

March 15, 2018

Allan Parkerson
Parkerson Construction, Inc.
710 S. 15th St
Grand Junction, CO 81501



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

1313 Sherman Street, Room 215
Denver, CO 80203

RE: 31 Road Pit, Permit No. M-1987-178, Reclamation Costs Update and Notice of Surety Increase (SI-2)

Dear Mr. Parkerson:

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).

Division calculations estimate the cost to reclaim the above referenced site to be \$221,112.34 rounded down to \$221,110.00. This is an increase of \$26,467.65 over the \$194,642.35 currently held by the Division. This estimate is based on conditions observed during the February 23, 2018 inspection where approximately 53 acres are affected by mining. ***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, May 14, 2018**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

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, or have questions or concerns, please feel free to contact me. Amy Yeldell at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203. Direct contact can be made by phone at 970-254-8511 or via email at amy.yeldell@state.co.us

Sincerely,

Amy Yeldell

Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
Phone: (970) 254-8511

Ec: Russ Means, Senior EPS, Grand Junction DRMS
Enc: Financial Warranty Cost Estimate



COST SUMMARY WORK

Task description: 2018 inspection update

Site: 31 Road Pit

Permit Action: 2018

Permit/Job#: M1987178

PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 3/15/2018

County: Mesa

Filename: M178-ACY

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Reduce active highwall to 3H:1V	DOZER	2	44.11	\$16,807.00
02a	Place topsoil above highwall slopes	SCRAPER1	2	2.62	\$3,219.00
03a	Push topsoil down regarded highwall slopes	DOZER	2	2.02	\$770.00
04a	Remove and spread visual berm material	DOZER	2	1.18	\$450.00
05a	Place topsoil above highwall slopes	SCRAPER1	2	55.56	\$68,247.00
06a	Spread overburden on pit floor 12" thick	GRADER	1	40.82	\$4,030.00
07a	Spread topsoil on pit floor 35 ac 12" thick	SCRAPER1	2	55.56	\$68,247.00
08a	Spread topsoil on pit floor 12" thick	GRADER	1	40.82	\$4,030.00
09a	Reveg pit slopes (non-cropland)	REVEGE	1	16.00	\$3,957.00
10a	Initial Mobilization	MOBILIZE	1	3.00	\$6,696.00
11a	Secondary Mobilization	MOBILIZE	1	3.00	\$817.00
<u>SUBTOTALS:</u>				264.69	\$177,270

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 132.35
Profit: 10.00

Total = \$3,580.85

Total = \$1,861.34

Total = \$9,667.80

Total = \$17,727.00

TOTAL O & P = \$32,836.99

CONTRACT AMOUNT (direct + O & P) = \$210,106.99

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 500.00
Engineering work and/or contract/bid preparation: 0.00
Reclamation management and/or administration: 5.00

Total = 500.00

Total = \$0.00

\$10,505.35

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$43,842.34

TOTAL BOND AMOUNT (direct + indirect) = \$221,112.34

TOTAL BOND AMOUNT (Rounded) = \$221,110.00

BULLDOZER WORKTask description: **Reduce active highwall to 3H:1V**Site: **31 Road Pit** Permit Action: 2018 Permit/Job#: M1987178**PROJECT IDENTIFICATION**

Task #: 01A State: Colorado Abbreviation: None
 Date: 3/15/2018 County: Mesa Filename: M178-01a
 User: ACY

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:	<u>\$83.81</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$66.17</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$40.52</u>	<u>NA</u>

Total unit Cost/Hour: \$190.50
 Total Fleet Cost/Hour: **\$381.00**

MATERIAL QUANTITIES

Initial Volume: 40,000
 Swell factor: 1.180
 Loose volume: **47,200 LCY**

Source of estimated volume: AM-01 values
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
 Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -10 %
 Average site altitude: 4,700 feet

Material weight: 2,400 lbs/LCYWeight description: Clay and gravel - Dry**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB))</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5260

