



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

1313 Sherman St. Room 215
Denver, CO 80203

May 10, 2021

Mr. Eric Frei
Flag Resources Inc
1412 CR 311
New Castle, CO 81641

Re: Silt Pit, Permit No. M-1981-202-SG, Financial Warranty Increase, Revision No. SI-2

Dear Mr. Frei:

On May 10, 2021 the Division of Reclamation, Mining and Safety increased the current Financial Warranty for this permit to \$337,611.00, in accordance with Rule 4.2.1 of the Rules and Regulations. This is an increase of \$73,401.00.

The Division ordered amendment of the current Financial Warranty, or submittal of a new Financial Warranty reflecting the increase, within 60 days from the date of this letter, Friday July 9, 2021. If you wish to submit a different type of Financial Warranty, please contact me such that I may send you the applicable form.

If you have any questions, please contact me.

Sincerely,

Amy C. Yeldell
Environmental Protection Specialist

cc: Sara M. Stevenson-Benn, DRMS

M-FW-14



COST SUMMARY WORK

Task description: Post Inspection Update 2021

Site: Silt Pit

Permit Action: 2021-03

Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 3/29/2021

County: Garfield

Filename: M202-ACY

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demo/Removal of Structures	DEMOLISH	1	16.00	\$8,068
02a	Dewatering of east lake to allow for grading	PUMPING	1	369.81	\$49,733
03a	Reduce North Highwall to 3:1 Slope	DOZER	2	1.59	\$856
03b	Reduce South Highwall to 3:1 Slope	DOZER	2	6.18	\$3,318
03c	Reduce sediment pond and dike Highwall to 3:1 Slope	DOZER	2	3.18	\$1,707
04a	Rip compacted areas	GRADER	1	21.56	\$3,508
05a	Topsoil North Highwall area	DOZER	2	2.80	\$1,384
05b	Topsoil remaining areas	SCRAPER1	2	62.06	\$56,081
05c	Finish grading topsoiled areas	GRADER	1	28.01	\$4,298
06a	Reveg all disturbed areas not to be pond	REVEGE	1	65.00	\$96,578
07a	Initial Mobilization	MOBILIZE	1	2.65	\$7,027
07b	Secondary Mobilization	MOBILIZE	1	2.65	\$1,416
10a	Backfill feed lot	DOZER	2	53.84	\$28,907
10b	Grading topsoiled areas	GRADER	1	3.63	\$557
10c	Reveg feed lot	REVEGE	1	16.00	\$11,589
<u>SUBTOTALS:</u>				654.96	\$275,027

INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$5,556
Performance bond:	1.05	Total =	\$2,888
Job superintendent:	145.00	Total =	\$10,085
Profit:	10.00	Total =	\$27,503
		TOTAL O & P =	\$46,031
		CONTRACT AMOUNT (direct + O & P) =	\$321,058

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	0.00	Total =	\$0
Reclamation management and/or administration:	5.00		\$16,053
CONTINGENCY: 0.00		Total =	\$0

TOTAL INDIRECT COST = \$62,584

TOTAL BOND AMOUNT (direct + indirect) = \$337,611

DEMOLITION WORK

Task description: Demo/Removal of Structures

Site: Silt Pit

Permit Action: 2021-03

Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 3/29/2021

County: Garfield

Filename: M202-01a

User: ACY

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Fuel Containment	30' x 20' x 3'	Floor, concrete, demolition only, average reinforcing - 6 in. thick	900.00	SF	\$0.80	\$720.00
Push cement into pit	5400 cf	Load/haul/dump demolished materials/debris into pit - Max. 1,000 ft. haul	200.00	CY	\$0.71	\$142.20
Remove Metal Debris	20' x 10' x 20	Loading and 5 mile haul, salvage allowed - Steel frame structures	148.00	CY	\$10.65	\$1,576.20
Batch Plant Pad	5300 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 200 ft. push	5,300.00	SF	\$1.13	\$6,010.20

