

**COST SUMMARY WORK**Task description: **TR4**Site: **Bunn Ranch Pit**Permit Action: **TR4 2021**Permit/Job#: **M1980131****PROJECT IDENTIFICATION**Task #: **002**State: **Colorado**Abbreviation: **None**Date: **4/27/2021**County: **Moffat**Filename: **M131-002**User: **RAR**Agency or organization name: **DRMS****TASK LIST (DIRECT COSTS)**

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01A	Removal of on site structures	DEMOLISH	1	32.00	\$8,642
02a	Dewater Pond 5 33 Acres	PUMPING	1	506.57	\$53,231
03a	Reduce all slopes to 3H:1V or flatter	DOZER	2	15.07	\$9,830
05a	Transport topsoil from stockpiles	LOADER	2	117.83	\$36,483
05b	Distribute topsoil	DOZER	2	38.84	\$25,328
06a	Reveg disturbed areas	REVEGE	1	75.00	\$97,616
07A	Initial mobilization of reclamation crew and equipment	MOBILIZE	1	2.11	\$6,353
<b><u>SUBTOTALS:</u></b>				<b>787.42</b>	<b>\$237,483</b>

**INDIRECT COSTS****OVERHEAD AND PROFIT:**

Liability insurance: 2.02

Total = \$4,797

Performance bond: 1.05

Total = \$2,494

Job superintendent: 393.71

Total = \$27,383

Profit: 10.00

Total = \$23,748

TOTAL O &amp; P = \$58,422

CONTRACT AMOUNT (direct + O &amp; P) = \$295,905

**LEGAL - ENGINEERING - PROJECT MANAGEMENT:**

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 7.22

Total = \$21,364

Reclamation management and/or administration: 5.30

\$15,683

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$95,969

TOTAL BOND AMOUNT (direct + indirect) = **\$333,452**

DEMOLITION WORKTask description: Removal of onsite structuresSite: Bunn Ranch Pit Permit Action: TR4 Permit/Job#: M1980131PROJECT IDENTIFICATION

Task # 01a State: Colorado Abbreviation: None  
 Date: 4/26/2021 County: Moffat Filename: M131-01A  
 User: RAR

Agency or organization name: DRMSUNIT 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	\$4,485.00
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	\$1,196.00
Scale	60'L x 10'W	Loading and 5 mile haul, salvage allowed - Steel frame structures	22.00	CY	\$10.65	\$234.30
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	\$5.10	\$1,938.00
Shop	20'L*20'W*10'H	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	4,000.00	CF	\$0.30	\$1,196.00

Job Hours: 32.00 Subtotal (unadjusted): \$9,049.30 Total Cost (adjusted for location): \$8,642.08

**PUMPING WORK**Task description: **Dewater Pond 5: 33 Acres**Site: **Bunn Ranch Pit**Permit Action: **TR4**Permit/Job#: **M1980131****PROJECT IDENTIFICATION**Task #: **02a**State: **Colorado**Abbreviation: **None**Date: **4/26/2021**County: **Moffat**Filename: **TR4**User: **RAR**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:	\$34.29	NA
Operating Cost/Hour:	\$43.11	100
Operator Cost/Hour:	\$27.68	NA
Total Unit Cost/Hour:	\$105.08	
Total Fleet Cost/Hour:	\$105.08	

**PUMPING QUANTITIES**

Initial Pond Volume:	660.00		Conversion factor:	325850.5800
Final Pond Volume:	<b>215,061,382.80</b>	gallons		
Total Pond Inflow Surface Area:	845,870	Sq. ft.	Unit inflow rate in gph/sq. ft.:	0.1758
Total Pond Inflow Volume per Hour:	148,703.95	gallons		

Source of estimated volume: **Operator. Surface Area DRMS google earth****PUMPING TIME**

Maximum Pump Capacity:	170,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	0	feet
Total Head:	5	feet
CPB Pump Capacity:	168,000	gph/pump
Site Altitude:	6,200	feet
Adjusted Pumping Capacity:	504,000	gph
Initial Unadjusted Pumping Time:	426.71	hours
Inflow during Initial Pumping:	63,453,326	gallons
Net Unadjusted Pumping Time:	552.61	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min/hr.)
Total Adjusted Pumping Time:	506.58	hours

**JOB TIME AND COST**Unit cost: \$0.000191 /GallonTotal job time: 506.58 HoursTotal job cost: \$53,231

**BULLDOZER WORK**Task description: Reduce all slopes to 3H:1V or flatterSite: Bunn Ranch PitPermit Action: TR4 2021Permit/Job#: M1980131**PROJECT IDENTIFICATION**

Task #: 03A State: Colorado Abbreviation: None  
Date: 4/28/2021 County: Moffat Filename: TR4  
User: RAR

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>\$156.88</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$127.87</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>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$326.04</u>	
Total Fleet Cost/Hour:	<u><b>\$652.09</b></u>	

**MATERIAL QUANTITIES**

Initial Volume: 16,670  
Swell factor: 1.060  
Loose volume: **17,670** LCY

Source of estimated volume: Operator  
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/LCY

