



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

February 23, 2021

Randy Snare
Snare Construction, Inc
13619 County Road 1
Florissant, CO 80816

**RE: Reclamation Cost Estimate, 110c Construction Materials Application
Snare Construction, Inc. and Materials, File No. M-2020-055**

Dear Mr. Snare,

On February 22 and 23, 2021, the Division of Reclamation, Mining, and Safety (Division) received your responses to the Division's February 18, 2021 Adequacy Review of your 110c permit application for the operation known as Snare Construction, Inc. and Materials, File No. M-2020-055. The Division has reviewed your adequacy review responses and has determined you have addressed all adequacy items.

The Division has calculated the total required financial warranty for the site to be \$6,600.00. A copy of the reclamation cost summary is attached for the Applicant's review. Please contact me prior to the decision date to discuss any questions regarding the cost estimate or if you identify any errors with this calculation. The application can be approved on or before February 25, 2021.

If you need additional information or have any questions, please contact me at Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at **303-866-3567 x8132**, or by email at elliott.russell@state.co.us.

Sincerely,

Elliott R. Russell
Environmental Protection Specialist

Enclosure: Reclamation Cost Estimate M2020055

ec: Jason Musick with DRMS, jason.musick@state.co.us



COST SUMMARY WORK

Task description: Cost Summary of Reclamation Tasks

Site: Snare Construction, Inc and
Materials

Permit Action: New Application
M2020055

Permit/Job#: M2020055

PROJECT IDENTIFICATION

Task #: 000
Date: 2/22/2021
User: ERR

State: Colorado
County: Teller

Abbreviation: None
Filename: M055-000

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Minor Grading of Permit Area	DOZERGRADER	1	2.50	\$654
002	Load/Carry Growth Media to Eastern Slope	LOADER	1	8.51	\$739
003	Spread Growth Medium on Eastern Slope	DOZER	1	3.80	\$987
004	Plant Reclamation Seed Mixture on Eastern Slope	REVEGE	1	2.00	\$976
005	Mob/Demob of Reclamation Equipment	MOBILIZE	1	1.64	\$2,191
<u>SUBTOTALS:</u>				18.45	\$5,547

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$112
Performance bond:	1.05	Total =	\$58
Job superintendent:	0.00	Total =	\$0
Profit:	10.00	Total =	\$555

TOTAL O & P = \$725

CONTRACT AMOUNT (direct + O & P) = \$6,272

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$0</u>	Total =	<u>\$0</u>
Engineering work and/or contract/bid preparation:	<u>0.00</u>	Total =	<u>\$0</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$314</u>

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$1,039

TOTAL AMOUNT (direct + indirect) = \$6,586

TOTAL BOND AMOUNT (rounded) = \$6,600

DOZERGRADER WORKTask description: **Minor Grading of Permit Area**

Site: **Snare Construction, Inc and Materials** Permit Action: **New Application M2020055** Permit/Job#: **M2020055**

PROJECT IDENTIFICATION

Task #: **001** State: **Colorado** Abbreviation: **None**
Date: **2/22/2021** County: **Teller** Filename: **M055-001**
User: **ERR**

Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D8T - 8SU**
Horsepower: _____
Blade Type: _____
Attachment: **3-shank ripper**
Shift Basis: **1 per day**
Data Source: _____

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own. Cost/Hour:	\$12.00	NA
Ripper op. Cost/Hour:	\$2.29	25
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$261.58**
Total Fleet Cost/Hour: **\$261.58**

JOB TIME AND COST

Fleet size: **1 Dozer(s)**
Unit cost: **\$261.58/LCY**

Total job time: **2.50 Hours**
Total job cost: **\$654**

WHEEL LOADER – LOAD AND CARRY WORKTask description: Load/Carry Growth Media to Eastern SlopeSite: Snare Construction, Inc and
MaterialsPermit Action: New Application
M2020055Permit/Job#: M2020055**PROJECT IDENTIFICATION**Task #: 002
Date: 2/22/2021
User: ERRState: Colorado
County: TellerAbbreviation: None
Filename: M055-002Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 924H
Attachment 1: ROPS CabHorsepower: 128
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$20.95	NA
Operating Cost/Hour:	\$25.17	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$86.82	
Total Fleet Cost/Hour:	\$86.82	

