# COST SUMMARY WORK

Т	Fask descrip	otion:	Post inspection u	ipdate 03-20	-18			
Site:	Soaring H	Eagle Gravel I	Pit Per	mit Action:	2018-03	Permit/Job	#: <u>M1999025</u>	
<u>P1</u>	ROJECT Task #: Date: User:	IDENTIFIC ACY 3/27/2018 ACY	ATION State: County:	Colorado Mesa		Abbreviation: Filename:	None M025-ACY	

Agency or organization name: DRMS

# TASK LIST (DIRECT COSTS)

T l-		Form	Fleet	Task	
Task	Description	Used	Size	Hours	Cost
01a	Structure Removal	DEMOLISH	1	5.00	\$956.22
02a	Excavate outlets structure	DOZER	1	4.44	\$1,065.00
02b	Excavate inlet structure	DOZER	1	4.44	\$1,065.00
03a	Provided 1540 c.y. of 2 ft D50 riprap delivered to site	NA	5	8.00	\$0.00
03b	Provided 1540 c.y. of 2 ft D50 riprap delivered to site	NA	5	8.00	\$0.00
04a	Place riprap on outlet structure	EXCAVATE	1	17.40	\$1,748.00
04b	Place riprap on inlet structure	EXCAVATE	1	17.40	\$1,748.00
05a	Dewater 35 ac pit with11 ft water depth for grading	PUMPING	1	744.63	\$19,651.00
06a	backfill 4500' max of pit slopes	SCRAPER1	1	109.90	\$37,190.00
06b	backfill material to create wetlands	SCRAPER1	1	31.10	\$10,525.00
07a	Rip compacted areas prior to topsoil replacement	RIPPER	1	43.70	\$10,757.00
08a	Apply topsoil to 4500 LF of pit slopes	SCRAPER1	1	3.31	\$1,120.00
09a	Apply topsoil to 29 ac facilities and perimeter road	SCRAPER1	1	37.98	\$12,854.00
10a	Reveg disturbed areas	REVEGE	1	60.00	\$73,845.00
11a	Initial mobilization	MOBILIZE	1	2.57	\$5,305.00
12a	Secondary mobilization	MOBILIZE	1	2.57	\$1,514.00
13a	Install wetlands exclusion fencing	SITEMAINT	1	80.00	\$7,050.00
		ENANCE			
		<u>SUBTO</u>	TALS:	1180.44	\$186,393

# **INDIRECT COSTS**

## **OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$3,765.14
Performance bond:	1.05	Total =	\$1,957.13
Job superintendent:	200.00	Total =	\$14,610.00
Profit:	10.00	Total =	\$18,639.30
		TOTAL O & P =	\$38,971.57
		CONTRACT AMOUNT (direct + O & P) = $($	\$225,364.57

## LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): Engineering work and/or contract/bid preparation: Reclamation management and/or administration:	500.00 4.25 5.00	Total = Total =	500.00 \$9,577.99 \$11,268.23
CONTINGENCY:	0.00	Total =	\$0.00
	TOTAL IN	DIRECT COST =	\$60,317.79
TOTAL BO	ND AMOUNT (di	rect + indirect) =	\$246,710.79

No increase issued bond close

# **DEMOLITION WORK**

Т	Task description:	Structure Removal			
Site:	Soaring Eagle Gravel Pi	t Permit Action:	2018-03	Permit/.	Job#: <u>M1999025</u>
<u>PROJEC</u>	CT IDENTIFICATION	<u>N</u>			
Task #: Date: User:	3/27/2018	State: Colorado County: Mesa		Abbreviation: Filename:	None M025-01a
	Agency or organizat	ion name: DRMS			
UNIT CO	OSTS			Location adju	stment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale foundation and slabs	80' L x 12'W	Demo. and on-site disposal in existing pit, 10 in. thick - Max. 10,000 ft. haul	960.00	SF	\$1.04	\$1,001.28

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	5.00	(unadjusted):	\$1,001.28	location):	\$956.22

