

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215

Denver, Colorado 80203

Phone: (303) 866-3567

FAX: (303) 832-8106



November 29, 2011

Darryl Steele
Moffat Limestone Company
P.O. Box 205
Maybell, CO
81640

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta E. Piñeda
Director

RE: Juniper Quarry, File No. M-1982-141, Reclamation Costs Update and Notice of Surety Increase SI-1

Dear Mr. Steele:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed). ***Therefore, pursuant to Section 34-32.5-117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter.*** The additional amount needs to be accepted prior to **Monday, January 30, 2012**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

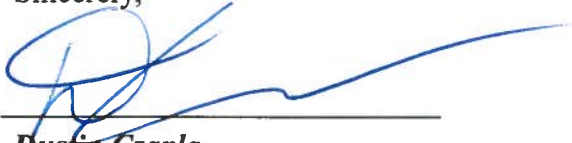
Staff calculations estimate the cost to reclaim the above referenced site to be \$314,460.00. This is an increase of \$219,184.00 over the \$95,276.00 currently held by the Division. This estimate is based on conditions observed during the November 18, 2011 inspection.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, have questions or concerns, please don't hesitate to contact me at the DRMS Grand Junction Field Office at 101 South 3rd Street, Suite 301, Grand Junction, CO, 81501, Phone: (970) 243-6299, Fax: (970) 241-1516.

STATE OF COLORADO

Sincerely,



Dustin Czapla

Environmental Protection Specialist

Division of Reclamation, Mining and Safety

Cc: Jennifer Maiolo, BLM

Enc: Financial Warranty Cost Estimate

COST SUMMARY

Task description: Financial Warranty Review

Site: Juniper Quarry Permit Action: 2011 Midterm Review Permit/Job#: M1982141

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 11/29/2011 County: Moffat Filename: M141-000
User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
AM1 Area					
01a	Highwall reduction (transport backfill material to HW)	LOADER	2	82.70	\$23,279.00
02a	Highwall reduction (grade HW)	DOZER	1	57.76	\$11,546.26
03a	Removal of mining equipment and debris	DEMOLISH	1	8.00	\$1,186.39
04a	Rip process area and access road	RIPPER	1	6.32	\$1,349.00
05a	Distribute topsoil throughout disturbed area	LOADER	1	14.96	\$2,106.00
06a	Spread topsoil	DOZER	1	6.05	\$1,208.53
07a	Revegetate disturbed area	REVEGE	1	20.00	\$19,837.95
CN1 Area					
08a	Remove mining equipment and debris	DEMOLISH	1	10.00	\$12,893.29
09a	Slope reduction (transport backfill materials to slopes)	LOADER	2	344.90	\$97,076.00
10a	Slope reduction (grade slopes)	DOZER	2	110.62	\$44,221.27
11a	Rip pit floor, process area and roads	RIPPER	2	3.89	\$1,660.00
12a	Distribute topsoil throughout disturbed area	LOADER	2	15.37	\$4,328.00
13a	Spread topsoil	DOZER	2	3.78	\$1,510.67
14a	Revegetate disturbed area	REVEGE	1	40.00	\$24,691.69
15a	Mobilize reclamation crew and equipment	MOBILIZE	1	4.66	\$6,027.39
<u>SUBTOTALS:</u>				729.01	\$252,921.44

INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$5,109.01
Performance bond:	1.05	Total =	\$2,655.68
Job superintendent:	97.89	Total =	\$5,804.88
Profit:	10.00	Total =	\$25,292.14
		TOTAL O & P =	\$38,861.71
		CONTRACT AMOUNT (direct + O & P) =	\$291,783.15

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	0.00	Total =	\$0.00
Reclamation management and/or administration:	5.00		\$14,589.16
CONTINGENCY:	3.00	Total =	\$7,587.64
		TOTAL INDIRECT COST =	\$61,538.51

