STATE OF COLORADO

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

M1980085, Vagneur Site, June 2024 Inspection Report

Simmons - DNR, Leigh <leigh.simmons@state.co.us> Tue, Jul 2, 2024 at 2:21 PM
To: Morgan Sandritter <Morgan.Sandritter@kilgorecompanies.com>

Morgan,

The Inspection Report from the Division's June 14 inspection of the Vagneur Site is attached. Please note that action is required on your part.

Let me know if you have any questions or comments after you have had a chance to review the report.

Leigh Simmons
Environmental Protection Specialist

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

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INSP-REPORTMWP_M1980085_LDS_07022024015335_withRCE.pdf
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COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Vagneur Site	**MINE/PROSPECTING ID#:** M-1980-085	**MINERAL:** Sand and gravel	**COUNTY:** Pitkin
INSPECTION TYPE: Monitoring	**WEATHER:** Raining	**INSP. DATE:** June 14, 2024	**INSP. TIME:** 09:30
OPERATOR: Elam Construction, Inc.	**OPERATOR REPRESENTATIVE:** Morgan Sandritter, Thomas Beck	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $804,529.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
INSPECTOR(S): Leigh Simmons	**INSPECTOR'S SIGNATURE:**	**SIGNATURE DATE:** July 2, 2024

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Financial Warranty
PROBLEM/POSSIBLE VIOLATION: Problem: The financial warranty is not adequate to reclaim the site in accordance with the approved reclamation plan. This is a failure to maintain the proper financial warranty amount to complete reclamation of the affected lands pursuant to C.R.S. 34-32.5-117(4)(b) of the Act.

CORRECTIVE ACTIONS: Please review the attached Reclamation Cost Estimate and respond with comments within 30 days. After 30 days the Division will initiate a separate Surety Increase notice to increase the financial warranty. The operator will have 60 days from the date on the Surety Increase notice to post the additional financial warranty.
CORRECTIVE ACTION DUE DATE: 8/01/24

OBSERVATIONS

This inspection was conducted as part of the normal monitoring program established by the Colorado Division of Reclamation, Mining and Safety (Division). The inspection was conducted by Leigh Simmons of the Division and accompanied by Morgan Sandritter of Kilgore Companies (the parent of Elam Construction), and Thomas Beck of Elam Construction, (permitee and operator).

The Vagneur Site is a 112(c) operation with a total permit area of 105 acres, located immediately east of the town of Woody Creek. The site was active at the time of the inspection.

The permit was last revised with Amendment 2, in 2008. This was shortly followed by a surety reduction, SR-1, for partially completed highwall backfill.

The locations of photos taken during the inspection are shown on the screenshot of the field map.

Backfilling and Grading:
The Vagneur Site continues to receive imported material that is used to backfill the pit walls in areas where mining is complete. Backfilling was proceeding southward from the northern end of the permit area.

Financial Warranty:
The Division currently holds a reclamation bond of $804,529 for the site. As is customary, the Reclamation Cost Estimate (RCE) for the site was re-evaluated with current unit costs as of 7/1/2024. The new RCE is attached to this inspection report - note that the tasks were not changed except to update obsolete equipment. The total required bond amount, including indirect costs, has increased to $1,168,936 meaning that the current financial warranty is insufficient; a problem has been cited above.

Hydrologic Balance:
Standing water was present in two locations at the site. These locations act as sumps for surface water at the site; no stormwater is discharged.

Gen. Compliance With Mine Plan:
Phase 1 of the mine plan was in progress, phase 2 had not yet begun.

Other:
Oldcastle leases a parcel in the south of the permit area for a concrete ready-mix plant. The plant was not operating at the time of the inspection.

Support Facilities On-site:
Fuel was contained in tanks within concrete secondary containment facilities. There was no evidence of fuel spilling. The tanks themselves were rather rusty, with indistinct labelling. No problem was noted at the time of the inspection, however the Division understands that Kilgore Companies internal policy means that some maintenance will be required.

The asphalt hot plant was not operating at the time of the inspection. The Division understands that the operator intends to replace the plant.

