STATE OF COLORADO

Girardi - DNR, Chris <chris.girardi@state.co.us>

Keenesburg No. 2 Mine- October 2024 Inspection Report and Updated Bond

1 message

Girardi - DNR, Chris <chris.girardi@state.co.us> Tue, Jan 21, 2025 at 10:53 AM
To: Brady Reece <breece@capitalsand.com>
Cc: Scott Jinks <sjinks@capitalsand.com>, "Krajewski, Dustin" <DKrajewski@trccompanies.com>, dpatterson@capitalsand.com, Jared Ebert - DNR <jared.ebert@state.co.us>

Hello,

Attached to this email is the Division's Inspection Report for the inspection conducted on October 2, 2024. In addition, attached is an updated cost estimate to complete reclamation at the site.

A hard copy will not be mailed unless requested.

Please let me know if you have any questions or concerns.

Have a great day,
Chris

Chris Girardi

Environmental Protection Specialist Intern

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

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2 attachments

Keenesburg No.2 Mine_Oct2024_InspectionReport.pdf
2738K

Keenesburg No.2 Mine_2025UpdatedCostEstimate.pdf
596K

COST SUMMARY WORK

Task description: **Reclamation Cost Estimate**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 001
Date: 1/6/2025
User: CMG

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-001

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001a	Reduce Highwall (2500'x25') sidewalls (300'x12')	DOZER	1	13.66	$6,506
001b	Regrade Wastepile- estimated 1 yr production	DOZER	2	416.65	$396,930
002a	Structure demo	DEMOLISH	1	160.00	$2,100,491
002b	Slab and Footer Demo	DEMOLISH	1	160.00	$521,342
002c	Sales Road Demo	DEMOLISH	1	80.00	$347,279
003a	Rip facilities area	RIPPER	2	33.64	$32,546
003b	Rip Haul Roads	RIPPER	2	20.18	$19,527
003c	Rip Topsoil Piles TS-0 & TS-1	RIPPER	2	23.07	$22,317
004a	Topsoil Facilities Area	TRUCK1	2	60.77	$130,407
004b	Topsoil Waste Pile	TRUCK1	2	184.55	$396,056
004c	Topsoil Haul Roads	TRUCK1	2	23.62	$50,694
004d	Topsoil Active Pit Area 184 acres	TRUCK1	2	207.05	$444,354
005a	Reveg- 66 ac Facilities	REVEGE	1	66.00	$151,890
005b	Reveg- Waste Pile 164 ac	REVEGE	1	164.00	$352,349
005c	Reveg- Haul Roads 21 ac	REVEGE	1	21.00	$48,329
005d	Reveg- Active Pit Area 184 ac	REVEGE	1	184.00	$395,319
005e	Reveg- Topsoil piles TS-0 & TS-1, 24 ac	REVEGE	1	24.00	$55,233
006	Mobilize Equipment	MOBILIZE	1	9.04	$39,535
007a	Vehicles for onsite support	MISCTRUK	2	300.00	$31,698
007b	Fuel truck 1.5 hour daily, 6 mos	MISCTRUK	1	200.00	$14,602
007c	Heavy equipment support vehicle 4 hrs/week, 6 mos	MISCTRUK	1	100.00	$8,032
			SUBTOTALS:	**2451.23**	**$5,565,436**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$112,422
Performance bond:	1.05	Total =	$58,437
Job superintendent:	1,225.62	Total =	$97,155
Profit:	10.00	Total =	$556,544
		TOTAL O & P =	$824,557
		CONTRACT AMOUNT (direct + O & P) =	$6,389,993

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	4.25	Total =	$271,575

Reclamation management and/or administration:	5.00		$319,500
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$1,415,631
		TOTAL BOND AMOUNT (direct + indirect) =	**$6,981,069**

BULLDOZER WORK

Task description: **Reduce Highwall (2500’x25’) sidewalls (300’x12’)**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	001A	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-001a
User:	CMG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
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 own. Cost/Hour:	$18.79	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $476.34
Total Fleet Cost/Hour: **$476.34**

