## COST SUMMARY WORK

e: _	15 Road	Gravel Pit	Pe	rmit Action:	2021-05	Permit/Job	#: <u>M2002114</u>
<u>PR</u>	OJECT	<u>IDENTIFIC</u>	<u>CATION</u>				
	Task #:	ACY	State:	Colorado		Abbreviation:	None
	Date:	7/20/2021	County:	Mesa		Filename:	M114-ACY
	User:	ACY					

## TASK LIST (DIRECT COSTS)

T1-		Form	Fleet	Task	
Task	Description	Used	Size	Hours	Cost
01c	Rip Compacted Stockpile Areas - Lake 1	RIPPER	2	4.28	\$2,229
01d	Transport Lake 1 Topsoil and Placement	TRUCK1	1	35.23	\$40,647
01f	Lake 1 Revegetate Dry Rangeland	REVEGE	1	16.00	\$19,959
03a	Drain lake 3 for grading banks	PUMPING	1	403.88	\$28,130
03b	Lake 3 establish 3H:1V slope from 2H:1V	DOZER	2	7.38	\$3,469
03c	Rip Compacted Areas - Lake 3	RIPPER	2	12.84	\$6,686
03d	Transport Lake 3 Topsoil and Placement	TRUCK1	1	35.28	\$40,710
03e	Revegetate Wetland Areas Lake 3	REVEGE	1	3.00	\$25,030
03f	Lake 3 Revegetate Dry Rangeland	REVEGE	1	24.00	\$71,282
04a	Drain lake 4 for grading banks	PUMPING	1	474.63	\$33,058
04b	Lake 4 establish 3H:1V slope from 2H:1V	DOZER	2	2.92	\$1,371
04c	Rip Compacted Areas - Lake 4	RIPPER	2	5.39	\$2,808
04d	Transport Lake 4 Topsoil and Placement	TRUCK1	1	14.60	\$16,842
04e	Revegetate Wetland Areas Lake 4	REVEGE	1	4.00	\$9,880
04f	Lake 4 Revegetate Dry Rangeland	REVEGE	1	16.00	\$29,938
05a	Structure Removal	DEMOLISH	1	8.00	\$3,690
06a	Initial Mobilization	MOBILIZE	1	2.34	\$6,680
06b	Secondary Mobilization	MOBILIZE	1	2.34	\$1,387
				10-11	ha 12 =0 c
		<u>SUBTO</u>	TALS:	1072.11	\$343,796

#### **INDIRECT COSTS**

#### **OVERHEAD AND PROFIT:**

Liability insurance: 2.02 Total = \$6,945 Performance bond: 1.05 Total = \$3,610 Total = \_ \$14,406 Job superintendent: 200.00 Total = Profit: 10.00 \$34,380

TOTAL O &  $P = \frac{$59,340}{}$ 

CONTRACT AMOUNT (direct + O & P) = 403,136

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Engineering work and/or contract/bid preparation: 4.25 Total = \$17,133

Reclamation management and/or administration: 5.00 \$20,157

CONTINGENCY: 3.00 Total = \$10,314

TOTAL INDIRECT COST = \$107,444

TOTAL BOND AMOUNT (direct + indirect) = \$451,240

## **BULLDOZER RIPPING WORK**

	Task description:	Rip	Compacted Stockpile Ar	eas - Lake 1				
Site	: 15 Road Grav	vel Pit	Permit Action:	2021-05	Pern	nit/Job#:	M20021	14
	PROJECT ID	ENTIFICATI	<u>ON</u>					
	Task #: 010	C	State: Colorado		Abbrev	iation:	None	
		0/2021	County: Mesa		File	ename:	M114-01	C
	User: AC	<u>CY</u>						
	Agency	or organization	name: DRMS					
	<b>HOURLY EQ</b>	UIPMENT CO	<u>OST</u>					
	Basic	Machine: Cat	D8T - 8SU		Horsepower:		310	
	Ripper Att	achment: 3-S	hank Ripper	<del>_</del>	Shift Basis:		er day	<del></del>
					Data Source:	((	CRG)	
	Cost Breakdown	<u>:</u>		1	III'I'			
		Ownership Co	ost/Hour	\$97.46	Utilization % NA			
		Operating Co		\$97.63	100			
		er Ownership Co		\$15.19	NA			
	Rip	per Operating Co Operator Co		\$9.94 \$40.04	100 NA			
		Total Unit Co		\$260.26	NA			
		Total Fleet Co	ost/Hour: \$520	0.51				
	MATERIAL (	<u>)UANTITIES</u>	. Sele	cted estimating	method: Area			
	Alternate Method	<u>ls:</u>						
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	5.00	acres	Rip Depth (ft):	2.00	Volume: 16,	133		BCY or CC
		Source of estin	mated quantity: 5 ac sto	ckpile				
	HOURLY PRO	ODUCTION						
	Seismic:	020011011						
	<u>Seisinic.</u>		Seismic Velocity:	NA	feet/second	d		
	Area:		· <u></u>					
	Aica.	Averag	ge Ripping Depth:	2.56	feet/pass			
		Averag	e Ripping Width:	7.08	feet/pass			
			e Ripping Length:	100.00	feet/pass			
			age Dozer Speed:  Maneuver Time:	88.00 0.25	feet/minut minutes/pa			
		_	tion per unit area:	0.703	acres/hour			
	Job Condition Co	orrection Factors	3					
			Unit Production:	0.703	Acres/hr			
	On	ladjusted Hourry						
			Site Altitude: Altitude Adj:	4,470 1.00	feet (CAT HB)	1		
			Job Efficiency:	0.83	(CAT HB)			
			Net Correction:	0.83	multiplier	,		
		Adiusted	Hourly Unit Production:	0.58	Acres/hr			
			Hourly Fleet Production:	1.17	Acres/hr			
	JOB TIME AN	ND COST						
	Fleet size:	2	Grader(s)	Total job tim	e: <b>4.</b> 2	28	На	ours
	<del>-</del>			ū				
	Unit cost:	\$445.769	Per acre	Total job cos	st: <b>\$2,2</b>	29		

## TRUCK/LOADER TEAM WORK

Task description:	Transpo	ort Lake 1 Topso	il and Placement	;		
Site: 15 Road Grave	l Pit	Permit Action	on: 2021-05	1	Permit/Job#: N	12002114
PROJECT IDE	NTIFICATION	I				
Task #: 01D	/2021	State: Colora County: Mesa	ado	Ab		one 114-01d
Agency o	or organization nar	me: DRMS				
HOURLY EQU	IPMENT COS	<del>_</del>			is: <u>1 per day</u>	
	Truck Loader Tea		Equipment Descri	ption		
	port Equipment -I	-Loader: CA	Γ 980H D8T - 8SU			
Road N	Maintenance –Mot	or Grader: NA	D8T - 8SU			
Cost Breakdown:		ater Truck: NA	Support I	Equipment	Maintena	nce Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	\$88.53	\$67.72	\$97.46	\$97.46	NA	NA
Operating cost/hour:	\$65.75	\$67.62	\$14.64	\$97.63	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$15.19	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	\$1.99	\$0.00	NA	NA
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	NA	NA
Unit Subtotals:	\$179.10	\$171.31	\$154.13	\$235.13	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	\$529.51	Support:	\$624.39	Maint:	\$0.00
Total work team co		90				
MATERIAL Q						
Initial volum Loose volum		CCY LCY	Swell	factor: 1.000		
	ource of estimated		wetlands + 8.4 d	ryland @ 8"		
Sourc	e of estimated swe		Iandbook			
	Material Purch To	ase Cost: $\begin{array}{c} \$0.00 \\ \hline \$0.00 \\ \hline \end{array}$				
HOURLY PRO	<u>ODUCTION</u>					
Truck Capacity: Truck Payload (we						
Material		oil	Pounds/LCY			

Pounds

LCY

Rated Payload:

Payload Capacity:

