

August 23, 2018

Russell Larsen/ Jon Muller  
Elam Construction, Inc.  
556 Struthers Ave  
Grand Junction, CO 81501



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

1313 Sherman Street, Room 215  
Denver, CO 80203

***RE: Bunn Ranch Pit, Permit No. M-1980-131, Reclamation Costs Update and Notice of Surety Increase (SI-4)***

Dear Mr. Larsen/ Muller:

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 \$202,666.37 rounded down to \$202,666.00. This is an increase of \$24,066.00 over the \$178,600.00 currently held by the Division. This estimate is based on conditions observed during the August 8, 2018 inspection. ***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, October 22, 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

Ec: Wally Erickson, Senior EPS, Grand Junction DRMS

Enc: Financial Warranty Cost Estimate



## COST SUMMARY WORK

Task description: Post inspection bond update 8-8-18

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-ACY

User: ACY

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Removal of onsite structures	DEMOLISH	1	32.00	\$7,539.09
02a	Pit 3-Lower water level by 10 ft.	PUMPING	1	50.11	\$4,480.00
02b	Pit 2-Lower water level by 10 ft.	PUMPING	1	18.23	\$1,630.00
02c	Pit 4-Lower water level by 10 ft.	PUMPING	1	15.25	\$1,363.00
02d	Pit 5-Lower water level by 10 ft.	PUMPING	1	24.57	\$2,196.00
02e	Pit 8-Lower water level by 10 ft.	PUMPING	1	62.06	\$5,548.00
02f	Pit 9-Lower water level by 10 ft.	PUMPING	1	63.50	\$5,677.00
03a	Reduce all slopes to 3H:1V or flatter	DOZER	2	39.61	\$19,619.00
04a	Rip compacted stockpile and operations area	RIPPER	2	23.71	\$12,708.00
05a	Transport topsoil from stockpiles	LOADER	2	64.72	\$19,064.00
05b	Distribute topsoil	DOZER	2	25.46	\$12,612.00
06a	Reveg disturbed areas	REVEGE	1	40.00	\$51,551.00
07a	Initial mobilization of reclamation crew and equipment	MOBILIZE	1	2.11	\$6,243.00
08a	Secondary mobilization of reclamation crew and equipment	MOBILIZE	1	2.11	\$1,427.00
<b><u>SUBTOTALS:</u></b>				<b>463.44</b>	<b>\$151,657</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Performance bond: 1.05

Job superintendent: 115.00

Profit: 10.00

Total = \$3,063.47

Total = \$1,592.40

Total = \$8,400.75

Total = \$15,165.70

TOTAL O & P = \$28,222.32

CONTRACT AMOUNT (direct + O & P) = \$179,879.32

## LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>500.00</u>	Total =	<u>500.00</u>
Engineering work and/or contract/bid preparation:	<u>7.39</u>	Total =	<u>\$13,293.08</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$8,993.97</u>

CONTINGENCY:	0.00	Total =	<u>\$0.00</u>
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TOTAL INDIRECT COST =	<u>\$51,009.37</u>
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TOTAL BOND AMOUNT (direct + indirect) =	<u>\$202,666.37</u>
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<b>TOTAL BOND AMOUNT (Rounded) =</b>	<b><u>\$202,666.00</u></b>
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## DEMOLITION WORK

Task description: Removal of onsite structures

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-01a

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
Office building	50'L x 30'W x 10'H	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	15,000.00	CF	\$0.30	\$4,515.00
Scale house	20'L x 20'W x 10'H	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	4,000.00	CF	\$0.30	\$1,204.00
Scale	60'L x 10'W	Loading and 5 mile haul, salvage allowed - Steel frame structures	22.00	CY	\$10.27	\$225.94
Cement footers	3 structures	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft. - Max. 200 ft. push	380.00	LF	\$5.13	\$1,949.40

Job Hours: 32.00

Subtotal  
(unadjusted): \$7,894.34

Total Cost  
(adjusted for location): \$7,539.09

## PUMPING WORK

Task description: Pit 3-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02A

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02a

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$22.80</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$38.79</u>	<u>100</u>
Operator Cost/Hour:	<u>\$27.80</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$89.39</u>	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>83.50</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>27,208,523.43</u>	gallons		
Total Pond Inflow Surface Area:	<u>36,170</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>6,358.72</u>	gallons		

Source of estimated volume: Site maps and field estimates (8.35 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>53.99</u>	hours
Inflow during Initial Pumping:	<u>343,277</u>	gallons
Net Unadjusted Pumping Time:	<u>54.67</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>50.11</u>	hours