MATERIAL QUANTITIES

Initial Volume: 16,103
Swell factor: 1.124
Loose volume: **18,093** LCY

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

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,110.5 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -15 %
Average site altitude: 4,800 feet

Material weight: 2,400 lbs/LCY

Weight description: Sand - Dry, loose

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))

Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6277

Adjusted unit production: 1,324.76 LCY/hr
Adjusted fleet production: **1324.76** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.360/LCY

Total job time: **13.66** Hours
Total job cost: **$6,506**

BULLDOZER WORK

Task description: **Regrade Wastepile- estimated 1 yr production**

Permit Action: 2025 Cost Estimate Update

Site: **Keenesburg No. 2 Mine** Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	001B	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-001b
User:	CMG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D9T - 9SU
Horsepower:	405
Blade Type:	Semi-Universal
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 own. Cost/Hour:	$18.79	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour:	$476.34
Total Fleet Cost/Hour:	**$952.67**

MATERIAL QUANTITIES

Initial Volume:	799,134
Swell factor:	1.000
Loose volume:	**799,134** LCY

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

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,243.2 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -10 %
Average site altitude: 4,800 feet

Material weight: 2,400 lbs/LCY

Weight description: Sand - Dry, loose

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)

Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7714

Adjusted unit production: 959.00 LCY/hr

Adjusted fleet production: **1918** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: $0.497/LCY

Total job time: **416.65** Hours

Total job cost: **$396,930**

DEMOLITION WORK

Task description: **Structure demo**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	002A	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-002a
User:	CMG				

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 89.40 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dry Sand Storage Building	125x450x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	1,125,000.00	CF	$0.45	$505,800.00
Mobile equipment Shop	75x100x25	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	187,500.00	CF	$0.45	$84,300.00
Maintenance Parts Storage	75x150x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	225,000.00	CF	$0.45	$101,160.00
Wet Sand and Storage Building	180x610x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	2,196,000.00	CF	$0.45	$987,321.60
Air compressor 1 and 2	30x30x16 x2	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	28,800.00	CF	$0.35	$9,947.52
Scales Loadout	110x155	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	13,797.00	SF	$1.65	$22,806.44
Water Treatment	60x130x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	156,000.00	CF	$0.45	$70,137.60
Wet Plant Enclosure	190x190x35	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	1,263,500.00	CF	$0.45	$568,069.60

Job Hours: **160.00** **Subtotal (unadjusted)**: **$2,349,542.76** **Total Cost (adjusted for location)**: **$2,100,491.23**

DEMOLITION WORK

Task description: **Slab and Footer Demo**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	002B	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-002b
User:	CMG				

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 89.40 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dry Sand Storage Building	125x450	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	56,250.00	SF	$2.48	$139,471.88
Mobile equipment Shop	75x100	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	7,500.00	SF	$2.48	$18,596.25
Maintenance Parts Storage	75x150	Demo. and on-site disposal in excavated pit, 10 in. thick - Max. 200 ft. push	11,250.00	SF	$2.07	$23,244.75
Wet Sand and Storage Building	180x610	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	109,800.00	SF	$2.48	$272,249.10
Air compressor 1 and 2	30x30 x2	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	1,800.00	SF	$1.24	$2,231.46
Scales Loadout	110x155	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	17,050.00	SF	$1.65	$28,183.65
Water Treatment	60x130	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	7,800.00	SF	$1.24	$9,669.66
Wet Plant Enclosure	190x190	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	36,100.00	SF	$2.48	$89,509.95

Job Hours: **160.00** **Subtotal (unadjusted)**: **$583,156.70** **Total Cost (adjusted for location)**: **$521,342.09**

DEMOLITION WORK

Task description: **Sales Road Demo**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	002C	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-002c
User:	CMG				

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 89.40 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Sales road	2800x84x8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	235,000.00	SF	$1.65	$388,455.00

Job Hours: **80.00** **Subtotal (unadjusted)**: **$388,455.00** **Total Cost (adjusted for location)**: **$347,278.77**

BULLDOZER RIPPING WORK

Task description: **Rip facilities area**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 003A
Date: 1/15/2025
User: CMG