The crusher was active during the inspection. A routine problem with one of the belts meant that some material was being double handled at the time of the inspection, but repairs were anticipated within the week.

Topsoil:

Topsoil was stockpiled in a berm around the perimeter of the pit. The berm was well vegetated and stable, noxious weeds were not noted during the inspection, however the operator should continue to monitor for weeds and treat as necessary.

MAP & PHOTOGRAPHS

Figure 1: Screenshot of the inspection map, with the permit boundary in purple, and points showing the locations of photographs in green

Figure 2: Stockpiled asphalt for recycling, with asphalt hot mix plant behind (not currently in operation). Point 304

Figure 3: Crusher from pit floor. Point 305

Figure 4: Sump. Point 306

Figure 5: Large boulders in foreground, concrete with rebar behind. Point 307

Figure 6: Right of dozer cut - phase 1; left of dozer cut - phase 2. Point 308

Figure 7: Active highwall. No blasting. Dozer pushes material down to loader. Pont 309

Figure 8: Dozer push area for asphalt. Point 309

Figure 9: Loader route to crusher. Point 309

Figure 10: Crushing/screening operations in progress

Figure 11: Sump. Point 310

Figure 12: Fuel tanks. Point 311

Figure 13: Fuel tanks. Point 312

Figure 14: Mine entrance. Point 313

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS---------------------------------- N	**(FN) FINANCIAL WARRANTY-------- PB**	**(RD) ROADS----------------- N**
(HB) HYDROLOGIC BALANCE------------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- N**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- Y**	**(TS) TOPSOIL--------------- Y**
(MP) GENL MINE PLAN COMPLIANCE- Y	**(FW) FISH & WILDLIFE---------------- N**	**(RV) REVEGETATION---- N**
(SM) SIGNS AND MARKERS---------------- Y	**(SP) STORM WATER MGT PLAN---- N**	**(RS) RECL PLAN/COMP-- N**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- N**	**(ST) STIPULATIONS------- N**
(AT) ACID OR TOXIC MATERIALS------- N	**(OD) OFF-SITE DAMAGE---------------N**	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

<u>Inspection Contact Address</u>
Morgan Sandritter, Thomas Beck
Elam Construction, Inc.
556 Struthers Ave
Grand Junction, CO 81501

Enclosure:
Reclamation Cost Estimate

COST SUMMARY WORK

Task description:

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: M085-000
User: LDS

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demolition and disposal of structures	DEMOLISH	1	120.00	$176,558
02a	Reduce slopes in Phase 1 area (cut/fill)	DOZER	2	194.64	$125,199
04a	Backfill slopes in Phase 2 area	SCRAPER1	2	66.18	$197,834
05a	Grade slopes in Phase 2 area	DOZER	2	16.35	$10,514
06a	Replace topsoil over affected area	SCRAPER1	2	29.91	$89,416
07a	Rip contour furrows on final slopes in Phase 2 area	RIPPER	1	7.53	$2,593
08a	Revegetate affected area	REVEGE	1	51.00	$222,441
09a	Interseed sagebrush after grass is established	REVEGE	1	51.00	$122,817
10a	Mobilize reclamation crew and equipment	MOBILIZE	1	5.27	$17,800
			SUBTOTALS:	**541.88**	**$965,172**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$19,496
Performance bond:	1.05	Total =	$10,134
Job superintendent:	270.94	Total =	$21,477
Profit:	10.00	Total =	$96,517
		TOTAL O & P =	$147,625
		CONTRACT AMOUNT (direct + O & P) =	$1,112,797

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$55,640
CONTINGENCY:	0.00	Total =	$0

TOTAL INDIRECT COST = $203,765

TOTAL BOND AMOUNT (direct + indirect) = $1,168,937

DEMOLITION WORK

Task description: **Demolition and disposal of structures**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: 085-01a
User: LDS

