate calculated for the operation.

Additional items

7. **The potential disposal of the coal reject material may require additional permits, licenses, and/or approvals from other agencies and/or local governments, such as a Certification of Designation (CD). A CD is issued in coordination between local governing bodies (county or municipality) with the Colorado Department of Public Health and Environment and the Hazardous Materials, and Waste Management Division. Please provide information about all permits, licenses, and approvals that must be attained prior to the use of this material as backfill.**

8. **It was stated in the TR-13 application that an estimated ~300 tons of coal reject material is generated annually. Please provide information about the expected frequency of the potential use of the material as backfill.**

9. **The ISM sampling plan submitted with the TR-13 application is satisfactory. After approval of this revision, the Operator may implement the ISM plan to sample the existing coal reject pile. Please be advised, the Division cannot approve the use of the coal reject material as backfill at the site until the sampling results have been reviewed by our office and the material has been determined to be inert and non – toxic or acid – forming. This review must be done through the Technical Revision process. Considering the amount of time that TR-13 has already been under review (~10 months), and the additional time that will be needed for the Operator to obtain the sampling data, the Division recommends the scope of TR-13 be limited to approval of the ISM sampling plan for the coal reject material and the updated reclamation cost estimate. Please provide a statement acknowledging that the Division's approval of TR-13 will be limited to these items.**

10. **Please commit to submitting a subsequent Technical Revision with the sampling results for the existing coal reject material and an analysis of its potential impacts prior to its use as backfill at the site. The description of the subsequent revision should include the proposal to use the existing coal reject material as backfill material based on the sampling results (if results suggest this use is appropriate). The Division will require a similar Technical Revision be submitted for each new pile of coal reject material proposed to be used as backfill material, prior to its use as such. Please acknowledge your understanding of this requirement.**

This concludes the Division's second review of the TR-13 materials submitted. The decision date for TR-13 is February 21, 2025. Please provide your response to the adequacy items identified above at least five (5) business days prior to the decision date, by **February 14, 2025**, to allow time for the Division's review. It is your responsibility to submit an extension request prior to the decision date if more time is needed to adequately addresses the issues above. Please be advised, the Division will not be able to approve an extension request past March 28, 2025, for this

revision, which would be one calendar year from the date of the application was submitted to our office.

If you have any questions, please contact me by email at Jocelyn.carter@state.co.us or by phone at (720) 666-1065.

Sincerely,

Jocelyn Carter
Environmental Protection Specialist
Division of Reclamation, Mining, and Safety

Ec: Amy Eschberger, DRMS

Enclosures: Reclamation Cost Estimate

COST SUMMARY WORK

Task description: **Cost Estimate w/ TR13 and 2023 Insp**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-000
User: JLC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Conveyor Belt Demo	DEMOLISH	1	200.00	$97,310
001A	Demo and Plug Monitoring Wells	BOREHOLE	1	0.00	$9,028
002	Grade Highwall to 4:1	DOZER	2	138.79	$128,773
003	Arroyo Restoration	SCRAPER1	2	431.97	$1,208,872
004	Arroyo Topsoil Placement	SCRAPER1	3	19.73	$78,209
005	Rip Haul Roads and Conveyor Area	RIPPER	2	40.05	$37,526
006	Pit Area Overburned/Topsoil Placement	SCRAPER1	3	21.58	$85,564
007	Weed Management	REVEGE	1	24.00	$64,779
008	Revegetation Arroyo 27 ac and Affected Area 71 ac	REVEGE	1	60.00	$199,957
009	Mobilization/Demoblilzation	MOBILIZE	1	9.12	$43,124
010	Lube Truck	MISCTRUK	1	100.00	$9,316
011	Fuel Truck	MISCTRUK	1	100.00	$9,316
012	Construction ManagementTruck	MISCTRUK	1	100.00	$8,863
		SUBTOTALS:		**1245.24**	**$1,980,637**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$40,009
Performance bond:	1.05	Total =	$20,797
Job superintendent:	622.62	Total =	$40,520
Profit:	10.00	Total =	$198,064
		TOTAL O & P =	$299,389
		CONTRACT AMOUNT (direct + O & P) =	$2,280,026

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	4.25	Total =	$96,901
Reclamation management and/or administration:	5.00		$114,001
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$510,792
		TOTAL BOND AMOUNT (direct + indirect) =	**$2,491,429**

DEMOLITION WORK

Task description: **Conveyor Belt Demo**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-001
User: JLC

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 88.00 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Conveyor Belt	6' x 10' x 4850'	Conveyor, demolition, on-site disposal, existing pit, 10,000 ft. haul	291,000.00	CF	$0.38	$110,580.00

Job Hours: 190.00 **Subtotal (unadjusted): $110,580.00** **Total Cost (adjusted for location): $97,310.40**