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-003a

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Ripper Attachment: 1-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:	$15.77	NA
Ripper Operating Cost/Hour:	$10.35	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$483.67	
Total Fleet Cost/Hour:	**$967.33**	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA
Area: 35.00 acres

Bank Volume: NA BCY NA
Rip Depth (ft): 1.50 Volume: 84,700 BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	4.05	feet/pass
Average Ripping Width:	6.08	feet/pass
Average Ripping Length:	125.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.627	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.627	Acres/hr
Site Altitude:	4,800	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.52 Acres/hr
Adjusted Hourly Fleet Production: **1.04** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s)

Total job time: **33.64** Hours

Unit cost: $929.884 Per acre   Total job cost: **$32,546**

BULLDOZER RIPPING WORK

Task description: **Rip Haul Roads**

Site: **Keenesburg No. 2 Mine**   Permit Action: 2025 Cost Estimate Update   Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 003B   State: Colorado   Abbreviation: None
Date: 1/15/2025   County: Weld   Filename: M058-003b
User: CMG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU   Horsepower: 405
Ripper Attachment: 1-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:	$15.77	NA
Ripper Operating Cost/Hour:	$10.35	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$483.67	

Total Fleet Cost/Hour: **$967.33**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA   Bank Volume: NA BCY NA
Area: 21.00 acres   Rip Depth (ft): 1.50   Volume: 50,820 BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	4.05	feet/pass
Average Ripping Width:	6.08	feet/pass
Average Ripping Length:	125.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.627	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.627	Acres/hr
Site Altitude:	4,800	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.52 Acres/hr
Adjusted Hourly Fleet Production: **1.04** Acres/hr

JOB TIME AND COST

Fleet size:	2	Grader(s)	Total job time:	**20.19**	Hours
Unit cost:	$929.884	Per acre	Total job cost:	**$19,527**	

BULLDOZER RIPPING WORK

Task description: **Rip Topsoil Piles TS-0 & TS-1**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	003C	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-003c
User:	CMG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D9T - 9SU	Horsepower:	405
Ripper Attachment:	1-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:	$15.77	NA
Ripper Operating Cost/Hour:	$10.35	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$483.67	

Total Fleet Cost/Hour: **$967.33**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	24.00	acres	Rip Depth (ft):	1.50	Volume:	58,080	BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity:	NA	feet/second

Area:

Average Ripping Depth:	4.05	feet/pass
Average Ripping Width:	6.08	feet/pass
Average Ripping Length:	125.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.627	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.627	Acres/hr
Site Altitude:	4,800	feet
Altitude Adj:	1.00	(CAT HB)

Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production:	0.52	Acres/hr
Adjusted Hourly Fleet Production:	**1.04**	Acres/hr

JOB TIME AND COST

Fleet size:	2	Grader(s)	Total job time:	**23.07**	Hours
Unit cost:	$929.884	Per acre	Total job cost:	**$22,317**	

TRUCK/LOADER TEAM WORK

Task description: **Topsoil Facilities Area**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	004A	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-004a
User:	CMG				

Agency 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:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	$108.25	$69.00	NA	$173.32	$77.29	$17.11
Operating cost/hour:	$79.54	$60.57	NA	$109.71	$14.22	$9.20
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Operator cost/hour:	$24.82	$56.84	NA	$40.04	$56.70	$0.00
Unit Subtotals:	$212.61	$186.41	NA	$323.07	$148.21	$26.31
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work:	$1,648.48	Support:	$323.07	Maint:	$174.52

Total work team cost/hour: **$2,146.07**

MATERIAL QUANTITIES

Initial volume:	72,309	CCY	Swell factor:	1.215
Loose volume:	**87,855**	LCY		

Source 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: 1,600 Pounds/LCY

Description:	Top Soil	
Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4800 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8” diameter 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:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	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	1800.00	0.00	2.00	2.00	3005	1.062

Haul Time: **1.062** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1800.00	0.00	2.00	2.00	3005	0.744

