



STATE OF  
COLORADO

Zuber - DNR, Rob <rob.zuber@state.co.us>

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## M2015006 TR1, DRMS letter and cost estimate

1 message

**Zuber - DNR, Rob** <rob.zuber@state.co.us>

Thu, Feb 27, 2025 at 2:55 PM

To: spraguestone <spraguestone@gmail.com>, Jason Andrews <jandrews@enganalytics.com>

Hello -

Please find attached my letter and Reclamation Cost Estimate.

Thank you,  
Rob

Rob Zuber, P.E.  
Environmental Protection Specialist  
Active Mines Program



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

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**M2015006\_TR1\_DRMS\_Letter and RCE.pdf**

365K



February 27, 2025

Mathew Sprague  
Sprague Stone LLC  
P.O. Box 294  
Masonville, CO 80541

**Re: Sprague Stone, Permit M-2015-006, TR-01, Reclamation Cost Estimate**

Dear Mr. Sprague:

On February 13, 2025, the Division received the most recent response to adequacy items for Technical Revision No. 1 (TR-01) from Engineering Analytics, Inc. All of the adequacy items have been addressed.

The next step in the process before the Division can approve TR-01 is to update the Reclamation Cost Estimate (RCE) for this permit. I have performed this update using:

- The Division's cost estimating software CIRCES
- The Division's estimate from last year (see Patrick Lennberg's letter dated April 29, 2024)
- Information in the exhibits that have been update by Engineering Analytics with this revision

The primary exhibits that were reviewed for the RCE update are Exhibit E (Reclamation Plan) and Exhibit L (Reclamation Cost Estimate).

Please see the attachment to this letter, which includes the Cost Summary for the RCE and the individual task sheets. The cost estimate has increased over last year, from \$267,063 to \$328,307. This increase is largely due to the area to be seeded (which increased from 26 acres to 62 acres per Exhibit L). You will see other significant changes from last year. I consolidated the backfilling task into Task 002 and deleted Task 003. Within the scraper task, the volume of topsoil increased from 15,555 CY to 33,342 CY, but the grade was decreased considerably.

It should be noted that the Division utilizes a team of scrapers for topsoil placement. Alternatively, if dozers were used to spread topsoil, an additional task for hauling the material (truck and loader team) would be required, because dozers are generally used for a maximum push distance of 300 feet. The text and maps in the permit indicate that the average distance to move topsoil is approximately 1,000 feet. Adding a task for hauling with trucks and then grading with a dozer would not result in substantial savings over using scrapers, in the Division's opinion.



Please review this RCE and respond (via formal letter) with comments regarding the details in my estimate and/or with changes to your exhibits.

The current deadline for a decision on TR-01 is March 7, 2025. Please send a request for an extension of one month if you do not concur with this RCE.

If you have any questions prior to providing your formal response, please contact me at [Rob.Zuber@state.co.us](mailto:Rob.Zuber@state.co.us) or by calling (720) 601-2276.

Thank you,

A handwritten signature in blue ink, appearing to read "Robert D. Zuber".

Robert D. Zuber, P.E.  
Environmental Protection Specialist

Attachment: Reclamation Cost Estimate

Copied via email:

Amy Eschberger, DRMS  
Amanda Sprague, Sprague Stone LLC  
Jason Andrews, Engineering Analytics, Inc.

## **ATTACHMENT**

### **Reclamation Cost Estimate**

## COST SUMMARY WORK

Task description: Cost Summary

Site: Sprague Stone

Permit Action: TR1

Permit/Job#: M2015006

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 2/27/2025

County: Larimer

Filename: M006-000

User: RDZ

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Rip Storage Areas	RIPPER	2	11.50	\$11,181
002	Backfill 4" overburden over work decks, including waste rock	DOZER	2	61.59	\$58,674
004	Spread Topsoil over 62 acres	SCRAPER1	1	17.73	\$59,920
005	Revegetating Disturbed Areas	REVEGE	1	62.00	\$120,045
006	Equipment Mobilization/Demobilization	MOBILIZE	1	2.60	\$11,737
<b><u>SUBTOTALS:</u></b>				<b>155.42</b>	<b>\$261,557</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$5,283

