STATE OF COLORADO

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

C1981022, Elk Creek Mine, SL2

3 messages

Simmons - DNR, Leigh <leigh.simmons@state.co.us> Wed, Jun 15, 2022 at 4:07 PM
To: Doug Smith <Doug.Smith@oxbow.com>

Doug,

I've attached the Findings document for SL-2. Apologies for missing this one - I don't think it was ever mailed to you, and I never emailed it.

Leigh Simmons
Environmental Protection Specialist

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

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C1981022, Elk Creek, SL2, Findings_Final.pdf
1001K

Doug Smith <Doug.Smith@oxbow.com> Thu, Jun 16, 2022 at 1:57 PM
To: "Simmons - DNR, Leigh" <leigh.simmons@state.co.us>

I think that you said that SR2 had the latest bond calculations in it. That is the one I can't find.

Doug

From: Simmons - DNR, Leigh <leigh.simmons@state.co.us>
Sent: Wednesday, June 15, 2022 4:07 PM
To: Doug Smith <Doug.Smith@OXBOW.COM>
Subject: C1981022, Elk Creek Mine, SL2

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

Doug Smith
Oxbow Mining, LLC.
PO Box 535
Somerset, CO 81434

November 18, 2021

Re: Elk Creek Mine (C-1981-022)
Proposed Surety Increase (SI-1)

Dear Mr. Smith,

Following discussion at the SI-1 informal conference on August 5, 2021, and the subsequent approval of MR-456, I have reviewed the entire site-wide reclamation cost estimate for the Elk Creek Mine.

I edited 5 tasks from the version completed with MT-8, details are given below:

- Task 001 (Dozer)
  - Average push distance reduced from 400' to 200'
  - Direct cost reduced from $220,672 to $102,325

- Tasks 016, 121 and 122 (Reveg)
  - Since all areas these tasks apply to have received Phase II bond release, initial seeding costs have been removed
  - Mulching costs have been removed
  - Re-seeding is applicable to 2% of the total acreage
  - Herbicide is applicable to 5% of the total acreage
  - Work hours = total acreage
  - Direct cost reduced from $33,770 to $517 (task 016); from $82,858 to $1033 (task 121); and from $60,188 to $1033 (task 122)

- Task 120 (Reveg)
  - Since this area has not yet received Phase II bond release, initial seeding costs have been retained
  - Mulching costs have been removed
  - Re-seeding is applicable to 10% of the total acreage
  - Work hours = 2 x total acreage
  - Direct cost reduced from $400,136 to $88,171

I have attached a copy of the full SI-1 cost estimate. As you will see, the total dollar amount including indirect costs is estimated at $1,755,100.

If you concur with the attached estimate I will update the record and finalize SI-1.

Sincerely,

Leigh Simmons
Environmental Protection Specialist

COST SUMMARY WORK

Task description: **Updated sitewide estimate for SI-1**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: C022-000
User: LDS

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill and Regrade Elk Creek Facilities Area	DOZER	3	90.27	$102,325
004	Backfill and Grade Material Used to Widen Access Road	DOZER	3	1.53	$1,738
005	Backfill and Regrade Elk Creek Mine Area	DOZER	3	101.64	$115,215
006	Move Fill Material from Elk Creek Mine to Elk Creek Faciliti	SCRAPER1	1	45.33	$40,628
008	Backfill and Regrade Primary Riprap Borrow Area	DOZER	3	4.75	$5,390
009	Backfill and Regrade Secondary Riprap Borrow Area	DOZER	3	12.05	$13,654
010	Backfill and Regrade Elk Creek Mine Rock Safety Catch Bench	DOZER	3	23.52	$26,665
011	Backfill and Regrade Temporary Conveyor Corridor	DOZER	3	11.87	$13,457
012	Regrade Expanded Elk Creek Mine Fan Bench	DOZER	3	1.06	$1,197
016	Re-seed Drill Pads and Roads, 20.72 acres @ 2% failure rate	REVEGE	1	20.72	$812
023	Spread Overburden on East Refuse Pile	SCRAPER1	1	12.91	$11,567
034	Rip All Surface Facility Areas	RIPPER	3	29.04	$36,310
041	Regrade Lower Power Line Access Road	EXCAVATE	1	41.01	$7,993
042	Regrade Pond C Access Road	DOZER	3	3.85	$4,364
050	Finish Grade All Disturbed Areas	GRADER	1	53.85	$9,411
066	Remove Upper Hubbard Creek Sediment Pond	DOZER	1	2.99	$1,128
067	Regrade East Bench Pond	DOZER	1	0.61	$229
068	Excavate/Backfill Pond C Wall Area	EXCAVATE	1	1.67	$326
069	Regrade West Valley Fill Diversion	EXCAVATE	1	1.81	$354
071	Remove Sewage Leach Field	DOZER	1	0.61	$229
072	Regrade Pond A	DOZER	1	0.61	$229
073	Regrade Pond B	DOZER	1	26.02	$9,830
075	Regrade Pond E	DOZER	1	4.39	$1,657
077	Regrade Pond F	DOZER	1	2.26	$853
090	Replace Topsoil from Stockpile to Previously Disturbed Elk A	SCRAPER1	1	1.86	$1,670
092	Replace Topsoil from Stockpile to East Refuse Area	SCRAPER1	1	5.07	$4,545
093	Replace Topsoil from Stockpile to West Valley Fill Area	SCRAPER1	1	27.58	$24,724
094	Replace Topsoil from Stockpile to II-West Refuse Pile	SCRAPER1	1	5.80	$5,195