### JOB TIME AND COST

Total job time: 50.11 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$4,480

## PUMPING WORK

Task description: Pit 2-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02B

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02b

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$22.80</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$38.79</u>	<u>100</u>
Operator Cost/Hour:	<u>\$27.80</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$89.39</u>	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>30.60</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>9,971,027.75</u>	gallons		
Total Pond Inflow Surface Area:	<u>14,915</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>2,622.04</u>	gallons		

Source of estimated volume: Site maps and field estimates (3.06 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>19.78</u>	hours
Inflow during Initial Pumping:	<u>51,874</u>	gallons
Net Unadjusted Pumping Time:	<u>19.89</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>18.23</u>	hours

### JOB TIME AND COST

Total job time: 18.23 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$1,630

## PUMPING WORK

Task description: Pit 4-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02C

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02c

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$22.80</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$38.79</u>	<u>100</u>
Operator Cost/Hour:	<u>\$27.80</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$89.39</u>	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>25.60</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>8,341,774.85</u>	gallons		
Total Pond Inflow Surface Area:	<u>14,676</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>2,580.09</u>	gallons		

Source of estimated volume: Site maps and field estimates (2.56 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>16.55</u>	hours
Inflow during Initial Pumping:	<u>42,703</u>	gallons
Net Unadjusted Pumping Time:	<u>16.64</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>15.25</u>	hours

### JOB TIME AND COST

Total job time: 15.25 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$1,363

## PUMPING WORK

Task description: Pit 5-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02D

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02d

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$22.80</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$38.79</u>	<u>100</u>
Operator Cost/Hour:	<u>\$27.80</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$89.39</u>	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>41.20</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>13,425,043.90</u>	gallons		
Total Pond Inflow Surface Area:	<u>18,035</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>3,170.50</u>	gallons		

Source of estimated volume: Site maps and field estimates (4.12 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>26.64</u>	hours
Inflow during Initial Pumping:	<u>84,453</u>	gallons
Net Unadjusted Pumping Time:	<u>26.80</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>24.57</u>	hours

### JOB TIME AND COST

Total job time: 24.57 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$2,196



## PUMPING WORK

Task description: Pit 8-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02E

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02e

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$22.80	NA
Operating Cost/Hour:	\$38.79	100
Operator Cost/Hour:	\$27.80	NA
Total Unit Cost/Hour:	\$89.39	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>103.60</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>33,758,120.09</u>	gallons		
Total Pond Inflow Surface Area:	<u>31,236</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>5,491.34</u>	gallons		

Source of estimated volume: Site maps and field estimates (10.36 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>66.98</u>	hours
Inflow during Initial Pumping:	<u>367,812</u>	gallons
Net Unadjusted Pumping Time:	<u>67.71</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>62.07</u>	hours

### JOB TIME AND COST

Total job time: 62.07 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$5,548

## PUMPING WORK

Task description: Pit 9-Lower water level by 10 ft.

Site: Bunn Ranch Pit

Permit Action: 2018-08

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 02F

State: Colorado

Abbreviation: None

Date: 8/22/2018

County: Moffat

Filename: M131-02f

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	6
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$22.80</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$38.79</u>	<u>100</u>
Operator Cost/Hour:	<u>\$27.80</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$89.39</u>	

Total Fleet Cost/Hour: \$89.39

### PUMPING QUANTITIES

Initial Pond Volume:	<u>105.90</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>34,507,576.42</u>	gallons		
Total Pond Inflow Surface Area:	<u>34,046</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>5,985.20</u>	gallons		

Source of estimated volume: Site maps and field estimates (10.59 surface ac.)

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>5</u>	feet
Estimated Discharge Head:	<u>0</u>	feet
Total Head:	<u>5</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>6,200</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>68.47</u>	hours
Inflow during Initial Pumping:	<u>409,791</u>	gallons
Net Unadjusted Pumping Time:	<u>69.28</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>63.51</u>	hours

### JOB TIME AND COST

Total job time: 63.51 Hours

Unit cost: \$0.000163 /Gallon

Total job cost: \$5,677

**BULLDOZER WORK**Task description: Reduce all slopes to 3H:1V or flatterSite: Bunn Ranch Pit Permit Action: 2018-08 Permit/Job#: M1980131**PROJECT IDENTIFICATION**

Task #: 03A State: Colorado Abbreviation: None  
 Date: 8/22/2018 County: Moffat Filename: M131-03a  
 User: ACY

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

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

**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</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>\$41.52</u>	<u>NA</u>