TOTAL BOND AMOUNT (direct + indirect) = \$314,460

WHEEL LOADER – LOAD AND CARRY WORKTask description: AM1 Highwall reduction (transport backfill material to HW)Site: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**

Task #: 01A State: Colorado Abbreviation: None
 Date: 11/29/2011 County: Moffat Filename: M141-01a
 User: DMC

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: CAT 972H Horsepower: 287
 Attachment 1: ROPS Cab Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$36.70	NA
Operating Cost/Hour:	\$65.54	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$140.73	
Total Fleet Cost/Hour:	\$281.46	

MATERIAL QUANTITIES

Initial volume: 17,778 CCY Swell factor: 1.695
 Loose volume: 30,132 LCY

Source of estimated volume: Inspection observations
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTIONLoader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.525	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0
 Return: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	500	0.00	4.00	4.00	0.4244	(Cat HB)
Return Route:	500	0.00	4.00	4.00	0.3902	(Cat HB)

Total Travel Time: 0.8146 minutes
 Total Cycle Time: 1.3396 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
 Bucket Fill Factor: 0.875 Blasted rock - well blasted (80 - 95%) 0.875
 Adjusted Capacity: 4.90 LCY

Job Condition Correction FactorsSite Altitude: 6600 feet

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

Unadjusted Hourly Unit Production: 219.47 LCY/Hour
 Adjusted Hourly Unit Production: 182.16 LCY/Hour
 Adjusted Hourly Fleet Production: 364.32 LCY/Hour

JOB TIME AND COST

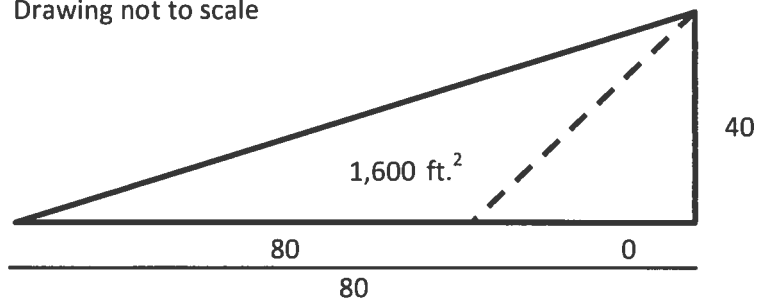
Fleet size: 2 Loader(s) Total job time: 82.71 Hours
 Unit cost: \$0.773 /LCY Total job cost: \$23,279.00

Highwall reduction - backfill

Highwall Height (ft.)	40.00	
Length of Highwall (lft.)	300.00	
- - - - Initial Slope	0.00	H:1V
— Desired Slope	2.00	H:1V
Volume of material to be moved (ft. ³)	480,000	
Volume of material to be moved (yd. ³)	17,778	

All dimensions measured in feet

Drawing not to scale



BULLDOZER WORKTask description: AM1 Highwall reduction (grade HW)Site: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 02AState: ColoradoAbbreviation: NoneDate: 11/29/2011County: MoffatFilename: M141-02aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8UHorsepower: 310Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$58.56	NA
Operating Cost/Hour:	\$102.84	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$199.89Total Fleet Cost/Hour: \$199.89**MATERIAL QUANTITIES**Initial Volume: 8,889Swell factor: 1.695Loose volume: 15,066 LCYSource of estimated volume: Approx. 1/2 of material placed at HW by loader.Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 1,110.8 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push gradient: 15 %Average site altitude: 6,600 feetMaterial weight: 2,600 lbs/LCYWeight description: Limestone - Broken**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.000	(GEN.)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2348

Adjusted unit production: 260.82 LCY/hr

Adjusted fleet production: 260.82 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.766/LCY