Job Hours: 16.00

Subtotal
(unadjusted): \$8,448.60

Total Cost
(adjusted for location): \$8,068.41

PUMPING WORK

Task description: Dewatering of east lake to allow for grading

Site: Silt Pit

Permit Action: 2021-03

Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: 02A

State: Colorado

Abbreviation: None

Date: 3/29/2021

County: Garfield

Filename: M202-02a

User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	4
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	8
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	8
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$49.04	NA
Operating Cost/Hour:	\$57.76	100
Operator Cost/Hour:	\$27.68	NA
Total Unit Cost/Hour:	\$134.48	

Total Fleet Cost/Hour: \$134.48

PUMPING QUANTITIES

Initial Pond Volume:	810.20		Conversion factor:	325850.5800
Final Pond Volume:	264,004,139.92	gallons		
Total Pond Inflow Surface Area:	46,000	Sq. ft.	Unit inflow rate in gph/sq. ft.:	0.1758
Total Pond Inflow Volume per Hour:	8,086.80	gallons		

Source of estimated volume: 40.51 ac pond 20'D, 2300 lft adjacent to river

PUMPING TIME

Maximum Pump Capacity:	170,000	gph/pump
Estimated Suction Head:	15	feet
Estimated Discharge Head:	15	feet
Total Head:	30	feet
CPB Pump Capacity:	165,600	gph/pump
Site Altitude:	5,440	feet
Adjusted Pumping Capacity:	662,400	gph
Initial Unadjusted Pumping Time:	398.56	hours
Inflow during Initial Pumping:	3,223,051	gallons
Net Unadjusted Pumping Time:	403.42	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	369.82	hours

JOB TIME AND COST

Total job time: **369.82** Hours

Unit cost: \$0.000186 /Gallon

Total job cost: **\$49,733**

BULLDOZER WORKTask description: **Reduce North Highwall to 3:1 Slope**Site: **Silt Pit** Permit Action: 2021-03 Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**

Task #: 03A State: Colorado Abbreviation: None
 Date: 3/29/2021 County: Garfield Filename: M202-03a
 User: ACY

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

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: 3-shank ripper
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$116.22</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$89.77</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$12.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$9.18</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$268.46
 Total Fleet Cost/Hour: **\$536.91**

MATERIAL QUANTITIES

Initial Volume: 1,481
 Swell factor: 1.060
 Loose volume: **1,570 LCY**

Source of estimated volume: 200 LF 20'H of 2:1 backfilled highwall
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
 Unadjusted hourly production: 852.6 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: -15 %
 Average site altitude: 5,440 feet

Material weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.100</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:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5773

Adjusted unit production: 492.21 LCY/hr

Adjusted fleet production: **984.42** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.545/LCY

Total job time: **1.59** Hours

Total job cost: **\$856**

BULLDOZER WORKTask description: Reduce South Highwall to 3:1 SlopeSite: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**

Task #: 03B State: Colorado Abbreviation: None
 Date: 3/29/2021 County: Garfield Filename: M202-03b
 User: ACY

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

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: 3-shank ripper
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own. Cost/Hour:	\$12.00	NA
Ripper op. Cost/Hour:	\$9.18	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$268.46
 Total Fleet Cost/Hour: **\$536.91**

MATERIAL QUANTITIES

Initial Volume: 3,333
 Swell factor: 1.124
 Loose volume: **3,745 LCY**

Source of estimated volume: 1200 LF 20'H of 1.5:1 cut & fill highwall
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
 Unadjusted hourly production: 852.6 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
 Average site altitude: 5,440 feet

Material weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**Job Condition Correction Factor**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 303.01 LCY/hr

Adjusted fleet production: **606.02** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.886/LCY

Total job time: **6.18** Hours

Total job cost: **\$3,318**

BULLDOZER WORKTask description: Reduce sediment pond and dike Highwall to 3:1 SlopeSite: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**

Task #: 03C State: Colorado Abbreviation: None
 Date: 3/29/2021 County: Garfield Filename: M202-03c
 User: ACY

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

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: 3-shank ripper
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own. Cost/Hour:	\$12.00	NA
Ripper op. Cost/Hour:	\$9.18	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$268.46
 Total Fleet Cost/Hour: **\$536.91**