Total unit Cost/Hour: \$247.68  
 Total Fleet Cost/Hour: **\$495.37**

**MATERIAL QUANTITIES**

Initial Volume: 50,042  
 Swell factor: 1.060  
 Loose volume: **53,045 LCY**

Source of estimated volume: Accepted values from 2015 SI-3  
 Source of estimated swell factor: Cat Handbook

**HOURLY PRODUCTION**

Average push distance: 50 feet  
 Unadjusted hourly production: 2,110.5 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %  
 Average site altitude: 6,200 feet

Material weight: 3,250 lbs/LCYWeight description: Gravel - Pitrun**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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.708	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3173

Adjusted unit production: 669.66 LCY/hr

Adjusted fleet production: **1339.32** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.370/LCY

Total job time: **39.61** Hours

Total job cost: **\$19,619**

## BULLDOZER RIPPING WORK

Task description: Rip compacted stockpile and operations area

Site: Bunn Ranch Pit Permit Action: 2018-08 Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None  
Date: 8/22/2018 County: Moffat Filename: M131-04a  
User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405  
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$110.70</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$95.46</u>	<u>100</u>
Ripper Ownership Cost/Hour:	<u>\$12.36</u>	<u>NA</u>
Ripper Operating Cost/Hour:	<u>\$7.88</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.52</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$267.92</u>	
Total Fleet Cost/Hour:	<u>\$535.85</u>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 30.00 acres Rip Depth (ft): 2.00 Volume: 96,800 BCY or CCY

Source of estimated quantity: Previously accepted values 2015 SI-3

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth:	<u>2.63</u>	<u>mph</u>
Average Ripping Width:	<u>7.67</u>	<u>degrees</u>
Average Ripping Length:	<u>100.00</u>	<u>feet</u>
Average Dozer Speed:	<u>88.00</u>	<u>feet</u>
Average Maneuver Time:	<u>0.25</u>	<u>feet</u>
Production per unit area:	<u>0.762</u>	<u>acres/hour</u>

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.762</u>	<u>Acres/hr</u>
Site Altitude:	<u>6,200</u>	<u>feet</u>
Altitude Adj:	<u>1.00</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.83</u>	<u>(1 shift/day)</u>
Net Correction:	<u>0.83</u>	<u>multiplier</u>

Adjusted Hourly Unit Production: 0.63 Acres/hr  
Adjusted Hourly Fleet Production: 1.26 Acres/hr

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 23.72 Hours

Unit cost: \$423.590 Per acre Total job cost: \$12,708

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Transport topsoil from stockpilesSite: Bunn Ranch PitPermit Action: 2018-08Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 8/22/2018County: MoffatFilename: M131-05aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 980HAttachment 1: ROPS CabHorsepower: 315Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$50.17	NA
Operating Cost/Hour:	\$56.19	100
Operator Cost/Hour:	\$40.90	NA
Total Unit Cost/Hour:	\$147.26	
Total Fleet Cost/Hour:	\$294.52	

**MATERIAL QUANTITIES**Initial volume: 44,770

CCY

Swell factor: 1.215Loose volume: 54,396

LCY

Source of estimated volume: 30 ac flat + 3.3 ac slopes (9570LF x 15' H) w/ 10" D of TSSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.550 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:		0.530	minutes

**Rolling Resistance – Road Conditions**Haul: 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:	200	0.00	5.00	5.00	0.1768	(Cat HB)
Return Route:	200	0.00	5.00	5.00	0.1599	(Cat HB)

Total Travel Time: 0.3367 minutes  
 Total Cycle Time: 0.8667 minutes

Load Bucket Capacity

Rated Capacity: 7.50 LCY (heaped)  
 Bucket Fill Factor: 0.975 Loose material - uniform aggregates to 1/8" (95-100%) 0.975  
 Adjusted Capacity: 7.31 LCY

Job Condition Correction Factors

Site Altitude: 6200 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: 506.24 LCY/Hour  
 Adjusted Hourly Unit Production: 420.18 LCY/Hour  
 Adjusted Hourly Fleet Production: 840.36 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 64.73 Hours  
 Unit cost: \$0.350 /LCY Total job cost: \$19,064

**BULLDOZER WORK**Task description: **Distribute topsoil**Site: **Bunn Ranch Pit** Permit Action: **2018-08** Permit/Job#: **M1980131****PROJECT IDENTIFICATION**

Task #: **05B** State: **Colorado** Abbreviation: **None**  
 Date: **8/22/2018** County: **Moffat** Filename: **M131-05b**  
 User: **ACY**