## BULLDOZER WORK

		LACavat	ouncis	structure			
Soaring Eagle	Gravel	Pit	Per	mit Action:	2018-03	Permit/Job#:	M1999025
PROJECT IDE	<u>NTIFI</u>	CATION					
Task #: $02A$ Date: $3/2^{\circ}$ User:AC	7/2018	C	State: ounty:	Colorado Mesa		Abbreviation: Filename:	None M025-02a
Agency	or organ	ization nam	e: DI	RMS			
HOURLY EQU	JIPME	NT COST					
Basic Machine	-	D9T - 9SU					
Horsepower Blade Type		ni-Universal					
Attachment	-	ank ripper					
Shift Basis		er day					
Data Source							
Cost Breakdown:		,					
					Utilization %		
Ownership Cost				\$100.59	NA		
Operating Cost				\$87.23	100		
Ripper own. Cost				\$10.94	NA		
Ripper op. Cost	-			\$0.68	10		
Operator Cost	Hour:			\$40.52	NA		
MATERIAL Q Initial Volume:	UANTI 2,555						
C11 .C	1.180						
Swell factor: Loose volume:	3,015	LCY					
Loose volume: Source of estimate	ed volum	ne: C			it (TR-2 estimate)		
Loose volume: Source of estimate Source of estimate	ed volum ed swell	ne: <u>C</u> factor: <u>C</u>	outlet de at Hand		it (TR-2 estimate)		
Loose volume: Source of estimate Source of estimate HOURLY PRO	ed volum ed swell DUCT	ne: <u>C</u> factor: <u>C</u>	at Hand		it (TR-2 estimate)		
Loose volume: Source of estimate Source of estimate	ed volum ed swell DUCT ance:	ne: <u>C</u> factor: <u>C</u> T <u>ION</u> _ 50 f	at Hand	lbook	it (TR-2 estimate)		
Loose volume: Source of estimate Source of estimate HOURLY PRO Average push dist	ed volum ed swell DUCT ance: y produc	$\frac{1}{100}$ $\frac{50 \text{ fr}}{2,1}$	Seet 10.5 LC	lbook Y/hr	it (TR-2 estimate)		
Loose volume: Source of estimate Source of estimate HOURLY PRC Average push dist Unadjusted hourly	ed volum ed swell DUCT ance: y product ency desc dient:	$\frac{1}{100}$ $\frac{50 \text{ fr}}{2,1}$	eet Ceet 10.5 LC Compa	lbook Y/hr			
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra	ed volum ed swell DUCT ance: y product ency desc dient:	tion: $\frac{50 \text{ f}}{2,1}$	Seet 10.5 LC Compa	lbook Y/hr			
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra Average site altitu	ed volum ed swell DUCT ance: y product ency desc dient: ide:	$\begin{array}{c} \text{ne:} & \underline{C}\\ \text{factor:} & \underline{C}\\ \hline \\ \hline$	Teet Compa Compa	Y/hr acted fill or e			
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra Average site altitu Material weight:	ed volum ed swell DUCT ance: y product ency desc dient: ide:	he: $C$ factor: $C$ <b>TON</b> tion: $2,1$ cription: $-$ 0 % 4,490 feet 2,400 lbs/J Clay and g	Teet Compa Compa	Y/hr acted fill or e			
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra Average site altitu Material weight: Weight descriptio Job Condition Co	ed volum ed swell DUCT cance: y product ency desc dient: ide: n: rrection perator S	ne: <u>C</u> factor: <u>C</u> <b>TON</b> tion: <u>2,1</u> cription: <u>2,1</u> cription: <u>2,1</u> 0 % <u>4,490 feet</u> <u>2,400 lbs/I</u> <u>Clay and g</u> <u>Factor</u> Skill:	eet 10.5 LC Compa LCY gravel - 1	Ibook Y/hr acted fill or e Dry .750	mbankment 0.9		
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra Average site altitu Material weight: Weight descriptio Job Condition Co Op Material	ed volum ed swell DUCT cance: y product ency desc dient: ide: n: <u>rrection</u> perator S consiste	ne: <u>C</u> factor: <u>C</u> <b>TON</b> tion: <u>2,1</u> cription: <u>2,1</u> cription: <u>2,400</u> 4,490 feet 2,400 lbs/l Clay and g Factor Skill: <u>5</u>	eet l0.5 LC Compa LCY gravel - 1 0 0	Ibook Y/hr icted fill or ei Dry .750 .900	 mbankment 0.9  <u>Source</u> (AVG.) (CAT HB))		
Loose volume: Source of estimate Source of estimate <b>HOURLY PRO</b> Average push dist Unadjusted hourly Materials consiste Average push gra Average site altitu Material weight: Weight descriptio Job Condition Co Op Material	ed volum ed swell DUCT cance: y product ency desc dient: ide: n: rrection perator S	ne: C factor: $C$ factor: $C$ <b>TON</b> tion: $50$ f tion: $2,1$ cription: $-$ 0 % 4,490 feet 2,400 lbs/l Clay and g Factor Skill:	eet l0.5 LC Compa LCY gravel - 0 0 1	Ibook Y/hr acted fill or e Dry .750			

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3220	
Adjusted unit production: 6	579.58 LCY/hr	
Adjusted fleet production:	679.58 LCY/hr	

# JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.353/LCY

Total job time:	<b>4.44</b> Hours
Total job cost:	\$1,065

## BULLDOZER WORK

Task description:	Excavate inlet s				
Soaring Eagle Grav	el Pit Pe	rmit Action:	2018-03	Permit/Job#:	M1999025
PROJECT IDENTI	FICATION				
Task #:         02B           Date:         3/27/2018           User:         ACY	State:	Colorado Mesa		Abbreviation: Filename:	None M025-02b
Agency or org	anization name: <u>D</u>	RMS			
HOURLY EQUIPM	ENT COST				
	at D9T - 9SU				
L	05				
VI	emi-Universal				
	-shank ripper				
	per day				
Data Source: (C	CRG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hours		\$100.59	NA		
Operating Cost/Hours		\$87.23	100		
Ripper own. Cost/Hour:		\$10.94	NA		
Ripper op. Cost/Hour:		\$0.68	10		
		¢ 10 50	NLA		
Total Fleet Cost/Hour:	\$239.96 <b>\$239.96</b>	\$40.52	NA		
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: <u>2,5</u> Swell factor: <u>1.1</u>	\$239.96 <b>\$239.96</b> <b>TITIES</b> 555 80	540.32			
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: <u>2,5</u> Swell factor: <u>1.1</u>	\$239.96 \$239.96 TITIES 555				
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0	\$239.96 <b>\$239.96</b> <b>TITIES</b> 555 80 <b>15</b> LCY				
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: <u>2,5</u> Swell factor: <u>1.1</u>	\$239.96 <b>\$239.96</b> <b>TITIES</b> 555 80 <b>DI5</b> LCY ume:Outlet d	etails in perm	it (TR-2 estimate)		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol	\$239.96 <b>\$239.96</b> <b>TITIES</b> 555 80 <b>DI5</b> LCY ume:Outlet d	etails in perm			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe	\$239.96 \$239.96 TITIES 555 80 15 LCY ume: Outlet d Cat Han	etails in perm			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe HOURLY PRODUC	\$239.96 \$239.96 TITIES 55 80 15 LCY ume: Outlet d cat Han CTION	etails in perm			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance:	\$239.96 \$239.96 TITIES 555 80 15 LCY ume: Outlet d cat Han CTION 50 feet	etails in perm dbook			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe HOURLY PRODUC	\$239.96 \$239.96 TITIES 555 80 15 LCY ume: Outlet d cat Han CTION 50 feet	etails in perm dbook			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance:	\$239.96 \$239.96 TITIES 555 80 015 LCY ume: Outlet d cat Han CTION uction: 50 feet 2,110.5 LC	etails in perm dbook			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly prod	\$239.96 \$239.96 TITIES 555 80 015 LCY ume: Outlet d cat Han CTION uction: 50 feet 2,110.5 LC	etails in perm dbook	 it (TR-2 estimate)		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated swee HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient:	\$239.96 \$239.96 TITIES 55 80 015 LCY ume: Outlet d ell factor: Cat Han CTION uction: 50 feet 2,110.5 LC escription: Comp 0 %	etails in perm dbook	 it (TR-2 estimate)		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient: Average push gradient: Average site altitude:	\$239.96 \$239.96 TITIES 55 80 15 LCY ume: Outlet d ell factor: Cat Han CTION uction: 2,110.5 LC escription: Comp 0 % 4,490 feet	etails in perm dbook CY/hr pacted fill or en	 it (TR-2 estimate)		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient: Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	$\frac{\$239.96}{\$239.96}$ $TITIES$ $\frac{55}{80}$ $15 \text{ LCY}$ $\frac{\text{Outlet d}}{\text{Cat Han}}$ $\frac{50 \text{ feet}}{\text{Cat Han}}$ $\frac{50 \text{ feet}}{2,110.5 \text{ LC}}$ $\frac{0 \%}{4,490 \text{ feet}}$ $\frac{0 \%}{2,400 \text{ lbs/LCY}}$ $\frac{0 \%}{\text{Clay and gravel - on Factor}}$	etails in perm dbook	it (TR-2 estimate) it (TR-2 estimate) mbankment 0.9 Source		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operato	$\frac{\$239.96}{\$239.96}$ $TITIES$ $\frac{55}{\$0}$ $TITIES$ $\frac{55}{\$0}$ $TITIES$ $\frac{55}{\$0}$ $TITIES$ $\frac{50 \text{ feet}}{Cat \text{ Han}}$ $\frac{50 \text{ feet}}{Cat \text{ Han}}$ $\frac{50 \text{ feet}}{2,110.5 \text{ LCY}}$ $\frac{0 \%}{4,490 \text{ feet}}$ $\frac{2,400 \text{ lbs/LCY}}{Clay \text{ and gravel}}$ $\frac{0 \text{ Factor}}{\text{r Skill:}}$	etails in perm dbook CY/hr pacted fill or en Dry 0.750			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operato Material consist	$\begin{array}{c c} \$239.96 \\ \$239.96 \\ \hline \\ \hline \\ \$239.96 \\ \hline \\ \hline \\ \hline \\ \$239.96 \\ \hline \\ \hline \\ \hline \\ \hline \\ \$239.96 \\ \hline \\ \hline \\ \hline \\ \$50 \\ \hline \\ $	etails in perm dbook CY/hr pacted fill or en Dry Dry 0.750 0.900	it (TR-2 estimate) it (TR-2 estimate) mbankment 0.9 <u>Source</u> (AVG.) (CAT HB))		
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 2,5 Swell factor: 1.1 Loose volume: 3,0 Source of estimated vol Source of estimated vol Source of estimated swee HOURLY PRODUC Average push distance: Unadjusted hourly prod Materials consistency de Average push gradient: Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operato Material consist	$\begin{array}{c c} \$239.96 \\ \hline \$239.96 \\ \hline \hline $239.96 \\ \hline \hline TITIES \\ \hline 55 \\ \hline 80 \\ \hline 015 LCY \\ \hline ume: Outlet d \\ \hline ell factor: Cat Han \\ \hline \hline Cat Han \\ \hline Cat Han $	etails in perm dbook CY/hr pacted fill or en Dry 0.750			

