



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

November 27, 2023

Douglas Bachli  
Rocky Road Investments, Inc.  
P.O. Box 63  
Masonville, CO 80541

**RE: Division's Financial Warranty Cost Estimate for Rocky Road Quarry (M1985-210)**

Dear Mr. Havens,

On August 22, 2023 the Division performed a routine monitoring inspection of the Rocky Road Quarry. As part of the inspection the financial warranty for the site was calculated. The Division used observations made during the inspection, and permit file information during the cost estimate calculations.

A copy of the mine's reclamation cost estimate is attached for your review. The Division will allow 14 days or until **December 11, 2023** to review and comment on the reclamation cost estimate prior to issuing a surety increase notice for the Rocky Road Quarry. Once the surety increase is issued by the Division, the Operator will have 60 days to provide the additional financial warranty.

If you need additional information or have any questions, please contact me by telephone at **303-866-3567 x8114**, or by email at [patrick.lennberg@state.co.us](mailto:patrick.lennberg@state.co.us).

Sincerely,

Patrick Lennberg  
Environmental Protection Specialist

Attachment: Reclamation Cost Estimate

cc: Jared Ebert, DRMS

ec: Doug Bachli, Rocky Road Investments, Inc., [dougbachli@coloradoflagstone.com](mailto:dougbachli@coloradoflagstone.com)



## **Attachments**

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: Rocky Road Quarry

Permit Action: 2023 Insp

Permit/Job#: M1985210

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 11/27/2023

County: Larimer

Filename: M210-000

User: JPL

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade Steep Road/Work Bench Areas (non-pre-law or AR01 Area)	DOZER	1	3.53	\$1,555
002	Rip Affected Lands	RIPPER	1	5.92	\$2,648
003	Replace Soil	TRUCK1	1	19.34	\$27,537
004	Revegetation of Affected Land	REVEGE	1	14.00	\$39,026
005	Mobilization	MOBILIZE	1	2.29	\$7,443
<b><u>SUBTOTALS:</u></b>				<b>45.08</b>	<b>\$78,209</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$1,580
Performance bond:	1.05	Total =	\$821
Job superintendent:	23.05	Total =	\$1,500
Profit:	10.00	Total =	\$7,821
		TOTAL O & P =	\$11,722
		CONTRACT AMOUNT (direct + O & P) =	\$89,931

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.25	Total =	\$3,822
Reclamation management and/or administration:	5.00		\$4,497

CONTINGENCY: 0.00      Total = \$0

TOTAL INDIRECT COST = \$20,541

**TOTAL BOND AMOUNT (direct + indirect) = \$98,750**

**BULLDOZER WORK**Task description: **Grade Steep Road/Work Bench Areas (non-pre-law or AR01 Area)**Site: **Rocky Road Quarry**Permit Action: 2023 InspPermit/Job#: M1985210**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 11/27/2023County: LarimerFilename: 001User: JPLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$241.38	NA
Operating Cost/Hour:	\$143.92	100
Ripper own.	\$14.11	NA
Cost/Hour:		
Ripper op. Cost/Hour:	\$0.75	10
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: \$440.19Total Fleet Cost/Hour: **\$440.19****MATERIAL QUANTITIES**Initial Volume: 3,000Swell factor: 1.125Loose volume: **3,375 LCY**Source of estimated volume: Based on Six BenchesSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 984.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -30 %Average site altitude: 5,500 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**Operator Skill: 0.750Source  
(AVG.)

Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9709

Adjusted unit  
production: 955.56 LCY/hr  
Adjusted fleet  
production: **955.56** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$0.461/LCY

Total job time: **3.53** Hours  
Total job cost: **\$1,555**

## BULLDOZER RIPPING WORK

Task description: Rip Affected Lands

Site: Rocky Road Quarry Permit Action: 2023 Insp Permit/Job#: M1985210

### PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None  
Date: 11/27/2023 County: Larimer Filename: 002  
User: JPL

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310  
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$241.38	NA
Operating Cost/Hour:	\$143.92	100
Ripper Ownership Cost/Hour:	\$14.11	NA
Ripper Operating Cost/Hour:	\$7.45	100
Operator Cost/Hour:	\$40.04	NA
Total Unit Cost/Hour:	\$446.90	
Total Fleet Cost/Hour:	<b>\$446.90</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 4.00 acres Rip Depth (ft): 0.50 Volume: 3,227 BCY or CCY

Source of estimated quantity: 1 Foot over 4 acres (AL1, 2, 3, 4 and 5)

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.56 feet/pass  
Average Ripping Width: 7.08 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: 0.813 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.813 Acres/hr  
Site Altitude: 5,500 feet  
Altitude Adj: 1.00 (CAT HB)  
Job Efficiency: 0.83 (1 shift/day)  
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.68 Acres/hr  
Adjusted Hourly Fleet Production: 0.68 Acres/hr

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 5.92 Hours

Unit cost: \$661.920 Per acre Total job cost: \$2,648



**TRUCK/LOADER TEAM WORK**Task description: Replace SoilSite: Rocky Road QuarryPermit Action: 2023 InspPermit/Job#: M1985210**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 11/27/2023County: LarimerFilename: 003User: JPLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 2,500 Gal.

**Cost Breakdown:**

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	25
Ownership cost/hour:	\$113.82	\$61.69	\$241.38	\$241.38	\$74.98	\$11.35
Operating cost/hour:	\$81.91	\$58.92	\$35.98	\$35.98	\$13.82	\$5.73
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	\$46.87	\$0.00
Unit Subtotals:	\$220.55	\$156.58	\$317.40	\$317.40	\$135.67	\$17.08
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$597.68		Support: \$634.80		Maint: \$152.75	

Total work team cost/hour: \$1,385.23**MATERIAL QUANTITIES**Initial volume: 11,769

CCY

Swell factor: 1.000Loose volume: 11,769

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 87,000

Pounds



Payload Capacity: 54.38 LCY**Truck Bed (volume) Basis:**

Struck Volume:	<u>24.20</u>	LCY
Heaped Volume:	<u>31.40</u>	LCY
Average Volume:	<u>27.80</u>	LCY
Adjusted Volume:	<u>31.40</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 24.75 LCY**Loading Tool Capacity**Bucket Size Class: NA

Rated Capacity:	<u>7.500</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>8.250</u>	LCY

**Job Condition Corrections:**Site Altitude (ft.): 5500 feet

	Truck	Loader	Source
Altitude Adj:	0.960	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	<b>0.797</b>	<b>0.830</b>	

**Loading Tool Cycle Time:**Number of Loading Tool Passes Required to Fill  
Truck: 3 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: 0.100Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump,  
maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Independently owned trucks 0.04	0.040	(Cat HB)
Operation:	Inconsistent operation 0.04	0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.100	minutes
Adjusted Loader Cycle Time:		<b>0.650</b>	minutes
Net Load Time per Truck:		<b>1.400</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.625</u>	Minutes
Truck Load Time:	<u>1.400</u>	Minutes	Adjusted for site altitude:	<u>1.400</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.042</u>	Minutes

Truck Travel (Haul & Return) 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	530.00	0.00	2.00	2.00	3005	0.639

Haul Time: **0.639** minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	530.00	0.00	2.00	2.00	3005	0.322

Return Time: **0.322** minutesTotal Truck Cycle Time: **4.028** minutes

Loading Tool unit

Production 733.33 LCY/HourAdjusted for job efficiency: 608.67 LCY/Hour

Truck Unit Production

368.70 LCY/HourAdjusted for job efficiency: 306.02 LCY/HourOptimal No. of Trucks: 2 Truck(s)Selected Number of Trucks: 2 Truck(s)Adjusted hourly truck team production: 612.04 LCY/HourAdjusted single truck/loader team production: 608.67 LCY/HourAdjusted multiple truck/loader team production: **608.67** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: **19.34** HoursUnit cost: \$2.276 /LCYTotal job cost: **\$26,785**

