



STATE OF
COLORADO

Carter - DNR, Jocelyn <jocelyn.carter@state.co.us>

St. Barbara Sand and Gravel Mine M-2004-013 TR-3 Adequacy Letter No.3

1 message

Carter - DNR, Jocelyn <jocelyn.carter@state.co.us>

Thu, Aug 22, 2024 at 4:51 PM

To: Mike Golliher <mgolliher@petelien.com>

Cc: Amy Eschberger - DNR <amy.eschberger@state.co.us>, ddeboer@petelien.com

Good evening Mike,

Please see the attached adequacy letter and reclamation cost estimate for this application. Let me know if you have any questions or concerns.

Thanks,
Jocelyn

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Jocelyn Carter
Environmental Protection Specialist
Division of Reclamation, Mining, and Safety
1313 Sherman St Suite 215
Denver, CO 80203
cell: (720) 666-1065



20240822_M2004013_TR3_AdequacyReview#3.pdf

178K



August 22, 2024

Michael Golliher
Pete Lien & Sons, Inc
P.O. Box 440
Rapid City, SD 57709

RE: St. Barbara Sand and Gravel Mine, Permit No. M-2004-013; Technical Revision Request (TR-3), Adequacy Review No. 3

Dear Mr. Golliher,

On May 20, 2024, the Division of Reclamation, Mining, and Safety (Division/DRMS) received the Technical Revision application (TR-3) for the St. Barbara Sand and Gravel Mine operation, Permit No. M-2004-013. The TR-3 application is to address the increased maximum disturbed acreage at any given time from 80 acres to 96 acres and the addition of two topsoil stockpiles located in the north central section of Mining Area 1. Please address the following remaining item.

1. Attached to this letter is a breakdown of the Division's reclamation cost estimate based on the information provided. Please review the calculation and provide any comments to the Division.

The decision date for TR-3 is currently scheduled for **August 23, 2024**. If additional time is needed to address concerns about the reclamation cost estimate, an extension request must be submitted to the Division prior to the decision date.

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

Sincerely,

Jocelyn Carter
Environmental Protection Specialist

Ec: Dakota DeBoer, Pete Lien & Sons, Inc.
Amy Eschberger, DRMS

Enclosures: St. Barbara Sand and Gravel Mine 2024 TR03 Reclamation Cost Estimate



COST SUMMARY WORK

Task description: Cost Summary

Site: St. Barbara Sand and Gravel Mine

Permit Action: 2024 TR03

Permit/Job#: M2004013

PROJECT IDENTIFICATION

Task #: 000
Date: 8/20/2024
User: JLC

State: Colorado
County: Pueblo

Abbreviation: None
Filename: M013-000

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Fill settling pond, 0.51 acres and 7.5' deep	DOZER	4	3.23	\$6,710
002	Fill processing ponds, 8.75 acres, avg 11.25' deep	TRUCK1	3	118.00	\$230,778
003	Topsoil 7-in on 77.3 acres	SCRAPER1	1	31.45	\$153,430
004	Reveg 77.3 Acres	REVEGE	1	39.00	\$242,910
005	Mob/Demob	MOBILIZE	1	3.33	\$28,004
<u>SUBTOTALS:</u>				195.01	\$661,832

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$13,369
Performance bond:	1.05	Total =	\$6,949
Job superintendent:	97.50	Total =	\$7,729
Profit:	10.00	Total =	\$66,183

TOTAL O & P = \$94,230

CONTRACT AMOUNT (direct + O & P) = \$756,062

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$500</u>	Total =	<u>\$500</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$32,133</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$37,803</u>

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$164,666

TOTAL BOND AMOUNT (direct + indirect) = \$826,498

BULLDOZER WORKTask description: Fill settling pond, 0.51 acres and 7.5' deepSite: St. Barbara Sand and Gravel MinePermit Action: 2024 TR03Permit/Job#: M2004013**PROJECT IDENTIFICATION**Task #: 001
Date: 8/20/2024
User: JLCState: Colorado
County: PuebloAbbreviation: None
Filename: M013-001Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$257.39</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$196.93</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$25.02</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.59</u>	<u>5</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$519.96</u>	
Total Fleet Cost/Hour:	<u>\$2,079.85</u>	

MATERIAL QUANTITIESInitial Volume: 6,171
Swell factor: 1.125
Loose volume: 6,942 LCYSource of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 250 feet
Unadjusted hourly production: 754.3 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 0 %
Average site altitude: 4,500 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% EarthJob Condition Correction FactorSource

Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7132

Adjusted unit
production: 537.97 LCY/hr
Adjusted fleet
production: **2151.88** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)
Unit cost: \$0.967/LCY

Total job time: **3.23** Hours
Total job cost: **\$6,710**

TRUCK/LOADER TEAM WORKTask description: Fill processing ponds, 8.75 acres, avg 11.25' deepSite: St. Barbara Sand and Gravel MinePermit Action: 2024 TR03Permit/Job#: M2004013**PROJECT IDENTIFICATION**Task #: 002
Date: 8/20/2024
User: JLCState: Colorado
County: PuebloAbbreviation: None
Filename: M013-002Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 972H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-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	NA	NA	25	25
Ownership cost/hour:	\$108.67	\$62.43	NA	NA	\$129.81	\$11.65
Operating cost/hour:	\$66.26	\$57.98	NA	NA	\$22.28	\$5.61
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.82	\$56.64	NA	NA	\$56.70	\$0.00
Unit Subtotals:	\$199.75	\$177.05	NA	NA	\$208.79	\$17.26
Number of Units:	6	3	0	0	1	1
Group Subtotals:	Work: \$1,729.65		Support: \$0.00		Maint: \$226.05	

Total work team cost/hour: \$1,955.70**MATERIAL QUANTITIES**Initial volume: 158,813 CCY Swell factor: 1.125
Loose volume: 178,665 LCYSource 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: 2,650 Pounds/LCYDescription: Decomposed rock - 25% Rock, 75% Earth

Rated Payload:	<u>62,000</u>	Pounds
Payload Capacity:	<u>23.40</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>17.10</u>	LCY
Heaped Volume:	<u>22.10</u>	LCY
Average Volume:	<u>19.60</u>	LCY
Adjusted Volume:	<u>22.10</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 18.48 LCY**Loading Tool Capacity**Bucket Size Class: NA

Rated Capacity:	<u>5.600</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>6.160</u>	LCY

Job Condition Corrections:Site Altitude (ft.): 4500 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: 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): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(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:		-0.060	minutes
Adjusted Loader Cycle Time:		0.465	minutes
Net Load Time per Truck:		1.030	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.030</u>	Minutes	Adjusted for site altitude:	<u>1.030</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	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	750.00	0.00	3.00	3.00	2183	0.607

Haul Time: **0.607** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	0.00	3.00	3.00	2936	0.410

Return Time: **0.410** minutesTotal Truck Cycle Time: **3.647** minutes

Loading Tool unit

Production 680.25 LCY/Hour Adjusted for job efficiency: 564.60 LCY/Hour
 Truck Unit Production 304.03 LCY/Hour Adjusted for job efficiency: 252.35 LCY/Hour

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

Adjusted hourly truck team production: 504.69 LCY/Hour
 Adjusted single truck/loader team production: 504.69 LCY/Hour
 Adjusted multiple truck/loader team production: **1,514.07** LCY/Hour

JOB TIME AND COSTFleet size: 3 Team(s) Total job time: **118.00** HoursUnit cost: \$1.292 /LCY Total job cost: **\$230,778**

SCRAPER TEAM WORKTask description: Topsoil 7-in on 77.3 acresSite: St. Barbara Sand and Gravel
MinePermit Action: 2024 TR03Permit/Job#: M2004013**PROJECT IDENTIFICATION**

Task #: 003 State: Colorado Abbreviation: None
 Date: 8/20/2024 County: Pueblo Filename: 003
 User: JLC

Agency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	Cat D10T - 10SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	50	NA	NA	50	50
Ownership cost/hour:	\$329.66	\$257.39	NA	NA	\$129.81	\$11.65
Operating cost/hour:	\$347.48	\$98.47	NA	NA	\$44.57	\$11.23
%Utilization-ripper:	NA	5	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$25.02	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.59	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	NA	\$56.70	\$0.00
Unit Subtotals:	\$734.66	\$421.50	NA	NA	\$231.07	\$22.88
Number of Units:	4	4	0	0	1	1
Group Subtotals:	Work:	\$4,624.64	Support:	\$0.00	Maint:	\$253.95

Total work team cost/hour: \$4,878.59**MATERIAL QUANTITIES**

Initial volume: 72,744 CCY Swell factor: 1.125
 Loose volume: 81,837 LCY

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

HOURLY PRODUCTION**Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY Struck Volume: 24.00 LCY
 Material description: Decomposed rock - 25% Rock, Heaped Volume: 34.00 LCY
75% Earth
 Rated Payload: 81,600 pounds Average Volume: 29.00 LCY