095	Replace Topsoil from Stockpile to II West Refuse Pile Road	SCRAPER1	1	1.09	$977
096	Replace Topsoil from Stockpile to Expanded Elk Creek Mine Fa	DOZER	3	0.13	$152
098	Replace Topsoil from Stockpile to Elk Creek Mine Area	SCRAPER1	1	18.89	$16,934
103	Replace Topsoil from Stockpile to Pond F, Ditches and Plunge	DOZER	1	2.86	$1,079
120	Broadcast Seed Mine Site	REVEGE	1	216.50	$88,281
121	Re-seed Drill Pads, MR's and TR's, 46.23 acres @ 2% failure	REVEGE	1	46.23	$1,033
122	Re-seed Light-Use Roads, MR's and TR's, 35.59 acres @ 2% fai	REVEGE	1	35.59	$1,522
130	Demolish and Remove All Mine Facilities	DEMOLISH	1	600.00	$747,568
131	Plug and Seal 7 Monitoring wells	BOREHOLE	1	42.00	$11,422
140	Mobilize/Demobilize Equipment for Initial Reclamation	MOBILIZE	1	10.00	$25,203
141	Mobilize/Demobilize Equipment for Pond Removal	MOBILIZE	1	7.14	$5,880
142	Mobilize/Demobilize Equipment for Site Maintenance	MOBILIZE	1	14.00	$13,875
150	Yearly site maintenance	SITEMAINTENANCE	1	140.00	$12,275
		SUBTOTALS:		**1669.11**	**$1,367,896**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$27,631
Performance bond:	1.05	Total =	$14,363
Job superintendent:	834.56	Total =	$60,113
Profit:	10.00	Total =	$136,790
		TOTAL O & P =	$238,897
		CONTRACT AMOUNT (direct + O & P) =	$1,606,793

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	5.23	Total =	$84,035
Reclamation management and/or administration:	4.00		$64,272
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$387,204
		TOTAL BOND AMOUNT (direct + indirect) =	**$1,755,100**

BULLDOZER WORK

Task description: **Backfill and Regrade Elk Creek Facilities Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-001
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 80,000
Swell factor: 1.125
Loose volume: **90,000** LCY

Source of estimated volume: Appendix K
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 5 %
Average site altitude: 6,150 feet

Material weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% 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:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3513

Adjusted unit production: 332.33 LCY/hr
Adjusted fleet production: **996.99** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $1.137/LCY

Total job time: **90.27** Hours
Total job cost: **$102,325**

BULLDOZER WORK

Task description: **Backfill and Grade Material Used to Widen Access Road**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-004
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 1,600
Swell factor: 1.165
Loose volume: **1,864** LCY

Source of estimated volume: Technical Revision 21
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 125 feet
Unadjusted hourly production: 1,450.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 10 %
Average site altitude: 6,100 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 405.13 LCY/hr
Adjusted fleet production: **1215.39** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $0.933/LCY

Total job time: **1.53** Hours
Total job cost: **$1,738**

BULLDOZER WORK

Task description: **Backfill and Regrade Elk Creek Mine Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-005
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 88,000
Swell factor: 1.165
Loose volume: **102,520** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 6,300 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 336.21 LCY/hr
Adjusted fleet production: **1008.63** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $1.124/LCY

Total job time: **101.64** Hours
Total job cost: **$115,215**

SCRAPER TEAM WORK

Task description: **Move Fill Material from Elk Creek Mine to Elk Creek Faciliti**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-006
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 22,000 CCY Swell factor: 1.125
Loose volume: **24,750** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,650 lbs/LCY
Material description: Decomposed rock - 25% Rock, 75% Earth
Rated Payload: 81,600 pounds
Payload Capacity: 30.79 LCY

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	2800.00	-10.00	5.00	-5.00	2972	0.99

Haul Time: **0.99** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2800.00	10.00	5.00	15.00	1047	2.70

Return Time: **2.70** minutes

Total Scraper team cycle time: **5.29** minutes
Adjusted for job conditions: 546.01 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 546.01 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **546.01** LCY/Hour

Unadjusted unit production/hour: 657.84 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **45.33** Hours

Unit cost: $1.642 /LCY Total job cost: **$40,628**

BULLDOZER WORK

Task description: **Backfill and Regrade Primary Riprap Borrow Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 008 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-008
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 1,500
Swell factor: 1.165
Loose volume: **1,748** LCY

Source of estimated volume: Map 18
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 30 %
Average site altitude: 6,400 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:	1.100	(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:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1295

Adjusted unit production: 122.51 LCY/hr
Adjusted fleet production: **367.53** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $3.084/LCY

Total job time: **4.75** Hours
Total job cost: **$5,390**

BULLDOZER WORK

Task description: **Backfill and Regrade Secondary Riprap Borrow Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 009 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-009
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 3,800
Swell factor: 1.165
Loose volume: **4,427** LCY

Source of estimated volume: Map 18
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 30 %
Average site altitude: 6,400 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:	1.100	(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:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1295

Adjusted unit production: 122.51 LCY/hr
Adjusted fleet production: **367.53** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $3.084/LCY

Total job time: **12.05** Hours
Total job cost: **$13,654**

BULLDOZER WORK

Task description: **Backfill and Regrade Elk Creek Mine Rock Safety Catch Bench**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 010 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-010
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 11,100
Swell factor: 1.165
Loose volume: **12,932** LCY

Source of estimated volume: Division Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 20 %
Average site altitude: 6,700 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:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1937

Adjusted unit production: 183.24 LCY/hr
Adjusted fleet production: **549.72** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $2.062/LCY

Total job time: **23.52** Hours
Total job cost: **$26,665**

BULLDOZER WORK

Task description: **Backfill and Regrade Temporary Conveyor Corridor**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 011 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-011
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 7,400
Swell factor: 1.165
Loose volume: **8,621** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet
Unadjusted hourly production: 754.3 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 5 %
Average site altitude: 6,250 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:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 242.05 LCY/hr
Adjusted fleet production: **726.15** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $1.561/LCY

Total job time: **11.87** Hours
Total job cost: **$13,457**

BULLDOZER WORK

Task description: **Regrade Expanded Elk Creek Mine Fan Bench**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 012 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-012
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 1,500
Swell factor: 1.165
Loose volume: **1,748** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,718.9 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 5 %
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:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 551.60 LCY/hr
Adjusted fleet production: **1654.8** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $0.685/LCY

Total job time: **1.06** Hours
Total job cost: **$1,197**

REVEGETATION WORK

Task description: **Re-seed Drill Pads and Roads, 20.72 acres @ 2% failure rate**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 016 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-016
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
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$290.40**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	$17.59
Indian Ricegrass - Native	0.50	1.62	$3.25
Mountain Brome - Bromar	2.00	3.21	$7.60
Sandberg Bluegrass - VNS	1.50	31.85	$12.60
Coreopsis, Lance Leafed	0.15	3.84	$4.28
Western Wheatgrass - Arriba	2.00	5.05	$13.00
Prairie Junegrass	0.25	13.29	$6.50
Penstemon, Rocky Mountain	0.15	2.35	$4.43
Yarrow, White	0.05	3.18	$2.00

