

## COST SUMMARY WORK

Task description: Cost Summary

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: Rev 9/1/2020

County: Boulder

Filename: M041-000

User: AME

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Demolition of structures	DEMOLISH	1	40.00	\$75,941
002	Demolition of conveyor supports 6x2x6(457), on-site disposal	NA	1	30.00	\$14,214
003	Demolition of conveyor system 9,718x4x4, off-site disposal	NA	1	20.00	\$144,781
004	Demolition of conveyor walkways 2,558x3x4, off-site disposal	NA	1	20.00	\$28,582
005	Demolition of conveyor structures 6-20(44), off-site disposal	NA	1	20.00	\$53,203
006	Demolition of conveyor buried section 160', off-site disposal	NA	1	10.00	\$1,663
007	Backfill Hi-Cal/2nd Ridge pit with in-pit stockpiles	SCRAPER1	1	950.73	\$1,292,036
008	Backfill Hi-Cal/2nd Ridge pit with crusher stockpiles	TRUCK1	1	2,109.13	\$3,960,546
009	Backfill Hi-Cal/2nd Ridge pit with Mt. George stockpile	TRUCK1	1	1,023.53	\$1,921,997
010	Backfill 3rd Ridge pit with in-pit stockpiles	SCRAPER1	1	83.70	\$113,743
011	Backfill 3rd Ridge pit with Mt. George stockpile	TRUCK1	1	430.07	\$807,598
012	3rd Ridge pit wetland excavation	SCRAPER1	1	500.17	\$679,726
013	Backfill 4th Ridge pit with in-pit stockpiles	DOZER	2	0.25	\$160
014	Wetland topsoil stripping	SCRAPER1	1	10.47	\$14,226
015	Crusher area topsoil stripping	SCRAPER1	1	8.75	\$11,888
016	Hi-Cal/2nd Ridge pit rough grade	GRADER	2	12.71	\$4,139
017	Hi-Cal/2nd Ridge pit final grade	GRADER	2	27.55	\$8,968
018	3rd Ridge pit rough grade	GRADER	2	3.53	\$1,149
019	3rd Ridge pit final grade	GRADER	2	7.65	\$2,491
020	4th Ridge pit rough grade	GRADER	1	1.65	\$270
021	4th Ridge pit final grade	GRADER	1	3.59	\$585
022	Rip office/maintenance/equipment/fuel areas	GRADER	1	1.65	\$285
023	Rip roads and other disturbances	GRADER	2	13.83	\$4,759
024	Retopsoil Hi-Cal/2nd Ridge pit with NE/N stockpile	SCRAPER1	1	20.51	\$27,875
025	Retopsoil Hi-Cal/2nd Ridge pit with NE/middle stockpile	SCRAPER1	1	45.65	\$62,041
026	Retopsoil Hi-Cal/2nd Ridge pit with NW stockpile	SCRAPER1	1	4.18	\$5,678
027	Retopsoil Hi-Cal/2nd Ridge pit with High-Cal stockpile	SCRAPER1	1	6.38	\$8,667
028	Retopsoil 3rd Ridge pit with NE/middle stockpile	SCRAPER1	1	0.64	\$864
029	Retopsoil 3rd Ridge pit with NE/S stockpile	SCRAPER1	1	10.46	\$14,218

030	3rd Ridge wetland area excavation	SCRAPER1	1	8.18	\$11,120
031	Retopsoil 4th Ridge pit wetland area excavation	SCRAPER1	1	3.66	\$4,970
032	Retopsoil wetland area excavation	SCRAPER1	1	5.49	\$7,457
033	Retopsoil crusher area with reclaimed area stripping	SCRAPER1	1	9.17	\$12,462
034	Retopsoil crusher area with SE stockpile	SCRAPER1	1	24.92	\$33,865
035	Retopsoil office/maint/equip/fuel areas with SE stockpile	SCRAPER1	1	4.68	\$6,356
036	Retopsoil roads and other disturbances with NE/S stockpile	SCRAPER1	1	25.51	\$34,664
037	Retopsoil roads and other disturbances with SE stockpile	SCRAPER1	1	27.11	\$36,843
038	Retopsoil roads and other disturbances with wetland excav	SCRAPER1	1	0.34	\$456
039	Revegetate Hi-Cal/2nd Ridge pit (107.3 ac)	REVEGE	1	107.30	\$148,183
040	Revegetate 3rd Ridge pit minus wetland (25 ac)	REVEGE	1	25.00	\$34,525
041	Revegetate 4th Ridge pit (2.3 ac)	REVEGE	1	2.30	\$3,176
042	Revegetate wetland area (20 ac)	REVEGE	1	20.00	\$20,212
043	Revegetate crusher area (47.4 ac)	REVEGE	1	47.40	\$65,460
044	Revegetate Mt. George stockpile area (22.9 ac)	REVEGE	1	22.90	\$31,625
045	Revegetate topsoil stockpile areas (27.7 ac)	REVEGE	1	27.70	\$38,254
046	Revegetate office/maint/equip/fuel areas (3.8 ac)	REVEGE	1	3.80	\$5,248
047	Revegetate conveyor corridor (4.6 ac)	REVEGE	1	4.60	\$6,353
048	Revegetate roads and other disturbances (63.4 ac)	REVEGE	1	63.40	\$87,556
049	Mobilization/Demobilization	MOBILIZE	1	56.88	\$393,841
<b><u>SUBTOTALS:</u></b>				<b>5907.12</b>	<b>\$10,244,920</b>

**INDIRECT COSTS****OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$206,947
Performance bond:	1.05	Total =	\$107,572
Job superintendent:	360.00	Total =	\$25,038
Profit:	10.00	Total =	\$1,024,492
		TOTAL O & P =	\$1,364,049
		CONTRACT AMOUNT (direct + O & P) =	\$11,608,969

