

COST SUMMARY WORK

Task description: Reclamation Cost Estimate

Site: Box Creek Placer Mine Permit Action: (1) Reclamation Cost Estimate

Permit/Job#: M2018053

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 2/6/2019 County: Lake Filename: M053-000
User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Backfill mining area	DOZER	1	138.42	\$28,860.00
02a	Grade settling pond	DOZER	1	18.24	\$3,803.00
03a	Topsoil placement	SCRAPER1	1	16.96	\$5,994.00
04a	Revegetate affected area	REVEGE	1	40.00	\$67,350.00
05a	Mobilize reclamation crew/equipment	MOBILIZE	1	3.77	\$5,467.00
05b	Secondary mobilization for reseeding	MOBILIZE	1	3.77	\$1,756.00
<u>SUBTOTALS:</u>				221.16	\$113,230

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$2,287.25
Performance bond:	1.05	Total =	\$1,188.92
Job superintendent:	121.55	Total =	\$8,879.23
Profit:	10.00	Total =	\$11,323.00

TOTAL O & P = \$23,678.40

CONTRACT AMOUNT (direct + O & P) = \$136,908.40

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>500.00</u>	Total =	<u>500.00</u>
Engineering work and/or contract/bid preparation:	<u>0.00</u>	Total =	<u>\$0.00</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$6,845.42</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$31,023.82

TOTAL BOND AMOUNT (direct + indirect) = \$144,253.82

BULLDOZER WORKTask description: **Backfill mining area**Site: **Box Creek Placer Mine**Permit Action: (1) Reclamation Cost
Estimate

Permit/Job#: M2018053

PROJECT IDENTIFICATIONTask #: 01A
Date: 2/6/2019
User: DMCState: Colorado
County: LakeAbbreviation: None
Filename: M053-01a

Agency or organization name: DRMS

HOURLY EQUIPMENT COSTBasic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA
Total unit Cost/Hour:	\$208.49	
Total Fleet Cost/Hour:	\$208.49	

MATERIAL QUANTITIESInitial Volume: 32,267
Swell factor: 1.000
Loose volume: **32,267 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feet
Unadjusted hourly production: 491.9 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 9,400 feet

Material weight: 2,900 lbs/LCY

Weight description: Sand and gravel - Dry

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4739

Adjusted unit
production: 233.11 LCY/hr
Adjusted fleet
production: **233.11** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.894/LCY

Total job time: **138.42** Hours
Total job cost: **\$28,860**

BULLDOZER WORKTask description: **Grade settling pond**Site: **Box Creek Placer Mine**Permit Action: (1) Reclamation Cost
EstimatePermit/Job#: **M2018053****PROJECT IDENTIFICATION**Task #: **02A**
Date: **2/11/2019**
User: **DMC**State: **Colorado**
County: **Lake**Abbreviation: **None**
Filename: **M053-02a**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**
Horsepower: **310**
Blade Type: **Semi-Universal**
Attachment: **NA**
Shift Basis: **1 per day**
Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA
Total unit Cost/Hour:	\$208.49	
Total Fleet Cost/Hour:	\$208.49	

MATERIAL QUANTITIESInitial Volume: **8,067**
Swell factor: **1.000**
Loose volume: **8,067 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**
Source of estimated swell
factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**
Unadjusted hourly
production: **852.6 LCY/hr**Materials consistency description: **Loose stockpile 1.2**Average push
gradient: **0 %**
Average site altitude: **9,400 feet**Material weight: **2,650 lbs/LCY**Weight description: **Decomposed rock - 25% Rock, 75% Earth**

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5187

Adjusted unit
production: 442.24 LCY/hr
Adjusted fleet
production: **442.24** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.471/LCY

Total job time: **18.24** Hours
Total job cost: **\$3,803**

SCRAPER TEAM WORKTask description: Topsoil placementSite: Box Creek Placer MinePermit Action: (1) Reclamation Cost EstimatePermit/Job#: M2018053**PROJECT IDENTIFICATION**Task #: 03AState: ColoradoAbbreviation: NoneDate: 2/12/2019County: LakeFilename: M053-03aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

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

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	NA
Ownership cost/hour:	\$155.61	NA	NA	NA	NA	NA
Operating cost/hour:	\$166.86	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$31.05	NA	NA	NA	NA	NA
Unit Subtotals:	\$353.51	NA	NA	NA	NA	NA
Number of Units:	1	0	0	0	0	0
Group Subtotals:	Work: \$353.51		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$353.51****MATERIAL QUANTITIES**Initial volume: 10,756