Adjusted unit production: 534.99 LCY/hr

Adjusted fleet production: **1069.98** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.356/LCY

Total job time: **44.11** Hours

Total job cost: **\$16,807**

SCRAPER TEAM WORKTask description: **Place topsoil above highwall slopes**Site: **31 Road Pit**Permit Action: 2018Permit/Job#: M1987178**PROJECT IDENTIFICATION**Task #: 02AState: ColoradoAbbreviation: NoneDate: 3/15/2018County: MesaFilename: M178-02aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D8T - 8SU
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	100	NA	NA	NA	NA
Ownership cost/hour:	\$99.75	\$83.81	NA	NA	NA	NA
Operating cost/hour:	\$118.23	\$66.17	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$41.46	\$40.52	NA	NA	NA	NA
Unit Subtotals:	\$259.44	\$190.50	NA	NA	NA	NA
Number of Units:	4	1	0	0	0	0
Group Subtotals:	Work: \$1,228.26		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$1,228.26****MATERIAL QUANTITIES**Initial volume: 4,033

CCY

Swell factor: 1.000Loose volume: **4,033**

LCY

Source of estimated volume: AM-01 valuesSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4700 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	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: 0.52 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

Return Time: 0.42 minutesTotal Scraper team cycle time: 2.44 minutesAdjusted for job conditions: 769.45 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 769.45 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/HourUnadjusted unit production/hour: 927.05 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 2.62 HoursUnit cost: \$0.798 /LCYTotal job cost: \$3,219

BULLDOZER WORKTask description: **Push topsoil down regarded highwall slopes**Site: **31 Road Pit** Permit Action: 2018 Permit/Job#: M1987178**PROJECT IDENTIFICATION**

Task #: 03A State: Colorado Abbreviation: None
 Date: 3/15/2018 County: Mesa Filename: M178-03a
 User: ACY

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:	<u>\$83.81</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$66.17</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$40.52</u>	<u>NA</u>

Total unit Cost/Hour: \$190.50
 Total Fleet Cost/Hour: **\$381.00**

MATERIAL QUANTITIES

Initial Volume: 4,330
 Swell factor: 1.000
 Loose volume: **4,330 LCY**

Source of estimated volume: AM-01 values
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
 Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -10 %
 Average site altitude: 4,700 feet

Material weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.200</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.0527

Adjusted unit production: 1,070.70 LCY/hr

Adjusted fleet production: **2141.4 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.178/LCY

Total job time: **2.02 Hours**

Total job cost: **\$770**

BULLDOZER WORKTask description: **Remove and spread visual berm material**Site: **31 Road Pit** Permit Action: 2018 Permit/Job#: M1987178**PROJECT IDENTIFICATION**

Task #: 04A State: Colorado Abbreviation: None
 Date: 3/15/2018 County: Mesa Filename: M178-04a
 User: ACY

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:	<u>\$83.81</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$66.17</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$40.52</u>	<u>NA</u>

Total unit Cost/Hour: \$190.50
 Total Fleet Cost/Hour: **\$381.00**

MATERIAL QUANTITIES

Initial Volume: 1,833
 Swell factor: 1.215
 Loose volume: **2,227 LCY**

Source of estimated volume: AM-01 values
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 80 feet
 Unadjusted hourly production: 984.2 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -5 %
 Average site altitude: 4,700 feet

Material weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.200</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9582

Adjusted unit production: 943.06 LCY/hr

Adjusted fleet production: **1886.12** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.202/LCY

Total job time: **1.18** Hours

Total job cost: **\$450**

SCRAPER TEAM WORKTask description: **Place topsoil above highwall slopes**Site: **31 Road Pit**Permit Action: 2018Permit/Job#: M1987178**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 3/15/2018County: MesaFilename: M178-05aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D8T - 8SU
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	100	NA	NA	NA	NA
Ownership cost/hour:	\$99.75	\$83.81	NA	NA	NA	NA
Operating cost/hour:	\$118.23	\$66.17	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$41.46	\$40.52	NA	NA	NA	NA
Unit Subtotals:	\$259.44	\$190.50	NA	NA	NA	NA
Number of Units:	4	1	0	0	0	0
Group Subtotals:	Work: \$1,228.26		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$1,228.26****MATERIAL QUANTITIES**Initial volume: 85,507