**LEGAL - ENGINEERING - PROJECT MANAGEMENT:**

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.25	Total =	\$493,381
Reclamation management and/or administration:	5.00		\$580,448
CONTINGENCY: 0.00		Total =	\$0

TOTAL INDIRECT COST = \$2,438,379

**TOTAL BOND AMOUNT (direct + indirect) = \$12,683,299**

## DEMOLITION WORK

Task description: Demolition of structures

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: Rev 9/1/2020

County: Boulder

Filename: M041-001

User: AME

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 103.60 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Demolish Crusher Slab	35 x 31 x 1	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 200 ft. push	1,085.00	SF	\$1.70	\$1,845.59
Demolish Crusher Metal Roof	23 x 35 x 30	Bldg. (MC) demo./off-site disposal in approved landfill - Max. 5 mile haul	24,150.00	CF	\$0.58	\$14,007.00
Demolish Office Trailer	50 x 12 x 9	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	5,400.00	CF	\$0.30	\$1,614.60
Demolish Break Room Trailer	50 x 12 x 9	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	5,400.00	CF	\$0.30	\$1,614.60
Demolish Trailer Steps (2)	10 x 14 x 1 (2x)	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 200 ft. push	280.00	SF	\$1.70	\$476.28
Demolish Office & Breakroom Slabs (2)	51 x 13 x 1 (2x)	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 200 ft. push	1,326.00	SF	\$1.70	\$2,255.53
Demolish Maintenance Buildings (2)	40 x 68 / 25 x 13	Bldg. (MC) demo./off-site disposal in approved landfill - Max. 5 mile haul	84,850.00	CF	\$0.58	\$49,213.00
Demolish Maintenance Building Slab	25 x 13	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 200 ft. push	325.00	SF	\$1.70	\$552.83
Demolish/Remove Fuel Island (2)	40 x 52 / 20 x 30	Bldg. (SC) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	2,680.00	CF	\$0.25	\$672.68
Remove Fuel Tank	28 x 16 x 16	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.00	\$1,050.00

Job Hours: 40.00

Subtotal  
(unadjusted): \$73,302.11

Total Cost  
(adjusted for location): \$75,940.99

**SCRAPER TEAM WORK**Task description: **Backfill Hi-Cal/2nd Ridge pit with in-pit stockpiles**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **007**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-007**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: **894,130**

CCY

Swell factor: **1.125**Loose volume: **1,005,896**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b><u>2,650 lbs/LCY</u></b>	Struck Volume:	<b><u>24.00</u></b>	LCY
Material description:	<b><u>Decomposed rock - 25% Rock, 75% Earth</u></b>	Heaped Volume:	<b><u>34.00</u></b>	LCY
Rated Payload:	<b><u>81,600 pounds</u></b>	Average Volume:	<b><u>29.00</u></b>	LCY
Payload Capacity:	<b><u>30.79 LCY</u></b>	Adjusted Capacity:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.64

Haul Time: 0.64 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 1,058.02 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 1,274.73 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 950.73 HoursUnit cost: \$1.284 /LCYTotal job cost: \$1,292,036

**TRUCK/LOADER TEAM WORK**Task description: **Backfill Hi-Cal/2nd Ridge pit with crusher stockpiles**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **008**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-008**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	CAT 992K
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	NA	50	50
Ownership cost/hour:	\$168.61	\$238.62	\$156.88	NA	\$55.79	\$14.71
Operating cost/hour:	\$139.68	\$180.34	\$63.93	NA	\$30.04	\$15.29
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	NA	\$46.87	\$0.00
Unit Subtotals:	\$333.11	\$454.93	\$260.85	NA	\$132.70	\$30.00
Number of Units:	3	1	1	0	1	1
Group Subtotals:	Work: \$1,454.26		Support: \$260.85		Maint: \$162.70	

Total work team cost/hour: **\$1,877.81****MATERIAL QUANTITIES**Initial volume: **2,444,646**

CCY

Swell factor: **1.125**Loose volume: **2,750,227**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,650**

Pounds/LCY

Description: **Decomposed rock - 25% Rock, 75% Earth**Rated Payload: **200,000**

Pounds

Payload Capacity: 75.47 LCY

**Truck Bed (volume) Basis:**

Struck Volume: 60.60 LCY  
 Heaped Volume: 78.80 LCY  
 Average Volume: 69.70 LCY  
 Adjusted Volume: 75.47 LCY

Final Truck Volume Based on Number of Loader Passes: 70.40 LCY

**Loading Tool Capacity**

Bucket Size Class: NA

Rated Capacity:	<u>16.000</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>17.600</u>	LCY

**Job Condition Corrections:**

Site Altitude (ft.): 5350 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	<b>0.830</b>	<b>0.830</b>	

**Loading Tool Cycle Time:**

Number of Loading Tool Passes Required to Fill  
 Truck: 4 passes

**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: NA  
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: \_\_\_\_\_

**Cycle Time Elements (min.):**

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.625 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		<b>0.585</b>	minutes
Net Load Time per Truck:		<b>1.855</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.80</u>	Minutes	Adjusted for site altitude:	<u>0.800</u>	Minutes
Truck Load Time:	<u>1.855</u>	Minutes	Adjusted for site altitude:	<u>1.855</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.20</u>	Minutes	Adjusted for site altitude:	<u>1.200</u>	Minutes

Truck Travel (Haul & Return) Time:  
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered.

## Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	0.00	3.00	3.00	2409	2.512

Haul Time: 2.512 minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	0.00	3.00	3.00	3503	1.699

Return Time: 1.699 minutesTotal Truck Cycle Time: 8.066 minutes

## Loading Tool unit

Production	<u>1,590.96</u>	LCY/Hour	Adjusted for job efficiency:	<u>1,320.50</u>	LCY/Hour
Truck Unit Production	<u>523.68</u>	LCY/Hour	Adjusted for job efficiency:	<u>434.65</u>	LCY/Hour

Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u>	Truck(s)
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Adjusted hourly truck team production:	<u>1,303.96</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>1,303.96</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>1,303.96</u>	LCY/Hour

**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: 2,109.13 HoursUnit cost: \$1.440 /LCY Total job cost: \$3,960,546

**TRUCK/LOADER TEAM WORK**Task description: **Backfill Hi-Cal/2nd Ridge pit with Mt. George stockpile**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **009**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-009**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	CAT 992K
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	NA	50	50
Ownership cost/hour:	\$168.61	\$238.62	\$156.88	NA	\$55.79	\$14.71
Operating cost/hour:	\$139.68	\$180.34	\$63.93	NA	\$30.04	\$15.29
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	NA	\$46.87	\$0.00
Unit Subtotals:	\$333.11	\$454.93	\$260.85	NA	\$132.70	\$30.00
Number of Units:	3	1	1	0	1	1
Group Subtotals:	Work: \$1,454.26		Support: \$260.85		Maint: \$162.70	

Total work team cost/hour: **\$1,877.81****MATERIAL QUANTITIES**Initial volume: **1,059,491**

CCY

Swell factor: **1.125**Loose volume: **1,191,927**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,650**

Pounds/LCY

Description: **Decomposed rock - 25% Rock, 75% Earth**Rated Payload: **200,000**

Pounds

Payload Capacity: 75.47 LCY

**Truck Bed (volume) Basis:**

Struck Volume: 60.60 LCY  
 Heaped Volume: 78.80 LCY  
 Average Volume: 69.70 LCY  
 Adjusted Volume: 75.47 LCY

Final Truck Volume Based on Number of Loader Passes: 65.60 LCY

**Loading Tool Capacity**

Bucket Size Class: NA

Rated Capacity:	<u>16.000</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.025</u>	Rock - Earth Mixture (100%-105%) 1.025
Adjusted Capacity:	<u>16.400</u>	LCY

**Job Condition Corrections:**

Site Altitude (ft.): 5350 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	<b>0.830</b>	<b>0.830</b>	

**Loading Tool Cycle Time:**

Number of Loading Tool Passes Required to Fill  
 Truck: 4 passes

**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: NA  
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: \_\_\_\_\_

**Cycle Time Elements (min.):**

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.625 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		<b>0.585</b>	minutes
Net Load Time per Truck:		<b>1.855</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.80</u>	Minutes	Adjusted for site altitude:	<u>0.800</u>	Minutes
Truck Load Time:	<u>1.855</u>	Minutes	Adjusted for site altitude:	<u>1.855</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.20</u>	Minutes	Adjusted for site altitude:	<u>1.200</u>	Minutes

Truck Travel (Haul & Return) Time:  
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered.

## Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5500.00	0.00	3.00	3.00	2409	2.719

Haul Time: 2.719 minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5500.00	0.00	3.00	3.00	3503	1.842

Return Time: 1.842 minutesTotal Truck Cycle Time: 8.416 minutes

## Loading Tool unit

Production	<u>1,482.49</u>	LCY/Hour	Adjusted for job efficiency:	<u>1,230.46</u>	LCY/Hour
Truck Unit Production	<u>467.68</u>	LCY/Hour	Adjusted for job efficiency:	<u>388.17</u>	LCY/Hour

Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u>	Truck(s)
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Adjusted hourly truck team production:	<u>1,164.52</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>1,164.52</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>1,164.52</u>	LCY/Hour

**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: 1,023.53 HoursUnit cost: \$1.613 /LCY Total job cost: \$1,921,997

**SCRAPER TEAM WORK**Task description: **Backfill 3rd Ridge pit with in-pit stockpiles**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 010State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-010User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 78,714

CCY

Swell factor: 1.125Loose volume: **88,553**

LCY

Source of estimated volume: Operator bond estimateSource 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 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.64

Haul Time: 0.64 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 1,058.02 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 1,274.73 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 83.70 HoursUnit cost: \$1.284 /LCYTotal job cost: \$113,743

**TRUCK/LOADER TEAM WORK**Task description: **Backfill 3rd Ridge pit with Mt. George stockpile**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **011**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-011**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	CAT 992K
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	NA	50	50
Ownership cost/hour:	\$168.61	\$238.62	\$156.88	NA	\$55.79	\$14.71
Operating cost/hour:	\$139.68	\$180.34	\$63.93	NA	\$30.04	\$15.29
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	NA	\$46.87	\$0.00
Unit Subtotals:	\$333.11	\$454.93	\$260.85	NA	\$132.70	\$30.00
Number of Units:	3	1	1	0	1	1
Group Subtotals:	Work: \$1,454.26		Support: \$260.85		Maint: \$162.70	

Total work team cost/hour: **\$1,877.81****MATERIAL QUANTITIES**Initial volume: **470,392**

CCY

Swell factor: **1.125**Loose volume: **529,191**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,650**

Pounds/LCY

Description: **Decomposed rock - 25% Rock, 75% Earth**Rated Payload: **200,000**

Pounds

Payload Capacity: 75.47 LCY

**Truck Bed (volume) Basis:**

Struck Volume: 60.60 LCY  
 Heaped Volume: 78.80 LCY  
 Average Volume: 69.70 LCY  
 Adjusted Volume: 75.47 LCY

Final Truck Volume Based on Number of Loader Passes: 65.60 LCY

**Loading Tool Capacity**

Bucket Size Class: NA

Rated Capacity:	<u>16.000</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.025</u>	Rock - Earth Mixture (100%-105%) 1.025
Adjusted Capacity:	<u>16.400</u>	LCY

**Job Condition Corrections:**

Site Altitude (ft.): 5350 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	<b>0.830</b>	<b>0.830</b>	

**Loading Tool Cycle Time:**

Number of Loading Tool Passes Required to Fill  
 Truck: 4 passes

**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: NA  
 Selected Value within this Basic Rating: NA  
 Track Loaders – Material Description: \_\_\_\_\_

**Cycle Time Elements (min.):**

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.625 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		<b>0.585</b>	minutes
Net Load Time per Truck:		<b>1.855</b>	minutes

**Truck Cycle Time:**

Truck Exchange Time:	<u>0.80</u>	Minutes	Adjusted for site altitude:	<u>0.800</u>	Minutes
Truck Load Time:	<u>1.855</u>	Minutes	Adjusted for site altitude:	<u>1.855</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.20</u>	Minutes	Adjusted for site altitude:	<u>1.200</u>	Minutes

Truck Travel (Haul & Return) Time:  
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered.

## Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4000.00	0.00	3.00	3.00	2409	2.096

Haul Time: **2.096** minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4000.00	0.00	3.00	3.00	3503	1.414

Return Time: **1.414** minutesTotal Truck Cycle Time: **7.365** minutes

## Loading Tool unit

Production	<u>1,482.49</u>	LCY/Hour	Adjusted for job efficiency:	<u>1,230.46</u>	LCY/Hour
Truck Unit Production	<u>534.42</u>	LCY/Hour	Adjusted for job efficiency:	<u>443.57</u>	LCY/Hour

Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u>	Truck(s)
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Adjusted hourly truck team production:	<u>1,330.70</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>1,230.46</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<b><u>1,230.46</u></b>	LCY/Hour

**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: **430.07** HoursUnit cost: \$1.526 /LCY Total job cost: **\$807,598**

**SCRAPER TEAM WORK**Task description: **3rd Ridge pit wetland excavation**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **012**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-012**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: **470,392**

CCY

Swell factor: **1.125**Loose volume: **529,191**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.64

Haul Time: 0.64 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 1,058.02 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 1,274.73 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 500.17 HoursUnit cost: \$1.284 /LCYTotal job cost: \$679,726

**BULLDOZER WORK**Task description: **Backfill 4th Ridge pit with in-pit stockpiles**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **013**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-013**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D9T - 9SU**  
 Horsepower: **405**  
 Blade Type: **Semi-Universal**  
 Attachment: **NA**  
 Shift Basis: **1 per day**  
 Data Source: **(CRG)**

**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$156.88	NA
Operating Cost/Hour:	\$127.87	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA
Total unit Cost/Hour:	\$324.78	
Total Fleet Cost/Hour:	<b>\$649.56</b>	

**MATERIAL QUANTITIES**

Initial Volume: **185**  
 Swell factor: **1.125**  
 Loose volume: **208 LCY**

Source of estimated volume: **Operator bond estimate**  
 Source of estimated swell factor: **Cat Handbook**

**HOURLY PRODUCTION**

Average push distance: **300 feet**  
 Unadjusted hourly production: **437.8 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **-5 %**  
 Average site altitude: **5,350 feet**

Material weight: **2,650 lbs/LCY**Weight description: **Decomposed rock - 25% Rock, 75% Earth****Job Condition Correction Factor**Operator Skill: **1.000**Source  
(EXCL.)

Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9639

Adjusted unit  
production: 422.00 LCY/hr  
Adjusted fleet  
production: **844** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.770/LCY

Total job time: **0.25** Hours  
Total job cost: **\$160**

**SCRAPER TEAM WORK**Task description: **Wetland topsoil stripping**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 014State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-014User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 11,293

CCY

Swell factor: 1.125Loose volume: **12,705**

LCY

Source of estimated volume: Operator bond estimateSource 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 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2800	0.46

Haul Time: 0.46 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2949	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.38 minutesAdjusted for job conditions: 1,213.61 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,213.61 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,213.61 LCY/HourUnadjusted unit production/hour: 1,462.18 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 10.47 HoursUnit cost: \$1.120 /LCYTotal job cost: \$14,226

**SCRAPER TEAM WORK**Task description: Crusher area topsoil strippingSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 015State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-015User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 9,437

CCY

Swell factor: 1.125Loose volume: 10,617

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

Material weight:	<u>2,650 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Decomposed rock - 25% Rock, 75% Earth</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>30.79 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2800	0.46

Haul Time: 0.46 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2949	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.38 minutesAdjusted for job conditions: 1,213.61 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,213.61 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,213.61 LCY/HourUnadjusted unit production/hour: 1,462.18 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 8.75 HoursUnit cost: \$1.120 /LCYTotal job cost: \$11,888

## MOTOR GRADER WORK

Task description: Hi-Cal/2nd Ridge pit rough grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 016 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-016  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$325.48</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 107.30 acres

Source of estimated acreage: Operator bond estimate

### HOURLY PRODUCTION

Average Grader Speed: 3.25 mph  
Selected Application: Heavy blading (0-6 mph) - 3.25  
Selected Blade Angle: 30 degrees  
Effective Blade Length: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 4.6879 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 4.2191 acres/Hour  
Adjusted Hourly Fleet Production: 8.4382 acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 12.72 Hours

Unit cost: \$38.57 per acre Total job cost: \$4,139

## MOTOR GRADER WORK

Task description: Hi-Cal/2nd Ridge pit final grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 017 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-017  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$325.48</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 107.30 acres

Source of estimated acreage: Operator bond 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: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 2.1636 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 1.9473 acres/Hour  
Adjusted Hourly Fleet Production: 3.8945 acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 27.55 Hours

Unit cost: \$83.57 per acre Total job cost: \$8,968

## MOTOR GRADER WORK

Task description: 3rd Ridge pit rough grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 018 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-018  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$325.48</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 29.80 acres