BOREHOLE SEALING WORK

Task description: **Demo and Plug Monitoring Wells**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 001A State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-001A
User: JLC

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Monitoring Wells MW-5 thru 24	Portland cement grout - 2 in. (labor, equip, materials)	2	1565	1,565.00	LF	$5.27	$8,248.33
Borehole Markers	Borehole location/identification marker (EA, material cost only)	NA	NA	20.00	EA	$39.00	$780.00

Job Hours: **0.00** **Total Cost**: **$9,028.00**

BULLDOZER WORK

Task description: **Grade Highwall to 4:1**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-002
User: JLC

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:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper own. Cost/Hour:	$18.32	NA
Ripper op. Cost/Hour:	$4.49	50
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $463.90
Total Fleet Cost/Hour: **$927.79**

MATERIAL QUANTITIES

Initial Volume: 107,666
Swell factor: 1.430
Loose volume: **153,962** LCY

Source of estimated volume: HW 7,500' long 30' height
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 120 feet
Unadjusted hourly production: 1,093.1 LCY/hr

Materials consistency description: Rock, well ripped or blasted 0.8

Average push gradient: -15 %
Average site altitude: 5,100 feet

Material weight: 3,300 lbs/LCY

Weight description: Decomposed rock - 75% Rock, 25% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.100	(50% SL)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5074

Adjusted unit production: 554.64 LCY/hr
Adjusted fleet production: **1109.28** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.836/LCY

Total job time: **138.79** Hours
Total job cost: **$128,773**

SCRAPER TEAM WORK

Task description: **Arroyo Restoration**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-003
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	50	50
Ownership cost/hour:	$255.23	NA	NA	NA	$149.33	$135.95
Operating cost/hour:	$280.59	NA	NA	NA	$46.40	$82.60
%Utilization-ripper:	NA	NA	NA	NA	0	NA
Ripper own. cost/hour:	NA	NA	NA	NA	$5.83	$0.00
Ripper op. cost/hour:	NA	NA	NA	NA	$0.00	$0.00
Operator cost/hour:	$47.07	NA	NA	NA	$46.87	$0.00
Unit Subtotals:	$582.89	NA	NA	NA	$248.43	$218.55
Number of Units:	4	0	0	0	1	1
Group Subtotals:	Work:	$2,331.56	Support:	$0.00	Maint:	$466.98

Total work team cost/hour: **$2,798.54**

MATERIAL QUANTITIES

Initial volume: 883,710 CCY Swell factor: 1.125
Loose volume: **994,174** LCY

Source of estimated volume: Table L-1 AM-01
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 2,650 lbs/LCY
Material description: Decomposed rock - 25% Rock, 75% Earth
Rated Payload: 81,600 pounds

Scraper Bowl (volume) Basis:

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY

Payload Capacity: 30.79 LCY Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 5100 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	4.00	2.00	6.00	1477	0.59

Haul Time: **0.59** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	-4.00	2.00	-2.00	2972	0.32

Return Time: **0.32** minutes

Total Scraper team cycle time: **2.51** minutes
Adjusted for job conditions: 1,150.76 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,150.76 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **2,301.51** LCY/Hour

Unadjusted unit production/hour: 1,386.45 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **431.97** Hours

Unit cost: $1.216 /LCY Total job cost: **$1,208,872**

SCRAPER TEAM WORK

Task description: **Arroyo Topsoil Placement**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-004
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	50	50
Ownership cost/hour:	$255.23	NA	NA	NA	$149.33	$135.95
Operating cost/hour:	$280.59	NA	NA	NA	$46.40	$82.60
%Utilization-ripper:	NA	NA	NA	NA	0	NA
Ripper own. cost/hour:	NA	NA	NA	NA	$5.83	$0.00
Ripper op. cost/hour:	NA	NA	NA	NA	$0.00	$0.00
Operator cost/hour:	$47.07	NA	NA	NA	$46.87	$0.00
Unit Subtotals:	$582.89	NA	NA	NA	$248.43	$218.55
Number of Units:	6	0	0	0	1	1
Group Subtotals:	Work:	$3,497.34	Support:	$0.00	Maint:	$466.98

Total work team cost/hour: **$3,964.32**

MATERIAL QUANTITIES

Initial volume: 43,560 CCY Swell factor: 1.215
Loose volume: **52,925** LCY

Source of estimated volume: Table L-1 AM-01
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 1,600 lbs/LCY
Material description: Top Soil
Rated Payload: 81,600 pounds
Payload Capacity: 51.00 LCY

Scraper Bowl (volume) Basis:

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 5100 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	4.00	2.00	6.00	1477	1.07

Haul Time: **1.07** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-4.00	2.00	-2.00	2972	0.56