Totals Seed Mix	8.10	69.28	**$71.25**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$267.22
Total Seed Application Cost/Acre	**$267.22**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	$7.78	$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	$194.52	$389.04
Total Mulch Materials Cost/Acre				**$404.60**

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: 0.5
Estimated Failure Rate: 0%
*Selected Replanting Work Items: NONE

Cost /Acre: $1,033.47
Cost /Acre*: $0.00

Initial Job Cost: **$516.74**
Reseeding Job Cost: **$0.00**
Total Job Cost: **$517**
Job Hours: **20.72**

SCRAPER TEAM WORK

Task description: **Spread Overburden on East Refuse Pile**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 023 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-023
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 14,100 CCY Swell factor: 1.125
Loose volume: **15,863** 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: 2,650 lbs/LCY
Material description: Decomposed rock - 25% Rock, 75% Earth
Rated Payload: 81,600 pounds
Payload Capacity: 30.79 LCY

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	0.35

Return Time: **0.35** minutes

Total Scraper team cycle time: **2.35** minutes
Adjusted for job conditions: 1,229.11 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,229.11 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,229.11** LCY/Hour

Unadjusted unit production/hour: 1,480.85 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **12.91** Hours

Unit cost: $0.729 /LCY Total job cost: **$11,567**

BULLDOZER RIPPING WORK

Task description: **Rip All Surface Facility Areas**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 034 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-034
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU Horsepower: 574
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper Ownership Cost/Hour:	$25.19	NA
Ripper Operating Cost/Hour:	$13.74	100
Operator Cost/Hour:	$41.30	NA
Total Unit Cost/Hour:	$416.77	

Total Fleet Cost/Hour: **$1,250.32**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 70.80 acres Rip Depth (ft): 2.00 Volume: 228,448 BCY or CCY

Source of estimated quantity: Page 2.05-20

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.00	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	300.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.979	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.979 Acres/hr

Site Altitude:	6,200	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.81 Acres/hr
Adjusted Hourly Fleet Production: **2.44** Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: **29.04** Hours

Unit cost: $512.847 Per acre Total job cost: **$36,310**

HYDRAULIC EXCAVATOR WORK

Task description: **Regrade Lower Power Line Access Road**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 041 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-041
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick
Attachment 1: ROPS Cab

Horsepower: 268
Weight (MT): 29.30
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$83.42	NA
Operating Cost/Hour:	$74.14	100
Operator Cost/Hour:	$37.32	NA
Total Unit Cost/Hour:	$194.88	

Total Fleet Cost/Hour: $194.88

MATERIAL QUANTITIES

Initial volume: 7,500 CCY Swell factor: 1.125
Loose volume: **8,438** LCY

Source of estimated volume: Appendix E-1; Map S-038
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.321 minutes

Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)
Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850
Adjusted Capacity: **1.33** LCY

Job Condition Correction Factors Site Altitude: 6400 feet

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

Unadjusted Hourly Unit Production: 247.85 LCY/Hour
Adjusted Hourly Unit Production: 205.72 LCY/Hour
Adjusted Hourly Fleet Production: **205.72** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: **41.02** Hours

Unit cost: $0.947 /LCY Total job cost: **$7,993**

BULLDOZER WORK

Task description: **Regrade Pond C Access Road**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 042 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-042
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 3,333
Swell factor: 1.165
Loose volume: **3,883** LCY

Source of estimated volume: Division Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 946.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 6,100 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 336.21 LCY/hr
Adjusted fleet production: **1008.63** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $1.124/LCY

Total job time: **3.85** Hours
Total job cost: **$4,364**

MOTOR GRADER WORK

Task description: **Finish Grade All Disturbed Areas**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 050 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-050
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 14M Horsepower: 259
Ripper Attachment: Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$85.80	NA
Operating Cost/Hour:	$60.40	100
Ripper Ownership Cost/Hour:	$0.00	NA
Ripper Operating Cost/Hour:	$0.00	
Operator Cost/Hour:	$28.56	NA
Total Unit Cost/Hour:	$174.76	

Total Fleet Cost/Hour: **$174.76**

MATERIAL QUANTITIES

Total Area to be graded or ripped: 89.00 acres

Source of estimated acreage: Page 2.05-20; Division Estimate

HOURLY PRODUCTION

Average Grader Speed: 1.50 mph
Selected Application: Finish grading (0-2.5 mph) - 1.5
Selected Blade Angle: 30 degrees
Effective Blade Length: 12.10 feet
Width of blade overlap per pass: 2.00 feet
Net grading or ripping width per pass: 10.10 feet
Unadjusted Hourly Unit Production: 1.8364 acres/hour

Job Condition Correction Factors Site Altitude: 6200 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.90	(1sh/d, fav.)
Net Correction:	0.9000	multiplier

Adjusted Hourly Unit Production: 1.6527 acres/Hour
Adjusted Hourly Fleet Production: **1.6527** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **53.85** Hours

Unit cost: $105.74 per acre Total job cost: **$9,411**

BULLDOZER WORK

Task description: **Remove Upper Hubbard Creek Sediment Pond**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 066 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-066
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 1,968
Swell factor: 1.165
Loose volume: **2,293** LCY

Source of estimated volume: TR-05; Appendix K
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,748.7 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 10 %
Average site altitude: 6,400 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr
Adjusted fleet production: **767.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.492/LCY

Total job time: **2.99** Hours
Total job cost: **$1,128**

BULLDOZER WORK

Task description: **Regrade East Bench Pond**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 067 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-067
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 400
Swell factor: 1.165
Loose volume: **466** LCY

Source of estimated volume: Map 15
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,748.7 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 10 %
Average site altitude: 6,400 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr
Adjusted fleet production: **767.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.492/LCY

Total job time: **0.61** Hours
Total job cost: **$229**

HYDRAULIC EXCAVATOR WORK

Task description: **Excavate/Backfill Pond C Wall Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 068 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-068
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick
Attachment 1: ROPS Cab