Source of estimated acreage: Operator bond estimate

### HOURLY PRODUCTION

Average Grader Speed: 3.25 mph  
Selected Application: Heavy blading (0-6 mph) - 3.25  
Selected Blade Angle: 30 degrees  
Effective Blade Length: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 4.6879 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 4.2191 acres/Hour  
Adjusted Hourly Fleet Production: 8.4382 acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 3.53 Hours

Unit cost: \$38.57 per acre Total job cost: \$1,149

## MOTOR GRADER WORK

Task description: 3rd Ridge pit final grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 019 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-019  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$325.48</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 29.80 acres

Source of estimated acreage: Operator bond 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: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 2.1636 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 1.9473 acres/Hour  
Adjusted Hourly Fleet Production: 3.8945 acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 7.65 Hours

Unit cost: \$83.57 per acre Total job cost: \$2,491

## MOTOR GRADER WORK

Task description: 4th Ridge pit rough grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 020 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-020  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$162.74</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 7.00 acres

Source of estimated acreage: Operator bond estimate

### HOURLY PRODUCTION

Average Grader Speed: 3.25 mph  
Selected Application: Heavy blading (0-6 mph) - 3.25  
Selected Blade Angle: 30 degrees  
Effective Blade Length: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 4.6879 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 4.2191 acres/Hour  
Adjusted Hourly Fleet Production: 4.2191 acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 1.66 Hours

Unit cost: \$38.57 per acre Total job cost: \$270

## MOTOR GRADER WORK

Task description: 4th Ridge pit final grade

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 021 State: Colorado Abbreviation: None  
Date: Rev 9/1/2020 County: Boulder Filename: M041-021  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297  
Ripper Attachment: \_\_\_\_\_ Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$55.79</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$60.08</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$0.00</u>	
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.74</u>	
Total Fleet Cost/Hour:	<u>\$162.74</u>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 7.00 acres

Source of estimated acreage: Operator bond 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: 13.90 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 11.90 feet  
Unadjusted Hourly Unit Production: 2.1636 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 1.9473 acres/Hour  
Adjusted Hourly Fleet Production: 1.9473 acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 3.59 Hours

Unit cost: \$83.57 per acre Total job cost: \$585

## MOTOR GRADER WORK

Task description: Rip office/maintenance/equipment/fuel areas

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 022

State: Colorado

Abbreviation: None

Date: Rev 9/1/2020

County: Boulder

Filename: M041-022

User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M

Horsepower: 297

Ripper Attachment: Multi-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$55.79	NA
Operating Cost/Hour:	\$60.08	100
Ripper Ownership Cost/Hour:	\$4.83	NA
Ripper Operating Cost/Hour:	\$4.40	100
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$171.97	
Total Fleet Cost/Hour:	<b>\$171.97</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 3.80 acres

Source of estimated acreage: Operator bond estimate

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Ripping (0-3 mph) - 1.50</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>16.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>14.00</u>	feet
Unadjusted Hourly Unit Production:	<u>2.5455</u>	acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 2.2909 acres/Hour

Adjusted Hourly Fleet Production: 2.2909 acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 1.66 Hours

Unit cost: \$75.07 per acre Total job cost: \$285

## MOTOR GRADER WORK

Task description: Rip roads and other disturbances

Site: Dowe Flats Mine

Permit Action: TR-04 Bond Estimate

Permit/Job#: M1993041

### PROJECT IDENTIFICATION

Task #: 023

State: Colorado

Abbreviation: None

Date: Rev 9/1/2020

County: Boulder

Filename: M041-023

User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 16M

Horsepower: 297

Ripper Attachment: Multi-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$55.79	NA
Operating Cost/Hour:	\$60.08	100
Ripper Ownership Cost/Hour:	\$4.83	NA
Ripper Operating Cost/Hour:	\$4.40	100
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$171.97	
Total Fleet Cost/Hour:	<b>\$343.94</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 63.40 acres

Source of estimated acreage: Operator bond estimate

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Ripping (0-3 mph) - 1.50</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>16.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>14.00</u>	feet
Unadjusted Hourly Unit Production:	<u>2.5455</u>	acres/hour

#### Job Condition Correction Factors

Site Altitude: 5350 feet

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

Adjusted Hourly Unit Production: 2.2909 acres/Hour

Adjusted Hourly Fleet Production: **4.5818** acres/Hour

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **13.84** Hours

Unit cost: \$75.07 per acre Total job cost: **\$4,759**

**SCRAPER TEAM WORK**Task description: Retopsoil Hi-Cal/2nd Ridge pit with NE/N stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 024State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-024User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 16,200

CCY

Swell factor: 1.215Loose volume: 19,683

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2800	0.75

Haul Time: 0.75 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2949	0.66

Return Time: 0.66 minutes

Total Scraper team cycle time: 3.01 minutes  
 Adjusted for job conditions: 959.60 LCY/Hour  
 Selected Number of Scrapers: 2 Scraper(s)  
 Adjusted single scraper team (unit) hourly production: 959.60 LCY/Hour  
 Adjusted multiple scraper team (fleet) hourly production: 959.60 LCY/Hour

Unadjusted unit production/hour: 1,156.15 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 20.51 HoursUnit cost: \$1.416 /LCY Total job cost: \$27,875

**SCRAPER TEAM WORK**Task description: Retopsoil Hi-Cal/2nd Ridge pit with NE/middle stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 025State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-025User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 32,300

CCY

Swell factor: 1.215Loose volume: 39,245

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2800	0.93

Haul Time: 0.93 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2949	0.83

Return Time: 0.83 minutesTotal Scraper team cycle time: 3.36 minutesAdjusted for job conditions: 859.64 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 859.64 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 859.64 LCY/HourUnadjusted unit production/hour: 1,035.71 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 45.65 HoursUnit cost: \$1.581 /LCYTotal job cost: \$62,041