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3220	
Adjusted unit production:	579.58 LCY/hr	
Adjusted fleet production:	579.58 LCY/hr	

# JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.353/LCY

Total job time:	<b>4.44</b> Hours
Total job cost:	\$1,065

## HYDRAULIC EXCAVATOR WORK

Task description:	Place	riprap on o	outlet struct	ture			
Soaring Eagle Grav	el Pit	Peri	mit Action:	2018-03		Permit/Job#:	M1999025
PROJECT IDENTI	FICATIO	<u>DN</u>					
Task #:         04A           Date:         3/27/2018           User:         ACY	3	State: County:	Colorado Mesa		Ab	bbreviation: Filename:	None M025-04a
Agency or org	anization	name: DR	RMS				
HOURLY EQUIPM	ENT CC	<u>ST</u>					
Basic Machine: Attachment 1:	Cat 320 ROPS (	D L 9'-6" S Cab	stick		Horsepower: Weight (MT): Shift Basis:	: 2	148 1.55 er day
Cost Dressladoren					Data Source:	:(0	CRG)
Cost Breakdown: Ownership Cos Operating Cos		\$31.0		Utilization % NA 100			
Operator Cos	t/Hour:	\$36.9	93	NA			
Total Unit Cos		\$100.					
Total Fleet Cos	st/Hour:	\$100	.45				
MATERIAL QUAN Initial volume: Loose volume:	TITIES           1,540           1,540		CCY LCY	Swell fa	ctor: <u>1.000</u>		
		ted volume:		ructure design (	<b>FR-2</b> estimate)		
		well factor:	Cat Hand	lbook			
HOURLY PRODUC							
Excavator Cycle Time	load buck	•	*	•	<b>•</b> •		
	Secor			Condition Descri	• <u> </u>		
	20001			Cycle Time V	L		minutes
Load Bucket Capacity					Bucket Size	Class M	edium
Rated Capaci	ty:	1.54	LCY (he	aped)	DUCKCI SIZE		cululli
Bucket Fill Fact		0.450		oorly blasted (4	0% - 50%) 0.45	50	
Adjusted Capaci Job Condition Correction	-	0.69	_ LCY	Si	te Altitude: <u>449</u>	00 feet	
Job Condition Correction	<u>III Pactors</u>		Course		ie Allitude. <u>445</u>	<u>70</u> 1001	
Altitude Adj:	1.	00	Source (CAT H				
Job Efficiency:		83	(1 shift/d	ay)			
Net Correction:	-	83	multiplie				
	Adjusted 1	Hourly Unit Hourly Unit Iourly Fleet	Production:	88.49	LCY/Hou LCY/Hou LCY/Hou	ır	
JOB TIME AND CO	<u>DST</u>						
Fleet size:	1	Excavato	or T	otal job time:	17	.40	Hours
Unit cost: \$1	.135	/LCY		Total job cost	: <b>\$1.</b>	748	
i		-		5	,		