Horsepower: 268
Weight (MT): 29.30
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$83.42	NA
Operating Cost/Hour:	$74.14	100
Operator Cost/Hour:	$37.32	NA
Total Unit Cost/Hour:	$194.88	

Total Fleet Cost/Hour: $194.88

MATERIAL QUANTITIES

Initial volume: 275 CCY Swell factor: 1.250
Loose volume: **344** LCY

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

HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.321 minutes

Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)
Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850
Adjusted Capacity: **1.33** LCY

Job Condition Correction Factors

Site Altitude: 6000 feet

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

Unadjusted Hourly Unit Production: 247.85 LCY/Hour
Adjusted Hourly Unit Production: 205.72 LCY/Hour
Adjusted Hourly Fleet Production: **205.72** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: **1.67** Hours

Unit cost: $0.947 /LCY Total job cost: **$326**

HYDRAULIC EXCAVATOR WORK

Task description: **Regrade West Valley Fill Diversion**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 069 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-069
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick
Attachment 1: ROPS Cab

Horsepower: 268
Weight (MT): 29.30
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$83.42	NA
Operating Cost/Hour:	$74.14	100
Operator Cost/Hour:	$37.32	NA
Total Unit Cost/Hour:	$194.88	

Total Fleet Cost/Hour: $194.88

MATERIAL QUANTITIES

Initial volume: 332 CCY Swell factor: 1.125
Loose volume: **374** LCY

Source of estimated volume: Map E-3211
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.321 minutes

Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)
Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850
Adjusted Capacity: **1.33** LCY

Job Condition Correction Factors Site Altitude: 6300 feet

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

Unadjusted Hourly Unit Production: 247.85 LCY/Hour
Adjusted Hourly Unit Production: 205.72 LCY/Hour
Adjusted Hourly Fleet Production: **205.72** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: **1.82** Hours

Unit cost: $0.947 /LCY Total job cost: **$354**

BULLDOZER WORK

Task description: **Remove Sewage Leach Field**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 071 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-071
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 250
Swell factor: 1.165
Loose volume: **291** LCY

Source of estimated volume: Map E-3207R
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,718.9 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 10 %
Average site altitude: 6,400 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 480.26 LCY/hr
Adjusted fleet production: **480.26** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.787/LCY

Total job time: **0.61** Hours
Total job cost: **$229**

BULLDOZER WORK

Task description: **Regrade Pond A**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 072 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-072
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 400
Swell factor: 1.165
Loose volume: **466** LCY

Source of estimated volume: Map S-040
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 2,748.7 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 10 %
Average site altitude: 6,400 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr
Adjusted fleet production: **767.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.492/LCY

Total job time: **0.61** Hours
Total job cost: **$229**

BULLDOZER WORK

Task description: **Regrade Pond B**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 073 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-073
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 11,333
Swell factor: 1.165
Loose volume: **13,203** LCY

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

HOURLY PRODUCTION

Average push distance: 175 feet
Unadjusted hourly production: 1,074.3 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -15 %
Average site altitude: 6,100 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: 507.50 LCY/hr
Adjusted fleet production: **507.5** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.745/LCY

Total job time: **26.02** Hours
Total job cost: **$9,830**

BULLDOZER WORK

Task description: **Regrade Pond E**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #:	075	State:	Colorado	Abbreviation:	None
Date:	11/18/2021	County:	Delta	Filename:	022-075
User:	LDS				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D10T - 10SU
Horsepower:	574
Blade Type:	Semi-Universal
Attachment:	NA
Shift Basis:	1 per day
Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume:	2,300
Swell factor:	1.165
Loose volume:	**2,680** LCY

Source of estimated volume: Division Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,718.9 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 6,000 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 610.90 LCY/hr
Adjusted fleet production: **610.9** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.619/LCY

Total job time: **4.39** Hours
Total job cost: **$1,657**

BULLDOZER WORK

Task description: **Regrade Pond F**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 077 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-077
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 1,020
Swell factor: 1.330
Loose volume: **1,357** LCY

Source of estimated volume: Map 2.05-M5J; Division Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 90 feet
Unadjusted hourly production: 1,873.5 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 5 %
Average site altitude: 6,300 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:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 601.21 LCY/hr
Adjusted fleet production: **601.21** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.628/LCY

Total job time: **2.26** Hours
Total job cost: **$853**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to Previously Disturbed Elk A**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 090 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-090
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 1,500 CCY Swell factor: 1.125
Loose volume: **1,688** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,650 lbs/LCY
Material description: Decomposed rock - 25% Rock, 75% Earth
Rated Payload: 81,600 pounds
Payload Capacity: 30.79 LCY

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	800.00	-12.50	5.00	-7.50	1628	0.61

Haul Time: **0.61** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	12.50	5.00	17.50	832	0.98

Return Time: **0.98** minutes

Total Scraper team cycle time: **3.19** minutes
Adjusted for job conditions: 905.45 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 905.45 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **905.45** LCY/Hour

Unadjusted unit production/hour: 1,090.91 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **1.86** Hours

Unit cost: $0.990 /LCY Total job cost: **$1,670**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to East Refuse Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 092 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-092
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 3,500 CCY Swell factor: 1.125
Loose volume: **3,938** LCY

Source of estimated volume: Map E3207R
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Scraper Bowl (volume) Basis:

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	1000.00	10.00	5.00	15.00	589	1.71

Haul Time: **1.71** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-10.00	5.00	-5.00	2972	0.41

Return Time: **0.41** minutes

Total Scraper team cycle time: **3.72** minutes
Adjusted for job conditions: 776.45 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 776.45 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **776.45** LCY/Hour

Unadjusted unit production/hour: 935.48 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **5.07** Hours

Unit cost: $1.154 /LCY Total job cost: **$4,545**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to West Valley Fill Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 093 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-093
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 18,300 CCY Swell factor: 1.125
Loose volume: **20,588** LCY

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

HOURLY PRODUCTION

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Scraper Bowl (volume) Basis:

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	2350.00	-1.00	5.00	4.00	2394	1.21

Haul Time: **1.21** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2350.00	1.00	5.00	6.00	2638	1.06