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 95.90 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Concrete plant	50' x 140' x 20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	140,000.00	CF	$0.33	$46,004.00
Concrete plant foundation	50' x 140'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	8,700.00	SF	$1.54	$13,415.40
Office area	50' x 175' x 10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	87,500.00	CF	$0.24	$21,297.50
Office area slab	175' x 50'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	8,750.00	SF	$1.16	$10,119.38
Truck scale	150' x 20'	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	340.00	LF	$4.63	$1,572.87
Fuel containment walls	60' x 25' x 5'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	850.00	SF	$3.73	$3,172.88
Fuel containment slab	60' x 25'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,500.00	SF	$1.16	$1,734.75
Canvas building with steel frame	60' x 35' x avg. 10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	21,000.00	CF	$0.24	$5,111.40
Canvas building asphalt slab	60' x 35' x 3"	Pavement, bituminous, demolition only - 3 in. thick	233.00	SY	$5.28	$1,230.24
Load and haul above slab to asphalt pit	60' x 35' x 3"	Load/haul/dump demolished materials/debris into pit - Max. 1,000 ft. haul	58.00	CY	$1.06	$61.60
Unprocessed recycled asphalt/concrete	15,000 c.y. max	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	15,000.00	CY	$3.32	$49,830.00
Shop structure	60' x 50' x 20'	Bldg. (SN) demo./on-	60,000.00	CF	$0.24	$14,604.00

		site disposal in existing pit or cut - Max. 10,000 ft. haul				
Shop pad	60' x 50'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	3,000.00	SF	$1.54	$4,626.00
Concrete truck washout pit	40' x 15'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	600.00	SF	$1.16	$693.90
Powerlines, est. 300' apart	3000'	Utility Poles, Wood 35' - 45' high (each pole)	10.00	EA	$325.00	$3,250.00
5,900 gal diesel tank	5,900 gal	Haul tank to certified salvage dump - 6,000 to 8,000 gal. tank	1.00	EA	$880.00	$880.00
10,000 gal diesel tanks	10,000 gal	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	2.00	EA	$1,050.00	$2,100.00
4,000 gal diesel tank	4,000 gal	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	$760.00	$760.00
55 gal oil drums	55 gal	Solid pickup - 55 gal. drums	9.00	EA	$240.00	$2,160.00
10,000 gal water storage tank	10,000 gal	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	$1,050.00	$1,050.00
Septic Tank, pump	12,000 gal	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	$432.00	$432.00

Job Hours: **120.00** **Subtotal (unadjusted)**: **$184,105.92** **Total Cost (adjusted for location)**: **$176,557.58**

BULLDOZER WORK

Task description: **Reduce slopes in Phase 1 area (cut/fill)**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #:	02A	State:	Colorado	Abbreviation:	None
Date:	7/2/2024	County:	Pitkin	Filename:	085-02a
User:	LDS				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$38.59	NA

Total unit Cost/Hour: $321.62
Total Fleet Cost/Hour: **$643.23**

MATERIAL QUANTITIES

Initial Volume: 187,042
Swell factor: 1.000
Loose volume: **187,042** LCY

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

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -15 %
Average site altitude: 7,500 feet

Material weight: 2,900 lbs/LCY

Weight description: Decomposed rock - 50% Rock, 50% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
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:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4724

Adjusted unit production: 480.48 LCY/hr
Adjusted fleet production: **960.96** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.669/LCY

Total job time: **194.64** Hours
Total job cost: **$125,199**

SCRAPER TEAM WORK

Task description: **Backfill slopes in Phase 2 area**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: 085-04a
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	CAT 972H
-Dump Area:	NA
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	NA	NA
Ownership cost/hour:	$329.66	NA	$62.43	NA	NA	NA
Operating cost/hour:	$347.48	NA	$57.98	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	NA	NA	NA
Ripper op. cost/hour:	NA	NA	$0.00	NA	NA	NA
Operator cost/hour:	$30.90	NA	$36.85	NA	NA	NA
Unit Subtotals:	$708.04	NA	$157.26	NA	NA	NA
Number of Units:	4	0	1	0	0	0
Group Subtotals:	Work:	$2,832.16	Support:	$157.26	Maint:	$0.00