Return Time: **0.744** minutes
Total Truck Cycle Time: **4.976** minutes

Loading Tool unit Production	870.97	LCY/Hour	Adjusted for job efficiency:	722.90	LCY/Hour
Truck Unit Production	379.82	LCY/Hour	Adjusted for job efficiency:	315.25	LCY/Hour
Optimal No. of Trucks:	2	Truck(s)	Selected Number of Trucks:	3	Truck(s)

Adjusted hourly truck team production:	945.76	LCY/Hour
Adjusted single truck/loader team production:	722.90	LCY/Hour
Adjusted multiple truck/loader team production:	**1,445.81**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Team(s)	Total job time:	**60.77**	Hours
Unit cost:	$1.484	/LCY	Total job cost:	**$130,407**	

TRUCK/LOADER TEAM WORK

Task description: **Topsoil Waste Pile**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	004B	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-004b
User:	CMG				

Agency 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:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	$108.25	$69.00	NA	$173.32	$77.29	$17.11
Operating cost/hour:	$79.54	$60.57	NA	$109.71	$14.22	$9.20
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Operator cost/hour:	$24.82	$56.84	NA	$40.04	$56.70	$0.00
Unit Subtotals:	$212.61	$186.41	NA	$323.07	$148.21	$26.31
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work:	$1,648.48	Support:	$323.07	Maint:	$174.52

Total work team cost/hour: **$2,146.07**

MATERIAL QUANTITIES

Initial volume:	219,607	CCY	Swell factor:	1.215
Loose volume:	**266,823**	LCY		

Source 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: 1,600 Pounds/LCY
Description: Top Soil

Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4800 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 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:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	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	3200.00	0.00	2.00	2.00	3005	1.528

Haul Time: **1.528** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3200.00	0.00	2.00	2.00	3005	1.210

Return Time: **1.210** minutes
Total Truck Cycle Time: **5.908** minutes

Loading Tool unit Production	870.97	LCY/Hour	Adjusted for job efficiency:	722.90	LCY/Hour
Truck Unit Production	319.91	LCY/Hour	Adjusted for job efficiency:	265.52	LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number of Trucks:	3	Truck(s)

Adjusted hourly truck team production: 796.56 LCY/Hour
Adjusted single truck/loader team production: 722.90 LCY/Hour
Adjusted multiple truck/loader team production: **1,445.81** LCY/Hour

JOB TIME AND COST

Fleet size:	2	Team(s)	Total job time:	**184.55**	Hours
Unit cost:	$1.484	/LCY	Total job cost:	**$396,056**	

TRUCK/LOADER TEAM WORK

Task description: **Topsoil Haul Roads**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	004C	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-004c
User:	CMG				

Agency 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:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	$108.25	$69.00	NA	$173.32	$77.29	$17.11
Operating cost/hour:	$79.54	$60.57	NA	$109.71	$14.22	$9.20
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Operator cost/hour:	$24.82	$56.84	NA	$40.04	$56.70	$0.00
Unit Subtotals:	$212.61	$186.41	NA	$323.07	$148.21	$26.31
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work:	$1,648.48	Support:	$323.07	Maint:	$174.52

Total work team cost/hour: **$2,146.07**

MATERIAL QUANTITIES

Initial volume: 28,109 CCY Swell factor: 1.215

Loose volume: **34,152** LCY

Source of estimated volume:	Adequcy response 4/6/20- road area of 21 acres
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: 1,600 Pounds/LCY

Description: Top Soil
Rated Payload: 87,000 Pounds
Payload Capacity: 54.38 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4800 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8” diameter 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:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	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	1000.00	0.00	2.00	2.00	3005	0.796

Haul Time: **0.796** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	2.00	2.00	3005	0.478

Return Time: **0.478** minutes

Total Truck Cycle Time: **4.444** minutes

Loading Tool unit Production	870.97	LCY/Hour	Adjusted for job efficiency:	722.90	LCY/Hour
Truck Unit Production	425.29	LCY/Hour	Adjusted for job efficiency:	352.99	LCY/Hour
Optimal No. of Trucks:	2	Truck(s)	Selected Number of Trucks:	3	Truck(s)