**SCRAPER TEAM WORK**Task description: Retopsoil Hi-Cal/2nd Ridge pit with NW stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 026State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-026User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 3,300

CCY

Swell factor: 1.215Loose volume: 4,010

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 51.00 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: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2800	0.75

Haul Time: 0.75 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2949	0.66

Return Time: 0.66 minutesTotal Scraper team cycle time: 3.01 minutesAdjusted for job conditions: 959.60 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 959.60 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 959.60 LCY/HourUnadjusted unit production/hour: 1,156.15 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 4.18 HoursUnit cost: \$1.416 /LCYTotal job cost: \$5,678

**SCRAPER TEAM WORK**Task description: **Retopsoil Hi-Cal/2nd Ridge pit with High-Cal stockpile**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 027State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-027User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 5,700

CCY

Swell factor: 1.215Loose volume: **6,926**

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.57

Haul Time: 0.57 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.66 minutesAdjusted for job conditions: 1,085.86 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,085.86 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,085.86 LCY/HourUnadjusted unit production/hour: 1,308.27 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 6.38 HoursUnit cost: \$1.252 /LCYTotal job cost: \$8,667

**SCRAPER TEAM WORK**Task description: Retopsoil 3rd Ridge pit with NE/middle stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 028State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-028User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 450

CCY

Swell factor: 1.215Loose volume: 547

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 51.00 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: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2800	0.93

Haul Time: 0.93 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2949	0.83

Return Time: 0.83 minutesTotal Scraper team cycle time: 3.36 minutesAdjusted for job conditions: 859.64 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 859.64 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 859.64 LCY/HourUnadjusted unit production/hour: 1,035.71 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 0.64 HoursUnit cost: \$1.581 /LCYTotal job cost: \$864

**SCRAPER TEAM WORK**Task description: Retopsoil 3rd Ridge pit with NE/S stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 029State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-029User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 8,263

CCY

Swell factor: 1.215Loose volume: 10,040

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2800	0.75

Haul Time: 0.75 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	0.00	3.00	3.00	2949	0.66

Return Time: 0.66 minutes

Total Scraper team cycle time: 3.01 minutes  
 Adjusted for job conditions: 959.60 LCY/Hour  
 Selected Number of Scrapers: 2 Scraper(s)  
 Adjusted single scraper team (unit) hourly production: 959.60 LCY/Hour  
 Adjusted multiple scraper team (fleet) hourly production: 959.60 LCY/Hour

Unadjusted unit production/hour: 1,156.15 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: 10.46 HoursUnit cost: \$1.416 /LCY Total job cost: \$14,218

**SCRAPER TEAM WORK**Task description: **3rd Ridge wetland area excavation**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **030**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-030**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: **7,313**

CCY

Swell factor: **1.215**Loose volume: **8,885**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.57

Haul Time: 0.57 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: 0.49 minutesTotal Scraper team cycle time: 2.66 minutesAdjusted for job conditions: 1,085.86 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,085.86 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,085.86 LCY/HourUnadjusted unit production/hour: 1,308.27 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 8.18 HoursUnit cost: \$1.252 /LCYTotal job cost: \$11,120

**SCRAPER TEAM WORK**Task description: **Retopsoil 4th Ridge pit wetland area excavation**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 031State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-031User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 3,764

CCY

Swell factor: 1.215Loose volume: **4,573**

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2800	0.39

Haul Time: 0.39 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2949	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.31 minutesAdjusted for job conditions: 1,250.39 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,250.39 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,250.39 LCY/HourUnadjusted unit production/hour: 1,506.49 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 3.66 HoursUnit cost: \$1.087 /LCYTotal job cost: \$4,970

**SCRAPER TEAM WORK**Task description: **Retopsoil wetland area excavation**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 032State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-032User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 5,647

CCY

Swell factor: 1.215Loose volume: **6,861**

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 51.00 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: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2800	0.39

Haul Time: 0.39 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2949	0.32

Return Time: 0.32 minutes

Total Scraper team cycle time: 2.31 minutes  
 Adjusted for job conditions: 1,250.39 LCY/Hour  
 Selected Number of Scrapers: 2 Scraper(s)  
 Adjusted single scraper team (unit) hourly production: 1,250.39 LCY/Hour  
 Adjusted multiple scraper team (fleet) hourly production: 1,250.39 LCY/Hour

Unadjusted unit production/hour: 1,506.49 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 5.49 HoursUnit cost: \$1.087 /LCY Total job cost: \$7,457

**SCRAPER TEAM WORK**Task description: Retopsoil crusher area with reclaimed area strippingSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 033State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-033User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 9,437

CCY

Swell factor: 1.215Loose volume: 11,466

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2800	0.39

Haul Time: 0.39 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2949	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.31 minutesAdjusted for job conditions: 1,250.39 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,250.39 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,250.39 LCY/HourUnadjusted unit production/hour: 1,506.49 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 9.17 HoursUnit cost: \$1.087 /LCYTotal job cost: \$12,462

**SCRAPER TEAM WORK**Task description: Retopsoil crusher area with SE stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 034State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-034User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 16,054

CCY

Swell factor: 1.215Loose volume: 19,506

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2800	1.10

Haul Time: 1.10 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2949	0.99

Return Time: 0.99 minutesTotal Scraper team cycle time: 3.69 minutesAdjusted for job conditions: 782.76 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 782.76 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 782.76 LCY/HourUnadjusted unit production/hour: 943.09 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 24.92 HoursUnit cost: \$1.736 /LCYTotal job cost: \$33,865

**SCRAPER TEAM WORK**Task description: Retopsoil office/maint/equip/fuel areas with SE stockpileSite: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 035State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-035User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: \$1,358.99**MATERIAL QUANTITIES**Initial volume: 2,044

CCY

Swell factor: 1.215Loose volume: 2,483

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	0.00	3.00	3.00	2800	2.00

Haul Time: 2.00 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	0.00	3.00	3.00	2949	1.84

