

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: Jemadojin Sand Mine

Permit Action: SR02

Permit/Job#: M2006017

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 9/1/2020

County: El Paso

Filename: M017-000

User: TC1

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Knock east highwall down from 1.7H to 3.2H:1V	DOZER	1	39.02	\$10,598
002	Knock south highwall down from 1.7H to 3.2H:1V	DOZER	1	23.71	\$6,439
003	Revegetate ~13.5 acres	REVEGE	1	47.00	\$15,801
004	mob. demob	MOBILIZE	1	3.48	\$2,040
005	APPLY 12 INCHES OF TOPSOIL	DOZER	1	28.53	\$7,749
<b><u>SUBTOTALS:</u></b>				<b>141.74</b>	<b>\$42,627</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$861

Performance bond: 1.05

Total = \$448

Job superintendent: 70.87

Total = \$4,929

Profit: 10.00

Total = \$4,263

TOTAL O & P = \$10,500

CONTRACT AMOUNT (direct + O & P) = \$53,127

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$0

Total = \$0

Engineering work and/or contract/bid preparation: 4.25

Total = \$2,258

Reclamation management and/or administration: 5.00

\$2,656

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$15,415

**TOTAL BOND AMOUNT (direct + indirect) = \$58,042**

**BULLDOZER WORK**Task description: **Knock east highwall down from 1.7H to 3.2H:1V**Site: **Jemadojin Sand Mine**Permit Action: SR02Permit/Job#: M2006017**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 9/1/2020County: El PasoFilename: M017006User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 1-shank ripperShift Basis: 1 per dayData 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>\$15.57</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$10.00</u>	<u>100</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$271.59Total Fleet Cost/Hour: **\$271.59****MATERIAL QUANTITIES**Initial Volume: 8,061Swell factor: 1.060Loose volume: **8,545 LCY**Source of estimated volume: Task 001.1 spreadsheet/TR-03Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 160 feetUnadjusted hourly production: 605.4 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 4,100 feetMaterial weight: 2,850 lbs/LCYWeight description: Sand - DampJob Condition Correction FactorSource

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:	0.807	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3617

Adjusted unit  
production: 218.97 LCY/hr  
Adjusted fleet  
production: **218.97** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$1.240/LCY

Total job time: **39.02** Hours  
Total job cost: **\$10,598**

**BULLDOZER WORK**Task description: **Knock south highwall down from 1.7H to 3.2H:1V**Site: **Jemadojin Sand Mine**Permit Action: SR02Permit/Job#: M2006017**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 9/1/2020County: El PasoFilename: AbcdefUser: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 1-shank ripperShift Basis: 1 per dayData 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>\$15.57</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$10.00</u>	<u>100</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$271.59Total Fleet Cost/Hour: **\$271.59****MATERIAL QUANTITIES**Initial Volume: 4,898Swell factor: 1.060Loose volume: **5,192 LCY**Source of estimated volume: Task 001.1 spreadsheet/TR-03Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 160 feetUnadjusted hourly production: 605.4 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 4,100 feetMaterial weight: 2,850 lbs/LCYWeight description: Sand - DampJob Condition Correction FactorSource

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:	0.807	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3617

Adjusted unit  
production: 218.97 LCY/hr  
Adjusted fleet  
production: **218.97** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$1.240/LCY

Total job time: **23.71** Hours  
Total job cost: **\$6,439**

**REVEGETATION WORK**Task description: Revegetate ~13.5 acresSite: Jemadojin Sand MinePermit Action: SR02Permit/Job#: M2006017**PROJECT IDENTIFICATION**Task #: 003  
Date: 9/1/2020  
User: TC1State: Colorado  
County: El PasoAbbreviation: None  
Filename: M17-003Agency 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
Chisel plowing {DMG}	\$94.63
<b>Total Tilling Cost/Acre</b>	<b>\$94.63</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	0.20	3.26	\$3.20
Little Bluestem - Cimarron	2.00	11.94	\$24.97
Prairiegrass - Matua	0.10	0.18	\$0.34
Streambank Wheatgrass - Sodar	2.20	7.17	\$12.54
Thickspike Wheatgrass - Critana	1.00	3.54	\$6.88
Western Wheatgrass - Barton	4.00	10.10	\$28.00
Prairie Junegrass	0.10	5.32	\$2.60
<b>Totals Seed Mix</b>	<b>9.60</b>	<b>41.51</b>	<b>\$78.51</b>

**Application**

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

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

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$602.00</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres: 13.5                      Cost /Acre: \$1,077.31  
 Estimated Failure Rate: 30%                      Cost /Acre\*: \$310.51  
 \*Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$14,543.69**  
 Reseeding Job Cost: **\$1,257.57**  
 Total Job Cost: **\$15,801**  
 Job Hours: **47.00**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mob. demob**Site: **Jemadojin Sand Mine**Permit Action: **SR02**Permit/Job#: **M2006017****PROJECT IDENTIFICATION**Task #: **004**  
Date: **9/1/2020**  
User: **TC1**State: **Colorado**  
County: **El Paso**Abbreviation: **None**  
Filename: **M060017**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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	52.21	\$131.79	\$141.54	1	\$273.33	\$141.54	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	1	\$74.11	\$67.39	\$250.00

Subtotals: **\$347.44** **\$208.93** **\$500.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
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Subtotals: **\$0.00** **\$0.00**



**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>FOUNTAIN</u>	
Total one-way travel distance:	<u>28.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,039.81</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$0.00</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.62</u>	<u>0.62</u>
Return Time (Hours):	<u>0.62</u>	<u>0.62</u>
Loading Time (Hours):	<u>0.25</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.25</u>	<u>NA</u>
Subtotals:	<u>1.74</u>	<u>1.24</u>

**JOB TIME AND COST**

Total job time:	<u>3.49</u>	Hours
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Total job cost:	<u>\$2,040</u>
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**BULLDOZER WORK**Task description: APPLY 12 INCHES OF TOPSOILSite: Jemadojin Sand MinePermit Action: SR02Permit/Job#: M2006017**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 9/1/2020County: El PasoFilename: M017-005User: TC1Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D8T - 8SU  
 Horsepower: 310  
 Blade Type: Semi-Universal  
 Attachment: 1-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>\$15.57</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$10.00</u>	<u>100</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$271.59</u>	
Total Fleet Cost/Hour:	<u>\$271.59</u>	

**MATERIAL QUANTITIES**

Initial Volume: 11,293  
 Swell factor: 1.000  
 Loose volume: 11,293 LCY

Source of estimated volume: Division of Reclamation, Mining & Safety (7 acres - 2019 GE)Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**

Average push distance: 250 feet  
 Unadjusted hourly production: 377.8 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 5 %  
 Average site altitude: 4,100 feet

Material weight: 1,600 lbs/LCYWeight description: Top SoilJob Condition Correction FactorSource

Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.0476

Adjusted unit  
production: 395.78 LCY/hr

Adjusted fleet  
production: **395.78 LCY/hr**

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.686/LCY

Total job time: **28.53 Hours**

Total job cost: **\$7,749**