## HYDRAULIC EXCAVATOR WORK

	Place riprap on					
Soaring Eagle Gravel	Pit Per	mit Action:	2018-03	Per	mit/Job#:	M1999025
PROJECT IDENTIFI	CATION					
Task #:         04B           Date:         3/27/2018           User:         ACY	State: County:	Colorado Mesa			viation: lename:	None M025-04b
Agency or organ	nization name: DI	RMS				
HOURLY EQUIPME	NT COST					
	Cat 320D L 9'-6" S ROPS Cab	Stick		Horsepower: Weight (MT): Shift Basis: Data Source:	2 1 p	148 1.55 er day CRG)
Cost Breakdown:						
Ownership Cost/H Operating Cost/H Operator Cost/H	Hour:         \$32.           Hour:         \$36.	50 93	Utilization % NA 100 NA			
Total Unit Cost/H	Hour: \$100	.45				
Total Fleet Cost/I	Hour: \$100	).45				
	540 540	CCY LCY	Swell fact	or: <u>1.000</u>		
	f estimated volume: imated swell factor:		ucture design (TI book	R-2 estimate)		
Source of est	imated swell factor:		-	R-2 estimate)		
Source of est	imated swell factor: <u><b>`ION</b></u>	Cat Hand	book			
Source of est	imated swell factor: <u><b>`ION</b></u>	Cat Hand	book ucket, swing emp	<u>oty):</u>		
Source of est	imated swell factor: <u><b>`ION</b></u>	Cat Hand aded, dump b Basic Job Co	book ucket, swing emp ondition Descript in Basic Descript	oty): ion: <u>SEVERE</u> ion: <u>SEVERE</u>		
Source of est HOURLY PRODUCT Excavator Cycle Time (lo	imated swell factor: <u>CION</u> ad bucket, swing loa	Cat Hand aded, dump b Basic Job Co	book ucket, swing emp ondition Descript	oty): ion: <u>SEVERE</u> ion: <u>SEVERE</u>		minutes
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity	imated swell factor: <u><b>TON</b></u> ad bucket, swing loa Secondary Job Co	Cat Hand aded, dump b Basic Job Co ondition with	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va	oty): ion: <u>SEVERE</u> ion: <u>SEVERE</u>		minutes
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity	imated swell factor: <u>TON</u> ad bucket, swing los Secondary Job Co : <u>1.54</u>	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va uped)	oty): tion: <u>SEVERE</u> tion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla		
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity Bucket Fill Factor	imated swell factor: <u>TON</u> <u>ad bucket, swing loa</u> Secondary Job Co : <u>1.54</u> : <u>0.450</u>	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va	oty): tion: <u>SEVERE</u> tion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla		
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity	imated swell factor: <u>TON</u> <u>ad bucket, swing loa</u> Secondary Job Co : <u>1.54</u> : <u>0.450</u> : <u>0.69</u>	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oped) porly blasted (409	oty): tion: <u>SEVERE</u> tion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity: Bucket Fill Factor Adjusted Capacity:	imated swell factor: <u>TON</u> <u>ad bucket, swing loa</u> Secondary Job Co : <u>1.54</u> : <u>0.450</u> : <u>0.69</u>	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oped) porly blasted (409	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla % - 50%) 0.450	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Iob Condition Correction Altitude Adj:	imated swell factor: <u>TON</u> <u>ad bucket, swing loa</u> Secondary Job Co <u>5 1.54</u> <u>1.54</u> <u>6 0.69</u> <u>6 1.00</u>	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY Source (CAT HE	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oped) porly blasted (409 Site	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla % - 50%) 0.450	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity Bucket Fill Factor Adjusted Capacity Iob Condition Correction Altitude Adj: Job Efficiency:	imated swell factor: <u>TON</u> <u>ad bucket, swing los</u> Secondary Job Co : <u>1.54</u> : <u>0.450</u> : <u>0.69</u> <u>Factors</u> <u>1.00</u> 0.83	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY Source (CAT HE (1 shift/da	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oped) porly blasted (409 Site	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla % - 50%) 0.450	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity Bucket Fill Factor: Adjusted Capacity: Iob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	imated swell factor: <u><b>TON</b></u> <u>ad bucket, swing loa</u> Secondary Job Co <u>5 0.450</u> <u>6 0.450</u> <u>6 0.69</u> <u>Factors</u> <u>1.00</u> 0.83 0.83	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY LCY Source (CAT HE (1 shift/da multiplier	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oorly blasted (409 Site 3)	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> due: <u>0.390</u> Bucket Size Cla <u>6 - 50%) 0.450</u> Altitude: <u>4490</u> fo	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Iob Condition Correction Altitude Adj: Job Efficiency: Net Correction: Unate Addition	imated swell factor: <u>TON</u> <u>ad bucket, swing los</u> Secondary Job Co <u>Secondary Job Co</u> <u>1.54</u> <u>0.450</u> <u>1.00</u> <u>1.00</u> <u>0.83</u> <u>0.83</u> djusted Hourly Unit djusted Hourly Unit	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY Source (CAT HE (1 shift/da multiplier Production: Production:	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va ped) porly blasted (409 Site 3) y) 106.62 88.49	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> lue: <u>0.390</u> Bucket Size Cla % - 50%) 0.450 Altitude: <u>4490</u> fo LCY/Hour LCY/Hour	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Iob Condition Correction Altitude Adj: Job Efficiency: Net Correction: Unate Add	imated swell factor: <u>TON</u> <u>ad bucket, swing los</u> Secondary Job Co <u>Secondary Job Co</u> <u>Secondary Job Co</u> <u>1.54</u> <u>0.450</u> <u>1.00</u> <u>1.00</u> <u>0.83</u> <u>0.83</u> djusted Hourly Unit djusted Hourly Unit ljusted Hourly Fleet	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY Source (CAT HE (1 shift/da multiplier Production: Production:	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va oorly blasted (409 Site 3) y) 106.62	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> ulue: <u>0.390</u> Bucket Size Cla <u>6 - 50%) 0.450</u> Altitude: <u>4490</u> for LCY/Hour	ass: <u>M</u> e	
Source of est HOURLY PRODUCT Excavator Cycle Time (lo Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Iob Condition Correction Altitude Adj: Job Efficiency: Net Correction: Unate Addition	imated swell factor: TON ad bucket, swing los Secondary Job Co : 1.54 : 0.450 : 0.69 Factors 1.00 0.83 0.83 djusted Hourly Unit djusted Hourly Unit ljusted Hourly Unit ST	Cat Hand aded, dump b Basic Job Co ondition with LCY (hea Rock - Po LCY Source (CAT HE (1 shift/da multiplier Production: Production:	book ucket, swing emp ondition Descript in Basic Descript Cycle Time Va ped) porly blasted (409 Site 3) y) 106.62 88.49	<u>oty):</u> ion: <u>SEVERE</u> ion: <u>SEVERE</u> lue: <u>0.390</u> Bucket Size Cla % - 50%) 0.450 Altitude: <u>4490</u> fo LCY/Hour LCY/Hour	ass: <u>M</u> e	