Return Time: 1.84 minutesTotal Scraper team cycle time: 5.44 minutesAdjusted for job conditions: 530.96 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 530.96 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 530.96 LCY/HourUnadjusted unit production/hour: 639.71 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 4.68 HoursUnit cost: \$2.560 /LCYTotal job cost: \$6,356

**SCRAPER TEAM WORK**Task description: **Retopsoil roads and other disturbances with NE/S stockpile**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **036**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-036**User: **AME**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: **16,433**

CCY

Swell factor: **1.215**Loose volume: **19,966**

LCY

Source of estimated volume: **Operator bond estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2800	1.10

Haul Time: 1.10 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2949	0.99

Return Time: 0.99 minutesTotal Scraper team cycle time: 3.69 minutesAdjusted for job conditions: 782.76 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 782.76 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 782.76 LCY/HourUnadjusted unit production/hour: 943.09 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 25.51 HoursUnit cost: \$1.736 /LCYTotal job cost: \$34,664

**SCRAPER TEAM WORK**Task description: **Retopsoil roads and other disturbances with SE stockpile**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 037State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-037User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 17,466

CCY

Swell factor: 1.215Loose volume: **21,221**

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 51.00 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: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2800	1.10

Haul Time: 1.10 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2949	0.99

Return Time: 0.99 minutesTotal Scraper team cycle time: 3.69 minutesAdjusted for job conditions: 782.76 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 782.76 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 782.76 LCY/HourUnadjusted unit production/hour: 943.09 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 27.11 HoursUnit cost: \$1.736 /LCYTotal job cost: \$36,843

**SCRAPER TEAM WORK**Task description: **Retopsoil roads and other disturbances with wetland excav**Site: **Dowe Flats Mine**Permit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 038State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-038User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	50	50
Ownership cost/hour:	\$181.30	\$156.88	NA	NA	\$55.79	\$14.71
Operating cost/hour:	\$203.87	\$127.87	NA	NA	\$30.04	\$15.29
%Utilization-ripper:	NA	NA	NA	NA	50	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$4.83	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$2.20	\$0.00
Operator cost/hour:	\$47.07	\$40.04	NA	NA	\$46.87	\$0.00
Unit Subtotals:	\$432.24	\$324.78	NA	NA	\$139.73	\$30.00
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,189.26	Support:	\$0.00	Maint:	\$169.73

Total work team cost/hour: **\$1,358.99****MATERIAL QUANTITIES**Initial volume: 216

CCY

Swell factor: 1.215Loose volume: **262**

LCY

Source of estimated volume: Operator bond estimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction:

Site Altitude: 5350 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2800	1.10

Haul Time: 1.10 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2500.00	0.00	3.00	3.00	2949	0.99

Return Time: 0.99 minutesTotal Scraper team cycle time: 3.69 minutesAdjusted for job conditions: 782.76 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 782.76 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 782.76 LCY/HourUnadjusted unit production/hour: 943.09 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 0.34 HoursUnit cost: \$1.736 /LCYTotal job cost: \$456

**REVEGETATION WORK**Task description: Revegetate Hi-Cal/2nd Ridge pit (107.3 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 039State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-039User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 107.3                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%              Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$142,952.57**

Reseeding Job Cost:	<b>\$5,230.12</b>
Total Job Cost:	<b>\$148,183</b>
Job Hours:	<b>107.30</b>

**REVEGETATION WORK**Task description: Revegetate 3rd Ridge pit minus wetland (25 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 040State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-040User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 25                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$33,306.75**

Reseeding Job Cost:	<b>\$1,218.58</b>
Total Job Cost:	<b>\$34,525</b>
Job Hours:	<b>25.00</b>

**REVEGETATION WORK**Task description: Revegetate 4th Ridge pit (2.3 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 041State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-041User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 2.3                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$3,064.22**

Reseeding Job Cost:	<b>\$112.11</b>
Total Job Cost:	<b>\$3,176</b>
Job Hours:	<b>2.30</b>

**REVEGETATION WORK**Task description: Revegetate wetland area (20 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 042State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-042User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$0.00</b>

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Subsoiling, light {(DMG)}	\$175.31
<b>Total Tilling Cost/Acre</b>	<b>\$175.31</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Bulrush	2.00	19.74	\$81.00
Common Rush	2.00	336.34	\$336.34
Milkweed, Swamp	0.25	0.39	\$74.80
<b>Totals Seed Mix</b>	<b>4.25</b>	<b>356.47</b>	<b>\$492.14</b>

**Application**

Description	Cost /Acre
Broadcast seeding [DMG]	\$267.22

<b>Total Seed Application Cost/Acre</b>	<b>\$267.22</b>
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**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
<b>Total Mulch Materials Cost/Acre</b>				<b>\$0.00</b>

**Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres:	20	Cost /Acre:	\$934.67
Estimated Failure Rate:	10%	Cost /Acre*:	\$759.36
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	<b>\$18,693.40</b>		
Reseeding Job Cost:	<b>\$1,518.72</b>		
Total Job Cost:	<b>\$20,212</b>		
Job Hours:	<b>20.00</b>		

**REVEGETATION WORK**Task description: Revegetate crusher area (47.4 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 043State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-043User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 47.4                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$63,149.60**

Reseeding Job Cost:	<b>\$2,310.42</b>
Total Job Cost:	<b>\$65,460</b>
Job Hours:	<b>47.40</b>

**REVEGETATION WORK**Task description: Revegetate Mt. George stockpile area (22.9 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 044State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-044User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	<b>17.28</b>	<b>69.54</b>	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 22.9                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$30,508.98**

Reseeding Job Cost:	<b>\$1,116.21</b>
Total Job Cost:	<b>\$31,625</b>
Job Hours:	<b>22.90</b>