Performance bond: 1.05

Total = \$2,746

Job superintendent: 54.37

Total = \$4,310

Profit: 10.00

Total = \$26,156

TOTAL O & P = \$38,495

CONTRACT AMOUNT (direct + O & P) = \$300,052

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$12,752

Reclamation management and/or administration: 5.00

\$15,003

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$66,750

**TOTAL BOND AMOUNT (direct + indirect) = \$328,307**

## BULLDOZER RIPPING WORK

Task description: Rip Storage Areas

Site: Sprague Stone

Permit Action: TR1

Permit/Job#: M2015006

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 2/27/2025

County: Larimer

Filename: M006-001

User: RDZ

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 405

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$253.16	NA
Operating Cost/Hour:	\$164.35	100
Ripper Ownership Cost/Hour:	\$18.79	NA
Ripper Operating Cost/Hour:	\$9.48	100
Operator Cost/Hour:	\$40.04	NA
Total Unit Cost/Hour:	\$485.82	
Total Fleet Cost/Hour:	<b>\$971.63</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 16.00 acres Rip Depth (ft): 1.00 Volume: 25,813 BCY or CCY

Source of estimated quantity: 2024 Annual Report Map

### 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: 200.00 feet/pass  
Average Dozer Speed: 88.00 feet/minute  
Average Maneuver Time: 0.25 minutes/pass  
Production per unit area: 0.838 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.838 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: 0.70 Acres/hr  
Adjusted Hourly Fleet Production: **1.39** Acres/hr

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **11.51** Hours

Unit cost: \$698.842 Per acre Total job cost: **\$11,181**

**BULLDOZER WORK**Task description: **Backfill 4" overburden over work decks, including waste rock**Site: **Sprague Stone**Permit Action: TR1Permit/Job#: M2015006**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 2/27/2025County: LarimerFilename: M006-002User: RDZAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$253.16</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$164.35</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$18.79</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$476.34Total Fleet Cost/Hour: **\$952.67****MATERIAL QUANTITIES**Initial Volume: 9,141Swell factor: 1.000Loose volume: **9,141 LCY**Source of estimated volume: 31 acres, average 4 inches deepSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 910.5 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 30 %Average site altitude: 5,500 feetMaterial weight: 3,300 lbs/LCYWeight description: Decomposed rock - 75% Rock, 25% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB))</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.0815

Adjusted unit production: 74.21 LCY/hr

Adjusted fleet production: **148.42** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$6.419/LCY

Total job time: **61.59** Hours

Total job cost: **\$58,674**



**SCRAPER TEAM WORK**Task description: **Spread Topsoil over 62 acres**Site: **Sprague Stone**Permit Action: TR1Permit/Job#: M2015006**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 2/27/2025County: LarimerFilename: M006-004User: RDZAgency 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:	Cat D9T - 9SU
-Dump Area:	CAT 16M
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 5,000 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	60	NA	25
Ownership cost/hour:	\$281.32	NA	\$253.16	\$179.39	NA	\$51.70
Operating cost/hour:	\$319.35	NA	\$82.18	\$71.78	NA	\$12.56
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	NA	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	NA	\$0.00
Operator cost/hour:	\$57.52	NA	\$40.04	\$56.70	NA	\$0.00
Unit Subtotals:	\$658.19	NA	\$375.37	\$307.87	NA	\$64.26
Number of Units:	4	0	1	1	0	1
Group Subtotals:	Work:	\$2,632.76	Support:	\$683.24	Maint:	\$64.26

Total work team cost/hour: **\$3,380.26****MATERIAL QUANTITIES**Initial volume: 33,342

CCY

Swell factor: 1.125Loose volume: **37,510**

LCY

Source of estimated volume: 62 acres, 4 inches deep; Exh LSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,650 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Decomposed rock - 25% Rock, 75% Earth</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>30.79 LCY</u>	Adjusted Capacity:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5500 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: 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	0.00	3.00	3.00	2800	0.64

Haul Time: 0.64 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 1,058.02 LCY/HourSelected Number of Scrapers: 4 Scraper(s)Adjusted single scraper team (unit) hourly production: 2,116.04 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,116.04 LCY/HourUnadjusted unit production/hour: 1,274.73 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 17.73 HoursUnit cost: \$1.597 /LCYTotal job cost: \$59,920