		PUMPIN	<u>G WORK</u>		
Task description:	Dewater 35 ac pi	t with 11 ft	water depth for gradin	g	
e: Soaring Eagle Gravel Pi	it Peri	mit Action:	2018-03	Permit/Job#:	M1999025
PROJECT IDENTIFIC	ATION				
Task #: 05A	State:	Colorado		Abbreviation:	None
Date: 3/27/2018	County:	Mesa		Filename:	M025-05a
User: ACY				-	
Agency or organiz	ation name: DR	RMS			
HOURLY EQUIPMEN	T COST				
	Description			Quantity	
	Centrifugal pump -	- 200M. 10 i	n.	1	
	Suction hose - 6 in			2	
	Discharge hose - 6			4	
	Pump operator	III. D., 25 It	•	0	
	• •			0	
Horsepower: 70					
Shift Basis: 1 per					
Weight: 1.9					
(US T	lons)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Ho	ur: \$9.4	9	NA		
Operating Cost/Ho			100		
Operator Cost/Ho			NA		
Total Unit Cost/Ho					
Total Fleet Cost/Ho					
		37			
PUMPING QUANTITI					
Initial Pond Volum				Conversion factor:	1.0000
Final Pond Volum	/	,088.00	gallons		
Total Pond Inflow Surfa	ce			Unit inflow rate in	
Are		00	Sq. ft.	gph/sq. ft.:	0.0879
Total Pond Inflow Volur					
per Hou	ır: <u>202</u>	.17	gallons		
Source of e	estimated volume:	Assume	2300'L x 10'H river side	pit slope	
PUMPING TIME					
Maxim	um Pump Capacit	v:	200,000	gph/pump	
	nated Suction Hea		15	feet	
	ted Discharge Hea		20	feet	
2.5.11114	Total Hea		35	feet	
(	CPB Pump Capacit		150,000	gph/pump	
	Site Altitud		4,490	feet	
	Site / Hutuu		.,		
Adjusted	l Pumping Capacit	v:	150,000	gph	
	sted Pumping Tim		836.29	hours	
	ing Initial Pumpin		169,074	gallons	
	sted Pumping Tim		837.42	Hours	
	Adjustment Facto		0.9700	(3% rule)	
	p Efficiency Facto		0.9167	(55 min./hr.)	
	sted Pumping Tim		744.63	hours	
JOB TIME AND COST			-		
JOD THUE AND COST	-		Total job time	: 744.63	Hours
			· ·		
Unit cost: \$0.0001	56 /Gallon		Total job cost	\$19,651	

# SCRAPER TEAM WORK

Site: So	aring Eagle Gr	avel Pit	Permi	t Action:	2018-03	Perr	nit/Job#:	M1999	025
PRC	DJECT IDEN	<b>TIFICATION</b>							
Та	ask #: 06A	Si	tate:	Colorado		Abbrey	viation:	None	
	Date: $3/27/20$			Mesa		Fil	ename:	M025-0	6a
	User: ACY								
	Agency or o	organization name:	DRM	IS					
HOU	URLY EQUIP	MENT			COSTS	hift basis: <u>1 per d</u>	a <u>y</u>		
					ent Description				
			craper: Dozer:	Cat 637 NA	G				
	Suppo	rt Equipment -Load		NA					
		-Dump	Area:	NA					
	Road Ma	intenance – Motor C		NA					
		-Water	I ruck:	NA					
Cost	Breakdown:	Scraper Wor	k Team		Support Equi	oment	Main	tenance H	Equipment
	r	Scraper	Do	zer	Load Area	Dump Area	Motor C	1	Water Tr
%Utiliza	ation-machine:	100		NA	NA	NA		NA	
Owners	ship cost/hour:	\$143.40		NA	NA	NA		NA	
Opera	ting cost/hour:	\$153.53		NA	NA	NA		NA	
%Util	lization-ripper:	NA		NA	NA	NA		NA	
Ripper o	own. cost/hour:	NA		NA	NA	NA		NA	
Ripper	op. cost/hour:	NA		NA	NA	NA		NA	
Oper	ator cost/hour:	\$41.46		NA	NA	NA		NA	
I	Unit Subtotals:	\$338.39		NA	NA	NA		NA	
Nu	mber of Units:	1		0	0	0		0	
Gr	roup Subtotals:	Work:	\$33	8.39	Support:	\$0.00	]	Maint:	\$0.00
MA	l work team cost TERIAL QUA	<u>NTITIES</u>		COV	0 110	1.000			
	Initial volume: Loose volume:	<u>64,000</u> <b>64,000</b>		CCY LCY	Swell fact	tor: <u>1.000</u>			
		rce of estimated vol			$O I E of 1 \in E_{t} = 1$	hwall backfilled to	2.1		
		of estimated swell fa		Cat Hand			) 5.1		
ноі	URLY PROD	UCTION	_						
<u>1100</u>					Scraper R	owl (volume) Basi	s.		
X.	latorial mainhe	$2.400 \text{ lb}_{2}/\text{LCV}$						τc	v
	Iaterial weight:ial description:	2,400 lbs/LCY Clay and gravel -	Drv		Struck Heaped	Volume: 24.00 Volume: 34.00		LC	
	Rated Payload:	81,600 pounds	Diy		Average			LC	
	load Capacity:	34.00 LCY			Adjusted C			LC	

<u>0.80</u> Minutes

<u>0.60</u> Minutes

## Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4490 feet

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

#### Travel Time:

Road Condition: <u>Rutted dirt, little maintenance, no water, 2" tire penetration 5.0</u>

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	5.00	5.00	1867	0.60

Haul Time: \_\_\_\_ **0.60** minutes

## **Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	5.00	5.00	2795	0.48
				Return Time:	0.48	minutes
			Total Scrape	er team cycle time:	2.48	minutes
			Adjusted	for job conditions:	582.34	LCY/Hour
			Selected N	umber of Scrapers:	1	Scraper(s)
	Adjuste	d single scrap	er team (unit)	hourly production:	582.34	LCY/Hour
	Adjusted n	nultiple scrape	er team (fleet)	hourly production:	582.34	LCY/Hour
	Unadjusted unit pro	duction/hour:	701.61	LCY/Hour		

#### JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	109.90	Hours
Unit cost:	\$0.581	_ /LCY	Total job cost:	\$37,190	