Adjusted hourly truck team production: 1,058.98 LCY/Hour

Adjusted single truck/loader team production: 722.90 LCY/Hour

Adjusted multiple truck/loader team production: **1,445.81** LCY/Hour

JOB TIME AND COST

Fleet size:	2	Team(s)	Total job time:	**23.62**	Hours
Unit cost:	$1.484	/LCY	Total job cost:	**$50,694**	

TRUCK/LOADER TEAM WORK

Task description: **Topsoil Active Pit Area 184 acres**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	004D	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-004d
User:	CMG				

Agency 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:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	$108.25	$69.00	NA	$173.32	$77.29	$17.11
Operating cost/hour:	$79.54	$60.57	NA	$109.71	$14.22	$9.20
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	$0.00	$0.00	$0.00
Operator cost/hour:	$24.82	$56.84	NA	$40.04	$56.70	$0.00
Unit Subtotals:	$212.61	$186.41	NA	$323.07	$148.21	$26.31
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work:	$1,648.48	Support:	$323.07	Maint:	$174.52

Total work team cost/hour: **$2,146.07**

MATERIAL QUANTITIES

Initial volume: 246,388 CCY Swell factor: 1.215
Loose volume: **299,361** LCY

Source of estimated volume: Adequacy response 4/6/20-
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: 1,600 Pounds/LCY
Description: Top Soil

Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4800 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8” diameter 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:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	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	3500.00	0.00	2.00	2.00	3005	1.627

Haul Time: **1.627** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3500.00	0.00	2.00	2.00	3005	1.310

Return Time: **1.310** minutes
Total Truck Cycle Time: **6.107** minutes

Loading Tool unit Production	870.97	LCY/Hour	Adjusted for job efficiency:	722.90	LCY/Hour
Truck Unit Production	309.48	LCY/Hour	Adjusted for job efficiency:	256.87	LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number of Trucks:	3	Truck(s)

Adjusted hourly truck team production: 770.61 LCY/Hour
Adjusted single truck/loader team production: 722.90 LCY/Hour
Adjusted multiple truck/loader team production: **1,445.81** LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **207.05** Hours

Unit cost: $1.484 /LCY Total job cost: **$444,354**

REVEGETATION WORK

Task description: **Reveg- 66 ac Facilities**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	005A	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-005a
User:	CMG				

Agency 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**
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	**Rate – PLS LBS / Acre**	**Seeds per SQ. FT**	**Cost /Acre**
Indiangrass - Cheyenne	0.50	1.52	$6.15
Indian Ricegrass - Nespar	3.00	9.71	$51.66
Switchgrass - Blackwell	1.50	13.40	$19.83
Sand Lovegrass - Bend	2.50	86.09	$43.54
Little Bluestem - Camper	0.75	4.48	$10.19
Sand Dropseed	0.50	59.69	$6.50
Sand Bluestem - Garden Co.	1.00	2.59	$24.23
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Prairie Sandreed - Goshen	0.75	4.70	$12.77

Totals Seed Mix	12.00	188.41	**$187.84**

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**
Straw, 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:	66	Cost /Acre:	$1,770.28
Estimated Failure Rate:	30%	Cost /Acre*:	$1,770.28
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		

Initial Job Cost:	**$116,838.48**
Reseeding Job Cost:	**$35,051.54**
Total Job Cost:	**$151,890**
Job Hours:	**66.00**

REVEGETATION WORK

Task description: **Reveg- Waste Pile 164 ac**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 005B State: Colorado Abbreviation: None
Date: 1/15/2025 County: Weld Filename: M058-005b
User: CMG

Agency 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
Indiangrass - Cheyenne	0.50	1.52	$6.15
Indian Ricegrass - Nespar	3.00	9.71	$51.66
Switchgrass - Blackwell	1.50	13.40	$19.83
Sand Lovegrass - Bend	2.50	86.09	$43.54
Little Bluestem - Camper	0.75	4.48	$10.19
Sand Dropseed	0.50	59.69	$6.50
Sand Bluestem - Garden Co.	1.00	2.59	$24.23
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Prairie Sandreed - Goshen	0.75	4.70	$12.77

Totals Seed Mix	12.00	188.41	**$187.84**

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
Straw, 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:	164	Cost /Acre:	$1,652.67
Estimated Failure Rate:	30%	Cost /Acre*:	$1,652.67
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		

