



STATE OF  
COLORADO

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

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## Sprague Stone RCE - updated estimate

1 message

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

Mon, Mar 10, 2025 at 2:42 PM

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

Hello.

I have updated the cost estimate per your letter Friday, and the changes to the revegetation task are significant and, in my opinion, reasonable.

Thanks,  
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\_Second DRMS Letter for RCE.pdf**

317K



March 10, 2025

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

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

Dear Mr. Sprague:

On March 7, 2025, the Division received the response letter from Engineering Analytics, Inc. related to the Division's Reclamation Cost Estimate (RCE) for Technical Revision No. 1 (TR-01).

Per this response letter, I have updated the revegetation task to use broadcast seeding rather than drill seeding, and I removed the costs for mulch

Please see the attachment to this letter, which includes an updated Cost Summary for the RCE and the individual task sheets. The updated total cost estimate is \$266,970. Please review this RCE and respond (via formal letter) with comments regarding the details in my estimate.

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,

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: 3/10/2025

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	\$70,391
006	Equipment Mobilization/Demobilization	MOBILIZE	1	2.60	\$11,737
<b><u>SUBTOTALS:</u></b>				<b>155.42</b>	<b>\$211,903</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$4,280

Performance bond: 1.05

Total = \$2,225

Job superintendent: 54.37

Total = \$4,310

Profit: 10.00

Total = \$21,190

TOTAL O & P = \$32,006

CONTRACT AMOUNT (direct + O & P) = \$243,909

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$10,366

Reclamation management and/or administration: 5.00

\$12,195

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$55,067

**TOTAL BOND AMOUNT (direct + indirect) = \$266,970**

## 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 Horsepower: 405  
Ripper Attachment: 3-Shank Ripper 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: 3/10/2025County: 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	1.00	3.05	\$12.30
Switchgrass - Blackwell	1.00	8.93	\$13.22
Big Bluestem - Native	0.80	2.39	\$12.49
Priarie Dropseed	0.60	6.63	\$78.94
Blue Grama - Native	2.00	32.64	\$42.65
Indian Ricegrass - Native	1.60	5.18	\$27.67
Buffalograss - Native/Plains	2.00	1.93	\$57.01
Sand Dropseed	0.20	23.88	\$2.60
Little Bluestem - Native	2.00	11.94	\$30.78
Sideoats Grama - Vaughn	2.80	9.19	\$68.85

Slender Wheatgrass - San Luis	2.00	7.30	\$12.07
Western Wheatgrass - Native	3.00	7.58	\$27.02
Needlegrass, Green - Lodorm	1.00	4.16	\$8.65
<b>Totals Seed Mix</b>	<b>20.00</b>	<b>124.79</b>	<b>\$394.25</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Broadcast seeding [DMG]	\$272.56
<b>Total Seed Application Cost/Acre</b>	<b>\$272.56</b>

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

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

**Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	\$917.99
Estimated Failure Rate:	25%	Cost /Acre*:	\$869.39
*Selected Replanting Work Items:	FERTILIZING,SEEDING		
Initial Job Cost:	\$56,915.38		
Reseeding Job Cost:	\$13,475.55		
Total Job Cost:	\$70,391		
Job Hours:	62.00		

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: Equipment Mobilization/DemobilizationSite: Sprague StonePermit Action: TR1Permit/Job#: M2015006**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 2/27/2025County: LarimerFilename: M006-006User: RDZAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck 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