Return Time: **1.06** minutes

Total Scraper team cycle time: **3.87** minutes
Adjusted for job conditions: 746.36 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 746.36 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **746.36** LCY/Hour

Unadjusted unit production/hour: 899.22 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **27.58** Hours

Unit cost: $1.201 /LCY Total job cost: **$24,724**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to II-West Refuse Pile**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 094 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-094
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 4,650 CCY Swell factor: 1.125
Loose volume: **5,231** LCY

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

HOURLY PRODUCTION

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Scraper Bowl (volume) Basis:

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6300 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	750.00	10.00	5.00	15.00	589	1.28

Haul Time: **1.28** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	-10.00	5.00	-5.00	2972	0.32

Return Time: **0.32** minutes

Total Scraper team cycle time: **3.20** minutes
Adjusted for job conditions: 902.63 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 902.63 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **902.63** LCY/Hour

Unadjusted unit production/hour: 1,087.50 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **5.80** Hours

Unit cost: $0.993 /LCY Total job cost: **$5,195**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to II West Refuse Pile Road**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 095 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-095
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 1,000 CCY Swell factor: 1.125
Loose volume: **1,125** 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: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6300 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	800.00	4.00	5.00	9.00	1042	0.81

Haul Time: **0.81** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	-4.00	5.00	1.00	2963	0.39

Return Time: **0.39** minutes

Total Scraper team cycle time: **2.80** minutes
Adjusted for job conditions: 1,031.57 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,031.57 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,031.57** LCY/Hour

Unadjusted unit production/hour: 1,242.86 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **1.09** Hours

Unit cost: $0.869 /LCY Total job cost: **$977**

BULLDOZER WORK

Task description: **Replace Topsoil from Stockpile to Expanded Elk Creek Mine Fa**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 096 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-096
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$1,133.53**

MATERIAL QUANTITIES

Initial Volume: 250
Swell factor: 1.125
Loose volume: **281** 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: 1,718.9 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 5 %
Average site altitude: 7,500 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4056

Adjusted unit production: 697.19 LCY/hr
Adjusted fleet production: **2091.57** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)
Unit cost: $0.542/LCY

Total job time: **0.13** Hours
Total job cost: **$152**

SCRAPER TEAM WORK

Task description: **Replace Topsoil from Stockpile to Elk Creek Mine Area**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 098 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-098
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-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	NA	NA	NA	NA
Ownership cost/hour:	$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	$896.30	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$896.30**

MATERIAL QUANTITIES

Initial volume: 13,400 CCY Swell factor: 1.125
Loose volume: **15,075** LCY

Source of estimated volume: Operator Estimate
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Scraper Bowl (volume) Basis:

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

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6200 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	1500.00	-10.00	5.00	-5.00	2972	0.56

Haul Time: **0.56** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	10.00	5.00	15.00	1047	1.46

Return Time: **1.46** minutes

Total Scraper team cycle time: **3.62** minutes
Adjusted for job conditions: 797.90 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 797.90 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **797.90** LCY/Hour

Unadjusted unit production/hour: 961.33 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **18.89** Hours

Unit cost: $1.123 /LCY Total job cost: **$16,934**

BULLDOZER WORK

Task description: **Replace Topsoil from Stockpile to Pond F, Ditches and Plunge**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 103 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-103
User: LDS

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Horsepower: 574
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$169.60	NA
Operating Cost/Hour:	$166.94	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $377.84
Total Fleet Cost/Hour: **$377.84**

MATERIAL QUANTITIES

Initial Volume: 1,300
Swell factor: 1.125
Loose volume: **1,463** LCY

Source of estimated volume: Map 2.05-M4 (Sheet 5 of 5); Map 2.05-M5J
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 125 feet
Unadjusted hourly production: 1,450.0 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 10 %
Average site altitude: 6,400 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 512.00 LCY/hr

Adjusted fleet production: **512** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $0.738/LCY

Total job time: **2.86** Hours

Total job cost: **$1,079**

REVEGETATION WORK

Task description: **Broadcast Seed Mine Site**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 120 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: C022-120
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
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$290.40**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.00	3.26	$11.73
Bitterbrush, Antelope	1.50	0.46	$29.25
Aster, Engleman's	0.13	0.60	$24.44
Mountain Brome - Bromar	1.50	2.41	$5.70
Great Basin Wildrye - Magnar	0.50	2.03	$5.78
Sandberg Bluegrass - VNS	0.12	2.55	$1.01
Sheep Fescue - Covar	1.00	15.61	$6.10
Milk Vetch, Cicer - Lutana	2.00	6.66	$16.40
Sainfoin - Remont	2.00	0.87	$6.32
Thickspike Wheatgrass - Critana	0.25	0.88	$1.72

Western Wheatgrass - Arriba	0.50	1.26	$3.25
Rabbitbrush, Rubber	0.50	7.45	$32.15
Needlegrass, Green - Lodorm	0.50	2.08	$5.89
Sage, Fringed	0.06	5.01	$2.46
Sagebrush, Mountain or Big	0.12	6.34	$2.37
Flax, Lewis Blue	0.66	4.38	$10.89
Sagebrush, Silver	0.12	2.33	$3.72
Penstemon, Palmer	0.25	5.53	$13.63
Penstemon, Rocky Mountain	0.50	7.84	$14.75
Yarrow, Western	0.06	3.65	$2.51
Totals Seed Mix	13.27	81.20	**$200.05**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$267.22
Total Seed Application Cost/Acre	**$267.22**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - Curtail @ 4.0 pt/ac	0.05	ACRE	$7.78	$0.39
Herbicide - Escort @ 1.0 pt/ac	0.05	ACRE	$194.52	$9.73
Total Mulch Materials Cost/Acre				**$10.12**

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: 108.25
Estimated Failure Rate: 10%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $767.79
Cost /Acre*: $467.27

Initial Job Cost: **$83,113.27**
Reseeding Job Cost: **$5,058.20**
Total Job Cost: **$88,171**
Job Hours: **216.50**