# SCRAPER TEAM WORK

Site: Soaring Eagle Gr	avel Pit	Permit Action:	2018-03	Perm	nit/Job#: <u>M199</u>	9025
PROJECT IDEN	<b>TIFICATION</b>					
Task #: 06B	Si	tate: Colorado		Abbrev	viation: None	
Date: 3/27/20		nty: Mesa		File	ename: M025-	06b
User: ACY						
Agency or o	organization name:	DRMS				
HOURLY EQUIP	MENT_		COSTS	hift basis: <u>1 per da</u>	ay	
	0		ent Description			
		craper: Cat 637 Dozer: NA	6			
Suppo	rt Equipment -Load					
Dood Mo	-Dump intenance –Motor C					
Koau Ma	-Water					
Cost Breakdown:	Scraper Wor		Support Equi		Maintenance	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water T
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$143.40	NA	NA	NA	NA	
Operating cost/hour:	\$153.53	NA	NA	NA	NA	
%Utilization-ripper:	NA	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	NA	NA	NA	NA	
Ripper op. cost/hour:	NA	NA	NA	NA	NA	
Operator cost/hour:	\$41.46	NA	NA	NA	NA	
Unit Subtotals:	\$338.39	NA	NA	NA	NA	
Number of Units:	1	0	0	0	0	
Group Subtotals:	Work:	\$338.39	Support:	\$0.00	Maint:	\$0.00
Total work team cost <u>MATERIAL QUA</u> Initial volume: Loose volume: Sou		CCY LCY	Swell fact 650' x 60' x 10'	tor: <u>1.000</u>		
	of estimated swell fa					
HOURLY PROD	UCTION					
			Scraper Be	owl (volume) Basi	<u>s:</u>	
Material weight:	2,400 lbs/LCY			Volume: 24.00		CY
Material description:	Clay and gravel -	Dry	Heaned	Volume: 34.00	I	CY
Rated Payload:	81,600 pounds	DIy	Average			CY

<u>0.80</u> Minutes

<u>0.60</u> Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4490 feet

Scraper	Push Dozer	Source
1.000	1.000	(CAT HB)
0.830	0.830	(CAT HB)
0.820	0.820	
	1.000	1.000         1.000           0.830         0.830

#### Travel Time:

Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	0.00	5.00	5.00	1867	0.98

Haul Time: 0.98 minutes

### **Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1600.00	0.00	5.00	5.00	2795	0.73
				Return Time:	0.73	minutes
			Total Scra	per team cycle time:	3.11	minutes
			Adjuste	d for job conditions:	464.37	LCY/Hour
			Selected 1	Number of Scrapers:	1	Scraper(s)
	Adjuste	d single scra	per team (unit	) hourly production:	464.37	LCY/Hour
	Adjusted n	ultiple scrap	per team (fleet	) hourly production:	464.37	LCY/Hour
Optima	Unadjusted unit pro al Number of Scrapers pe		-	LCY/Hour		
JOB T	IME AND COST					
Flee	t size: 1	Team(s)		Total job time:	31.10	Hours
Uni	t cost: \$0.729	/LCY		Total job cost:	\$10,525	

CIRCES Cost Estimating Software

# BULLDOZER RIPPING WORK

	Task description:	Rip o	compacted areas prior to	topsoil replac	ement			
Site:	Soaring Eagle	e Gravel Pit	Permit Action:	2018-03	Perm	it/Job#:	M1999025	
	PROJECT ID	ENTIFICATI	<u>ON</u>					
	Task #: 07.		State: Colorado		Abbrevi		None	
		27/2018	County: Mesa		File	name:	M025-07a	
	User: AC	CY						
	Agency	or organization	name: DRMS					_
	HOURLY EQ	UIPMENT CO	<u>DST</u>					
	Basic	Machine: Cat	D9T - 9SU		Horsepower:	40	05	
	Ripper Att	achment: 3-S	hank Ripper	_	Shift Basis:		r day	_
					Data Source:	(CI	RG)	_
	Cost Breakdown	<u>.</u>						
					Utilization %			
		Ownership Co		\$100.59	NA			
	р.	Operating Co		\$87.23	100			
		er Ownership Co		\$10.94	NA			
	Ripj	per Operating Co Operator Co		\$6.82 \$40.52	100 NA			
		Total Unit Co		\$246.10	INA			
				\$240.10				
		Total Fleet Co	ost/Hour: \$246	.10				
	MATERIAL (	DUANTITIES	Sala	cted estimating	method: Area			
			Sele	cicu estimating	Inctilod. Alca			
	Alternate Method	<u>18.</u>						
ismic:	NA		Bank Volume:	NA	BCY		IA D	
Area:	31.00	acres	Rip Depth (ft):	2.00	Volume: 100	,027	В	CY or C
		Source of estir	nated quantity: 29 ac fa	cilities, 2 ac pit	slopes			_
	HOURLY PR	ODUCTION						
	Seismic:	(	Seismic Velocity:	NA	feet/second			
		L		1471				
	Area:							
			e Ripping Depth:	2.00	mph			
		-	e Ripping Width:	7.67	degrees			
			Ripping Length: age Dozer Speed:	250.00 88.00	feet feet			
			Maneuver Time:	0.25	feet			
			tion per unit area:	0.855	acres/hour			
	Job Condition Co		·					
			Unit Production:	0.855	Acres/hr			
	Ch	aajuotee moully	Site Altitude:	4,490				
			Altitude Adj:	4,490	feet (CAT HB)			
			Job Efficiency:	0.83	(1 shift/day	<i>r</i> )		
			Net Correction:	0.83	(1 shift duy multiplier	/		
		A 1						
			Hourly Unit Production:	0.71	Acres/hr			
			Hourly Fleet Production:	0.71	Acres/hr			
	JOB TIME AN	ND COST						
	Fleet size:	1	Grader(s)	Total job time	e: <u>43.7</u>	1	Hours	8
	Unit cost:	\$346.993	Per acre	Total job cos	t: <b>\$10,7</b>	57		
				512 200	+=0,1			