MATERIAL QUANTITIES

Initial Volume: 2,222
 Swell factor: 1.060
 Loose volume: **2,355 LCY**

Source of estimated volume: 1200 LF 20'H of 2:1 cut & fill highwall
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
 Unadjusted hourly production: 852.6 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 0 %
 Average site altitude: 5,440 feet

Material weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4344

Adjusted unit production: 370.37 LCY/hr

Adjusted fleet production: **740.74 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.725/LCY

Total job time: **3.18 Hours**

Total job cost: **\$1,707**

MOTOR GRADER WORK

Task description: Rip compacted areas

Site: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 3/29/2021 County: Garfield Filename: M202-04a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 14M Horsepower: 259
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$65.89</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$58.96</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$4.83</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$4.40</u>	<u>100</u>
Operator Cost/Hour:	<u>\$28.56</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$162.64</u>	
Total Fleet Cost/Hour:	<u>\$162.64</u>	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 30.00 acres

Source of estimated acreage: Annual report, processing areas

HOURLY PRODUCTION

Average Grader Speed: 1.50 mph
Selected Application: Ripping (0-3 mph) - 1.50
Selected Blade Angle: -1 degrees
Effective Blade Length: 0.00 feet
Width of blade overlap per pass: 2.00 feet
Net grading or ripping width per pass: 8.50 feet
Unadjusted Hourly Unit Production: 1.5455 acres/hour

Job Condition Correction Factors

Site Altitude: 5440 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: 1.3909 acres/Hour
Adjusted Hourly Fleet Production: **1.3909** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **21.57** Hours

Unit cost: \$116.93 per acre Total job cost: **\$3,508**

BULLDOZER WORKTask description: Topsoil North Highwall areaSite: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**

Task #: 05A State: Colorado Abbreviation: None
 Date: 3/29/2021 County: Garfield Filename: M202-05a
 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:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$247.28
 Total Fleet Cost/Hour: \$494.57

MATERIAL QUANTITIES

Initial Volume: 3,093
 Swell factor: 1.215
 Loose volume: 3,758 LCY

Source of estimated volume: 2.3 ac (1000 LF x 100'W) @ 10" D
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
 Unadjusted hourly production: 852.6 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 0 %
 Average site altitude: 5,440 feet

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

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

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

Net correction: 0.7877

Adjusted unit production: 671.59 LCY/hr

Adjusted fleet production: **1343.18** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.368/LCY

Total job time: **2.80** Hours

Total job cost: **\$1,384**

SCRAPER TEAM WORKTask description: Topsoil remaining areasSite: Silt PitPermit Action: 2021-03Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**Task #: 05BState: ColoradoAbbreviation: NoneDate: 3/29/2021County: GarfieldFilename: M202-05bUser: ACYAgency 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:	\$206.99	NA	NA	NA	NA	NA
Operating cost/hour:	\$213.97	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$451.85	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$903.70		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$903.70****MATERIAL QUANTITIES**Initial volume: 62,248

CCY

Swell factor: 1.215Loose volume: **75,631**

LCY

Source of estimated volume: 46.3 ac 3" DSource 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: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5440 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	5.00	5.00	1867	0.52

Haul Time: 0.52 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	5.00	5.00	2795	0.45

Return Time: 0.45 minutesTotal Scraper team cycle time: 2.37 minutesAdjusted for job conditions: 609.37 LCY/HourSelected Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 609.37 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,218.73 LCY/HourUnadjusted unit production/hour: 734.18 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 62.06 HoursUnit cost: \$0.742 /LCYTotal job cost: \$56,081

MOTOR GRADER WORK

Task description: Finish grading topsoiled areas

Site: Silt Pit

Permit Action: 2021-03

Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: 05C

State: Colorado

Abbreviation: None

Date: 3/29/2021

County: Garfield

Filename: M202-05c

User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 14M

Horsepower: 259

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$65.89	NA
Operating Cost/Hour:	\$58.96	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.56	NA
Total Unit Cost/Hour:	\$153.41	
Total Fleet Cost/Hour:	\$153.41	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 46.30 acres

Source of estimated acreage: Areas to be topsoiled

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>12.10</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.10</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8364</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 5440 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: 1.6527 acres/Hour

Adjusted Hourly Fleet Production: **1.6527** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **28.01** Hours