CCY

Swell factor: 1.000Loose volume: **85,507**

LCY

Source of estimated volume: 53 ac 12" thickSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4700 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	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: 0.52 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

Return Time: 0.42 minutesTotal Scraper team cycle time: 2.44 minutesAdjusted for job conditions: 769.45 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 769.45 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/HourUnadjusted unit production/hour: 927.05 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 55.56 HoursUnit cost: \$0.798 /LCYTotal job cost: \$68,247

MOTOR GRADER WORK

Task description: Spread overburden on pit floor 12" thick

Site: 31 Road Pit

Permit Action: 2018

Permit/Job#: M1987178

PROJECT IDENTIFICATION

Task #: 06A

State: Colorado

Abbreviation: None

Date: 3/15/2018

County: Mesa

Filename: M178-06a

User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 120M

Horsepower: 138

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$32.40	NA
Operating Cost/Hour:	\$28.16	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$38.16	NA
Total Unit Cost/Hour:	\$98.72	
Total Fleet Cost/Hour:	\$98.72	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 53.00 acres

Source of estimated acreage: Field estimates

HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>10.40</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>8.40</u>	feet
Unadjusted Hourly Unit Production:	<u>1.5273</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 4700 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.85</u>	(1sh/d, mod.)
Net Correction:	<u>0.8500</u>	multiplier

Adjusted Hourly Unit Production: 1.2982 acres/Hour

Adjusted Hourly Fleet Production: **1.2982** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **40.83** Hours

Unit cost: \$76.04 per acre Total job cost: **\$4,030**

SCRAPER TEAM WORKTask description: **Spread topsoil on pit floor 35 ac 12" thick**Site: **31 Road Pit**Permit Action: 2018Permit/Job#: M1987178**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 3/15/2018County: MesaFilename: M178-07aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 627G w/push-pull
-Dozer:	Cat D8T - 8SU
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	100	NA	NA	NA	NA
Ownership cost/hour:	\$99.75	\$83.81	NA	NA	NA	NA
Operating cost/hour:	\$118.23	\$66.17	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$41.46	\$40.52	NA	NA	NA	NA
Unit Subtotals:	\$259.44	\$190.50	NA	NA	NA	NA
Number of Units:	4	1	0	0	0	0
Group Subtotals:	Work: \$1,228.26		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$1,228.26****MATERIAL QUANTITIES**Initial volume: 85,507

CCY

Swell factor: 1.000Loose volume: **85,507**

LCY

Source of estimated volume: 53 ac 12" thickSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4700 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	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: 0.52 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

Return Time: 0.42 minutesTotal Scraper team cycle time: 2.44 minutesAdjusted for job conditions: 769.45 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 769.45 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/HourUnadjusted unit production/hour: 927.05 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 55.56 HoursUnit cost: \$0.798 /LCYTotal job cost: \$68,247

MOTOR GRADER WORK

Task description: Spread topsoil on pit floor 12" thick

Site: 31 Road Pit

Permit Action: 2018

Permit/Job#: M1987178

PROJECT IDENTIFICATION

Task #: 08A

State: Colorado

Abbreviation: None

Date: 3/15/2018

County: Mesa

Filename: M178-08a

User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 120M

Horsepower: 138

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$32.40	NA
Operating Cost/Hour:	\$28.16	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$38.16	NA
Total Unit Cost/Hour:	\$98.72	
Total Fleet Cost/Hour:	\$98.72	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 53.00 acres