Initial Job Cost:	**$271,037.88**
Reseeding Job Cost:	**$81,311.36**
Total Job Cost:	**$352,349**
Job Hours:	**164.00**

REVEGETATION WORK

Task description: **Reveg- Haul Roads 21 ac**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	005C	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-005c
User:	CMG				

Agency 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**
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	**Rate – PLS LBS / Acre**	**Seeds per SQ. FT**	**Cost /Acre**
Indiangrass - Cheyenne	0.50	1.52	$6.15
Indian Ricegrass - Nespar	3.00	9.71	$51.66
Switchgrass - Blackwell	1.50	13.40	$19.83
Sand Lovegrass - Bend	2.50	86.09	$43.54
Little Bluestem - Camper	0.75	4.48	$10.19
Sand Dropseed	0.50	59.69	$6.50
Sand Bluestem - Garden Co.	1.00	2.59	$24.23
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Prairie Sandreed - Goshen	0.75	4.70	$12.77

Totals Seed Mix	12.00	188.41	**$187.84**

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
Straw, 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:	21	Cost /Acre:	$1,770.28
Estimated Failure Rate:	30%	Cost /Acre*:	$1,770.28
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		

Initial Job Cost:	**$37,175.88**
Reseeding Job Cost:	**$11,152.76**
Total Job Cost:	**$48,329**
Job Hours:	**21.00**

REVEGETATION WORK

Task description: **Reveg- Active Pit Area 184 ac**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 005D State: Colorado Abbreviation: None
Date: 1/15/2025 County: Weld Filename: M058-005d
User: CMG

Agency 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
Indiangrass - Cheyenne	0.50	1.52	$6.15
Indian Ricegrass - Nespar	3.00	9.71	$51.66
Switchgrass - Blackwell	1.50	13.40	$19.83
Sand Lovegrass - Bend	2.50	86.09	$43.54
Little Bluestem - Camper	0.75	4.48	$10.19
Sand Dropseed	0.50	59.69	$6.50
Sand Bluestem - Garden Co.	1.00	2.59	$24.23
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Prairie Sandreed - Goshen	0.75	4.70	$12.77

Totals Seed Mix	12.00	188.41	**$187.84**

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
Straw, 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:	184	Cost /Acre:	$1,652.67
Estimated Failure Rate:	30%	Cost /Acre*:	$1,652.67
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		

Initial Job Cost:	**$304,091.28**
Reseeding Job Cost:	**$91,227.38**
Total Job Cost:	**$395,319**
Job Hours:	**184.00**

REVEGETATION WORK

Task description: **Reveg- Topsoil piles TS-0 & TS-1, 24 ac**

Site: **Keenesburg No. 2 Mine** Permit Action: 2025 Cost Estimate Update Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 005E State: Colorado Abbreviation: None
Date: 1/15/2025 County: Weld Filename: M058-005e
User: CMG

Agency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	0.50	1.52	$6.15
Indian Ricegrass - Nespar	3.00	9.71	$51.66
Switchgrass - Blackwell	1.50	13.40	$19.83
Sand Lovegrass - Bend	2.50	86.09	$43.54
Little Bluestem - Camper	0.75	4.48	$10.19
Sand Dropseed	0.50	59.69	$6.50
Sand Bluestem - Garden Co.	1.00	2.59	$24.23
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Prairie Sandreed - Goshen	0.75	4.70	$12.77

Totals Seed Mix	12.00	188.41	**$187.84**

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
Straw, 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:	24	Cost /Acre:	$1,770.28
Estimated Failure Rate:	30%	Cost /Acre*:	$1,770.28
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		

Initial Job Cost:	**$42,486.72**
Reseeding Job Cost:	**$12,746.02**
Total Job Cost:	**$55,233**
Job Hours:	**24.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize Equipment**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	006	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-006
User:	CMG				

