STATE OF COLORADO

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

C1981022, Elk Creek Mine, SI-1, Adequacy letter and updated RCE

Doug Smith <Doug.Smith@oxbow.com> Mon, Dec 6, 2021 at 9:35 AM
To: "Simmons - DNR, Leigh" <leigh.simmons@state.co.us>
Cc: Mike Ludlow <Mike.Ludlow@oxbow.com>

Leigh,

Oxbow Mining accepts the revised cost estimate, and will continue to further pursue bond release for the work that has been completed.

Doug Smith

Oxbow Mining, LLC

(970) 929-6034

From: Simmons - DNR, Leigh <leigh.simmons@state.co.us>
Sent: Monday, December 6, 2021 9:00 AM
To: Doug Smith <Doug.Smith@OXBOW.COM>
Subject: Re: C1981022, Elk Creek Mine, SI-1, Adequacy letter and updated RCE

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> > > 1313 Sherman Street, Room 215, Denver, CO 80203

leigh.simmons@state.co.us | https://drms.colorado.gov

On Thu, Jul 22, 2021 at 3:45 PM Mike Ludlow <Mike.Ludlow@oxbow.com> wrote:

> Leigh, please accept this email as a request for an informal hearing regarding the bonding cost calculations as calculated at the midterm permit review. I have reviewed the cost summary provided in your email. The total of the direct cost on your review calculations was $1,974,914. I have used the divisions costs to perform the remaining tasks and have added the direct cost for the remaining work to be $543,468. I have attached the bonding sheets with the work tasks crossed out that have been completed which should not be included in the remaining work to be performed. Section 3.02.2(4) requires the division to adjust the bond for the future cost of the reclamation. The divisions' methodology of calculating the bond for Elk Creek does not give adequate credit for the work that has been completed. The work completed has been clearly documented in the Quarterly inspection reports.
>
> Best Regards,
>
> Michael W Ludlow
>
> President
>
> Oxbow Mining, LLC
>
> Elk Creek Mine
>
> P.O. Box 535
>
> Somerset, CO 81434
>
> 970-929-5494 Office
>
> 970-261-5142 Cell

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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

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