Total work team cost/hour: **$2,989.42**

MATERIAL QUANTITIES

Initial volume: 173,333 CCY Swell factor: 1.000
Loose volume: **173,333** LCY

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

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,900 lbs/LCY
Material description: Decomposed rock - 50% Rock, 50% Earth
Rated Payload: 81,600 pounds
Payload Capacity: 28.14 LCY

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **28.14** LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 7500 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: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	1867	0.40

Haul Time: **0.40** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	2795	0.34

Return Time: **0.34** minutes

Total Scraper team cycle time: **2.14** minutes
Adjusted for job conditions: 654.80 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,309.60 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **2,619.19** LCY/Hour

Unadjusted unit production/hour: 788.91 LCY/Hour
Optimal Number of Scrapers per push dozer: ________

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **66.18** Hours

Unit cost: $1.141 /LCY Total job cost: **$197,834**

BULLDOZER WORK

Task description: **Grade slopes in Phase 2 area**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #:	05A	State:	Colorado	Abbreviation:	None
Date:	7/2/2024	County:	Pitkin	Filename:	085-05a
User:	LDS				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$38.59	NA

Total unit Cost/Hour: $321.62
Total Fleet Cost/Hour: **$643.23**

MATERIAL QUANTITIES

Initial Volume: 14,444
Swell factor: 1.000
Loose volume: **14,444** 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: 1,400.0 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 15 %
Average site altitude: 7,500 feet

Material weight: 2,900 lbs/LCY

Weight description: Decomposed rock - 50% Rock, 50% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3156

Adjusted unit production: 441.84 LCY/hr
Adjusted fleet production: **883.68** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.728/LCY

Total job time: **16.35** Hours
Total job cost: **$10,514**

SCRAPER TEAM WORK

Task description: **Replace topsoil over affected area**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #:	06A	State:	Colorado	Abbreviation:	None
Date:	7/2/2024	County:	Pitkin	Filename:	085-06a
User:	LDS				

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	CAT 972H
-Dump Area:	NA
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	NA	NA
Ownership cost/hour:	$329.66	NA	$62.43	NA	NA	NA
Operating cost/hour:	$347.48	NA	$57.98	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	NA	NA	NA
Ripper op. cost/hour:	NA	NA	$0.00	NA	NA	NA
Operator cost/hour:	$30.90	NA	$36.85	NA	NA	NA
Unit Subtotals:	$708.04	NA	$157.26	NA	NA	NA
Number of Units:	4	0	1	0	0	0
Group Subtotals:	Work:	$2,832.16	Support:	$157.26	Maint:	$0.00

Total work team cost/hour: **$2,989.42**

MATERIAL QUANTITIES

Initial volume: 82,280 CCY Swell factor: 1.000

Loose volume: **82,280** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	1,600 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Top Soil	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	51.00 LCY	Adjusted Capacity:	**29.00**	LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 7500 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: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	1867	0.36

Haul Time: **0.36** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	2795	0.34

Return Time: **0.34** minutes

Total Scraper team cycle time: **2.10** minutes
Adjusted for job conditions: 687.71 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,375.43 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **2,750.86** LCY/Hour

Unadjusted unit production/hour: 828.57 LCY/Hour
Optimal Number of Scrapers per push dozer: ____

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: **29.91** Hours

Unit cost: $1.087 /LCY Total job cost: **$89,416**

BULLDOZER RIPPING WORK

Task description: **Rip contour furrows on final slopes in Phase 2 area**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #:	07A	State:	Colorado	Abbreviation:	None
Date:	7/2/2024	County:	Pitkin	Filename:	085-07a
User:	LDS				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D8T - 8SU	Horsepower:	310
Ripper Attachment:	3-Shank Ripper	Shift Basis:	1 per day
		Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper Ownership Cost/Hour:	$14.53	NA
Ripper Operating Cost/Hour:	$7.95	100
Operator Cost/Hour:	$38.59	NA
Total Unit Cost/Hour:	$344.10	
Total Fleet Cost/Hour:	**$344.10**	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	4.40	acres	Rip Depth (ft):	1.00	Volume:	7,099	BCY or CCY