Total job time: 57.76 Hours

Total job cost: \$11,546.26

DEMOLITION WORK

Task description: AM1 Removal of mining equipment and debris

Site: Juniper Quarry

Permit Action: 2011 Midterm Review

Permit/Job#: M1982141

PROJECT IDENTIFICATION

Task #: 03A

State: Colorado

Abbreviation: None

Date: 11/29/2011

County: Moffat

Filename: M141-03a

User: DMC

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Debris pile	20'W x 20'L x 10'H	Loading and 5 mile haul, salvage allowed - Steel frame structures	148.00	CY	\$8.78	\$1,299.44

Job Hours: 8.00

Subtotal
(unadjusted): \$1,299.44

Total Cost
(adjusted for location): \$1,186.39

BULLDOZER RIPPING WORK

Task description: AM1 Rip process area and access road

Site: Juniper Quarry Permit Action: 2011 Midterm Review Permit/Job#: M1982141

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 11/29/2011 County: Moffat Filename: M141-04a
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

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

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$65.28	NA
Operating Cost/Hour:	\$102.84	100
Ripper Operating Cost/Hour:	\$6.49	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$213.10	
Total Fleet Cost/Hour:	\$213.10	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 4 acres Rip Depth (ft): 2.00 Volume: 13,552 BCY or CCY

Source of estimated quantity: Previous estimate (GRM 7/13/2005)

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.56</u>	mph
Average Ripping Width:	<u>7.08</u>	degrees
Average Ripping Length:	<u>300.00</u>	feet
Average Dozer Speed:	<u>88.00</u>	feet
Average Maneuver Time:	<u>0.25</u>	feet
Production per unit area:	<u>0.800</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.800</u>	Acres/hr
Site Altitude:	<u>6,600</u>	feet
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Adjusted Hourly Unit Production:	<u>0.66</u>	Acres/hr
Adjusted Hourly Fleet Production:	<u>0.66</u>	Acres/hr

JOB TIME AND COST

Fleet size: 1 Ripper(s) Total job time: 6.33 Hours

Unit cost: \$321.115 Per acre Total job cost: \$1,349.00

WHEEL LOADER – LOAD AND CARRY WORKTask description: AM1 Distribute topsoil throughout disturbed areaSite: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 11/29/2011County: MoffatFilename: M141-05aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 972HHorsepower: 287Attachment 1: ROPS CabShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$36.70	NA
Operating Cost/Hour:	\$65.54	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$140.73	
Total Fleet Cost/Hour:	\$140.73	

MATERIAL QUANTITIESInitial volume: 4,840

CCY

Swell factor: 1.000Loose volume: 4,840

LCY

Source of estimated volume: 12 ac. disturbance (2011 Annual Report) x 3"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		-0.010	minutes
Adjusted Basic Cycle Time:		0.515	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Return: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	200	0.00	4.00	4.00	0.1697	(Cat HB)
Return Route:	200	0.00	4.00	4.00	0.1561	(Cat HB)

Total Travel Time: 0.3258 minutes
 Total Cycle Time: 0.8408 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
 Bucket Fill Factor: 0.975 Loose material - uniform aggregates to 1/8" (95-100%) 0.975
 Adjusted Capacity: 5.46 LCY

Job Condition Correction Factors

Site Altitude: 6600 feet

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

Unadjusted Hourly Unit Production: 389.61 LCY/Hour
 Adjusted Hourly Unit Production: 323.38 LCY/Hour
 Adjusted Hourly Fleet Production: 323.38 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 14.97 Hours
 Unit cost: \$0.435 /LCY Total job cost: \$2,106.00

BULLDOZER WORKTask description: AM1 Spread topsoilSite: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 06A
Date: 11/29/2011
User: DMCState: Colorado
County: MoffatAbbreviation: None
Filename: M141-06aAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8U
Horsepower: 310
Blade Type: Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$58.56	NA
Operating Cost/Hour:	\$102.84	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$199.89Total Fleet Cost/Hour: \$199.89**MATERIAL QUANTITIES**Initial Volume: 4,840
Swell factor: 1.000
Loose volume: 4,840 LCYSource of estimated volume: Task 05aSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feet
Unadjusted hourly production: 931.6 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %
Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 800.52 LCY/hr