Payload Capacity: 30.79 LCYAdjusted Capacity: 29.00 LCYCycle Time:Scraper Loading Time: 0.50 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4500 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	2.00	3.00	5.00	1867	0.67

Haul Time: 0.67 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-2.00	3.00	1.00	2963	0.45

Return Time: 0.45 minutesTotal Scraper team cycle time: 2.22 minutesAdjusted for job conditions: 650.54 LCY/HourSelected Number of Scrapers: 4 Scraper(s)Adjusted single scraper team (unit) hourly production: 2,602.16 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,602.16 LCY/HourUnadjusted unit production/hour: 783.78 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 31.45 HoursUnit cost: \$1.875 /LCYTotal job cost: \$153,430

REVEGETATION WORKTask description: Reveg 77.3 AcresSite: St. Barbara Sand and Gravel MinePermit Action: 2024 TR03Permit/Job#: M2004013PROJECT IDENTIFICATIONTask #: 004
Date: 8/20/2024
User: JLCState: Colorado
County: PuebloAbbreviation: None
Filename: 004Agency or organization name: DRMSFERTILIZING**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost / Acre
Ammonium nitrate, 33-0-0	121.00	pound	\$0.64	\$77.68
Triple superphosphate, 0-46-0	87.00	pound	\$0.92	\$79.75
			Total Fertilizer Materials Cost/Acre	\$157.43

Application

Description	Cost / Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$43.12
Total Fertilizer Application Cost/Acre	\$43.12

TILLING

Description	Cost / Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost / Acre
Alkali Sacaton	1.50	58.54	\$43.63
Switchgrass - Blackwell	4.00	35.72	\$52.88
Galleta	11.00	40.15	\$609.81
Western Wheatgrass - Barton	16.00	40.40	\$150.33
Totals Seed Mix	32.50	174.82	\$856.65

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$236.64
Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$492.78	\$985.56
Total Mulch Materials Cost/Acre				\$985.56

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Power mulcher (MEANS 32 91 13.16 0350)	\$157.25
Total Mulch Application Cost/Acre	\$242.63

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:	77.3	Cost /Acre:	\$2,978.44
Estimated Failure Rate:	15%	Cost /Acre*:	\$1,093.29
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$230,233.41		
Reseeding Job Cost:	\$12,676.70		
Total Job Cost:	\$242,910		
Job Hours:	39.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mob/Demob**Site: **St. Barbara Sand and Gravel Mine**Permit Action: **2024 TR03**Permit/Job#: **M2004013****PROJECT IDENTIFICATION**

Task #: 005 State: Colorado Abbreviation: None
 Date: 8/20/2024 County: Pueblo Filename: 005
 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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

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 D10T - 10SU	93.31	\$282.41	\$125.64	4	\$1,632.20	\$502.56	\$250.00
Cat 637G	57.28	\$329.66	\$125.64	4	\$1,821.20	\$502.56	\$500.00
CAT 14M	23.57	\$129.81	\$59.44	1	\$189.25	\$59.44	\$250.00
Hydroseeder with Tractor	28.00	\$45.21	\$122.78	2	\$335.98	\$245.56	\$500.00
CAT 972H	28.00	\$62.43	\$122.78	3	\$555.63	\$368.34	\$2,000.00
Cat 730	25.19	\$108.67	\$59.44	6	\$1,008.66	\$356.64	\$2,000.00
Power Mulcher (Bowie LD-90)	6.00	\$27.21	\$59.44	1	\$86.65	\$59.44	\$250.00

Subtotals: **\$5,629.57** **\$2,094.54** **\$5,750.00****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.	\$34.10	1	\$34.10	\$34.10
Light Duty Pickup, 4x4, 1 T. Crew	\$108.47	1	\$108.47	\$108.47

Subtotals: **\$142.57** **\$142.57**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>PUEBLO</u>	
Total one-way travel distance:	<u>15.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$27,908.55</u>
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 ** two round trips with haul rig:

Total Roadable Mob/Demob Cost **	<u>\$95.05</u>
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 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.33</u>	<u>0.33</u>
Return Time (Hours):	<u>0.33</u>	<u>0.33</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.67</u>	<u>0.67</u>

JOB TIME AND COST

Total job time:	<u>3.33</u>	Hours
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Total job cost:	<u>\$28,004</u>
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