**REVEGETATION WORK**Task description: Revegetation of Affected LandSite: Rocky Road QuarryPermit Action: 2023 InspPermit/Job#: M1985210**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 11/27/2023County: LarimerFilename: 004User: JPLAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$0.00</b>

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
	\$
<b>Total Tilling Cost/Acre</b>	<b>\$0.00</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Big Bluestem - Native	3.40	10.15	\$40.18
Blue Grama - Lovington	1.60	26.12	\$25.56
Little Bluestem - Pastura	2.00	11.94	\$26.97
Sand Bluestem - Garden Co.	0.40	1.04	\$9.81
Sideoats Grama - Vaughn	4.60	15.10	\$38.53
Smooth Brome - Lincoln	3.00	9.99	\$9.98
Sheep Fescue - Bighorn	1.20	18.73	\$5.28
Rabbitbrush, Rubber	12.90	192.20	\$829.41
Western Wheatgrass - Barton	8.00	20.20	\$56.00

Flax, Lewis Blue	0.59	3.91	\$9.74
Spike Muhly	0.40	14.69	\$3.88
Penstemon, Rocky Mountain	0.59	9.25	\$17.41
Yarrow, White	0.06	3.82	\$2.40
Canada Bluegrass - Reubens	1.00	57.39	\$6.50
<b>Totals Seed Mix</b>	<b>39.74</b>	<b>394.52</b>	<b>\$1,081.62</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Broadcast seeding [DMG]	\$267.22
<b>Total Seed Application Cost/Acre</b>	<b>\$267.22</b>

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
<b>Total Mulch Materials Cost/Acre</b>				<b>\$859.57</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$74.46
<b>Total Mulch Application Cost/Acre</b>	<b>\$74.46</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
Pine, Ponderosa	240	Tubling, 3 cu. in. container (MEANS)	\$1.26	\$0.00	\$302.40
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$302.40</b>

**JOB TIME AND COST**

No. of Acres:	14	Cost /Acre:	\$2,585.27
Estimated Failure Rate:	15%	Cost /Acre*:	\$1,348.84
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	<b>\$36,193.78</b>
Reseeding Job Cost:	<b>\$2,832.56</b>
Total Job Cost:	<b>\$39,026</b>
Job Hours:	<b>14.00</b>

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization**Site: **Rocky Road Quarry**Permit Action: **2023 Insp**Permit/Job#: **M1985210****PROJECT IDENTIFICATION**Task #: **005**State: **Colorado**Abbreviation: **None**Date: **11/27/2023**County: **Larimer**Filename: **005**User: **JPL**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 D8T - 8SU	47.71	\$241.38	\$158.17	2	\$799.10	\$316.34	\$500.00
CAT 980H	33.12	\$61.69	\$158.17	1	\$219.86	\$158.17	\$250.00
CAT 12M	16.01	\$74.98	\$82.29	1	\$157.27	\$82.29	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$25.94	\$82.29	1	\$108.23	\$82.29	\$250.00
Cat 740	36.49	\$113.82	\$158.17	2	\$543.98	\$316.34	\$500.00

Subtotals: **\$1,828.44** **\$955.43** **\$1,750.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$34.27	1	\$34.27	\$34.27

Subtotals: **\$34.27** **\$34.27**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	LOVELAND	
Total one-way travel distance:	8.50	miles
Average Travel Speed:	55.00	mph

Total Non-Roadable Mob/Demob Cost *	\$7,432.25
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$10.59
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.15	0.15
Return Time (Hours):	0.15	0.15
Loading Time (Hours):	0.42	NA
Unloading Time (Hours):	0.42	NA
Subtotals:	1.15	0.31

**JOB TIME AND COST**

Total job time:	2.30	Hours
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Total job cost:	\$7,443
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