CCY

Swell factor: 1.000Loose volume: **10,756**

LCY

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

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY

Payload Capacity: 30.79 LCYAdjusted Capacity: 29.00 LCYCycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 9400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	0.980	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.813	NA	

Travel Time:Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	8.00	8.00	1131	0.49

Haul Time: 0.49 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	8.00	8.00	1931	0.34

Return Time: 0.34 minutesTotal Scraper team cycle time: 2.23 minutesAdjusted for job conditions: 634.36 LCY/HourSelected Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 634.36 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 634.36 LCY/HourUnadjusted unit production/hour: 780.27 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 16.96 HoursUnit cost: \$0.557 /LCYTotal job cost: \$5,994

REVEGETATION WORKTask description: Revegetate affected area

Site: Box Creek Placer Mine Permit Action: (1) Reclamation Cost Estimate Permit/Job#: M2018053

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
 Date: 2/12/2019 County: Lake Filename: M053-04a
 User: DMC

Agency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$92.77
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$286.37

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Birdsfoot Trefoil - Empire	0.25	2.40	\$2.65
Big Bluegrass - Sherman	0.50	10.33	\$3.84
Bluebunch Wheatgrass - Secar	1.00	3.21	\$7.85
Mountain Brome - Bromar	3.00	4.82	\$13.35
Red Clover - Medium	0.50	3.10	\$6.82
White Dutch Clover - VNS	0.25	4.88	\$1.46
Sheep Fescue - Bighorn	0.50	7.81	\$2.43
Slender Wheatgrass - San Luis	2.00	7.30	\$6.62
Needlegrass, Green - Lodorm	2.00	8.31	\$9.96
Parry's Oatgrass	2.00	4.13	\$25.24

Prairie Junegrass	0.15	7.97	\$4.66
Timothy, Alpine - Native	0.25	7.46	\$6.19
Totals Seed Mix	12.40	71.72	\$91.06

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Total Mulch Application Cost/Acre	\$161.56

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	40	Cost /Acre:	\$1,346.99
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,346.99
*Selected Replanting Work Items:	TILLING, SEEDING, MULCHING		
Initial Job Cost:	\$53,879.60		
Reseeding Job Cost:	\$13,469.90		
Total Job Cost:	\$67,350		
Job Hours:	40.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize reclamation crew/equipment**Site: **Box Creek Placer Mine** Permit Action: (1) Reclamation Cost EstimatePermit/Job#: M2018053**PROJECT IDENTIFICATION**

Task #: 05A State: Colorado Abbreviation: None
 Date: 2/12/2019 County: Lake Filename: M053-05a
 User: DMC

Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**

Shift basis: 1 per day
 Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	47.71	\$93.62	\$117.55	1	\$211.17	\$117.55	\$250.00
CAT 972H	28.00	\$44.67	\$117.55	1	\$162.22	\$117.55	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Cat 637G	57.28	\$155.61	\$125.45	1	\$281.06	\$125.45	\$250.00
Subtotals:					\$855.66	\$537.89	\$1,250.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$19.39	1	\$19.39	\$19.39
Subtotals:			\$19.39	\$19.39

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: LEADVILLE
 Total one-way travel distance: 20.00 miles
 Average Travel Speed: 45.00 mph

Total Non-Roadable Mob/Demob Cost * \$5,450.03
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$17.24
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.44</u>	<u>0.44</u>
Return Time (Hours):	<u>0.44</u>	<u>0.44</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.89</u>	<u>0.89</u>

JOB TIME AND COST

Total job time: 3.78 Hours

Total job cost: \$5,467

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Secondary mobilization for reseeding

Site: Box Creek Placer Mine Permit Action: (1) Reclamation Cost Estimate Permit/Job#: M2018053

PROJECT IDENTIFICATION

Task #: 05B State: Colorado Abbreviation: None
 Date: 2/12/2019 County: Lake Filename: M053-05b
 User: DMC

Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**

Shift basis: 1 per day
 Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Subtotals:					\$201.21	\$177.34	\$500.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$19.39	1	\$19.39	\$19.39
Subtotals:			\$19.39	\$19.39

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>LEADVILLE</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,738.91</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$17.24</u>
'** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.44</u>	<u>0.44</u>
Return Time (Hours):	<u>0.44</u>	<u>0.44</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.89</u>	<u>0.89</u>

JOB TIME AND COST

Total job time:	<u>3.78</u>	Hours
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Total job cost:	<u>\$1,756</u>
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