MATERIAL QUANTITIESInitial volume: 1,000 CCY Swell factor: 1.215
Loose volume: 1,215 LCYSource of estimated volume: Application
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.475 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.010	minutes
Adjusted Basic Cycle Time:		0.465	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0
Return: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	450	0.00	4.00	4.00	0.2856	(Cat HB)
Return Route:	450	0.00	4.00	4.00	0.2856	(Cat HB)

Total Travel Time: 0.5712 minutes
 Total Cycle Time: 1.0362 minutes

Load Bucket Capacity

Rated Capacity: 2.70 LCY (heaped)
 Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
 Adjusted Capacity: 2.97 LCY

Job Condition Correction Factors

Site Altitude: 8580 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Unadjusted Hourly Unit Production: 171.97 LCY/Hour
 Adjusted Hourly Unit Production: 142.73 LCY/Hour
 Adjusted Hourly Fleet Production: 142.73 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 8.51 Hours
 Unit cost: \$0.608 /LCY Total job cost: \$739

BULLDOZER WORKTask description: **Spread Growth Medium on Eastern Slope**Site: **Snare Construction, Inc and
Materials**Permit Action: New Application
M2020055Permit/Job#: M2020055**PROJECT IDENTIFICATION**Task #: 003
Date: 2/22/2021
User: ERRState: Colorado
County: TellerAbbreviation: None
Filename: M055-003Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SU
Horsepower: 310
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>\$116.22</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$89.77</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$12.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$259.28
Total Fleet Cost/Hour: **\$259.28****MATERIAL QUANTITIES**Initial Volume: 1,000
Swell factor: 1.215
Loose volume: **1,215 LCY**Source of estimated volume: Application
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 60 feet
Unadjusted hourly production: 1,246.9 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 30 %
Average site altitude: 8,580 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.200</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2561

Adjusted unit production: 319.33 LCY/hr

Adjusted fleet production: **319.33** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.812/LCY

Total job time: **3.80** Hours

Total job cost: **\$987**

REVEGETATION WORKTask description: Plant Reclamation Seed Mixture on Eastern SlopeSite: Snare Construction, Inc and
MaterialsPermit Action: New Application
M2020055Permit/Job#: M2020055**PROJECT IDENTIFICATION**Task #: 004
Date: 2/22/2021
User: ERRState: Colorado
County: TellerAbbreviation: None
Filename: M055-004Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alsike Clover	0.30	4.68	\$1.15
Mountain Brome - Bromar	6.00	9.64	\$22.80
Orchardgrass - Potomac	3.00	37.19	\$12.80
Ryegrass, Perennial - Belramo	6.00	34.02	\$10.80
Sandberg Bluegrass - VNS	4.20	89.19	\$35.28
Rye, Winter - VNS	6.00	2.48	\$3.21
Timothy - Climax	4.50	129.13	\$7.20

Totals Seed Mix	30.00	306.34	\$93.23
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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
			\$	\$
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:	2.4	Cost /Acre:	\$325.23
Estimated Failure Rate:	25%	Cost /Acre*:	\$325.23
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$780.55
Reseeding Job Cost:	\$195.14
Total Job Cost:	\$976
Job Hours:	2.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mob/Demob of Reclamation Equipment**Site: **Snare Construction, Inc and
Materials**Permit Action: **New Application
M2020055**Permit/Job#: **M2020055****PROJECT IDENTIFICATION**Task #: **005**
Date: **2/22/2021**
User: **ERR**State: **Colorado**
County: **Teller**Abbreviation: **None**
Filename: **M055-005**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:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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 924H	12.69	\$20.95	\$67.39	1	\$88.34	\$67.39	\$250.00
Cat D8T - 8SU	53.08	\$128.22	\$141.54	1	\$269.76	\$141.54	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	1	\$74.11	\$67.39	\$250.00
Subtotals:					\$432.21	\$276.32	\$750.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$121.96	1	\$121.96	\$121.96
Subtotals:			\$121.96	\$121.96

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>WOODLAND PARK</u>	
Total one-way travel distance:	<u>15.60</u>	miles
Average Travel Speed:	<u>50.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,115.01</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$76.10</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.31</u>	<u>0.31</u>
Return Time (Hours):	<u>0.31</u>	<u>0.31</u>
Loading Time (Hours):	<u>0.10</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.10</u>	<u>NA</u>
Subtotals:	<u>0.82</u>	<u>0.62</u>

JOB TIME AND COST

Total job time:	<u>1.65</u>	Hours
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Total job cost:	<u>\$2,191</u>
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