Unit cost: \$92.82 per acre Total job cost: **\$4,298**

REVEGETATION WORKTask description: Reveg all disturbed areas not to be pondSite: Silt PitPermit Action: 2021-03Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**Task #: 06AState: ColoradoAbbreviation: NoneDate: 3/29/2021County: GarfieldFilename: M202-06aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	100.00	pound	\$0.34	\$34.00
			Total Fertilizer Materials Cost/Acre	\$34.00

Application

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

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.50	19.51	\$14.24
Russian Wildrye - VNS	2.00	8.03	\$11.84
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Streambank Wheatgrass - Sodar	1.00	3.26	\$5.70
Tall Wheatgrass - Jose	4.00	7.25	\$13.50
Western Wheatgrass - Native	2.00	5.05	\$12.00
Totals Seed Mix	10.00	46.10	\$58.69

Application

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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
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.92	\$2.92
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
Total Mulch Materials Cost/Acre				\$604.92

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$101.93
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$234.82

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Narrowleaf	40	Tubling, 10 cu. in. container {(MEANS)}	\$4.43	\$2.40	\$177.20
Totals Nursery Stock Cost / Acre					\$177.20

JOB TIME AND COST

No. of Acres:	<u>50</u>	Cost /Acre:	<u>\$1,485.82</u>
Estimated Failure Rate:	<u>30%</u>	Cost /Acre*:	<u>\$1,485.82</u>
*Selected Replanting Work Items:	<u>FERTILIZING,TILLING,SEEDING,NU RSERY,MULCHING</u>		
Initial Job Cost:	<u>\$74,291.00</u>		
Reseeding Job Cost:	<u>\$22,287.30</u>		
Total Job Cost:	<u>\$96,578</u>		
Job Hours:	<u>65.00</u>		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **Silt Pit** Permit Action: **2021-03** Permit/Job#: **M1981202SG****PROJECT IDENTIFICATION**

Task #: **07A** State: **Colorado** Abbreviation: **None**
 Date: **3/29/2021** County: **Garfield** Filename: **M202-07a**
 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:	\$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 D8T - 8SU	53.08	\$128.22	\$141.54	2	\$539.52	\$283.08	\$250.00
CAT 14M	23.57	\$70.72	\$67.39	1	\$138.11	\$67.39	\$250.00
Cat 637G	57.28	\$206.99	\$141.54	2	\$697.06	\$283.08	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	1	\$74.11	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$11.19	\$67.39	1	\$78.58	\$67.39	\$250.00
Submersible pump - 460v, 8 in.	0.70	\$10.98	\$67.39	1	\$78.37	\$67.39	\$250.00

Subtotals: **\$1,605.75** **\$835.72** **\$1,500.00****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	\$49.16	1	\$49.16	\$49.16

Subtotals: **\$49.16** **\$49.16**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>RIFLE. CO</u>	
Total one-way travel distance:	<u>9.00</u>	miles
Average Travel Speed:	<u>55.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$7,010.53</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$16.09</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.16</u>	<u>0.16</u>
Return Time (Hours):	<u>0.16</u>	<u>0.16</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.33</u>	<u>0.33</u>

JOB TIME AND COST

Total job time:	<u>2.65</u>	Hours
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Total job cost:	<u>\$7,027</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Secondary MobilizationSite: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**

Task #: 07B State: Colorado Abbreviation: None
 Date: 3/29/2021 County: Garfield Filename: M202-07b
 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:	\$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
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	1	\$74.11	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$11.19	\$67.39	1	\$78.58	\$67.39	\$250.00
Subtotals:					\$152.69	\$134.78	\$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	\$49.16	1	\$49.16	\$49.16
Subtotals:			\$49.16	\$49.16

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>RIFLE. CO</u>	
Total one-way travel distance:	<u>9.00</u>	miles
Average Travel Speed:	<u>55.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,399.46</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$16.09</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.16</u>	<u>0.16</u>
Return Time (Hours):	<u>0.16</u>	<u>0.16</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.33</u>	<u>0.33</u>