# SCRAPER TEAM WORK

Site: Soaring Eagle Gra	avel Pit H	Permit	t Action:	2018-03	Perr	nit/Job#: <u>M19</u>	99025
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 08A Date: 3/27/20	State 018 County		Colorado Mesa		Abbrev File	viation: None ename: M025	-08a
User: ACY	·						
Agency or o	organization name:	DRM	IS				
HOURLY EQUIP	MENT			COSTS	hift basis: <u>1 per d</u>	ay	
			Equipme	nt Description			
	-Scra		Cat 637	G			
Suppor	rt Equipment -Load A	ozer:	NA NA				
**	-Dump A	rea:	NA				
Road Mar	intenance –Motor Gra -Water Tr		NA NA				
Cost Breakdown:	Scraper Work 7 Scraper	Team Do:	zor	Support Equij Load Area	Dump Area	Maintenanc Motor Grader	e Equipmer Water
	-	D0.			•		
%Utilization-machine:	100		NA	NA	NA	NA	
Ownership cost/hour: Operating cost/hour:	\$143.40 \$153.53		NA NA	NA NA	NA NA	NA NA	
%Utilization-ripper:	\$155.55 NA		NA	NA	NA	NA	
Ripper own. cost/hour:	NA		NA	NA	NA	NA	
Ripper op. cost/hour:	NA		NA	NA	NA	NA	
Operator cost/hour:	\$41.46		NA	NA	NA	NA	
Unit Subtotals:	\$338.39		NA	NA	NA	NA	
Number of Units:	1		0	0	0	0	
Group Subtotals:	Work:	\$338	8.39	Support:	\$0.00	Maint:	\$0.0
Total work team cost <u>MATERIAL QUA</u> Initial volume: Loose volume:			CCY LCY	Swell fact	or: <u>1.000</u>		
	rce of estimated volun of estimated swell fact		4500' LF Cat Hand		l with 7" ot topsoi	1	
HOURLY PRODU	UCTION						
				Scraper Be	owl (volume) Basi	is:	
Material weight: Material description:	1,600 lbs/LCY Top Soil			Struck Heaped	Volume: 24.00 Volume: 34.00	]	LCY LCY
Rated Payload: Payload Capacity:	81,600 pounds 51.00 LCY			Average Adjusted C			LCY LCY

<u>0.80</u> Minutes

<u>0.60</u> Minutes

## Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4490 feet

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

#### Travel Time:

Road Condition: <u>Rutted dirt, little maintenance, no water, 2" tire penetration 5.0</u>

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	5.00	5.00	1867	0.58

Haul Time: **0.58** minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	0.00	5.00	5.00	2795	0.48
				Return Time:	0.48	minutes
			Total Scrap	er team cycle time:	2.46	minutes
			Adjusted	for job conditions:	587.07	LCY/Hour
			Selected N	umber of Scrapers:	1	Scraper(s)
	Adjuste	d single scra	per team (unit)	hourly production:	587.07	LCY/Hour
	Adjusted n	nultiple scrap	ber team (fleet)	hourly production:	587.07	LCY/Hour
	Unadjusted unit pro	duction/hour	: 707.32	LCY/Hour		

Fleet size:	1	Team(s)	Total job time:	3.31	Hours
Unit cost:	\$0.576	/LCY	Total job cost:	\$1,120	_

Page 1 of 2

# SCRAPER TEAM WORK

Site: Soaring Eagle Gra	avel Pit	Permit	Action:	2018-03	Perr	nit/Job#: <u>M199</u>	9025
PROJECT IDENT	<b>TIFICATION</b>						
Task #: 09A	Sta	ate: (	Colorado		Abbrey	viation: None	
Date: $3/27/20$			Mesa			ename: M025-	09a
User: ACY							
Agency or c	organization name:	DRM	S				
HOURLY EQUIP	<u>MENT</u>			COSTS	hift basis: <u>1 per d</u>	ay	
				nt Description			
		raper:	Cat 637	G			
Suppo	rt Equipment -Load	ozer:	NA NA				
Suppor	-Dump		NA				
Road Mai	intenance – Motor Gr	rader:	NA				
	-Water T	ruck:	NA				
Cost Breakdown:	Scraper Work	Team		Support Equi	ament	Maintenance	Fauinment
<u>Cost Ditakuowii</u> .	Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water Tr
%Utilization-machine:	100		NA	NA	NA	NA	
Ownership cost/hour:	\$143.40		NA	NA	NA	NA	
Operating cost/hour:	\$153.53		NA	NA	NA	NA	
%Utilization-ripper:	NA		NA	NA	NA	NA	
Ripper own. cost/hour:	NA		NA	NA	NA	NA	
Ripper op. cost/hour:	NA		NA	NA	NA	NA	
Operator cost/hour:	\$41.46		NA	NA	NA	NA	
Unit Subtotals:	\$338.39		NA	NA	NA	NA	
Number of Units:	1		0	0	0	0	
Group Subtotals:	Work:	\$338	3.39	Support:	\$0.00	Maint:	\$0.00
Total work team cost MATERIAL QUA Initial volume:	<b>NTITIES</b> 27,292		ССҮ	Swell fact	or: <u>1.000</u>		
Loose volume:	27,292		LCY				
	rce of estimated volu				ter rd covered wit	h 7" to topsoil	
Source of	of estimated swell fac	ctor:	Cat Hand	lbook			
	UCTION						
HOURLY PRODU							
HOURLY PRODU				Scraper Bo	owl (volume) Basi	s:	
	1,600 lbs/LCY				owl (volume) Basi Volume: 24.00		CY
HOURLY PRODU Material weight: Material description: Rated Payload:					Volume: 24.00 Volume: 34.00	L	.CY .CY .CY

<u>0.80</u> Minutes

<u>0.60</u> Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4490 feet

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

#### Travel Time:

Road Condition: <u>Rutted dirt, little maintenance, no water, 2" tire penetration 5.0</u>

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	5.00	5.00	1867	0.31

Haul Time: **0.31** minutes

### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	5.00	5.00	2795	0.30
				Return Time:	0.30	minutes
			Total Scrape	er team cycle time:	2.01	minutes
		718.51	LCY/Hour			
		1	Scraper(s)			
	Adjusted	718.51	LCY/Hour			
	Adjusted m	ultiple scrap	er team (fleet)	hourly production:	718.51	LCY/Hour
Optima	Unadjusted unit pro I Number of Scrapers pe			_ LCY/Hour		
JOB TI	ME AND COST					
Fleet	size: 1	Team(s)	Г	Total job time:	37.98	Hours