Source of estimated quantity: DRMS

HOURLY PRODUCTION

Seismic:

Seismic Velocity:	NA	feet/second

Area:

Average Ripping Depth:	2.56	feet/pass
Average Ripping Width:	7.08	feet/pass
Average Ripping Length:	100.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.703	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.703	Acres/hr
Site Altitude:	7,500	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier
Adjusted Hourly Unit Production:	0.58	Acres/hr
Adjusted Hourly Fleet Production:	**0.58**	Acres/hr

JOB TIME AND COST

Fleet size:	1	Grader(s)	Total job time:	**7.54**	Hours
Unit cost:	$589.369	Per acre	Total job cost:	**$2,593**	

REVEGETATION WORK

Task description: **Revegetate affected area**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 08A State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: 085-08a
User: LDS

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
Weed control spraying (MEANS 31 31 16.13 3100)	$338.80
Total Tilling Cost/Acre	**$456.41**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	9.00	29.13	$155.63
Mountain Brome - Bromar	13.00	20.89	$78.23
Slender Wheatgrass - Native	5.00	18.25	$35.32
Thickspike Wheatgrass - Critana	5.00	17.68	$40.74
Rabbitbrush, Rubber	7.00	104.29	$583.78
Western Wheatgrass - Native	5.00	12.63	$45.03
Needlegrass, Green - Lodorm	13.00	54.02	$112.39
Serviceberry	7.00	12.86	$763.31

Totals Seed Mix	64.00	269.74	**$1,814.42**

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}	1.50	TON	$492.78	$739.17
Total Mulch Materials Cost/Acre				**$739.17**

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: 51 Cost /Acre: $3,489.27
Estimated Failure Rate: 25% Cost /Acre*: $3,489.27
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$177,952.77**
Reseeding Job Cost: **$44,488.19**
Total Job Cost: **$222,441**
Job Hours: **51.00**

REVEGETATION WORK

Task description: **Interseed sagebrush after grass is established**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 09A State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: 085-09a
User: LDS

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
Sagebrush, Mountain or Big	20.00	1,056.01	$1,653.98
Totals Seed Mix	20.00	1,056.01	**$1,653.98**

Application

Description	Cost /Acre
Broadcast seeding [DMG]	$272.56

Total Seed Application Cost/Acre	**$272.56**

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: 51

Estimated Failure Rate: 25%

*Selected Replanting Work Items: SEEDING

Cost /Acre: $1,926.54

Cost /Acre*: $1,926.54

Initial Job Cost: **$98,253.54**

Reseeding Job Cost: **$24,563.39**

Total Job Cost: **$122,817**

Job Hours: **51.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize reclamation crew and equipment**

Site: **Vagneur Site** Permit Action: 2024Inspection_CostUpdate Permit/Job#: M1980085

PROJECT IDENTIFICATION

Task #: 10A State: Colorado Abbreviation: None
Date: 7/2/2024 County: Pitkin Filename: 085-10a
User: LDS

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/uni t	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	$187.85	$125.64	2	$626.98	$251.28	$500.00
Cat 637G	57.28	$329.66	$125.64	4	$1,821.20	$502.56	$1,000.00
CAT 972H	28.00	$62.43	$122.78	2	$370.42	$245.56	$500.00
Drill/Broadcast Seeder with Tractor	25.00	$41.02	$59.44	1	$100.46	$59.44	$250.00
Power Mulcher (Bowie LD-90)	6.00	$27.21	$59.44	1	$86.65	$59.44	$250.00
					Subtotals: **$3,005.71**	**$1,118.28**	**$2,500.00**

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	$24.60	1	$24.60	$24.60
		Subtotals:	**$24.60**	**$24.60**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GLENWOOD SPRINGS	
Total one-way travel distance:	45.00	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$17,759.77	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$40.25	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.82	0.82
Return Time (Hours):	0.82	0.82
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	2.64	1.64

JOB TIME AND COST

Total job time: **5.27** Hours

Total job cost: **$17,800**