REVEGETATION WORK

Task description: **Re-seed Drill Pads, MR's and TR's, 46.23 acres @ 2% failure**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 121 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-121
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
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$290.40**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	$17.59
Indian Ricegrass - Native	0.50	1.62	$3.25
Mountain Brome - Bromar	2.00	3.21	$7.60
Sandberg Bluegrass - VNS	1.50	31.85	$12.60
Coreopsis, Lance Leafed	0.15	3.84	$4.28
Western Wheatgrass - Arriba	2.00	5.05	$13.00
Prairie Junegrass	0.25	13.29	$6.50
Penstemon, Rocky Mountain	0.15	2.35	$4.43
Yarrow, White	0.05	3.18	$2.00

Totals Seed Mix	8.10	69.28	**$71.25**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$267.22
Total Seed Application Cost/Acre	**$267.22**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	$7.78	$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	$194.52	$389.04
Total Mulch Materials Cost/Acre				**$404.60**

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: 1
Estimated Failure Rate: 0%
*Selected Replanting Work Items: NONE

Cost /Acre: $1,033.47
Cost /Acre*: $0.00

Initial Job Cost: **$1,033.47**
Reseeding Job Cost: **$0.00**
Total Job Cost: **$1,033**
Job Hours: **46.23**

REVEGETATION WORK

Task description: **Re-seed Light-Use Roads, MR's and TR's, 35.59 acres @ 2% fai**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 122 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-122
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
Weed control spraying (MEANS 31 31 16.13 3100)	$290.40
Total Tilling Cost/Acre	**$290.40**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	$17.59
Indian Ricegrass - Native	0.50	1.62	$3.25
Mountain Brome - Bromar	2.00	3.21	$7.60
Sandberg Bluegrass - VNS	1.50	31.85	$12.60
Coreopsis, Lance Leafed	0.15	3.84	$4.28
Western Wheatgrass - Arriba	2.00	5.05	$13.00
Prairie Junegrass	0.25	13.29	$6.50
Penstemon, Rocky Mountain	0.15	2.35	$4.43
Yarrow, White	0.05	3.18	$2.00

Totals Seed Mix	8.10	69.28	**$71.25**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$267.22
Total Seed Application Cost/Acre	**$267.22**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	$7.78	$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	$194.52	$389.04
Total Mulch Materials Cost/Acre				**$404.60**

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: 1
Estimated Failure Rate: 0%
*Selected Replanting Work Items: NONE

Cost /Acre: $1,033.47
Cost /Acre*: $0.00

Initial Job Cost: **$1,033.47**
Reseeding Job Cost: **$0.00**
Total Job Cost: **$1,033**
Job Hours: **35.59**

DEMOLITION WORK

Task description: **Demolish and Remove All Mine Facilities**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 130 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-130
User: LDS

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 91.30 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Elk Creek Fan Structures	15'x10'x50'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	15,000.00	CF	$0.22	$3,285.00
- Pads	18'x60'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	2,160.00	SF	$1.00	$2,162.16
Substation No. 4	25'x25'x20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	12,500.00	CF	$0.22	$2,737.50
- Pad	25'x25'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	625.00	SF	$1.00	$625.63
- Fencing	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	$3.08	$308.00
- Transformer	NA	NON-PCB Transformer Removal	1.00	EA	$2,238.20	$2,238.20
200,000 Gallon Water Tank	200,000 Gallons	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	28,510.00	CF	$0.24	$6,728.36
Rock Dust Tanks (2)	20'x15' Diameter	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	7,069.00	CF	$0.24	$1,668.28
- Pads	16'x8'x8"	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	256.00	SF	$1.33	$341.50
- Footings	8@8.75'x2'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	24.00	LF	$12.01	$288.24
Overland Conveyors	2,400 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	40.00	EA	$3,125.00	$125,000.00
- Transfer Towers (3)	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	15,000.00	CF	$0.24	$3,540.00

		10,000 ft. haul				
- Pads	10'x20'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	600.00	SF	$2.00	$1,201.20
Powerlines	3,100 LF	Utility Poles, Wood 35' - 45' high (each pole)	30.00	EA	$292.00	$8,760.00
Elk Creek Culvert	300 LF x 9' D	Pipe, corrugated metal (CMP) - 108 in. diameter pipe	300.00	LF	$51.18	$15,352.80
Substation No. 1 Transformers (3)	NA	NON-PCB Transformer Removal	3.00	EA	$2,238.20	$6,714.60
- Equipment	6'x8'x6'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	288.00	CF	$0.22	$61.92
- Pad	25'x25'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	625.00	SF	$1.00	$625.63
- Fence	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	$3.08	$308.00
Explosives Magazine	20'x25'x10'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	10,000.00	CF	$0.22	$2,150.00
Dump Station	140'x40'x12'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	67,200.00	CF	$0.24	$15,859.20
- Pad	140'x40'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,600.00	SF	$1.00	$5,605.60
- Footing	1'x2'x360 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	360.00	LF	$4.00	$1,440.00
125 and 500 Ton Steel Bins	NA	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	21,094.00	CF	$0.24	$4,978.18
Truck Scale Pad	10'x60'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	600.00	SF	$2.00	$1,201.20
- Building	Assume 5' Deep	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	3,000.00	CF	$0.22	$645.00
- Footing	1.5'x3'x140 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	140.00	LF	$9.01	$1,261.40
Tipple Structure	30'x50'x50'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	75,000.00	CF	$0.24	$17,700.00

		10,000 ft. haul				
- Pad	30'x50'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	1,500.00	SF	$2.00	$3,003.00
- Footing	1.5'x3'x160 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	160.00	LF	$9.01	$1,441.60
Coal Screening Facility	35'x35'x55'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	67,375.00	CF	$0.24	$15,900.50
- Pad	35'x55'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	1,225.00	SF	$2.00	$2,452.45
- Footing	1.5'x3'x140 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	140.00	LF	$9.01	$1,261.40
Dump Station/Truck Scale Conveyors	140 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	2.00	EA	$3,125.00	$6,250.00
Crusher/Feeder Conveyor	160 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	2.00	EA	$3,125.00	$6,250.00
Crusher Bypass Conveyor	200 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	3.00	EA	$3,125.00	$9,375.00
Silo Feeder Conveyor	380 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.00	EA	$3,125.00	$18,750.00
Loadout Feeder Conveyor	350 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.00	EA	$3,125.00	$18,750.00
Coal Storage Silo	140'x70' Diameter	Explosive demolition, large projects - Concrete structures	539,000.00	CF	$0.32	$172,480.00
- Headhouse	20'x20'x10'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,000.00	CF	$0.24	$944.00
- Pad	12"x70' Diameter	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	3,848.00	SF	$2.00	$7,703.70
- Footing	2'x3'x220 LF	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	220.00	LF	$12.01	$2,642.20
Batch-Weigh Loadout	27'x27'x100'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	72,900.00	CF	$0.24	$17,204.40
- Pad	27'x27'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	729.00	SF	$2.00	$1,459.46