87,000

54.38

Truck Bed (volume) Basis: Struck Volume:	24.20 I	LCY				
Heaped Volume:		LCY				
Average Volume:		LCY				
Adjusted Volume:		LCY				
Adjusted Volume.		.C1				
Final	Truck Volume l	Based on Number of	f Loader Passes:	31.50	LCY	
Loading Tool Capacity						
		1	Bucke	et Size Class: Na	A	_
Rated Capacity:	7.500	LCY (heaped)				_
Bucket Fill Factor:	1.050		andy clay (100% -	110%) 1.050		_
Adjusted Capacity:	7.875	LCY				
Job Condition Corrections:	-	Si	te Altitude (ft.): 44	170 feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HB)			
Job Efficiency:	0.830	0.830	(CAT HB)			
Net Correction:	0.830	0.830				
Excavators and Front Shovel  Machine Cycle Time vs		Rating: NA				•
Machine Cycle Time vs Selected Value v	s. Job Condition within this Basic	Rating: NA				•
Machine Cycle Time vs Selected Value v Track Loaders –	s. Job Condition within this Basic	Rating: NA				•
Machine Cycle Time vs Selected Value v Track Loaders – I Cycle Time Elements (min.):	s. Job Condition vithin this Basic Material Descrip	Rating: NA ption:		Dumpi 0 100		
Machine Cycle Time vs Selected Value v Track Loaders –	s. Job Condition vithin this Basic Material Descrip	Rating: NA		Dump:0.100		•
Machine Cycle Time vs Selected Value v Track Loaders – I Cycle Time Elements (min.):	s. Job Condition vithin this Basic Material Descrip Ma	Rating: NA ption:  nneuver: NA	me (load, dump, m			utes
Machine Cycle Time vs Selected Value v Track Loaders – I Cycle Time Elements (min.): Load: NA Wheel and Track Loaders -	s. Job Condition vithin this Basic Material Descrip Ma	Rating: NA ption:  nneuver: NA	me (load, dump, m	aneuver):0		utes
Machine Cycle Time vs Selected Value v Track Loaders – I Cycle Time Elements (min.): Load: NA	s. Job Condition vithin this Basic Material Descrip Ma	Rating: NA  ption:  naneuver: NA  sic Loader Cycle Tir	me (load, dump, m		550 min	utes
Machine Cycle Time vs Selected Value vs Track Loaders – Is Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors	s. Job Condition vithin this Basic Material Descrip Ma  Unadjusted Bas Mixed materia	Rating: NA  ption:  naneuver: NA  sic Loader Cycle Tir		aneuver): 0.	550 min Source	utes
Machine Cycle Time vs Selected Value vs Track Loaders – I Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material:	s. Job Condition vithin this Basic Material Descrip Ma Unadjusted Bas Mixed materia Conveyor or d	Rating: NA  ption:  naneuver: NA  sic Loader Cycle Tir	h and up 0.00	aneuver): 0 Factor (min.) 0.020	550 min Source (Cat HB)	utes
Machine Cycle Time vs Selected Value vs Track Loaders – I Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile:	s. Job Condition vithin this Basic Material Descrip Ma Unadjusted Bas Mixed materia Conveyor or d	Rating: NA ption:  Anneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. hig ership of trucks and	h and up 0.00	Factor (min.) 0.020 0.000	550 min    Source (Cat HB) (Cat HB)	utes
Machine Cycle Time vs Selected Value vs Track Loaders — I  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders —  Cycle Time Factors Material: Stockpile: Truck Ownership:	Material Descrip  Material Descrip  Ma  Unadjusted Bas  Mixed materia  Conveyor or d  Common own	Rating: NA ption:  Anneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. hig ership of trucks and ation -0.04 t 0.00	h and up 0.00 loaders -0.04	Factor (min.) 0.020 0.000 -0.040	Source (Cat HB) (Cat HB) (Cat HB)	utes 
Machine Cycle Time vs Selected Value vs Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation:	Material Descrip  Material Descrip  Ma  Unadjusted Bas  Mixed materia  Conveyor or d  Common own  Constant opera	Rating: NA ption:  Anneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. hig ership of trucks and ation -0.04 t 0.00	h and up 0.00	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040	Source   (Cat HB)   (Cat HB)	utes 
Machine Cycle Time vs Selected Value vs Track Loaders – I  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation:	Material Descrip  Material Descrip  Ma  Unadjusted Bas  Mixed materia  Conveyor or d  Common own  Constant opera	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tine al 0.02  lozer piled 10 ft. hig ership of trucks and lation -0.04 t 0.00  Net Cycle Tine Adjusted Load	h and up 0.00 loaders -0.04 ne Adjustment: er Cycle Time:	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Machine Cycle Time vs Selected Value vs Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation:	Material Descrip  Material Descrip  Ma  Unadjusted Bas  Mixed materia  Conveyor or d  Common own  Constant opera	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tine al 0.02  lozer piled 10 ft. hig ership of trucks and lation -0.04 t 0.00  Net Cycle Tine Adjusted Load	h and up 0.00 loaders -0.04	aneuver): 0  Factor (min.)  0.020  0.000  -0.040  -0.040  0.000  -0.060	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes	utes 
Machine Cycle Time vs Selected Value vs Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation:	Material Descrip  Material Descrip  Ma  Unadjusted Bas  Mixed materia  Conveyor or d  Common own  Constant opera	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tine al 0.02  lozer piled 10 ft. hig ership of trucks and lation -0.04 t 0.00  Net Cycle Tine Adjusted Load	h and up 0.00 loaders -0.04 ne Adjustment: er Cycle Time:	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes 
Machine Cycle Time vs. Selected Value vs. Track Loaders – I  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation: Dump Target:	Material Description of the Material Description of the Material Description of the Mixed material Conveyor or dominal targets.	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tine al 0.02  lozer piled 10 ft. hig ership of trucks and lation -0.04 t 0.00  Net Cycle Tine Adjusted Load	h and up 0.00 loaders -0.04  ne Adjustment: er Cycle Time: ime per Truck:	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Machine Cycle Time vs Selected Value vs Track Loaders – 1  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:  Truck Cycle Time:	Material Description of the Material Description of the Material Description of the Mixed material Conveyor or dominal target the Modern of th	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tine  10.02  lozer piled 10 ft. high ership of trucks and ation -0.04  t 0.00  Net Cycle Tine  Adjusted Load Net Load T	h and up 0.00 loaders -0.04  ne Adjustment: er Cycle Time: ime per Truck:	aneuver): 0  Factor (min.)  0.020  0.000  -0.040  -0.040  0.000  -0.060  0.490  1.570	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> Road Condition: <u>Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0</u>

#### Haul Route:

Seg#	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	1.00	8.00	9.00	983	1.312

Haul Time: **1.312** minutes Return Route: Haul Distance Grade (%) Roll. Res Total Res Velocity Travel Seg# Time (Ft) (%) (%) (fpm) (min) 1200.00 8.00 7.00 2470 -1.00 0.679

Return Time: 0.679 minutes
Total Truck Cycle Time: 5.161 minutes

Loading Tool unit

Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour Truck Unit Production 366.21 LCY/Hour Adjusted for job efficiency: 303.95 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 607.91 LCY/Hour

Adjusted single truck/loader team production:

Adjusted multiple truck/loader team production:

607.91

LCY/Hour

LCY/Hour

## **JOB TIME AND COST**

 Fleet size:
 1
 Team(s)
 Total job time:
 35.23
 Hours

 Unit cost:
 \$1.898
 /LCY
 Total job cost:
 \$40,647

## **REVEGETATION WORK**

Task description: Lake 1		Lake 1 Revegetate Dry Rang	ake 1 Revegetate Dry Rangeland			
Site:	15 Road Gravel Pit	Permit Action:	2021-05	Permit/Job#:	M2002114	
P	ROJECT IDENTIFIC	ATION				

Task #: 01F State: Colorado Abbreviation: None Date: 7/20/2021 County: Mesa Filename: M114-01f

ACY User:

Agency or organization name: DRMS

## **FERTILIZING**

#### Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac.	1.00	acre	\$2,063.06	\$2,063.06
Sodium nitrate, 16-0-0	750.00	pound	\$0.76	\$570.00
			Total Fertilizer Materials	
			Cost/Acre	\$2,633.06

Application

Description		Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)		\$69.26
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	<b>Total Fertilizer Application Cost/Acre</b>	\$108.03

#### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$404.96

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	2.50	298.44	\$24.38
Sandberg Bluegrass - VNS	2.00	42.47	\$16.80
Galleta	2.50	9.13	\$55.88
Globemallow, Scarlet (or copper)	0.50	5.66	\$67.75
Winter Fat	0.25	0.64	\$5.13
Yarrow, Western	0.50	30.40	\$20.90
Kochia, Forage (Prostrate)	0.25	35.11	\$2.24

	Totals Seed Mix	8.50	421.84	\$193.07
application				
P ' '				Cost /A are

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.98	\$2.98
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$307.02	\$307.02
Total Mulch Materials Cost/Acre				\$310.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$71.57
Power mulcher (MEANS 32 91 13.16 0350)		\$106.29
Weed spray, truck, non-aquatic areas, ann. [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$200.67

#### NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals :	Nursery Stoc	ek Cost / Acre	\$0.00

## **JOB TIME AND COST**

No. of Acres: 4.2 Cost /Acre: \$4,081.79 Estimated Failure Rate: 50% Cost /Acre\*: \$1,340.70

\*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$17,143.52** Reseeding Job Cost: \$2,815.47 Total Job Cost: **\$19,959** Job Hours: **16.00** 