Source of estimated acreage: Field estimates

HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>10.40</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>8.40</u>	feet
Unadjusted Hourly Unit Production:	<u>1.5273</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 4700 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.85</u>	(1sh/d, mod.)
Net Correction:	<u>0.8500</u>	multiplier

Adjusted Hourly Unit Production: 1.2982 acres/Hour

Adjusted Hourly Fleet Production: **1.2982** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **40.83** Hours

Unit cost: \$76.04 per acre Total job cost: **\$4,030**

REVEGETATION WORKTask description: Reveg pit slopes (non-cropland)Site: 31 Road PitPermit Action: 2018Permit/Job#: M1987178**PROJECT IDENTIFICATION**Task #: 09AState: ColoradoAbbreviation: NoneDate: 3/15/2018County: MesaFilename: M178-09aUser: ACYAgency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	2.26	7.32	\$22.04
Crested Wheatgrass - Ephraim	1.26	5.79	\$4.62
Sand Dropseed	0.26	31.04	\$2.82
Galleta	3.00	10.95	\$74.10
Western Wheatgrass - Native	2.00	5.05	\$14.00
Totals Seed Mix	8.78	60.14	\$117.58

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.74	\$2.74
Total Mulch Materials Cost/Acre				\$2.74

Application

Description	Cost /Acre
Weed spray, truck, non-aquatic area, nox. [DMG]	\$71.50
Total Mulch Application Cost/Acre	\$71.50

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: 5 Cost /Acre: \$565.33
 Estimated Failure Rate: 40% Cost /Acre*: \$565.33
 *Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$2,826.65
 Reseeding Job Cost: \$1,130.66
 Total Job Cost: \$3,957
 Job Hours: 16.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **31 Road Pit**Permit Action: **2018**Permit/Job#: **M1987178****PROJECT IDENTIFICATION**Task #: **10A**State: **Colorado**Abbreviation: **None**Date: **3/15/2018**County: **Mesa**Filename: **M178-10a**User: **ACY**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	\$83.81	\$117.55	2	\$402.72	\$235.10	\$250.00
Cat 627G w/push-pull	43.48	\$99.75	\$117.55	4	\$869.20	\$470.20	\$500.00
CAT 120M	15.53	\$32.40	\$88.67	1	\$121.07	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Subtotals:					\$1,493.88	\$882.64	\$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, 3/4 T.	\$40.79	1	\$40.79	\$40.79
Subtotals:			\$40.79	\$40.79

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION, CO	
Total one-way travel distance:	<u>10.00</u>	miles
Average Travel Speed:	<u>40.00</u>	mph
Total Non-Roadable Mob/Demob Cost *	\$6,676.02	
'* two round trips with haul rig:		
Total Roadable Mob/Demob Cost **	<u>\$20.40</u>	
** one round trip, no haul rig:		

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.25</u>	<u>0.25</u>
Return Time (Hours):	<u>0.25</u>	<u>0.25</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.50</u>	<u>0.50</u>

JOB TIME AND COST

Total job time:	<u>3.00</u>	Hours
Total job cost:	<u>\$6,696</u>	

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Secondary Mobilization**Site: **31 Road Pit**Permit Action: 2018Permit/Job#: M1987178**PROJECT IDENTIFICATION**Task #: 11AState: ColoradoAbbreviation: NoneDate: 3/15/2018County: MesaFilename: M178-11aUser: ACYAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck 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
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00

Subtotals: **\$100.89** **\$88.67** **\$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, 3/4 T.	\$40.79	1	\$40.79	\$40.79

Subtotals: **\$40.79** **\$40.79**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION, CO	
Total one-way travel distance:	10.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$796.56	
** two round trips with haul rig:		
Total Roadable Mob/Demob Cost **	\$20.40	
** one round trip, no haul rig:		

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.25	0.25
Return Time (Hours):	0.25	0.25
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.50	0.50

JOB TIME AND COST

Total job time: 3.00 Hours

Total job cost: \$817