**REVEGETATION WORK**Task description: Revegetate topsoil stockpile areas (27.7 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 045State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-045User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 27.7                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$36,903.88**

Reseeding Job Cost:	<b>\$1,350.18</b>
Total Job Cost:	<b>\$38,254</b>
Job Hours:	<b>27.70</b>

**REVEGETATION WORK**Task description: Revegetate office/maint/equip/fuel areas (3.8 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 046State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-046User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	<b>17.28</b>	<b>69.54</b>	<b>\$255.43</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 3.8                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: \$5,062.63

Reseeding Job Cost:	<b>\$185.22</b>
Total Job Cost:	<b>\$5,248</b>
Job Hours:	<b>3.80</b>

**REVEGETATION WORK**Task description: Revegetate conveyor corridor (4.6 ac)Site: Dowe Flats MinePermit Action: TR-04 Bond EstimatePermit/Job#: M1993041**PROJECT IDENTIFICATION**Task #: 047State: ColoradoAbbreviation: NoneDate: Rev 9/1/2020County: BoulderFilename: M041-047User: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 4.6                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$6,128.44**

Reseeding Job Cost:	<b>\$224.22</b>
Total Job Cost:	<b>\$6,353</b>
Job Hours:	<b>4.60</b>

**REVEGETATION WORK**Task description: **Revegetate roads and other disturbances (63.4 ac)**Site: **Dowe Flats Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **048**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-048**User: **AME**Agency or organization name: **DRMS****FERTILIZING****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Triple superphosphate, 0-46-0	67.00	pound	\$0.43	\$28.48
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$28.48</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

<b>Description</b>	<b>Cost /Acre</b>
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

<b>Seed Mix</b>	<b>Rate – PLS LBS / Acre</b>	<b>Seeds per SQ. FT</b>	<b>Cost /Acre</b>
Beardless Wheatgrass - Whitmar	2.20	7.17	\$25.80
Arizona Fescue - Redondo	0.60	6.89	\$5.55
Indian Ricegrass - Paloma	1.90	6.15	\$21.14
Bluebunch Wheatgrass - Secar	1.90	6.11	\$20.66
Blue Grama - Native	0.20	3.26	\$2.75
Canby Bluegrass - Canbar	0.20	4.25	\$2.05
Buffalograss - Native/Plains	2.90	2.80	\$34.99
Prairie Clover, Purple - Kanab	0.11	0.75	\$6.22
Aster, Smooth	0.06	1.04	\$8.79
Little Bluestem - Pastura	1.00	5.97	\$13.48
Alfalfa - Ladak (inoculated)	0.16	0.77	\$0.41

Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Coneflower, Prairie	0.03	0.82	\$0.99
Streambank Wheatgrass - Sodar	0.60	1.96	\$3.42
Thickspike Wheatgrass - Critana	0.40	1.41	\$2.75
Coreopsis, Plains	0.03	0.95	\$4.30
Western Wheatgrass - Arriba	1.50	3.79	\$9.75
Needle and Thread	1.40	3.70	\$58.59
Needlegrass, Green - Lodorm	0.90	3.74	\$10.60
Prairie Junegrass	0.03	1.59	\$0.78
Flax, Lewis Blue	0.11	0.73	\$1.82
Globemallow, Scarlet (or copper)	0.06	0.68	\$8.13
Penstemon, Palmer	0.05	1.11	\$2.73
Yarrow, Western	0.01	0.61	\$0.42
Goldeneye - Showy	0.03	0.34	\$1.80
<b>Totals Seed Mix</b>	17.28	69.54	<b>\$255.43</b>

**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres: 63.4                      Cost /Acre: \$1,332.27  
 Estimated Failure Rate: 10%                      Cost /Acre\*: \$487.43  
 \*Selected Replanting Work Items: SEEDING  
 Initial Job Cost: **\$84,465.92**

Reseeding Job Cost:	<b>\$3,090.31</b>
Total Job Cost:	<b>\$87,556</b>
Job Hours:	<b>63.40</b>

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization/Demobilization**Site: **Dowe F145.00 Mine**Permit Action: **TR-04 Bond Estimate**Permit/Job#: **M1993041****PROJECT IDENTIFICATION**Task #: **049**State: **Colorado**Abbreviation: **None**Date: **Rev 9/1/2020**County: **Boulder**Filename: **M041-049**User: **AME**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat 637G w/push-pull	59.59	\$181.30	\$141.54	6	\$1,937.04	\$849.24	\$2,500.00
CAT 992K	107.88	\$238.62	\$141.54	4	\$1,520.64	\$566.16	\$1,000.00
Cat D9T - 9SU	60.01	\$156.88	\$141.54	6	\$1,790.52	\$849.24	\$1,500.00
CAT 16M	28.73	\$60.62	\$123.81	6	\$1,106.58	\$742.86	\$2,000.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	4	\$296.44	\$269.56	\$1,000.00

Subtotals: **\$6,651.22** **\$3,277.06** **\$8,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Cat 777F	\$333.11	6	\$1,998.66	\$1,998.66
Water Tanker, 3,500 Gal.	\$45.29	3	\$135.87	\$135.87
Light Duty Pickup, 4x4, 3/4 T.	\$13.23	2	\$26.46	\$26.46

Subtotals: **\$2,160.99** **\$2,160.99**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>LONGMONT</u>	
Total one-way travel distance:	<u>10.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$392,880.89</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$960.44</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.22</u>	<u>0.22</u>
Return Time (Hours):	<u>0.22</u>	<u>0.22</u>
Loading Time (Hours):	<u>14.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>14.00</u>	<u>NA</u>
Subtotals:	<u>28.44</u>	<u>0.44</u>

**JOB TIME AND COST**

Total job time:	<u>56.89</u>	Hours
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Total job cost:	<u>\$393,841</u>
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