## **PUMPING WORK**

Task description:	Drain lake 3 for g	grading bar	nks		
Site: 15 Road Gravel Pit	Pern	nit Action:	2021-05	Permit/Job#:	M2002114
PROJECT IDENTIF	<u>ICATION</u>				
Task #: 03A	State:	Colorado		Abbreviation:	None
Date: 7/20/2021	County:	Mesa			M114-03a
User: ACY					
Agency or orga	nization name: DR	MS			
HOURLY EQUIPME	ENT COST				
	Description			Quantity	
Make and Model:	Submersible pump	- 460v, 8 in		2	
Attachment 1:	Suction hose - 6 in.			2	
Attachment 2:	Discharge hose - 6	in. D., 25 ft		4	
Labor Unit 1:	Pump operator	,		1	
Horsepower:	95				
	per day				
	0.70				
	S Tons)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/l	-	)4	NA		
Operating Cost/l			100		
Operator Cost/		23	NA		
Total Unit Cost/	Hour: \$69.6	55			
Total Fleet Cost	/Hour: \$69.6	55			
PUMPING QUANTI					
·		00		Communication Contains	225050 5000
Initial Pond Vol				Conversion factor:	325850.5800
Final Pond Vol Total Pond Inflow Su		967.04	gallons	Unit inflow rate in	
	Area: 1,045	440	Sq. ft.	gph/sq. ft.:	0.1758
Total Pond Inflow Vo		,440	_ Sq. 1t.	gpii/sq. it	0.1736
per F		38.35	gallons		
•	of estimated volume:		ponds pumped 12' o	down	
	or estimated volume.	24 ac 01	polius pumpeu 12	down	
PUMPING TIME					
	kimum Pump Capacity		170,000	gph/pump	
	stimated Suction Head	-	5	feet	
Estin	mated Discharge Head		25	feet	
	Total Head		30	feet	
	CPB Pump Capacity		165,600	gph/pump	
	Site Altitude	e:	4,470	feet	
	sted Pumping Capacity		331,200	gph	
	djusted Pumping Time		283.35	hours	
	during Initial Pumping		52,076,123	gallons	
	djusted Pumping Time		440.58	Hours	
	ude Adjustment Facto		1.0000	(3% rule)	
	ump Efficiency Facto djusted Pumping Tim		0.9167 403.88	(55 min./hr.) hours	
		·	403.00	110urs	
JOB TIME AND CO	<u>8T</u>		Total job	time: 403.88	Hours
Unit cost: \$0.00	00193 /Gallon		Total job	cost: \$28,130	

## **BULLDOZER WORK**

15 Road Gravel Pit	Permit Action:	2021-05	Permit/Job#:	M2002114
13 Road Graver I it	I CHIII ACTOII.	2021-03	T CIMIU 300#.	1012002114
PROJECT IDENTIFICAT	<u> FION</u>			
Task #: 03B	State: Colorado		Abbreviation:	None
Date: 7/21/2021	County: Mesa		Filename:	M114-03b
User: ACY	=		<del>-</del>	
Agency or organization	on name: DRMS			
rigoney or organization				
HOURLY EQUIPMENT	<u>COST</u>			
Basic Machine: Cat D8T	- 8SU			
Horsepower: 310		<u> </u>		
Blade Type: Semi-Un	niversal			
Attachment: NA				
Shift Basis: 1 per day	1			
Data Source: (CRG)		<u> </u>		
Cost Breakdown:				
		<u>Utilization %</u>		
Ownership Cost/Hour:	\$97.46	NA		
Operating Cost/Hour:	\$97.63	100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$40.04	NA		
Total unit Cost/Hour: \$23	35.13			
	70.25			
MATERIAL QUANTITIE Initial Volume: 7,963 Swell factor: 1.250				
Loose volume: <b>9,954</b> LC	Y			
Source of estimated volume:	4300LF of 20'H @ 2	:1		
Source of estimated swell factor	or: Cat Handbook			
HOUDI V DDODUCTION	т			
HOURLY PRODUCTION				
Average push distance:	65 feet			
Unadjusted hourly production:	1,170.3 LCY/hr			
Materials consistency descripti	on: Compacted fill or e	mbankment 0.9		
Average push gradient: -20	) %			
	00 feet			
Material weight: 2,5	50 lbs/LCY		_	
Weight description: Ear	rth - Dry packed			
Job Condition Correction Factor		Source		
Operator Skill:	0.750	(AVG.)		
Material consistency:	0.900	(CAT HB))		
Dozing method:	1.000	(GEN.)		
Visibility:	1.000	(AVG.)		

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.426	(CAT HB)
1.000	(CAT HB)
0.902	(CAT HB)
1.000	(PAT)
	0.800 1.426 1.000 0.902

Net correction: 0.5765

Adjusted unit production: 674.68 LCY/hr
Adjusted fleet production: 1349.36 LCY/hr

## **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.348/LCY

Total job time: 7.38 Hours
Total job cost: \$3,469

## **BULLDOZER RIPPING WORK**

	Task description:	Rip	Compacted Areas - Lake	23			
Site:	15 Road Grav	el Pit	Permit Action:	2021-05	Permit/Jo	b#: <u>M2002</u>	2114
	PROJECT IDE	ENTIFICATI	<u>ON</u>				
	Task #: 030	2	State: Colorado		Abbreviatio	n: None	
		1/2021	County: Mesa		Filenam	-	)3c
	User: AC	Y	·				
	Agency	or organization	name: DRMS				
	HOURLY EQU	JIPMENT CO	<u>OST</u>				
	Basic I	Machine: Cat	D8T - 8SU		Horsepower:	310	
	Ripper Atta	achment: 3-S	hank Ripper	<del></del>	Shift Basis:	1 per day	
					Data Source:	(CRG)	
	Cost Breakdown:						
					Utilization %		
		Ownership Co		\$97.46	NA		
	Dinne	Operating Co or Ownership Co		\$97.63 \$15.19	100 NA		
		er Operating Co		\$9.94	100		
	Кірр	Operator Co		\$40.04	NA		
		Total Unit Co		\$260.26			
		Total Fleet Co	ost/Hour: \$520	).51			
	MATERIAL Q	UANTITIES	Sele	cted estimating	method: Area		
	Alternate Method		Sele	cted estimating	, method. <u>Theu</u>		
Seismic:	NA	<del></del>	Bank Volume:	NA	BCY	NA	
Area:	15.00	acres	Rip Depth (ft):	2.00	Volume: 48,400	IVA	BCY or CC
		Source of estin	nated quantity: 15 ac st	tockpile, vard, o	office scale area		=
	HOURLY PRO		1 7	1 / 3 /			
	Seismic:	<u>DECTION</u>					
	Seisific.	:	Seismic Velocity:	NA	feet/second		
	Area:	Averso	e Ripping Depth:	2.56	feet/pass		
			e Ripping Width:	7.08	feet/pass		
		_	Ripping Length:	100.00	feet/pass		
		_	age Dozer Speed:	88.00	feet/minute		
		Average	Maneuver Time:	0.25	minutes/pass		
		Produc	ion per unit area:	0.703	acres/hour		
	Job Condition Co	rrection Factors					
	Una	adjusted Hourly	Unit Production:	0.703	Acres/hr		
			Site Altitude:	4,470	feet		
			Altitude Adj:	1.00	(CAT HB)		
			Job Efficiency:	0.83	(1 shift/day)		
			Net Correction:	0.83	multiplier		
		Adjusted	Hourly Unit Production:	0.58	Acres/hr		
			Hourly Fleet Production:	1.17	Acres/hr		
	JOB TIME AN	D COST					
	Fleet size:	2	Grader(s)	Total job tim	ne: <b>12.85</b>	Н	lours
	Unit cost:	\$445.769	Per acre	Total job cos	st: <b>\$6,686</b>		

## TRUCK/LOADER TEAM WORK

Site: 15 Road Gravel	Pit	Permit Action	on: 2021-05	]	Permit/Job#: N	12002114
PROJECT IDEN	TIFICATION	1				
Task #: 03D Date: 7/21/2 User: ACY	2021	State: Colora County: Mesa	ado	Ab		one 114-03d
Agency or	organization nar	me: DRMS				
HOURLY EQUI	PMENT COS	<u>T</u>		Shift bas	is: <u>1 per day</u>	
			Equipment Descri	ption		
Τ	ruck Loader Tea		740			
Sunn	ort Equipment -I		Т 980H D8T - 8SU			
Бирр			D8T - 8SU			
Road M	aintenance –Mot					
	-Wa	ater Truck: NA				
Cost Breakdown:	Truck/Lo	ader Team	Support 1	Equipment	Maintena	nce Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
Utilization-machine:	100	100	15	100	NA	N/A
Ownership cost/hour:	\$88.53	\$67.72	\$97.46	\$97.46	NA	NA NA
Operating cost/hour:	\$65.75	\$67.62	\$14.64	\$97.63	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA NA
ipper own. cost/hour:	NA	\$0.00	\$15.19	\$0.00	NA	N/A
Ripper op. cost/hour:	NA	\$0.00	\$1.99	\$0.00	NA	N/
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	NA	N/
Unit Subtotals:	\$179.10	\$171.31	\$154.13	\$235.13	NA	NA NA
Number of Units:	2	1	1	2	0	(
Group Subtotals:	Work:	\$529.51	Support:	\$624.39	Maint:	\$0.00
Total work team cos	st/hour: <b>\$1,153.</b>	90				
MATERIAL QU	ANTITIES					
Initial volume:		CCY	Swell	factor: 1.000		
Loose volume:				1.000		
C -	urce of estimated	l volume: 4.94	ac wetlands + 15	dryland @ 8"		
50	of estimated swe		Handbook			
						<del></del> -
	Material Purch					
		tase Cost: \$0.00 otal Cost: \$0.00				