JOB TIME AND COST

Total job time:	<u>2.65</u>	Hours
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Total job cost:	<u>\$1,416</u>
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BULLDOZER WORKTask description: **Backfill feed lot**Site: **Silt Pit** Permit Action: **2021-03** Permit/Job#: **M1981202SG****PROJECT IDENTIFICATION**

Task #: **10A** State: **Colorado** Abbreviation: **None**
 Date: **3/29/2021** County: **Garfield** Filename: **M202-10a**
 User: **ACY**

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

Basic Machine: **Cat D8T - 8SU**
 Horsepower: **310**
 Blade Type: **Semi-Universal**
 Attachment: **3-shank ripper**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own. Cost/Hour:	\$12.00	NA
Ripper op. Cost/Hour:	\$9.18	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$268.46**
 Total Fleet Cost/Hour: **\$536.91**

MATERIAL QUANTITIES

Initial Volume: **50,000**
 Swell factor: **1.060**
 Loose volume: **53,000 LCY**

Source of estimated volume: **Approx 3 ac @ 10 ft**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **100 feet**
 Unadjusted hourly production: **852.6 LCY/hr**

Materials consistency description: **Partly consolidated stockpile 1.1**

Average push gradient: **-15 %**
 Average site altitude: **5,440 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:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5773

Adjusted unit production: 492.21 LCY/hr

Adjusted fleet production: **984.42 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.545/LCY

Total job time: **53.84 Hours**

Total job cost: **\$28,907**

MOTOR GRADER WORK

Task description: Grading topsoiled areas

Site: Silt Pit Permit Action: 2021-03 Permit/Job#: M1981202SG

PROJECT IDENTIFICATION

Task #: 10B State: Colorado Abbreviation: None
Date: 3/29/2021 County: Garfield Filename: M202-10b
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 14M Horsepower: 259
Ripper Attachment: Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$65.89</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$58.96</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>\$28.56</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$153.41</u>	
Total Fleet Cost/Hour:	<u>\$153.41</u>	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 6.00 acres

Source of estimated acreage: Areas to be topsoiled

HOURLY PRODUCTION

Average Grader Speed: 1.50 mph
Selected Application: Finish grading (0-2.5 mph) - 1.5
Selected Blade Angle: 30 degrees
Effective Blade Length: 12.10 feet
Width of blade overlap per pass: 2.00 feet
Net grading or ripping width per pass: 10.10 feet
Unadjusted Hourly Unit Production: 1.8364 acres/hour

Job Condition Correction Factors

Site Altitude: 5440 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: 1.6527 acres/Hour
Adjusted Hourly Fleet Production: **1.6527** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **3.63** Hours

Unit cost: \$92.82 per acre Total job cost: **\$557**

REVEGETATION WORKTask description: Reveg feed lotSite: Silt PitPermit Action: 2021-03Permit/Job#: M1981202SG**PROJECT IDENTIFICATION**Task #: 10C
Date: 3/29/2021
User: ACYState: Colorado
County: GarfieldAbbreviation: None
Filename: M202-10cAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	100.00	pound	\$0.34	\$34.00
			Total Fertilizer Materials Cost/Acre	\$34.00

Application

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

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.50	19.51	\$14.24
Russian Wildrye - VNS	2.00	8.03	\$11.84
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Streambank Wheatgrass - Sodar	1.00	3.26	\$5.70
Tall Wheatgrass - Jose	4.00	7.25	\$13.50
Western Wheatgrass - Native	2.00	5.05	\$12.00
Totals Seed Mix	10.00	46.10	\$58.69

Application

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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
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.92	\$2.92
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
Total Mulch Materials Cost/Acre				\$604.92

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$101.93
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$234.82

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Narrowleaf	40	Tubling, 10 cu. in. container {(MEANS)}	\$4.43	\$2.40	\$177.20
Totals Nursery Stock Cost / Acre					\$177.20

JOB TIME AND COST

No. of Acres: 6 Cost /Acre: \$1,485.82
 Estimated Failure Rate: 30% Cost /Acre*: \$1,485.82
 *Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING,NU
RSERY,MULCHING

Initial Job Cost: **\$8,914.92**
 Reseeding Job Cost: **\$2,674.48**
 Total Job Cost: **\$11,589**
 Job Hours: **16.00**