Weight description: Gravel - Pitrun

<u>Job Condition</u>	<u>Correction Factor</u>	<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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.708	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2777

Adjusted unit  
production: 586.09 LCY/hr  
Adjusted fleet  
production: **1172.18** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.556/LCY

Total job time: **15.07** Hours  
Total job cost: **\$9,830**

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Transport topsoil from stockpilesSite: Bunn Ranch PitPermit Action: TR4 2021Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 4/26/2021County: MoffatFilename: TR4User: RARAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 980H high liftAttachment 1: ROPS CabHorsepower: 315Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$55.34	NA
Operating Cost/Hour:	\$58.76	90
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$154.80	
Total Fleet Cost/Hour:	\$309.61	

**MATERIAL QUANTITIES**Initial volume: 99,589

CCY

Swell factor: 1.215Loose volume: 121,001

LCY

Source of estimated volume: Operator: 75 acre with 12 inches of topsoilSource 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:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:		-0.080	minutes
Adjusted Basic Cycle Time:		0.470	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:	100	0.00	5.00	5.00	0.0884	(Cat HB)
Return Route:	100	0.00	5.00	5.00	0.0799	(Cat HB)

Total Travel Time: 0.1683 minutes  
Total Cycle Time: **0.6383** 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

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

Unadjusted Hourly Unit Production: 687.33 LCY/Hour  
Adjusted Hourly Unit Production: 570.48 LCY/Hour  
Adjusted Hourly Fleet Production: **1,140.97** LCY/Hour

**JOB TIME AND COST**

Fleet size: 2 Loader(s) Total job time: **117.83** Hours  
Unit cost: \$0.271 /LCY Total job cost: **\$36,483**



Task description: **Distribute topsoil**Site: **Bunn Ranch Pit**Permit Action: **TR4 2021**Permit/Job#: **M1980131****PROJECT IDENTIFICATION**Task #: **05B**State: **Colorado**Abbreviation: **None**Date: **4/26/2021**County: **Moffat**Filename: **TR4**User: **RAR**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:	\$156.88	NA
Operating Cost/Hour:	\$127.87	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:	\$326.04	
Total Fleet Cost/Hour:	<b>\$652.09</b>	

**MATERIAL QUANTITIES**Initial Volume: **99,589**Swell factor: **1.000**Loose volume: **99,589 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:	0.900	(AB.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: 1.0312

Adjusted unit  
production: 1,281.99 LCY/hr  
Adjusted fleet  
production: **2563.98 LCY/hr**

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.254/LCY

Total job time: **38.84 Hours**  
Total job cost: **\$25,328**

Task description: Reveg disturbed areasSite: Bunn Ranch PitPermit Action: TR4 2021Permit/Job#: M1980131**PROJECT IDENTIFICATION**Task #: 06AState: ColoradoAbbreviation: NoneDate: 4/26/2021County: MoffatFilename: TR4User: RARAgency 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)	\$107.16
<b>Total Tilling Cost/Acre</b>	<b>\$107.16</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	0.80	3.86	\$2.04
Orchardgrass - Paiute	0.60	7.44	\$2.45
Smooth Brome - Lincoln	7.80	25.96	\$25.94
Timothy, Alpine - Native	0.15	4.48	\$3.64
<b>Totals Seed Mix</b>	<b>9.35</b>	<b>41.74</b>	<b>\$34.06</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	\$2.92	\$2.92
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$604.92</b>

**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
<b>Total Mulch Application Cost/Acre</b>	<b>\$234.82</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Narrowleaf	3	Bare root seedling, 11-16 inch ht. (MEANS)	\$2.25	\$0.00	\$6.75
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$6.75</b>

**JOB TIME AND COST**

No. of Acres:	75	Cost /Acre:	\$1,219.71
Estimated Failure Rate:	30%	Cost /Acre*:	\$272.81
*Selected Replanting Work Items:	SEEDING,NURSERY		

Initial Job Cost:	<b>\$91,478.25</b>
Reseeding Job Cost:	<b>\$6,138.23</b>
Total Job Cost:	<b>\$97,616</b>
Job Hours:	<b>75.00</b>

## EQUIPMENT MOBILIZATION/DEMobilIZATION

Task description: Initial mobilization of reclamation crew and equipment

Site: Bunn Ranch Pit

Permit Action: TR4 2021

Permit/Job#: M1980131

### PROJECT IDENTIFICATION

Task #: 07A

State: Colorado

Abbreviation: None

Date: 4/28/2021

County: Moffat

Filename: M131-07A

User: RAR

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 D9T - 9SU	66.13	\$172.47	\$141.54	2	\$628.02	\$283.08	\$500.00
CAT 990H	83.34	\$111.11	\$141.54	2	\$505.30	\$283.08	\$500.00
Submersible pump - 460v, 8 in.	0.70	\$10.98	\$67.39	1	\$78.37	\$67.39	\$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

Subtotals: **\$1,364.38** **\$768.33** **\$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	\$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>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>\$6,350.63</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$2.81</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:	<u>2.11</u>	Hours
Total job cost:	<u>\$6,353</u>	