Adjusted fleet production: 800.52 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.250/LCY

Total job time: 6.05 Hours

Total job cost: \$1,208.53

REVEGETATION WORKTask description: AM1 Revegetate disturbed areaSite: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 11/29/2011County: MoffatFilename: M141-07aUser: DMCAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
8-24-24, 10-15-15, 10-20-20	250.00	pound	\$0.30	\$75.00
Total Fertilizer Materials Cost/Acre				\$75.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$50.09
Total Fertilizer Application Cost/Acre	\$50.09

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$86.71
Total Tilling Cost/Acre	\$86.71

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	6.00	19.42	\$41.58
Thickspike Wheatgrass - Critana	5.50	19.44	\$27.83
Western Wheatgrass - Arriba	8.00	20.20	\$28.80
Needle and Thread	7.50	19.80	\$345.00
Flax, Lewis Blue	1.00	6.63	\$16.17
Winter Fat	1.00	2.55	\$32.00
Bluebunch Wheatgrass - Goldar	4.00	12.86	\$21.52
Totals Seed Mix	33.00	100.91	\$512.90

Application

Description	Cost /Acre
Drill seeding {DMG}	\$90.11

Total Seed Application Cost/Acre	\$90.11
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 2.0 pt/ac	20.00	ACRE	\$2.40	\$48.00
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$164.00	\$328.00
Total Mulch Materials Cost/Acre				\$376.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$65.89
Weed spray, truck, non-aquatic area, nox. [DMG]	\$60.19
Total Mulch Application Cost/Acre	\$126.08

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:	12	Cost /Acre:	\$1,316.89
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,316.89
*Selected Replanting Work Items:	FERTILIZING, TILLING, SEEDING, MULCHING		

Initial Job Cost:	\$15,802.68
Reseeding Job Cost:	\$3,950.67
Total Job Cost:	\$19,753.35
Job Hours:	20.00

DEMOLITION WORK

Task description: CN1 Remove mining equipment and debris

Site: Juniper Quarry

Permit Action: 2011 Midterm Review

Permit/Job#: M1982141

PROJECT IDENTIFICATION

Task #: 08A
Date: 11/29/2011
User: DMC

State: Colorado
County: Moffat

Abbreviation: None
Filename: M141-08a

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Remove 10,000 gallon fuel tank	10,000 gal.	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$950.00	\$950.00
Remove miscellaneous refuse/debris	150 cyd.	Loading and 5 mile haul, salvage allowed - Steel frame structures	150.00	CY	\$8.78	\$1,317.00
Remove empty fuel tanks	3 observed on site	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	3.00	EA	\$710.00	\$2,130.00
Remove steel sheds (2)	150 CY	Loading and 5 mile haul, salvage allowed - Steel frame structures	150.00	CY	\$8.78	\$1,317.00
Remove hazardous material containers	approx. 10	Hazardous waste removal - Drum solids/liquids, per drum, (7+ drum job)	10.00	DRUM	\$315.79	\$3,157.90
Clean up contaminated soils	approx. 20	Dispose of contaminated soil at approved landfill - Average	20.00	CY	\$262.50	\$5,250.00

Job Hours: 10.00

Subtotal
(unadjusted): \$14,121.90

Total Cost
(adjusted for location): \$12,893.29

WHEEL LOADER – LOAD AND CARRY WORKTask description: CN1 Slope reduction (transport backfill materials to slopes)Site: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 09AState: ColoradoAbbreviation: NoneDate: 11/29/2011County: MoffatFilename: M141-09aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 972HHorsepower: 287Attachment 1: ROPS CabShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$36.70	NA
Operating Cost/Hour:	\$65.54	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$140.73	
Total Fleet Cost/Hour:	\$281.46	