- Footing	1.5'x3'x108 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	108.00	LF	$9.01	$973.08
- Surge and Weigh Bins	300 and 120 Tons	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	14,175.00	CF	$0.24	$3,345.30
- Transfer Chutes	40'x36'x18'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	25,920.00	CF	$0.24	$6,117.12
- Discharge Chute	40'x36'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,440.00	SF	$1.00	$1,441.44
Woman's Change House	45'x30'x14'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	18,900.00	CF	$0.22	$4,063.50
- Pad	45'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,350.00	SF	$1.00	$1,351.35
Waste Barrel Storage Structure	10'x20'; 30'x30'x12'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	13,200.00	CF	$0.22	$2,838.00
- Pads	10'x20'; 30'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,100.00	SF	$1.00	$1,101.10
Office Septic Tank	1,500 Gallons	Excavate and load tank onto trailer, non-leaking - 3,000 gal. to 5,000 gal.	1.00	EA	$614.00	$614.00
- Remove Septic Tank Sludge	Assume 500 Gals	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	$238.00	$238.00
- Dispose of Sludge Off-Site	Assume 500 Gals	Dispose of tank sludge off-site - Average	500.00	GAL	$6.80	$3,400.00
- Haul Tank to Certified Dump	1,500 Gallons	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	$760.00	$760.00
Metal Storage Building	30'x60'x12'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	21,600.00	CF	$0.22	$4,644.00
- Pad	30'x60'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,800.00	SF	$1.00	$1,801.80
Train Car Antifreeze Tanks (2)	12,000 Gallons	Excavate and load tank onto trailer, non-leaking - 9,000 gal. to 12,000 gal.	2.00	EA	$1,050.00	$2,100.00
- Remove Sludge from Tank Bottom	Assume 2,400 Gals	Remove sludge, water, and rem. product from	2.00	EA	$397.00	$794.00

		tank - 9,000 to 12,000 gal.				
- Dispose of Sludge Off-Site	Assume 2,400 Gals	Dispose of tank sludge off-site - Average	2,400.00	GAL	$6.80	$16,320.00
- Haul Tank to Certified Dump	12,000 Gallons	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	2.00	EA	$1,050.00	$2,100.00
Train Car Antifreeze Tank	6,000 Gallons	Excavate and load tank onto trailer, non-leaking - 6,000 gal. to 8,000 gal.	1.00	EA	$880.00	$880.00
- Remove Sludge from Tank Bottom	Assume 600 Gals	Remove sludge, water, and rem. product from tank - 6,000 to 8,000 gal.	1.00	EA	$298.00	$298.00
- Dispose of Sludge Off-Site	Assume 600 Gals	Dispose of tank sludge off-site - Average	600.00	GAL	$6.80	$4,080.00
- Haul Tank to Certified Dump	6,000 Gallons	Haul tank to certified salvage dump - 6,000 to 8,000 gal. tank	1.00	EA	$880.00	$880.00
Main Septic Tank	3,000 Gallons	Excavate and load tank onto trailer, non-leaking - 3,000 gal. to 5,000 gal.	1.00	EA	$614.00	$614.00
- Remove Sludge from Tank Bottom	Assume 500 Gals	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	$238.00	$238.00
- Dispose of Sludge Off-Site	Assume 500 Gals	Dispose of tank sludge off-site - Average	500.00	GAL	$6.80	$3,400.00
- Haul Tank to Certified Dump	3,000 Gallons	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	$760.00	$760.00
Compressor House	30'x54'x16'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	25,920.00	CF	$0.24	$6,117.12
- Footers	1'x2'x168 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	168.00	LF	$4.00	$672.00
Office	62,424 CF	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	62,424.00	CF	$0.24	$14,732.06
- Pad	5,400 SF	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,400.00	SF	$1.00	$5,405.40
- Footers	1'x2'x315 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	315.00	LF	$4.00	$1,260.00
Bath House	100'x110'x18'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	185,850.00	CF	$0.24	$43,860.60
- Pad	100'x110'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000	11,000.00	SF	$1.00	$11,011.00

		ft. haul				
- Footers	2'x3'x420 LF	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	420.00	LF	$12.01	$5,044.20
Concrete Dams	14'x155'x2'	Wall, concrete, demolition only, average reinforcing - 24 in. thick	2,170.00	SF	$4.45	$9,656.50
- Dam Base	15'x155'x2'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	172.00	CY	$133.50	$22,962.00
Culvert IIW-4	12"x100 LF	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	100.00	LF	$4.10	$409.70
Culvert IIW-5	12"x100 LF	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	100.00	LF	$4.10	$409.70
Tank Containment Walls	16'x44'x4' (8")	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	485.00	SF	$3.08	$1,493.80
Covered Oil Storage	25'x16'x20'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	6,400.00	CF	$0.24	$1,510.40
Water Treatment Room	10'x20'x20'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,000.00	CF	$0.24	$944.00
Sump	39.3'x14'x4' (8")	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	426.00	SF	$3.08	$1,312.08
Clean Oil/Water/Mud out of Sump	12,000 Gallons	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	$397.00	$397.00
- Dispose of Sludge Off-Site	Assume 2,000 Gals	Dispose of tank sludge off-site - Average	2,000.00	GAL	$6.80	$13,600.00
Sanborn Substation No. 2 Transformers	NA	NON-PCB Transformer Removal	3.00	EA	$2,238.20	$6,714.60
- Equipment Removal	6'x8'x6'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	288.00	CF	$0.24	$67.97
- Pad	25'x25'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	625.00	SF	$2.00	$1,251.25
- Fence	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	$3.08	$308.00
Sanborn Overland Conveyor	1500LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	24.00	EA	$3,125.00	$75,000.00
- Transfer Buildings (4)	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	20,000.00	CF	$0.24	$4,720.00