Unit cost: \_\_\_\_\_\$0.471 /LCY

Total job cost: \$12,854

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Init	tial mobilization					
e: Soaring Eagle G	Fravel Pit	Permit	Action: _2018-	03		Permit/Job#: <u>M</u>	1999025
PROJECT IDEN	TIFICATI	<u>ON</u>					
Task #: 11A			lorado		Abbro	eviation: None	
Date: 3/27/ User: ACY	2018	County: <u>Mo</u>	esa		F	ilename: M025	-11a
Agency or	organizatior	n name: DRMS					
EQUIPMENT TH	RANSPOR	<u>T RIG COST</u>					
					Shift ba		
					Cost Data Sou	rce: CRG Da	ta
Truck 7	Fractor Desc	ription: GENE	RIC ON-HIGHV	WAY TR	UCK TRACTO	OR, 6X4, DIESEL	POWERED,
					(2ND HALF,		
Truck	Trailer Desc	ription: G				ROP DECK EQUI	IPMENT
			Т	RAILER	(25T, 50T, Al	ND 100T)	
Cost Breakdown:							
Available Rig Caj		0-25 Tons	26-50 Tons		+ Tons		
Ownership (		\$16.63	\$18.37		22.33		
Operating C		\$44.38	\$46.13		50.07		
Operator (		\$27.66	\$27.66		27.66		
	Cost/Hour:	\$0.00	\$25.39		25.39		
Total Unit C	Cost/Hour:	\$88.67	\$117.55	\$.	25.45		
NON ROADABL	E EQUIPN	MENT:					
Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit (TONS)	Cost/hr/ unit	Cost/hr/uni t	Size	Cost/hr/ fleet	Cost/hr/ fleet	Cost/ fleet
Submersible pump - 460v, 8 in.	0.70	\$5.50	\$88.67	1	\$94.17	\$88.67	\$250.00
Cat D9T - 9SU	66.13	\$111.53	\$125.45	1	\$236.98	\$125.45	\$250.00
Cat 320D L 9'-6" Stick	23.70	\$31.02	\$88.67	1	\$119.69	\$88.67	\$250.00
Cat 637G	57.28	\$143.40	\$125.45	1	\$268.85	\$125.45	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00

\$605.58 Subtotals: \$916.28

\$1,500.00

## **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$83.91	1	\$83.91	\$83.91
Light Duty Pickup, 4x4, 1 T. Crew	\$47.96	1	\$47.96	\$47.96

Subtotals:	\$131.87	\$13	<b>51.87</b>
EQUIPMENT HAUL DISTANCE and Time			
Nearest Major City or Town within project area region:	GRAND JUNC	TION	
Total one-way travel distance:	5.00		miles
Average Travel Speed:	35.00		mph
Total Non-Roadable Mob/Demob Cost *	\$5,267.38		
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$37.68		_

Transportation Cycle Time:

Non- Roadable Roadable Equipment Equipment	
0.14 0.14	Haul Time (Hours):
0.14 0.14	Return Time (Hours):
0.50 NA	Loading Time (Hours):
0.50 NA	Unloading Time (Hours):
1.29 0.29	Subtotals:
0.14         0.14           0.14         0.14           0.50         NA           0.50         NA	Return Time (Hours): Loading Time (Hours): Unloading Time (Hours):

## JOB TIME AND COST

Total job time:	2.57	Hours
Total job cost:	\$5,305	

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Tas	k description	n: Sec	ondary mobilizat	ion				
te: S	boaring Eag	le Gravel Pit	Permit	Action: _2018	-03		Permit/Job#:	M1999025
<u>PRC</u>	)JECT ID	ENTIFICATI	ON					
-	Task #: 12	2A	State: Co	olorado		Abbre	eviation: No	me
Date: 3/27/2018 County: Mesa							)25-12a	
	User: A	CY	·					
	Agency	or organization	n name: DRMS					
<u>EQU</u>	JIPMENT	TRANSPOR	<u>T RIG COST</u>					
						Shift ba	sis: 1 per	day
					(	Cost Data Sou	rce: CRG	Data
	True	ck Tractor Desc			400 HP	(2ND HALF,	2006)	SEL POWERED,
	Tru	ick Trailer Desc	ription: G	ENERIC FOLD				QUIPMENT
					ΓRAILER	(25T, 50T, AN	ND 100T)	
Cost	Breakdown:	-						
Av	ailable Rig	Capacities	0-25 Tons	26-50 Tons	51-	+ Tons		
		ip Cost/Hour:	\$16.63	\$18.37		22.33		
	Operatir	ng Cost/Hour:	\$44.38	\$46.13	\$	50.07		
		or Cost/Hour:	\$27.66	\$27.66		27.66		
	1	er Cost/Hour:	\$0.00	\$25.39		25.39		
	Total Ur	nit Cost/Hour:	\$88.67	\$117.55	\$1	25.45		
NON	N ROADA	BLE EQUIP	<u>MENT:</u>					
Ma	chine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Des	scription	Unit	Cost/hr/ unit	Cost/hr/uni	Size	Cost/hr/	Cost/hr/ flee	t Cost/ fleet
	1	(TONS)		t		fleet		
See	ll/Broadcast eder with ctor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
	wer Mulcher wie LD-90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00

Subtotals: **\$196.59 \$177.34 \$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	\$47.96	1	\$47.96	\$47.96
		Subtotals:	\$47.96	\$47.96

## **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	GRAND JUNCTION 5.00 35.00	miles mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$1,500.02	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$13.70	_

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.14	0.14
Return Time (Hours):	0.14	0.14
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.29	0.29

## JOB TIME AND COST

Total job time: 2.57 Hours

Total job cost: \$1,514

## SITE MAINTENANCE

	Task description	i: Insta	all wetlands exclusion f	fencing			
Site:	Soaring Eagle	Gravel Pit	Permit Action:	2018-03	Permit/	Job#: <u>M1999025</u>	
<u>PROJE</u>	CT IDENTIF	<b>ICATION</b>					
Task # Date: User:	3/29/2018	C	State: Colorado County: Mesa		Abbreviation: Filename:	None M025-13a	
	Agency of	or organization na	ame: DRMS				
<u>UNIT C</u>	<u>OSTS</u>						

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Install Wetlands Fencing	80.00	Fencing, barbed wire, - 3 strand	5,000.00	LF	\$1.41	\$7,050.00

Job Hours: 80.00

Total Cost: \$7,050.00