MATERIAL QUANTITIESInitial volume: 70,833

CCY

Swell factor: 1.695Loose volume: 120,055

LCY

Source of estimated volume: Onsite observationsSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.525	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	500	0.00	5.00	5.00	0.4611	(Cat HB)
Return Route:	500	0.00	5.00	5.00	0.4160	(Cat HB)

Total Travel Time: 0.8771 minutes
 Total Cycle Time: 1.4021 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
 Bucket Fill Factor: 0.875 Blasted rock - well blasted (80 - 95%) 0.875
 Adjusted Capacity: 4.90 LCY

Job Condition Correction FactorsSite Altitude: 6600 feet

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

Unadjusted Hourly Unit Production: 209.69 LCY/Hour
 Adjusted Hourly Unit Production: 174.04 LCY/Hour
 Adjusted Hourly Fleet Production: 348.08 LCY/Hour

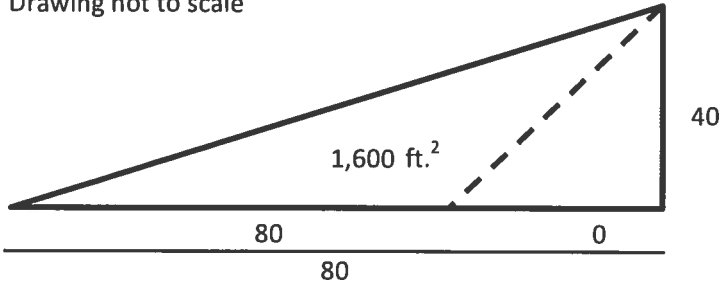
JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 344.90 Hours
 Unit cost: \$0.809 /LCY Total job cost: \$97,076.00

Highwall reduction - backfill

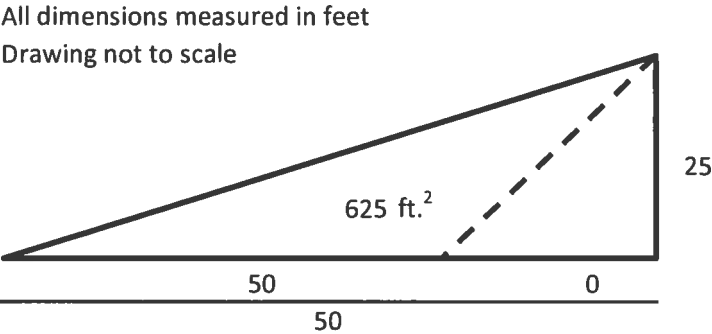
Highwall Height (ft.)	40.00	
Length of Highwall (lft.)	1000.00	
- - - - Initial Slope	0.00	H:1V
— Desired Slope	2.00	H:1V
Volume of material to be moved (ft. ³)	1,600,000	
Volume of material to be moved (yd. ³)	59,259	

All dimensions measured in feet
Drawing not to scale



Highwall reduction - backfill

Highwall Height (ft.)	25.00	
Length of Highwall (lft.)	500.00	
- - - Initial Slope	0.00	H:1V
— Desired Slope	2.00	H:1V
Volume of material to be moved (ft. ³)	312,500	
Volume of material to be moved (yd. ³)	11,574	



BULLDOZER WORKTask description: CN1 Slope reduction (grade slopes)Site: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**Task #: 10A
Date: 11/29/2011
User: DMCState: Colorado
County: MoffatAbbreviation: None
Filename: M141-10aAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8U
Horsepower: 310
Blade Type: Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$58.56	NA
Operating Cost/Hour:	\$102.84	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$199.89Total Fleet Cost/Hour: \$399.77**MATERIAL QUANTITIES**Initial Volume: 35,416
Swell factor: 1.695
Loose volume: 60,027 LCYSource of estimated volume: Approx. 1/2 of material placed at slopes by loaderSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feet
Unadjusted hourly production: 1,155.6 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push gradient: 15 %
Average site altitude: 6,600 feetMaterial weight: 2,600 lbs/LCYWeight description: Limestone - Broken**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.000	(GEN.)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2348