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 D8T - 8SU	47.71	$173.32	$122.78	1	$296.10	$122.78	$250.00
Cat D9T - 9SU	60.01	$253.16	$125.64	2	$757.60	$251.28	$250.00
CAT 980H	33.12	$69.00	$122.78	2	$383.56	$245.56	$500.00
Cat 740	36.49	$108.25	$122.78	6	$1,386.18	$736.68	$1,500.00
CAT 140M	16.68	$77.29	$59.44	1	$136.73	$59.44	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$41.02	$59.44	2	$200.92	$118.88	$250.00
Cat 320D L 9'-6" Stick	23.70	$244.29	$59.44	2	$607.46	$118.88	$250.00
				Subtotals:	**$3,768.55**	**$1,653.50**	**$3,250.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 3,500 Gal.	$53.90	1	$53.90	$53.90
Lube Truck, 4x2, 190 HP	$41.41	1	$41.41	$41.41
Fuel Tanker, 4x2, 170 HP	$34.10	1	$34.10	$34.10
		Subtotals:	**$129.41**	**$129.41**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	HUDSON	
Total one-way travel distance:	13.00	miles
Average Travel Speed:	50.00	mph
Total Non-Roadable Mob/Demob Cost * ‘* two round trips with haul rig:	$39,467.87	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$67.29	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.26	0.26
Return Time (Hours):	0.26	0.26
Loading Time (Hours):	2.00	NA
Unloading Time (Hours):	2.00	NA
Subtotals:	4.52	0.52

JOB TIME AND COST

Total job time: **9.04** Hours

Total job cost: **$39,535**

MISCELLANEOUS TRUCK WORK

Task description: **Vehicles for onsite support**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 007A
Date: 1/15/2025
User: CMG

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-007a

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Light Duty Pickup, 4x4, 1 T. Crew
Attachment 1:
Attachment 2:
Labor Unit 1: General Laborer
Labor Unit 2:

Horsepower: 340
Shift Basis: 1 per day
Weight: 2.45 (US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$4.12	NA
Operating Cost/Hour:	$20.48	100
Operator Cost/Hour:	$28.23	NA
Total Unit Cost/Hour:	$52.83	

Total Fleet Cost/Hour: $105.66

JOB TIME AND COST

Fleet size: 2 Truck(s)

Unit cost: $105.66 /Hour

Total job time: **300.00** Hours

Total job cost: **$31,698**

MISCELLANEOUS TRUCK WORK

Task description: **Fuel truck 1.5 hour daily, 6 months**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	007B	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-007b
User:	CMG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model:	Fuel Tanker, 4x2, 170 HP	Horsepower:	170
Attachment 1:		Shift Basis:	1 per day
Attachment 2:		Weight:	
Labor Unit 1:	Tanker Driver - 2+ rear axles		(US Tons)
Labor Unit 2:			

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$11.65	NA
Operating Cost/Hour:	$22.45	100
Operator Cost/Hour:	$38.91	NA
Total Unit Cost/Hour:	$73.01	

Total Fleet Cost/Hour: $73.01

JOB TIME AND COST

Fleet size:	1	Truck(s)	Total job time:	**200.00**	Hours
Unit cost:	$73.01	/Hour	Total job cost:	**$14,602**	

MISCELLANEOUS TRUCK WORK

Task description: **Heavy equipment support vehicle 4 hrs/week, 6 months**

Site: **Keenesburg No. 2 Mine**

Permit Action: 2025 Cost Estimate Update

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #:	007C	State:	Colorado	Abbreviation:	None
Date:	1/15/2025	County:	Weld	Filename:	M058-007c
User:	CMG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model:	Lube Truck, 4x2, 190 HP	Horsepower:	190
Attachment 1:		Shift Basis:	1 per day
Attachment 2:		Weight:	
Labor Unit 1:	Tanker Driver - 1 rear axle		(US Tons)
Labor Unit 2:			

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$13.93	NA
Operating Cost/Hour:	$27.48	100
Operator Cost/Hour:	$38.91	NA
Total Unit Cost/Hour:	$80.32	
Total Fleet Cost/Hour:	$80.32	

JOB TIME AND COST

Fleet size: 1 Truck(s)

Unit cost: $80.32 /Hour

Total job time: **100.00** Hours

Total job cost: **$8,032**