**REVEGETATION WORK**Task description: Revegetating Disturbed AreasSite: Sprague StonePermit Action: TR1Permit/Job#: M2015006**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 2/27/2025County: LarimerFilename: M006-005User: RDZAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
8-32-16, 16-20-0	200.00	pound	\$0.92	\$184.72
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$184.72</b>

**Application**

Description	Cost /Acre
Truck whirlwind spreader (MEANS 32 01 90.13 0140)	\$17.86
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$17.86</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
Indiangrass - Cheyenne	0.50	1.52	\$6.15
Switchgrass - Blackwell	0.50	4.47	\$6.61
Big Bluestem - Native	0.40	1.19	\$6.24
Priarie Dropseed	0.30	3.32	\$39.47
Blue Grama - Native	1.00	16.32	\$21.33
Indian Ricegrass - Native	0.80	2.59	\$13.83
Buffalograss - Native/Plains	1.00	0.96	\$28.50
Sand Dropseed	0.10	11.94	\$1.30
Little Bluestem - Native	1.00	5.97	\$15.39
Sideoats Grama - Vaughn	1.40	4.60	\$34.43

Slender Wheatgrass - San Luis	1.00	3.65	\$6.04
Western Wheatgrass - Native	1.50	3.79	\$13.51
Needlegrass, Green - Lodorm	0.50	2.08	\$4.32
<b>Totals Seed Mix</b>	<b>10.00</b>	<b>62.39</b>	<b>\$197.13</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Drill Seeding (DRMS Survey Cost)	\$236.64
<b>Total Seed Application Cost/Acre</b>	<b>\$236.64</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	\$492.78	\$985.56
<b>Total Mulch Materials Cost/Acre</b>				<b>\$985.56</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Power mulcher (MEANS 32 91 13.16 0350)	\$157.25
<b>Total Mulch Application Cost/Acre</b>	<b>\$157.25</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>
Juniper, Rocky Mountain	6	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.74	\$0.00	\$16.44
Pine, Ponderosa	6	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.74	\$0.00	\$16.44
Oak, Gambel's	6	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.62	\$0.00	\$15.72
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$48.60</b>

**JOB TIME AND COST**

No. of Acres:	62	Cost /Acre:	\$1,827.76
Estimated Failure Rate:	25%	Cost /Acre*:	\$433.77
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$113,321.12		
Reseeding Job Cost:	\$6,723.44		
Total Job Cost:	\$120,045		
Job Hours:	62.00		

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Equipment Mobilization/Demobilization**Site: **Sprague Stone**Permit Action: **TR1**Permit/Job#: **M2015006****PROJECT IDENTIFICATION**Task #: **006**State: **Colorado**Abbreviation: **None**Date: **2/27/2025**County: **Larimer**Filename: **M006-006**User: **RDZ**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:	\$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 D9T - 9SU	60.01	\$253.16	\$125.64	2	\$757.60	\$251.28	\$250.00
Cat 637G w/push-pull	59.59	\$281.32	\$125.64	4	\$1,627.84	\$502.56	\$1,000.00
CAT 16M	28.73	\$179.39	\$122.78	1	\$302.17	\$122.78	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$41.02	\$59.44	2	\$200.92	\$118.88	\$500.00
Water Tanker, 5,000 Gal.	15.00	\$51.70	\$59.44	1	\$111.14	\$59.44	\$250.00

Subtotals: **\$2,999.67** **\$1,054.94** **\$2,250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Power Mulcher (Bowie LD-90)	\$58.47	1	\$58.47	\$58.47
Light Duty Pickup, 4x4, 3/4 T.	\$13.77	1	\$13.77	\$13.77

Subtotals: **\$72.24** **\$72.24**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: LOVELAND  
 Total one-way travel distance: 6.00 miles  
 Average Travel Speed: 40.00 mph

Total Non-Roadable Mob/Demob Cost \* \$11,715.72  
 \*\* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$21.67  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.15</u>	<u>0.15</u>
Return Time (Hours):	<u>0.15</u>	<u>0.15</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.30</u>	<u>0.30</u>

**JOB TIME AND COST**

Total job time: 2.60 Hours

Total job cost: \$11,737