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

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

**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$110.70	NA
Operating Cost/Hour:	\$95.46	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: **\$247.68**  
 Total Fleet Cost/Hour: **\$495.37**

**MATERIAL QUANTITIES**

Initial Volume: **54,396**  
 Swell factor: **1.000**  
 Loose volume: **54,396 LCY**

Source of estimated volume: **Transported volume**  
 Source of estimated swell factor: **Cat Handbook**

**HOURLY PRODUCTION**

Average push distance: **100 feet**  
 Unadjusted hourly production: **1,243.2 LCY/hr**

Materials consistency description: **Loose stockpile 1.2**

Average push gradient: **0 %**  
 Average site altitude: **6,200 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: 1,068.28 LCY/hr

Adjusted fleet production: **2136.56** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.232/LCY

Total job time: **25.46** Hours

Total job cost: **\$12,612**

**REVEGETATION WORK**Task description: Reveg disturbed areasSite: Bunn Ranch PitPermit Action: 2018-08Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 06AState: ColoradoAbbreviation: NoneDate: 8/23/2018County: MoffatFilename: M131-06aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

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

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
<b>Total Tilling Cost/Acre</b>	<b>\$106.29</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	0.80	3.86	\$2.09
Orchardgrass - Paiute	0.60	7.44	\$2.23
Smooth Brome - Lincoln	7.80	25.96	\$34.01
Timothy, Alpine - Native	0.15	4.48	\$3.71
<b>Totals Seed Mix</b>	<b>9.35</b>	<b>41.74</b>	<b>\$42.03</b>

**Application**

Description	Cost /Acre
-------------	------------

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

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$578.81</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, aquatic area, nox. [DMG]	\$70.14
<b>Total Mulch Application Cost/Acre</b>	<b>\$231.70</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres: 33.3                      Cost /Acre: \$1,190.83  
 Estimated Failure Rate: 30%                      Cost /Acre\*: \$1,190.83  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$39,654.64**  
 Reseeding Job Cost: **\$11,896.39**  
 Total Job Cost: **\$51,551**  
 Job Hours: **40.00**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Initial mobilization of reclamation crew and equipment**Site: **Bunn Ranch Pit**Permit Action: 2018-08Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 8/23/2018County: MoffatFilename: M131-07aUser: 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 D9T - 9SU	66.13	\$123.06	\$125.45	2	\$497.02	\$250.90	\$500.00
CAT 990H	83.34	\$132.84	\$125.45	2	\$516.58	\$250.90	\$500.00
Submersible pump - 460v, 8 in.	0.70	\$7.31	\$88.67	1	\$95.98	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00

Subtotals: **\$1,310.79** **\$767.81** **\$1,750.00****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	\$47.19	1	\$47.19	\$47.19

Subtotals: **\$47.19** **\$47.19**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>CRAIG</u>	
Total one-way travel distance:	<u>1.00</u>	miles
Average Travel Speed:	<u>35.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$6,240.36</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$2.70</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.03</u>	<u>0.03</u>
Return Time (Hours):	<u>0.03</u>	<u>0.03</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.06</u>	<u>0.06</u>

**JOB TIME AND COST**

Total job time: 2.11 Hours

Total job cost: \$6,243

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Secondary mobilization of reclamation crew and equipment**Site: **Bunn Ranch Pit**Permit Action: 2018-08Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 08AState: ColoradoAbbreviation: NoneDate: 8/23/2018County: MoffatFilename: M131-08aUser: 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Subtotals:					<b>\$201.21</b>	<b>\$177.34</b>	<b>\$500.00</b>

**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	\$47.19	1	\$47.19	\$47.19
Subtotals:			<b>\$47.19</b>	<b>\$47.19</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: CRAIG  
 Total one-way travel distance: 1.00 miles  
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost \* \$1,424.05  
 \* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$2.70  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.03	0.03
Return Time (Hours):	0.03	0.03
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.06	0.06

**JOB TIME AND COST**

Total job time: 2.11 Hours

Total job cost: \$1,427

# Burn Ranch Pit

M-1980-131

↗ N



Burn Ranch  
Pit



# M-1988-B1 Changes from 2015 S1-3

02 - Updated Pump style available in CIRCES, more efficient  
 - updated pond volumes based on data below

05a - updated TS volumes to cover operations + Stockpile area (30 ac) + 3.3 ac Pond slopes  
 ↳ (4570 LF of slopes 15' + 1)

05b - updated volume to WCY transported volume from task 05a

06a - updated Seeded acreage to match TS ac 30 → 33.3  
 ↳ Use of power mulcher

\*Does not account for system price changes inputs only