Pounds/LCY

Pounds

LCY

Material weight:

Rated Payload:

Payload Capacity:

Description:

1,600

Top Soil

87,000

54.38

penetration 8.0

Truck Bed (volume) Bas			T CTT					
Struck Volume:		24.20	LCY					
Heaped Volume:		31.40	LCY					
Average Volume:		27.80	LCY					
Adjusted Volume:		31.40	LCY					
F	inal Tru	ıck Volume	Based on Nur	nber of Load	der Passes:	31.50	LCY	
Loading Tool Capacity								
<b>D</b> 10		<b>7. 7.</b> 0.0	1 7 677 4		Buc	ket Size Class:	NA	
Rated Capacity		7.500	LCY (he		1 /1000/	1100() 1.050		
Bucket Fill Facto		1.050		am or sandy	clay (100%	- 110%) 1.050		
Adjusted Capacity	/:	7.875	LCY					
Job Condition Correcti	ons:			Site Al	titude (ft.):	4470 feet		
	T	ruck	Loade	r	Source			
Altitude Adj:	1	.000	1.000		(CAT HE	3)		
Job Efficiency:	0	.830	0.830		(CAT HE	3)		
Net Correction:	0	.830	0.830					
Loading Tool Cycle Ti	me•	Numbe	r of Loading T	<u> </u>	Required to	Fill Truck:	4	nasses
Loading Tool Cycle Ti		Numbe	r of Loading T	<u> </u>	Required to	Fill Truck:	4	passes
Excavators and Front Sh	ovels:			ool Passes I	Required to	Fill Truck:	4	passes
-	ovels: ne vs. Jo	ob Conditio	on Rating: N	<u> </u>	Required to	Fill Truck:	4	passes
Excavators and Front Sh Machine Cycle Tir	ovels: ne vs. Jo lue with	ob Conditio in this Basi	on Rating: Nic Rating: N	ool Passes I	Required to	Fill Truck:	4	passes
Excavators and Front Sh Machine Cycle Tir Selected Va	ovels: ne vs. Jo lue with rs – Ma	ob Conditio in this Basi	on Rating: Nic Rating: N	ool Passes I	Required to	Fill Truck:	4	passes
Excavators and Front Sh Machine Cycle Tir Selected Va Track Loade	ovels: ne vs. Jo lue with rs – Ma	ob Conditio iin this Basi terial Descr	on Rating: Nic Rating: Nic Rating: Nic Internation:	ool Passes I	Required to	Fill Truck:		passes
Excavators and Front Sh Machine Cycle Tir Selected Va Track Loade Cycle Time Elements (m Load: NA	ovels: ne vs. Jo lue with rs – Ma in.):	ob Conditio iin this Basi terial Descr M	on Rating: Nic Rat	ool Passes I		Dump: 0.1	00	
Excavators and Front Sh Machine Cycle Tir Selected Va Track Loade Cycle Time Elements (m Load: NA Wheel and Track Load	ovels: ne vs. Jo lue with rs – Ma in.):	ob Conditio iin this Basi terial Descr M	on Rating: Nic Rat	ool Passes I		Dump: 0.1	00 0.550 mi	passes
Excavators and Front Sh Machine Cycle Tir Selected Va Track Loade Cycle Time Elements (m Load: NA Wheel and Track Load	ovels: ne vs. Jo lue with rs – Ma in.): ers - Un	ob Conditio nin this Basi terial Descr Madjusted Ba	on Rating: Nic Rat	ool Passes I		Dump: 0.1 maneuver): Factor (min.)	00 0.550 mi   Source	
Excavators and Front She Machine Cycle Tire Selected Va Track Loade Cycle Time Elements (machine Load: NA Wheel and Track Load Cycle Time Factor Materi	ovels: ne vs. Jo lue with rs – Ma in.): ers - Un ors	ob Condition this Basisterial Description Management of the Manage	on Rating: Nic Rat	ool Passes I	oad, dump, 1	Dump: 0.1 maneuver): Factor (min.) 0.020	00 0.550 mi Source (Cat HB)	
Excavators and Front Shark Machine Cycle Tire Selected Va Track Loade Cycle Time Elements (machine Load: NA Wheel and Track Load Cycle Time Factor Materi Stockpi	ovels: ne vs. Jo lue with rs – Ma in.): ers - Un ors al: M le: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and	pad, dump, 1	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000	00 0.550 mi Source (Cat HB) (Cat HB)	
Excavators and Front Sh  Machine Cycle Tir Selected Va  Track Loade  Cycle Time Elements (m  Load: NA  Wheel and Track Load  Cycle Time Factor  Materi  Stockpi  Truck Ownersh	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and	pad, dump, 1	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040	00 mi Source (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sharmachine Cycle Tire Selected Va Track Loade Cycle Time Elements (magentum Load: NA NA Wheel and Track Load Cycle Time Factor Materia Stockpi Truck Ownersh Operation	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C on: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and	pad, dump, 1	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000	00 mi Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sh  Machine Cycle Tir Selected Va  Track Loade  Cycle Time Elements (m  Load: NA  Wheel and Track Load  Cycle Time Factor  Materi  Stockpi  Truck Ownersh	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C on: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Ration: Nic Ration: Nic Ration Nic Ration: Nic Rati	ft. high and	Dad, dump, 1	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040	00 mi Source (Cat HB) (Cat HB) (Cat HB)	
Excavators and Front Sharmachine Cycle Tire Selected Va Track Loade Cycle Time Elements (magentum Load: NA NA Wheel and Track Load Cycle Time Factor Materia Stockpi Truck Ownersh Operation	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C on: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Ration: Nic Ration Nic	fool Passes I	Dad, dump, 1 l up 0.00 ers -0.04	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040 0.000	00	
Excavators and Front Sharmachine Cycle Tire Selected Va Track Loade Cycle Time Elements (magentum Load: NA NA Wheel and Track Load Cycle Time Factor Materia Stockpi Truck Ownersh Operation	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C on: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and ks and loader cle Time Ad	oad, dump, 1 l up 0.00 ers -0.04 ljustment:	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060	00 mi	
Excavators and Front Sharmachine Cycle Tire Selected Va Track Loade Cycle Time Elements (magentum Load: NA NA Wheel and Track Load Cycle Time Factor Materia Stockpi Truck Ownersh Operation	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: C p: C on: C	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and ks and loader Cy	oad, dump, 1 l up 0.00 ers -0.04 ljustment:	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	00    Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	
Excavators and Front Shandshine Cycle Tire Selected Va Track Loade Cycle Time Elements (material Load: NA Wheel and Track Load Cycle Time Factor Material Stockpi Truck Ownersh Operation Dump Targ	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: Co pp: Co on: Co et: N	ob Condition this Basisterial Description Manager Basis Basi	on Rating: Nic Rat	ft. high and ks and loader Cy	l up 0.00 ers -0.04 ljustment: vcle Time:	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	00    Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	nutes
Excavators and Front Shandshine Cycle Tire Selected Va Track Loade Cycle Time Elements (material Load: NA Wheel and Track Load Cycle Time Factor Material Stockpi Truck Ownersh Operation Dump Targ	ovels: ne vs. Jo lue with rs – Ma in.):  ers - Un ors al: M le: Co p: Co et: N	bb Condition this Basisterial Description Management of the Manage	on Rating: Nic Rat	ft. high and ks and loader Cy	Jup 0.00 ers -0.04  ljustment: //cle Time: //cle Truck:	Dump: 0.1 maneuver): Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490 1.570	00  Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> Road Condition: <u>Soft, rutted dirt, no maintenance or water, 4" tire</u>

Haul Route:

11001						
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	1.00	8.00	9.00	983	1.312

Haul Time: 1.312 minutes

Return Route:

Ttotal II Ito	ate.					
Seg#	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	-1.00	8.00	7.00	2470	0.679

Return Time: 0.679 minutes
Total Truck Cycle Time: 5.161 minutes

Loading Tool unit

Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production

366.21 LCY/Hour Adjusted for job efficiency: 303.95 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 607.91 LCY/Hour Adjusted single truck/loader team production: 607.91 LCY/Hour Adjusted multiple truck/loader team production: 607.91 LCY/Hour

**JOB TIME AND COST** 

Fleet size: 1 Team(s) Total job time: **35.28** Hours

Unit cost: \$1.898 /LCY Total job cost: **\$40,710** 

## **REVEGETATION WORK**

Revegetate Wetland Areas Lake 3

Site:	15 Road Gravel Pit	Permit Action:	2021-05	Permit/Job#:	M2002114	
-				-		

## **PROJECT IDENTIFICATION**

Task #:03EState:ColoradoAbbreviation:NoneDate:7/21/2021County:MesaFilename:M114-03e

User: ACY

Agency or organization name: DRMS

## **FERTILIZING**

Task description:

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac.	1.00	acre	\$2,063.06	\$2,063.06
Sodium nitrate, 16-0-0	750.00	pound	\$0.76	\$570.00
			Total Fertilizer Materials Cost/Acre	\$2,633.06

Application

Description		Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)		\$69.26
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	<b>Total Fertilizer Application Cost/Acre</b>	\$108.03

#### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Total Tilling Cost/Acre	\$114.56

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	\$28.48
Orchardgrass - Potomac	0.50	6.20	\$2.13
Elk Sedge	0.10	0.23	\$43.10
Slender Wheatgrass - Native	3.00	10.95	\$13.88
Western Wheatgrass - Arriba	0.10	0.25	\$0.65
Sweetvetch, Utah or Northern	0.50	0.23	\$37.50
Red Top	1.00	114.55	\$7.88
Reedgrass, Canadian (or Blue Joint)	0.20	20.57	\$40.65
Reedgrass, Northern - Native	0.50	51.42	\$68.33

Saltgrass, Inland	1.00	13.86	\$42.80
Snowberry, Western	1.00	1.72	\$63.50
Sumac, Skunkbrush	0.40	0.19	\$8.40
Timothy, Alpine - Native	1.00	29.84	\$24.25
Basin Wildrye - Trailhead	1.50	6.10	\$23.12
Greasewood, Black	1.00	140.45	\$19.00
Totals Seed Mix	12.80	435.59	\$423.65

**Application** 

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.98	\$2.98
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$307.02	\$307.02
Total Mulch Materials Cost/Acre				\$310.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$71.57
Power mulcher (MEANS 32 91 13.16 0350)		\$106.29
Weed spray, truck, aquatic area, annuals [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$200.67

#### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Plains	22	Container, 2 gallon (MEANS)	\$32.10	\$2.40	\$706.20
Totals Nursery Stock Cost / Acre				\$706.20	

#### **JOB TIME AND COST**

 No. of Acres:
 4.94
 Cost /Acre:
 \$4,763.39

 Estimated Failure Rate:
 15%
 Cost /Acre\*:
 \$2,022.30

\*Selected Replanting Work Items: TILLING,SEEDING,NURSERY,MULC

HING

Initial Job Cost: \$23,531.15

Reseeding Job Cost: \$1,498.52

Total Job Cost: \$25,030

Job Hours: 3.00

## **REVEGETATION WORK**

Lake 3 Revegetate Dry Rangeland

Site:	15 Road Gravel Pit	Permit Action:	2021-05	Permit/Job#:	M2002114	
Site.	13 Kuau Graver i ii	1 CHILL ACTION.	2021-03	1 CΠΠυ 300π.	1012002114	

## **PROJECT IDENTIFICATION**

Task #:03FState:ColoradoAbbreviation:NoneDate:7/21/2021County:MesaFilename:M114-03f

User: ACY

Agency or organization name: DRMS

## **FERTILIZING**

Task description:

#### Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac.	1.00	acre	\$2,063.06	\$2,063.06
Sodium nitrate, 16-0-0	750.00	pound	\$0.76	\$570.00
			Total Fertilizer Materials	
			Cost/Acre	\$2,633.06

Application

Description		Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)		\$69.26
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	<b>Total Fertilizer Application Cost/Acre</b>	\$108.03

#### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$404.96

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	2.50	298.44	\$24.38
Sandberg Bluegrass - VNS	2.00	42.47	\$16.80
Galleta	2.50	9.13	\$55.88
Globemallow, Scarlet (or copper)	0.50	5.66	\$67.75
Winter Fat	0.25	0.64	\$5.13
Yarrow, Western	0.50	30.40	\$20.90
Kochia, Forage (Prostrate)	0.25	35.11	\$2.24

	8.50	421.84	\$193.07
Application			

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.98	\$2.98
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$307.02	\$307.02
Total Mulch Materials Cost/Acre				\$310.00

**Application** 

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$71.57
Power mulcher (MEANS 32 91 13.16 0350)		\$106.29
Weed spray, truck, non-aquatic areas, ann. [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$200.67

#### NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 1	Nursery Stoc	k Cost / Acre	\$0.00

## **JOB TIME AND COST**

No. of Acres: 15 Cost /Acre: \$4,081.79 Estimated Failure Rate: 50% Cost /Acre\*: \$1,340.70

\*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$61,226.85** Reseeding Job Cost: \$10,055.25 Total Job Cost: **\$71,282** Job Hours: **24.00** 

## **PUMPING WORK**

Task description:	Drain	lake 4 for grading b	anks		
: 15 Road Gravel Pit		Permit Action	2021-05	Permit/Job#:	M2002114
PROJECT IDENTI	FICATIO	<u>ON</u>			
Task #: 04A		State: Colorad	0	Abbreviation: N	lone
Date: 7/20/2021		County: Mesa		Filename: N	1114-04a
User: ACY		<u> </u>		<del></del>	
Agency or org	anization r	name: DRMS			
HOURLY EQUIPM					
	Descri			Quantity	
Make and Model:		rsible pump - 460v, 8	in.	2	_
Attachment 1:		n hose - 6 in. diam., 25		2	
Attachment 2:		rge hose - 6 in. D., 25		4	
Labor Unit 1:		operator		1	<del></del>
Horsepower:	95			ı	<u> </u>
	per day				
Weight:	0.70	<u></u>			
	US Tons)				
Cost Breakdown:	,				
Cost Breakdo wiii.			Utilization %		
Ownership Cost	/Hour:	\$32.04	NA		
Operating Cost	/Hour:	\$9.38	100		
Operator Cost	/Hour:	\$28.23	NA		
Total Unit Cost	:/Hour:	\$69.65			
Total Fleet Cos	st/Hour:	\$69.65	_		
PUMPING QUANT		Ψον.ου			
Initial Pond Vo		324.00		Conversion factor:	325850.5800
Final Pond Vo		105,575,587.92	gallons	Conversion factor.	323630.3600
Total Pond Inflow S		105,575,507.92	ganons	Unit inflow rate in	
Total Folia Ilillow 5	Area:	1,176,120	Sq. ft.	gph/sq. ft.:	0.1758
Total Pond Inflow V		1,170,120	5q. it.	gpii/sq. it	0.1736
	Hour:	206,761.90	gallons		
Source	e of estimat	ted volume: 27 ac o	of ponds pumped 12	2' down	
PUMPING TIME					
		C	170 000		
		ımp Capacity: Suction Head:	170,000 5	gph/pump	
			25	feet	
ES	illiated Dis	scharge Head: Total Head:	30	feet feet	
	CDD D	imp Capacity:	165,600		
	Crbri	Site Altitude:	4,470	gph/pump	
		Site Aintude.	4,470	feet	
A dia	isted Diimr	oing Capacity:	331,200	gph	
		umping Time:	318.77	hours	
		itial Pumping:	65,908,843	gallons	
		umping Time:	517.77	Hours	
		stment Factor:	1.0000	(3% rule)	
		ciency Factor:	0.9167	(55 min./hr.)	
		umping Time:	474.64	hours	
JOB TIME AND CO		-			
	<u>-</u>		Total j	job time: <b>474.64</b>	Hours
Unit cost: \$0.0	000193	/Gallon	Total	job cost: \$33,058	