Adjusted unit production: 271.33 LCY/hr

Adjusted fleet production: 542.66 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.737/LCY

Total job time: 110.62 Hours

Total job cost: \$44,221.27

BULLDOZER RIPPING WORK

Task description: CN1 Rip pit floor, process area and roads

Site: Juniper Quarry Permit Action: 2011 Midterm Review Permit/Job#: M1982141

PROJECT IDENTIFICATION

Task #: 11A State: Colorado Abbreviation: None
Date: 11/29/2011 County: Moffat Filename: M141-11a
User: DMC

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

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

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$65.28</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$102.84</u>	<u>100</u>
Ripper Operating Cost/Hour:	<u>\$6.49</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.49</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$213.10</u>	
Total Fleet Cost/Hour:	<u>\$426.20</u>	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 5 acres Rip Depth (ft): 2.00 Volume: 16,133 BCY or CCY

Source of estimated quantity: Onsite observations/Mining and reclamation maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 mph
Average Ripping Width: 7.08 degrees
Average Ripping Length: 200.00 feet
Average Dozer Speed: 88.00 feet
Average Maneuver Time: 0.25 feet
Production per unit area: 0.773 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.773 Acres/hr
Site Altitude: 6,600 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.64 Acres/hr
Adjusted Hourly Fleet Production: 1.28 Acres/hr

JOB TIME AND COST

Fleet size: 2 Ripper(s) Total job time: 3.90 Hours

Unit cost: \$332.085 Per acre Total job cost: \$1,660.00

WHEEL LOADER – LOAD AND CARRY WORKTask description: CN1 Distribute topsoil throughout disturbed areaSite: Juniper QuarryPermit Action: 2011 Midterm ReviewPermit/Job#: M1982141**PROJECT IDENTIFICATION**

Task #: 12A State: Colorado Abbreviation: None
 Date: 11/29/2011 County: Moffat Filename: M141-12a
 User: DMC

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: CAT 972H Horsepower: 287
 Attachment 1: ROPS Cab Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$36.70	NA
Operating Cost/Hour:	\$65.54	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$140.73	
Total Fleet Cost/Hour:	\$281.46	

MATERIAL QUANTITIES

Initial volume: 6,050 CCY Swell factor: 1.000
 Loose volume: 6,050 LCY

Source of estimated volume: 2011 Annual report (15 ac. x 3")
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTIONLoader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		-0.020	minutes
Adjusted Basic Cycle Time:		0.505	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0
 Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	500	0.00	5.00	5.00	0.4611	(Cat HB)
Return Route:	500	0.00	5.00	5.00	0.4160	(Cat HB)

Total Travel Time: 0.8771 minutes
 Total Cycle Time: 1.3821 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
 Bucket Fill Factor: 0.975 Loose material - uniform aggregates to 1/8" (95-100%) 0.975
 Adjusted Capacity: 5.46 LCY

Job Condition Correction Factors

Site Altitude: 6600 feet

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

Unadjusted Hourly Unit Production: 237.03 LCY/Hour
 Adjusted Hourly Unit Production: 196.74 LCY/Hour
 Adjusted Hourly Fleet Production: 393.48 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 15.38 Hours
 Unit cost: \$0.715 /LCY Total job cost: \$4,328.00