Return Time: **0.56** minutes

Total Scraper team cycle time: **3.23** minutes
Adjusted for job conditions: 894.24 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 894.24 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **2,682.72** LCY/Hour

Unadjusted unit production/hour: 1,077.40 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 3 Team(s) Total job time: **19.73** Hours

Unit cost: $1.478 /LCY Total job cost: **$78,209**

BULLDOZER RIPPING WORK

Task description: **Rip Haul Roads and Conveyor Area**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-005
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$238.76	NA
Operating Cost/Hour:	$162.29	100
Ripper Ownership Cost/Hour:	$18.32	NA
Ripper Operating Cost/Hour:	$8.98	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$468.39	

Total Fleet Cost/Hour: **$936.77**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 58.60 acres Rip Depth (ft): 1.00 Volume: 94,541 BCY or CCY

Source of estimated quantity: Operator Supplied Map from Inspection

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.63	feet/pass
Average Ripping Width:	7.67	feet/pass
Average Ripping Length:	400.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.881	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.881	Acres/hr
Site Altitude:	5,100	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.73 Acres/hr
Adjusted Hourly Fleet Production: **1.46** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **40.06** Hours

Unit cost: $640.384 Per acre Total job cost: **$37,526**

SCRAPER TEAM WORK

Task description: **Pit Area Overburned/Topsoil Placement**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-006
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	50	50
Ownership cost/hour:	$255.23	NA	NA	NA	$149.33	$135.95
Operating cost/hour:	$280.59	NA	NA	NA	$46.40	$82.60
%Utilization-ripper:	NA	NA	NA	NA	0	NA
Ripper own. cost/hour:	NA	NA	NA	NA	$5.83	$0.00
Ripper op. cost/hour:	NA	NA	NA	NA	$0.00	$0.00
Operator cost/hour:	$47.07	NA	NA	NA	$46.87	$0.00
Unit Subtotals:	$582.89	NA	NA	NA	$248.43	$218.55
Number of Units:	6	0	0	0	1	1
Group Subtotals:	Work:	$3,497.34	Support:	$0.00	Maint:	$466.98

Total work team cost/hour: **$3,964.32**

MATERIAL QUANTITIES

Initial volume: 60,016 CCY Swell factor: 1.125
Loose volume: **67,518** LCY

Source of estimated volume: Table L-1 AM-01, Inspection Map, 2'OB+1'TS
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,650 lbs/LCY
Material description: Decomposed rock - 25% Rock, 75% Earth
Rated Payload: 81,600 pounds

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY

Payload Capacity: 30.79 LCY Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 5100 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	4.00	2.00	6.00	1477	0.76

Haul Time: **0.76** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-4.00	2.00	-2.00	2972	0.41

Return Time: **0.41** minutes

Total Scraper team cycle time: **2.77** minutes
Adjusted for job conditions: 1,042.74 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,042.74 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **3,128.23** LCY/Hour

Unadjusted unit production/hour: 1,256.32 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 3 Team(s) Total job time: **21.58** Hours

Unit cost: $1.267 /LCY Total job cost: **$85,564**

REVEGETATION WORK

Task description: **Weed Management**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 007 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-007
User: JLC

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
Weed control spraying (MEANS 31 31 16.13 3100)	$338.80
Total Tilling Cost/Acre	**$338.80**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			$
Totals Seed Mix	0.00	0.00	**$0.00**

Application

Description	Cost /Acre

	$
Total Seed Application Cost/Acre	**$0.00**

MULCHING and MISCELLANEOUS

Materials

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

Application

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

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: 191.2
Estimated Failure Rate: 0%
*Selected Replanting Work Items: NONE

Cost /Acre: $338.80
Cost /Acre*: $0.00

Initial Job Cost: **$64,778.56**
Reseeding Job Cost: **$0.00**
Total Job Cost: **$64,779**
Job Hours: **24.00**

REVEGETATION WORK

Task description: **Revegetation Arroyo 27 ac and Affected Area 71 ac**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 008 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-008
User: JLC

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
5-10-10, 5-10-15, 6-12-12	100.00	pound	$0.39	$39.00
			Total Fertilizer Materials Cost/Acre	**$39.00**

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	$41.82
Total Fertilizer Application Cost/Acre	**$41.82**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$112.82
Weed control spraying (MEANS 31 31 16.13 3100)	$338.80
Total Tilling Cost/Acre	**$451.62**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Switchgrass - Blackwell	1.00	8.93	$11.50
Blue Grama - Native	1.00	16.32	$13.73
Buffalograss - Native/Plains	2.00	1.93	$24.13
Sand Dropseed	0.25	29.84	$2.44
Little Bluestem - Native	1.00	5.97	$13.57
Sideoats Grama - Vaughn	3.00	9.85	$25.13
Western Wheatgrass - Native	2.00	5.05	$12.00
Prairie Junegrass	0.25	13.29	$6.50