## **BULLDOZER WORK**

Task description:		Lake 4 6	establish 3H	vii i biop	C 11 0111 211.1 V		
15 Road Gravel	Pit		Permit	Action:	2021-05	Permit/Job#:	M2002114
PROJECT IDEN	TIFI	CATION					
Task #: 04B			State: C	Colorado		Abbreviation:	None
Date: 7/21/2	2021		County: N	Mesa		Filename:	M114-04b
User: ACY						- -	
Agency or	organ	ization nan	ne: DRM	S			
HOURLY EQUI							
Basic Machine:		D8T - 8SU	<u> </u>				
Horsepower:	310						
Blade Type:	Sem	i-Universa	1		<del></del> ;		
Attachment:	NA						
Shift Basis:		r day					
Data Source:	(CR	G)			<u></u>		
Cost Breakdown:							
_	_				<u>Utilization %</u>		
Ownership Cost/H	_			\$97.46	NA 100		
Operating Cost/H	_			\$97.63	100 NA		
Ripper own. Cost/H				\$0.00	NA 0		
	O11#*			\$0.00	U		
Ripper op. Cost/H	-			¢40.04	37.4		
	lour:	\$235.13 <b>\$470.25</b>		\$40.04	NA		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume:	lour:	\$470.25 ITIES		\$40.04	NA NA		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU	lour:	\$470.25 [TIES		\$40.04	NA		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	ANTI 3,148 1.250 3,935 volum swell	\$470.25  TTIES  LCY  ne: factor:	1700LF of 2 Cat Handboo	0'H @ 2:			
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	ANTI 3,148 1.250 3,935 volum swell	\$470.25  TIES  LCY  ne: factor:	Cat Handboo	0'H @ 2:			
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	ANTI 3,148 1.250 3,935 volum swell  DUCT	\$470.25  TTIES  LCY  ne: factor:  10N  65		0'H @ 2: ok			
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI  Average push distant	ANTI 3,148 1.250 3,935 volum swell  DUCT nce:	\$470.25  TTIES  LCY  ne: factor:  10N  65  1,1	feet 70.3 LCY/h	0'H @ 2: ok			
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI  Average push distar Unadjusted hourly p	ANTI 3,148 1.250 3,935 volum swell  DUCT nce: product	\$470.25  TTIES  LCY  ne: factor:  10N  65  1,1	feet 170.3 LCY/h Compacted	0'H @ 2: ok	1		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI Average push distant Unadjusted hourly p Materials consistence	ANTI 3,148 1.250 3,935 volum swell  DUCT nce: product	\$470.25  TTIES  LCY  ne: factor:  10N  65  1,1  cription: -20 %	feet 170.3 LCY/h Compacted	0'H @ 2: ok	1		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI Average push distant Unadjusted hourly publication Materials consistence Average push gradi Average site altitud	ANTI 3,148 1.250 3,935 volum swell  DUCT nce: product cy desc	\$470.25  TTIES  LCY  ne: factor:  10N  65  1,1  cription:  -20 %  4,400 fee  2,550 lbs.	feet 170.3 LCY/h Compacted	0'H @ 2: ok	1		
Ripper op. Cost/H Operator Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI Average push distant Unadjusted hourly p Materials consistence Average push gradi Average site altitud Material weight: Weight description: Job Condition Corre	in: iur: iur:  3,148 1.250 3,935 volum swell  DUCT ince: product cy descrete: e:	\$470.25  TTIES  LCY  ne: factor:  10N  65 1,1  cription: -20 % 4,400 fee  2,550 lbs. Earth - D  Factor	feet 170.3 LCY/h Compacted t /LCY ry packed	O'H @ 2: ok d fill or e	1mbankment 0.9		
Ripper op. Cost/H Operator Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROI  Average push distar Unadjusted hourly p Materials consistence Average push gradi Average site altitud Material weight: Weight description: Job Condition Correct Ope	ANTI 3,148 1.250 3,935 volum swell  DUCT nce: product cy descent: e:	\$470.25  TIES  LCY  ne: factor: factor:  -20 % 4,400 fee  2,550 lbs. Earth - D  Factor kill:	feet 170.3 LCY/h Compacted t /LCY ry packed 0.750	O'H @ 2: ok  d fill or e	1mbankment 0.9Source (AVG.)		
Ripper op. Cost/H Operator Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou  MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated Source of estimated HOURLY PROI  Average push distant Unadjusted hourly p Materials consistence Average push gradi Average site altitud Material weight: Weight description: Job Condition Corre Ope Material co	ANTI 3,148 1.250 3,935 volum swell  DUCT nce: product cy descent: e:	\$470.25  TTIES  LCY  ne: factor:  65  1,1  cription:  -20 %  4,400 fee  2,550 lbs.  Earth - D  Factor kill: ncy:	feet 170.3 LCY/h Compacted t /LCY ry packed	O'H @ 2: ok  d fill or e	1mbankment 0.9		

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5765

Adjusted unit production: 674.68 LCY/hr
Adjusted fleet production: 1349.36 LCY/hr

## **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.348/LCY

Total job time: 2.92 Hours
Total job cost: \$1,371

## **BULLDOZER RIPPING WORK**

	Task description:	Rip C	Compacted Areas - Lake	4					
Site	: 15 Road Grav	vel Pit	Permit Action:	2021-05	P	ermit/Job#:	: <u>M200</u>	)2114	
	PROJECT ID	ENTIFICATION	<u>ON</u>						
	Task #: 040	C	State: Colorado		Abh	reviation:	None		
		21/2021	County: Mesa			Filename:	M114	-04c	
	User: AC								
	Agency	or organization	name: DRMS						
	HOURLY EQ	UIPMENT CO	<u>OST</u>						
	Basic	Machine: Cat	D8T - 8SU		Horsepower:		310		
	Ripper Att	tachment: 3-S	hank Ripper	<u> </u>	Shift Basis:	1 1	er day		
				<del></del>	Data Source:	(	CRG)		
	Cost Breakdown	<u>:</u>							
					Utilization %				
		Ownership Co		\$97.46	NA	_			
		Operating Co		\$97.63	100	_			
		er Ownership Co		\$15.19	NA	_			
	Rip	per Operating Co		\$9.94	100	=			
		Operator Co		\$40.04	NA	_			
		Total Unit Co		\$260.26					
		Total Fleet Co	ost/Hour: \$520	.51					
	MATERIAL (	<u>DUANTITIES</u>	Sele	cted estimating	g method: Are	a			
	Alternate Method	ds:							
Seismic:	NA		Bank Volume:	NA	BCY		NA		
Area:	6.30	acres	Rip Depth (ft):	2.00	Volume:	20,328		BCY or CC	
	Source of estimated quantity:6.3ac Wash plant area								
	HOURLY PRO	ODUCTION							
	Seismic:								
	<u>Bergiine.</u>	S	Seismic Velocity:	NA	feet/sec	cond			
	<b>A</b>		, <u> </u>						
	Area:	Aama a	a Dimnina Dantha	2.56	foot/mov				
			e Ripping Depth:  e Ripping Width:	7.08	feet/pas feet/pas				
		_	Ripping Length:	100.00	feet/pas				
		_	age Dozer Speed:	88.00	feet/mi				
			Maneuver Time:	0.25	minute				
		_	ion per unit area:	0.703	acres/h	-			
	Job Condition Co								
	Un	nadjusted Hourly	Unit Production:	0.703	Acres/h	ır			
			Site Altitude:	4,470	feet				
			Altitude Adj:	1.00	(CAT I	HB)			
			Job Efficiency:	0.83	(1 shift				
			Net Correction:	0.83	multipl	ier			
		Adjusted	Hourly Unit Production:	0.58	Acres/hr				
			Hourly Fleet Production:	1.17	Acres/hr				
	JOB TIME AN	ND COST							
	Fleet size:	2	Grader(s)	Total job tim	ne:	5.40	]	Hours	
	Unit cost:	\$445.769	Per acre	Total job co	st· ¢	62,808			
	- Int cost	ψιτυυ/	1 01 4010	10th job co.	ν 4	<b></b> ,000			

## TRUCK/LOADER TEAM WORK

Site: 15 Road Gravel	Pit	Permit Actio	on: 2021-05		Permit/Job#: M	12002114
PROJECT IDEN	<u>NTIFICATION</u>	[				
Task #: 04D	2021	State: Colora	do	Ab	breviation: No	
Date: $\frac{7/21}{2}$ User: ACY		County: Mesa			Filename: M	114-04d
	r organization nar	ne: DRMS				
	C					
HOURLY EQUI	IPMENT COS'	<del>_</del>			is: <u>1 per day</u>	
	Fruck Loader Tea		Equipment Descri 740	ption		
	Truck Loader Tea	-Loader: CAT	7 980H			
Supp	ort Equipment -L		D8T - 8SU			
Road M	-Di Iaintenance –Mot	1	D8T - 8SU			
		ter Truck: NA				
God B. III	an tar	- 1 T.	C .		3.6.1.	T.
Cost Breakdown:	Truck/Loa	ader Team Loader	Load Area	Equipment Dump Area	Maintenai Motor Grader	Nater Truck
0/XI:				•		
%Utilization-machine:	\$88.53	100 \$67.72	\$97.46	\$97.46	NA NA	NA NA
Ownership cost/hour: Operating cost/hour:	\$65.75	\$67.72	\$14.64	\$97.40	NA NA	NA NA
%Utilization-riper:	NA	0	20	NA	NA NA	NA NA
Ripper own. cost/hour:	NA	\$0.00	\$15.19	\$0.00	NA	NA NA
Ripper op. cost/hour:	NA	\$0.00	\$1.99	\$0.00	NA	NA
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	NA	NA
Unit Subtotals:	\$179.10	\$171.31	\$154.13	\$235.13	NA	NA
Number of Units:	2	1	1	2	0	(
Group Subtotals:	Work:	\$529.51	Support:	\$624.39	Maint:	\$0.00
Total work team co	st/hour: <b>\$1,153.</b>	90				
MATERIAL OF						
MATERIAL QU						
Initial volume Loose volume		CCY LCY	Swell	factor: 1.000		
So	ource of estimated	volume: 1.95 a	nc wetlands + 6.3	dryland @ 8"		
	e of estimated swe	ell factor: Cat H	andbook			
	Material Purch					
	10	otal Cost: \$0.00				
<b>HOURLY PRO</b>	DUCTION					
Truck Capacity:						
Truck Payload (wei			D 1 ~ ~~			
Material v	weight: $1,600$ ription: Top So	ni1	Pounds/LCY			
Rated Pa			Pounds			
Payload Ca			LCY			