BULLDOZER WORKTask description: **CN1 Distribute topsoil throughout disturbed area**Site: **Juniper Quarry**Permit Action: **2011 Midterm Review**Permit/Job#: **M1982141****PROJECT IDENTIFICATION**Task #: **13A**
Date: **11/29/2011**
User: **DMC**State: **Colorado**
County: **Moffat**Abbreviation: **None**
Filename: **M141-13a**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8U**
Horsepower: **310**
Blade Type: **Universal**
Attachment: **NA**
Shift Basis: **1 per day**
Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$58.56	NA
Operating Cost/Hour:	\$102.84	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: **\$199.89**Total Fleet Cost/Hour: **\$399.77****MATERIAL QUANTITIES**Initial Volume: **6,050**
Swell factor: **1.000**
Loose volume: **6,050 LCY**Source of estimated volume: **Task 12a**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**
Unadjusted hourly production: **931.6 LCY/hr**Materials consistency description: **Loose stockpile 1.2**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **1,600 lbs/LCY**Weight description: **Top Soil****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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 800.52 LCY/hr

Adjusted fleet production: 1601.04 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.250/LCY

Total job time: 3.78 Hours

Total job cost: \$1,510.67

REVEGETATION WORKTask description: CN1 Revegetate disturbed areaSite: Juniper Quarry Permit Action: 2011 Midterm Review Permit/Job#: M1982141**PROJECT IDENTIFICATION**

Task #: 14A State: Colorado Abbreviation: None
 Date: 11/29/2011 County: Moffat Filename: M141-14a
 User: DMC

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
8-24-24, 10-15-15, 10-20-20	250.00	pound	\$0.30	\$75.00
Total Fertilizer Materials Cost/Acre				\$75.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$50.09
Total Fertilizer Application Cost/Acre	\$50.09

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$86.71
Total Tilling Cost/Acre	\$86.71

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	6.00	19.42	\$41.58
Thickspike Wheatgrass - Critana	5.50	19.44	\$27.83
Western Wheatgrass - Arriba	8.00	20.20	\$28.80
Needle and Thread	7.50	19.80	\$345.00
Flax, Lewis Blue	1.00	6.63	\$16.17
Winter Fat	1.00	2.55	\$32.00
Bluebunch Wheatgrass - Goldar	4.00	12.86	\$21.52
Totals Seed Mix	33.00	100.91	\$512.90

Application

Description	Cost /Acre
Drill seeding {DMG}	\$90.11

Total Seed Application Cost/Acre	\$90.11
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 2.0 pt/ac	20.00	ACRE	\$2.40	\$48.00
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$164.00	\$328.00
Total Mulch Materials Cost/Acre				\$376.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$65.89
Weed spray, truck, non-aquatic area, nox. [DMG]	\$60.19
Total Mulch Application Cost/Acre	\$126.08

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:	15	Cost /Acre:	\$1,316.89
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,316.89
*Selected Replanting Work Items:	FERTILIZING, TILLING, SEEDING, MULCHING		
Initial Job Cost:	\$19,753.35		
Reseeding Job Cost:	\$4,938.34		
Total Job Cost:	\$24,691.69		
Job Hours:	40.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize reclamation crew and equipment**Site: Juniper Quarry Permit Action: 2011 Midterm Review Permit/Job#: M1982141**PROJECT IDENTIFICATION**

Task #: 15A State: Colorado Abbreviation: None
 Date: 11/29/2011 County: Moffat Filename: M141-15a
 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 - 8U	53.70	\$65.28	\$125.45	2	\$381.46	\$250.90	\$500.00
CAT 972H	28.00	\$36.70	\$117.55	2	\$308.50	\$235.10	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$39.59	\$88.67	1	\$128.26	\$88.67	\$250.00
Subtotals:					\$818.22	\$574.67	\$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	\$25.30	1	\$25.30	\$25.30
Subtotals:			\$25.30	\$25.30

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	CRAIG	
Total one-way travel distance:	30.00	miles
Average Travel Speed:	45.00	mph

Total Non-Roadable Mob/Demob Cost *	\$5,993.63
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$33.73
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.67	0.67
Return Time (Hours):	0.67	0.67
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	2.33	1.33

JOB TIME AND COST

Total job time:	4.67	Hours
Total job cost:	\$6,027.36	