Totals Seed Mix	10.50	91.18	**$108.99**

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}	2.00	TON	$429.79	$859.57
Total Mulch Materials Cost/Acre				**$859.57**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$74.46
Power mulcher (MEANS 32 91 13.16 0350)	$147.67
Total Mulch Application Cost/Acre	**$222.13**

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: 98
Estimated Failure Rate: 25%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $1,955.13
Cost /Acre*: $340.99

Initial Job Cost: **$191,602.74**
Reseeding Job Cost: **$8,354.26**
Total Job Cost: **$199,957**
Job Hours: **60.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization/Demoblilzation**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 009 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-009
User: JLC

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:	$20.26	$36.04	$47.05
Operating Cost/Hour:	$39.51	$76.08	$82.85
Operator Cost/Hour:	$22.52	$22.52	$22.52
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$82.29	$158.17	$175.95

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 D9T - 9SU	66.13	$257.08	$175.95	2	$866.06	$351.90	$500.00
CAT 14M	23.57	$155.16	$82.29	1	$237.45	$82.29	$250.00
Cat 637G w/push-pull	59.59	$255.23	$175.95	6	$2,587.08	$1,055.70	$1,000.00
Water Tanker, 10,000 Gal.	41.10	$135.95	$158.17	1	$294.12	$158.17	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$6.73	$82.29	2	$178.04	$164.58	$250.00
Power Mulcher (Bowie LD-90)	6.00	$25.94	$82.29	1	$108.23	$82.29	$250.00
Subtotals:					**$4,270.98**	**$1,894.93**	**$2,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	$15.83	1	$15.83	$15.83
Subtotals:			**$15.83**	**$15.83**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	PUEBLO	
Total one-way travel distance:	10.00	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$43,118.38	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$5.76	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.18	0.18
Return Time (Hours):	0.18	0.18
Loading Time (Hours):	2.10	NA
Unloading Time (Hours):	2.10	NA
Subtotals:	4.56	0.36

JOB TIME AND COST

Total job time:	**9.13**	Hours
Total job cost:	**$43,124**	

MISCELLANEOUS TRUCK WORK

Task description: **Lube Truck**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 010 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-010
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Lube Truck, 6x4, 250 HP Horsepower: 250
Attachment 1: Shift Basis: 1 per day
Attachment 2: Weight: (US Tons)
Labor Unit 1: Fuel/Lube Truck Driver
Labor Unit 2:

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$16.65	NA
Operating Cost/Hour:	$37.60	100
Operator Cost/Hour:	$38.91	NA
Total Unit Cost/Hour:	$93.16	
Total Fleet Cost/Hour:	$93.16	

JOB TIME AND COST

Fleet size: 1 Truck(s) Total job time: **100.00** Hours

Unit cost: $93.16 /Hour Total job cost: **$9,316**

MISCELLANEOUS TRUCK WORK

Task description: **Fuel Truck**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 011 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-011
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Fuel Tanker, 6x4, 210 HP Horsepower: 210
Attachment 1: Shift Basis: 1 per day
Attachment 2: Weight: (US Tons)
Labor Unit 1: Fuel/Lube Truck Driver
Labor Unit 2:

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$16.65	NA
Operating Cost/Hour:	$37.60	100
Operator Cost/Hour:	$38.91	NA
Total Unit Cost/Hour:	$93.16	
Total Fleet Cost/Hour:	$93.16	

JOB TIME AND COST

Fleet size: 1 Truck(s) Total job time: **100.00** Hours

Unit cost: $93.16 /Hour Total job cost: **$9,316**

MISCELLANEOUS TRUCK WORK

Task description: **Construction ManagementTruck**

Site: **Pueblo Cement Plant and Limestone Quarry** Permit Action: 2024 TR13 Permit/Job#: M2002004

PROJECT IDENTIFICATION

Task #: 012 State: Colorado Abbreviation: None
Date: 4/15/2024 County: Pueblo Filename: M004-012
User: JLC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Light Duty Pickup, 4x4, 3/4 T. Horsepower: 160
Attachment 1: Shift Basis: 1 per day
Attachment 2: Weight: 2.25 (US Tons)
Labor Unit 1: Foreman
Labor Unit 2:

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$5.01	NA
Operating Cost/Hour:	$10.82	100
Operator Cost/Hour:	$72.80	NA
Total Unit Cost/Hour:	$88.63	
Total Fleet Cost/Hour:	$88.63	

JOB TIME AND COST

Fleet size: 1 Truck(s) Total job time: **100.00** Hours

Unit cost: $88.63 /Hour Total job cost: **$8,863**