		10,000 ft. haul				
- Pads (4)	10'x20'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	800.00	SF	$2.00	$1,601.60
- Equipment Removal	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	1,000.00	CF	$0.24	$236.00
Air Compressor Building #2	30'x30'x16'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	14,400.00	CF	$0.24	$3,398.40
- Pad	30'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	900.00	SF	$1.00	$900.90

Job Hours: **600.00** **Subtotal (unadjusted)**: **$818,804.28** **Total Cost (adjusted for location)**: **$747,568.31**

BOREHOLE SEALING WORK

Task description: **Plug and Seal 7 Monitoring wells**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 131 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-131
User: LDS

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
4" Holes (7)	PVC plug - 4 in. diameter borehole	4"	NA	7.00	EA	$33.98	$237.86
- Fill Holes with Cement	Portland cement grout (Bag, material cost only...94 lb. bag)	4"	50' EA	15.00	bag	$19.95	$299.25
- Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	7.00	LF	$3.26	$22.82
- Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	7.00	EA	$37.50	$262.50
- Drill Rig Time	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	42.00	EA	$176.95	$7,431.90
Water Truck Time - ALLHoles	Water Tanker, 5,000 Gal.	NA	NA	42.00	EA	$75.41	$3,167.22

Job Hours: **42.00** **Total Cost**: **$11,422.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize/Demobilize Equipment for Initial Reclamation**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 140 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-140
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:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

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 815F	22.88	$91.25	$68.37	1	$159.62	$68.37	$250.00
Cat D10T - 10SU	84.53	$169.60	$147.95	3	$952.65	$443.85	$750.00
ATLAS COPCO ROC D7-11,4.0 in.	0.00	$94.21	$68.37	1	$162.58	$68.37	$250.00
Cat 336D L 10'-6" Stick	32.23	$83.42	$132.49	1	$215.91	$132.49	$250.00
CAT 14M	23.57	$85.80	$68.37	1	$154.17	$68.37	$250.00
Cat 637G w/push-pull	59.59	$223.48	$147.95	2	$742.86	$295.90	$500.00
Drill/Broadcast Seeder with Tractor	25.00	$7.98	$68.37	1	$76.35	$68.37	$250.00
Subtotals:					**$2,464.14**	**$1,145.72**	**$2,500.00**

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.	$46.35	1	$46.35	$46.35
Fuel Tanker, 6x4, 210 HP	$46.35	1	$46.35	$46.35
Lube Truck, 6x4, 250 HP	$46.35	1	$46.35	$46.35

Flatbed Truck, 6x4, 45K GVW	$49.15	1	$49.15	$49.15
Light Duty Pickup, 4x4, 1 T. Crew	$20.51	1	$20.51	$20.51
Subtotals:			**$208.71**	**$208.71**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION	
Total one-way travel distance:	80.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$24,367.72
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$834.84

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	2.00	2.00
Return Time (Hours):	2.00	2.00
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	5.00	4.00

JOB TIME AND COST

Total job time:	**10.00**	Hours
Total job cost:	**$25,203**	

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize/Demobilize Equipment for Pond Removal**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 141 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-141
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:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

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 D10T - 10SU	84.53	$169.60	$147.95	1	$317.55	$147.95	$250.00
Cat 623G	41.35	$207.90	$132.49	1	$340.39	$132.49	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$7.98	$68.37	1	$76.35	$68.37	$250.00
Subtotals:					**$734.29**	**$348.81**	**$750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	$49.15	1	$49.15	$49.15
Subtotals:			**$49.15**	**$49.15**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	DELTA	
Total one-way travel distance:	45.00	miles
Average Travel Speed:	35.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$5,753.69
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$126.39

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.29	1.29
Return Time (Hours):	1.29	1.29
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	3.57	2.57

JOB TIME AND COST

Total job time:	**7.14**	Hours
Total job cost:	**$5,880**	

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilize/Demobilize Equipment for Site Maintenance**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 142 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-142
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:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

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 D3K XL - 3P	9.22	$27.67	$68.37	10	$960.40	$683.70	$0.00
Subtotals:					**$960.40**	**$683.70**	**$0.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	$49.15	10	$491.50	$491.50
Subtotals:			**$491.50**	**$491.50**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	DELTA	
Total one-way travel distance:	45.00	miles
Average Travel Speed:	45.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$12,892.20
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$983.00

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	2.50	NA
Unloading Time (Hours):	2.50	NA
Subtotals:	7.00	2.00

JOB TIME AND COST

Total job time:	**14.00**	Hours
Total job cost:	**$13,875**	

SITE MAINTENANCE

Task description: **Yearly site maintenance**

Site: **Elk Creek Mine** Permit Action: SI1 Permit/Job#: C1981022

PROJECT IDENTIFICATION

Task #: 150 State: Colorado Abbreviation: None
Date: 11/18/2021 County: Delta Filename: 022-150
User: LDS

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Pond Cleaning	10.00	Cat 307D 7'-3" Stick	100.00	EA	$86.23	$8,623.00
Elk Creek Stream Channel Maintenance	2.00	Cat D3K XL - 3P	20.00	EA	$96.36	$1,927.20
Elk Creek Ditch Maintenance	2.00	Cat 307D 7'-3" Stick	20.00	EA	$86.23	$1,724.60

Job Hours: 140.00 **Total Cost: $12,274.80**

Simmons - DNR, Leigh <leigh.simmons@state.co.us> Thu, Jun 16, 2022 at 6:36 PM
To: Doug Smith <Doug.Smith@oxbow.com>

Doug,

Sorry for the confusion.

Attached is the most recent site-wide reclamation cost estimate, together with the explanatory cover letter. The header shows SI-1, although this was withdrawn (since the required surety ended up decreasing) and SR-2 was issued instead - the RCE was not changed.
The required surety changed again since then, with SL-5 and will likely change again soon with SL-6 and SL-7, however the sitewide estimate will likely not change again until the next Permit Renewal.

I hope that makes sense.

Leigh Simmons
Environmental Protection Specialist

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

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