Truck Bed (volume) Basis: Struck Volume:	24.20 I	LCY				
Heaped Volume:		LCY				
Average Volume:		LCY				
Adjusted Volume:		LCY				
Adjusted Volume.	31.40 1	201				
Final '	Truck Volume	Based on Number of	Loader Passes:	31.50	LCY	
Loading Tool Capacity						
D . 10	<b>7. 7.</b> 0.0	l v avv a	Bucke	et Size Class: NA	A	=
Rated Capacity:	7.500	LCY (heaped)	1 1 /1000/	1100() 1 050		_
Bucket Fill Factor:	1.050		andy clay (100% -	110%) 1.050		_
Adjusted Capacity:	7.875	LCY				
Job Condition Corrections:	-	Si	te Altitude (ft.): 44	170 feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HB)			
Job Efficiency:	0.830	0.830	(CAT HB)			
Net Correction:	0.830	0.830				
Excavators and Front Shovel  Machine Cycle Time vs		Rating: NA				
Machine Cycle Time vs Selected Value w	s. Job Condition within this Basic	Rating: NA				
Machine Cycle Time vs Selected Value w Track Loaders – I	s. Job Condition within this Basic	Rating: NA				
Machine Cycle Time vs Selected Value w Track Loaders – I	s. Job Condition vithin this Basic Material Descri	Rating: NA		Dump: 0.100		
Machine Cycle Time vs Selected Value w Track Loaders – l Cycle Time Elements (min.):	s. Job Condition vithin this Basic Material Descri	Rating: NA ption:  aneuver: NA	ne (load, dump, m		550 min	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.): Load: NA Wheel and Track Loaders -	s. Job Condition vithin this Basic Material Descri	Rating: NA ption:  aneuver: NA	ne (load, dump, m	aneuver):0	550 min	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA Wheel and Track Loaders – Cycle Time Factors	s. Job Condition vithin this Basic Material Descri Ma Ma Unadjusted Bas	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tir	ne (load, dump, m	aneuver): 0.	550 min Source	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA Wheel and Track Loaders - Cycle Time Factors Material:	s. Job Condition vithin this Basic Material Descri	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tire al 0.02		aneuver): 0 Factor (min.) 0.020	550 min Source (Cat HB)	utes 
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile:	Material Descri	Rating: NA  ption:  Anneuver: NA  sic Loader Cycle Tire al 0.02  lozer piled 10 ft. higi	h and up 0.00	aneuver): 0.	550 min Source	utes 
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA Wheel and Track Loaders - Cycle Time Factors Material:	Material Descri	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tir  1 0.02  lozer piled 10 ft. higi ership of trucks and	h and up 0.00	Factor (min.) 0.020 0.000	550 min    Source	utes 
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors Material: Stockpile: Truck Ownership:	Mixed material Conveyor or d	Rating: NA ption:  aneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. higi ership of trucks and ation -0.04 at 0.00	h and up 0.00 loaders -0.04	Factor (min.) 0.020 0.000 -0.040	Source (Cat HB) (Cat HB) (Cat HB)	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Mixed material Conveyor or d	Rating: NA ption:  aneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. higi ership of trucks and ation -0.04 at 0.00	h and up 0.00	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040	Source   (Cat HB)   (Cat HB)	nutes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Mixed material Conveyor or d	Rating: NA ption:  aneuver: NA sic Loader Cycle Tir al 0.02 lozer piled 10 ft. higi ership of trucks and ation -0.04 at 0.00	h and up 0.00 loaders -0.04	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000	Source   (Cat HB)   (Cat HB)	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Mixed material Conveyor or d	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tin  al 0.02  lozer piled 10 ft. higi ership of trucks and ation -0.04  t 0.00  Net Cycle Tin Adjusted Loade	h and up 0.00 loaders -0.04	aneuver): 0  Factor (min.)  0.020  0.000  -0.040  -0.040  0.000  -0.060	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation: Dump Target:	Mixed material Conveyor or d	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tin  al 0.02  lozer piled 10 ft. higi ership of trucks and ation -0.04  t 0.00  Net Cycle Tin Adjusted Loade	h and up 0.00 loaders -0.04  ne Adjustment: er Cycle Time:	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders –  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation:	Mixed material Conveyor or de Common own Constant oper.	Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tin  al 0.02  lozer piled 10 ft. higi ership of trucks and ation -0.04  t 0.00  Net Cycle Tin Adjusted Loade	h and up 0.00 loaders -0.04  ne Adjustment: er Cycle Time: ime per Truck:	aneuver): 0 Factor (min.) 0.020 0.000 -0.040 -0.040 0.000 -0.060 0.490	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Machine Cycle Time vs Selected Value w Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:  Truck Cycle Time:	Mixed material Conveyor or d Common own Constant oper Nominal targe	e Rating: NA  ption:  aneuver: NA  sic Loader Cycle Tin  al 0.02  lozer piled 10 ft. high ership of trucks and ation -0.04  et 0.00  Net Cycle Tin Adjusted Loade Net Load T	h and up 0.00 loaders -0.04  ne Adjustment: er Cycle Time: ime per Truck:  Adjusted f	aneuver): 0  Factor (min.)  0.020  0.000  -0.040  -0.040  0.000  -0.060  0.490  1.570	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> Road Condition: <u>Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0</u>

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	1.00	8.00	9.00	983	1.312

Haul Time: 1.312 minutes

Return Route:

Return Route.							
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)	
1	1200.00	-1.00	8.00	7.00	2470	0.679	

Return Time: 0.679 minutes
Total Truck Cycle Time: 5.161 minutes

Loading Tool unit

Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour Truck Unit Production

\_\_\_\_\_366.21 LCY/Hour Adjusted for job efficiency: \_\_\_\_303.95 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 607.91 LCY/Hour Adjusted single truck/loader team production: 607.91 LCY/Hour Adjusted multiple truck/loader team production: 607.91 LCY/Hour

**JOB TIME AND COST** 

Fleet size: \_\_\_\_\_1 Team(s) Total job time: \_\_\_\_\_14.60 Hours

Unit cost: \$1.898 /LCY Total job cost: **\$16,842** 

## **REVEGETATION WORK**

Revegetate Wetland Areas Lake 4

Site:	15 Road Gravel Pit	Permit Action:	2021-05	Permit/Job#:	M2002114	

## **PROJECT IDENTIFICATION**

Task #:04EState:ColoradoAbbreviation:NoneDate:7/21/2021County:MesaFilename:M114-04e

User: ACY

Agency or organization name: DRMS

## **FERTILIZING**

Task description:

#### Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac.	1.00	acre	\$2,063.06	\$2,063.06
Sodium nitrate, 16-0-0	750.00	pound	\$0.76	\$570.00
			Total Fertilizer Materials	
			Cost/Acre	\$2,633.06

Application

		~
Description		Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)		\$69.26
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	Total Fertilizer Application Cost/Acre	\$108.03

## **TILLING**

Description		Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)		\$114.56
	<b>Total Tilling Cost/Acre</b>	\$114.56

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	\$28.48
Orchardgrass - Potomac	0.50	6.20	\$2.13
Elk Sedge	0.10	0.23	\$43.10
Slender Wheatgrass - Native	3.00	10.95	\$13.88
Western Wheatgrass - Arriba	0.10	0.25	\$0.65
Sweetvetch, Utah or Northern	0.50	0.23	\$37.50
Red Top	1.00	114.55	\$7.88
Reedgrass, Canadian (or Blue Joint)	0.20	20.57	\$40.65
Reedgrass, Northern - Native	0.50	51.42	\$68.33

Saltgrass, Inland	1.00	13.86	\$42.80
Snowberry, Western	1.00	1.72	\$63.50
Sumac, Skunkbrush	0.40	0.19	\$8.40
Timothy, Alpine - Native	1.00	29.84	\$24.25
Basin Wildrye - Trailhead	1.50	6.10	\$23.12
Greasewood, Black	1.00	140.45	\$19.00
Totals Seed Mix	12.80	435.59	\$423.65

**Application** 

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.98	\$2.98
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$307.02	\$307.02
Total Mulch Materials Cost/Acre				\$310.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$71.57
Power mulcher (MEANS 32 91 13.16 0350)		\$106.29
Weed spray, truck, aquatic area, annuals [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$200.67

#### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Cottonwood, Plains	22	Container, 2 gallon (MEANS)	\$32.10	\$2.40	\$706.20
		Totals	Nursery Stoc	ek Cost / Acre	\$706.20

#### **JOB TIME AND COST**

 No. of Acres:
 1.95
 Cost / Acre:
 \$4,763.39

 Estimated Failure Rate:
 15%
 Cost / Acre\*:
 \$2,022.30

\*Selected Replanting Work Items: TILLING,SEEDING,NURSERY,MULC

HING

Initial Job Cost: \$9,288.61

Reseeding Job Cost: \$591.52

Total Job Cost: \$9,880

Job Hours: 4.00

## **REVEGETATION WORK**

Lake 4 Revegetate Dry Rangeland

	2114
Site: 15 Road Gravel Pit Permit Action: 2021-05 Permit/Job#: M20	12114

## **PROJECT IDENTIFICATION**

Task #:04FState:ColoradoAbbreviation:NoneDate:7/21/2021County:MesaFilename:M114-04f

User: ACY

Agency or organization name: DRMS

## **FERTILIZING**

Task description:

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac.	1.00	acre	\$2,063.06	\$2,063.06
Sodium nitrate, 16-0-0	750.00	pound	\$0.76	\$570.00
			Total Fertilizer Materials Cost/Acre	\$2,633.06

Application

Description		Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)		\$69.26
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	<b>Total Fertilizer Application Cost/Acre</b>	\$108.03

#### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$404.96

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	2.50	298.44	\$24.38
Sandberg Bluegrass - VNS	2.00	42.47	\$16.80
Galleta	2.50	9.13	\$55.88
Globemallow, Scarlet (or copper)	0.50	5.66	\$67.75
Winter Fat	0.25	0.64	\$5.13
Yarrow, Western	0.50	30.40	\$20.90
Kochia, Forage (Prostrate)	0.25	35.11	\$2.24

\$232.00

	Totals Seed Mix	8.50	421.84	\$193.07
Application				
Description				Cost /Acre
Drill Seeding (DRMS Survey Cost)				\$232.00
	Total Seed	Applicatio	n 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	\$2.98	\$2.98
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$307.02	\$307.02
Total Mulch Materials Cost/Acre				\$310.00

**Application** 

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$71.57
Power mulcher (MEANS 32 91 13.16 0350)		\$106.29
Weed spray, truck, non-aquatic areas, ann. [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$200.67

#### NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
	\$0.00				

## **JOB TIME AND COST**

No. of Acres: 6.3 Cost /Acre: \$4,081.79 Estimated Failure Rate: 50% Cost /Acre\*: \$1,340.70

\*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$25,715.28** Reseeding Job Cost: \$4,223.21 Total Job Cost: **\$29,938** Job Hours: **16.00** 

## **DEMOLITION WORK**

J	Γask description:	Structure Re	emoval			
Site: _	15 Road Gravel Pit	1	Permit Action:	2021-05	Permit/.	Job#: M2002114
ROJE(	CT IDENTIFICATIO	<u>N</u>				
Task #:	05A	State:	Colorado		Abbreviation:	None
Date:	7/21/2021	County:	Mesa		Filename:	M114-05a
User:	ACY	• -				

## **UNIT COSTS**

## Location adjustment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale	24' x 28'	Loading and 2 mile haul, no salvage - Machine loading	25.00	CY	\$18.25	\$456.25
Office	24' x 28' x 8'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 200 ft. push	5,376.00	CF	\$0.22	\$1,171.97
Office Foundation	24' x 28' x 6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	672.00	SF	\$1.05	\$707.62
Scale	24' x 28'	Hauling only, per mile, 12-18 CY truck - 30 mph average speed	30.00	MI	\$7.61	\$228.30
Storage Building	30' x 60'	USER PROVIDED ITEM	300.00	-	\$1.00	\$300.00
Fuel Storage	-	USER PROVIDED ITEM	1,000.00	-	\$1.00	\$1,000.00

				<b>Total Cost</b>	
		Subtotal		(adjusted for	
Job Hours:	8.00	(unadjusted):	\$3,864.14	location):	\$3,690.25

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Initial Mobilization	1		
e: 15 Road Gravel Pit	Permi	t Action:	Permit/Jo	b#: <u>M2002114</u>
PROJECT IDENTIFIC	<u>ATION</u>			
Task #: 06A	State: C	Colorado	Abbreviation:	None
Date: 7/21/2021 User: ACY	County: N	Mesa	Filename:	M114-06a
EQUIPMENT TRANSP	PORT RIG COST		Shift basis:	1 per day
Truck Tractor	Description: GEN		Cost Data Source: AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006)	CRG Data  DIESEL POWERED,
Truck Trailer	Description:		G GOOSENECK, DROP DEC AILER (25T, 50T, AND 100T)	-
Cost Breakdown:				
<b>Available Rig Capacities</b>	0-25 Tons	26-50 Tons	51+ Tons	
Ownership Cost/Ho	ur: \$21.28	\$37.94	\$47.67	
Operating Cost/Ho	ur: \$26.55	\$50.48	\$56.21	

\$20.54

\$23.53

\$132.49

\$20.54

\$23.53

\$147.95

#### **NON ROADABLE EQUIPMENT:**

Total Unit Cost/Hour:

Operator Cost/Hour:

Helper Cost/Hour:

\$20.54

\$0.00

\$68.37

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/uni	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
	(TONS)		t		fleet		
Submersible pump	0.70	\$14.98	\$68.37	1	\$83.35	\$68.37	\$250.00
- 460v, 8 in.							
Cat D8T - 8SU	53.08	\$112.65	\$147.95	2	\$521.20	\$295.90	\$250.00
Cat 740	36.49	\$88.53	\$132.49	1	\$221.02	\$132.49	\$250.00
CAT 980H	33.12	\$67.72	\$132.49	2	\$400.42	\$264.98	\$500.00
Drill/Broadcast	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00
Seeder with							
Tractor							
Power Mulcher	6.00	\$14.98	\$68.37	1	\$83.35	\$68.37	\$250.00
(Bowie LD-90)							

Subtotals: \$1,385.69 \$898.48 \$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	\$48.74	2	\$97.48	\$97.48

Subtotals:	\$97.48	\$97.48
Dunnuais.	カフ/・サロ	カフノ・サロ

## **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

Total one-way travel distance:

3.00 miles
mph

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

\$6,662.95

#### **Transportation Cycle Time:**

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.09	0.09
Return Time (Hours):	0.09	0.09
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.17	0.17

#### **JOB TIME AND COST**

Total job time:	2.34	Hours
Total job cost:	\$6,680	

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Secondary Mob	oilization		
ite: 15 Road Gravel Pit	oad Gravel Pit Permit Action: 2021-05		05 Permit	/Job#: <u>M2002114</u>
PROJECT IDENTIFIC	ATION			
Task #: 06B Date: 7/21/2021 User: ACY	State: County:	Colorado Mesa	Abbreviation Filename	
Agency or organiz	cation name:D	RMS		
EQUIPMENT TRANSI	PORT RIG CO	<u>ST</u>		
			Shift basis:	1 per day CRG Data
			Cost Data Source: _	<del></del>
Truck Tractor	Description: G	ENERIC ON-HIGHV	WAY TRUCK TRACTOR, 6X	4, DIESEL POWERED,
Truck Trailer	Description:	GENERIC FOLD	400 HP (2ND HALF, 2006) ING GOOSENECK, DROP D	FCK FOLIPMENT
Truck Trunci	Description.		RAILER (25T, 50T, AND 100	-
G . D . 1.1				,
Cost Breakdown:				
Available Rig Capacities			51+ Tons	
Ownership Cost/Ho		\$37.94	\$47.67	
Operating Cost/Ho	ur: \$26.55	\$50.48	\$56.21	
Operator Cost/Ho	ur: \$20.54	\$20.54	\$20.54	
Helper Cost/Ho	ur: \$0.00	\$23.53	\$23.53	

## **NON ROADABLE EQUIPMENT:**

Total Unit Cost/Hour:

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Description	Unit (TONS)	Cost/hr/ unit	Cost/hr/uni t	Size	Cost/hr/ fleet	Cost/III/ Heet	Cost nect
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.98	\$68.37	1	\$83.35	\$68.37	\$250.00

\$132.49

\$68.37

\$147.95

Subtotals: \$159.70 \$136.74 \$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	\$48.74	2	\$97.48	\$97.48

Subtotals:	\$97.48	\$97.48
oudiotais.	D7/.40	D7/.40

## **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

Total one-way travel distance:

3.00 miles

mph

#### **Transportation Cycle Time:**

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.09	0.09
Return Time (Hours):	0.09	0.09
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.17	0.17

#### **JOB TIME AND COST**

Total job time:	2.34	Hours
Total job cost:	\$1,387	

2021-05 CIRCES de M-2002-114

# Bond is sufficient

Lake 1 A - Dewater 9th x 26.7ac > 240.3 oc/Ft B - Place overburden for 11.51ac wetland +1.163,052 Shelf 9 ft x 11.5/ac > 167,125 cx - Rever Wetland 11.51ac - Rever dryland 804 as half completed -04.2 remaining - TopSoil 8.4ac around lam+ 11.51 wetland 8" x 19.91 - DZI, 414.31 CY C-Rip Stochpile area 15ac Lake 3 (NW) ~24ac pit + 15ac yard A - Dewater 12ft Dx 24ac >288ac/ft + 1,015,440 mflow 3 B - Regrade Slopes Z: F>3:1 @ 20'H D-Topsoil 8'Deso' perimeter + 15ac y +> 19.94ac +> 21,44. CI-Rip yard area NISAC E- Reveg Wetland = 4.94ac F! Rever Dryland > 15ac Lake 4 (NE) ~27 ac pit + 6.3ac plant A-Dewater 12 ft D x 27ac +> 324ac/A+1,174, no inflan 1 B- Regrade slapes 2:1-03:10 20'H D-Topsoil 8"De So' perimete (1950e) + 6.30c plant () Ly 8.25ac > 8,873.0 cy CFRip Plant area Co. 3 ac F Rever Wetland 1.95 ac

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