March 15, 2018

Allan Parkerson Parkerson Construction, Inc. 710 S. 15th St Grand Junction, CO 81501



1313 Sherman Street, Room 215 Denver, CO 80203

# RE: 31 Road Pit, Permit No. M-1987-178, Reclamation Costs Update and Notice of Surety Increase (SI-2)

Dear Mr. Parkerson:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed).

Division calculations estimate the cost to reclaim the above referenced site to be \$221,112.34 rounded down to \$221,110.00. This is an increase of \$26,467.65 over the \$194,642.35 currently held by the Division. This estimate is based on conditions observed during the February 23, 2018 inspection where approximately 53 acres are affected by mining. Therefore, pursuant to Section 34-32.5-117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter. The additional amount needs to be accepted prior to Monday, May 14, 2018. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, or have questions or concerns, please feel free to contact me. Amy Yeldell at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203. Direct contact can be made by phone at 970-254-8511 or via email at amy.veldell@ state.co.us

Sincerely,

Amy Yeldell

Environmental Protection Specialist Department of Natural Resources Division of Reclamation, Mining and Safety

Phone: (970) 254-8511

Ec: Russ Means, Senior EPS, Grand Junction DRMS

Enc: Financial Warranty Cost Estimate



#### **COST SUMMARY WORK**

e: 31 Ro	ad Pit	Permit Action:	2018	Permit/Job#: <u>M1987178</u>
PROJE	CT IDENTIFIC	<u>CATION</u>		
Task	#: ACY	State: Colorado		Abbreviation: None
Dat	e: 3/15/2018	County: Mesa		Filename: M178-ACY
	r: ACY			

#### TASK LIST (DIRECT COSTS)

Task		Form Fleet		Task	
Task	Description Used Siz		Size	Hours	Cost
01a	Reduce active highwall to 3H:1V	DOZER	2	44.11	\$16,807.00
02a	Place topsoil above highwall slopes	SCRAPER1	2	2.62	\$3,219.00
03a	Push topsoil down regarded highwall slopes	DOZER	2	2.02	\$770.00
04a			2	1.18	\$450.00
05a	Place topsoil above highwall slopes	SCRAPER1	2	55.56	\$68,247.00
06a	Spread overburden on pit floor 12" thick	GRADER	1	40.82	\$4,030.00
07a	Spread topsoil on pit floor 35 ac 12" thick	SCRAPER1	2	55.56	\$68,247.00
08a	Spread topsoil on pit floor 12" thick	GRADER	1	40.82	\$4,030.00
09a	Reveg pit slopes (non-cropland)	REVEGE	1	16.00	\$3,957.00
10a	Initial Mobilization	MOBILIZE	1	3.00	\$6,696.00
11a	Secondary Mobilization	MOBILIZE	1	3.00	\$817.00
		TALS:	264.69	\$177,270	

#### **INDIRECT COSTS**

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

2.02 Liability insurance: \$3,580.85 Total = Performance bond: 1.05 Total = \$1,861.34 132.35 Total = \$9,667.80 Job superintendent: Total = 10.00 \$17,727.00 Profit:

TOTAL O & P =  $\frac{$32,836.99}{}$ 

CONTRACT AMOUNT (direct + O & P) =  $\sqrt{\$210,106.99}$ 

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 500.00 Total = 500.00

Engineering work and/or contract/bid preparation: 0.00 Total = \$0.00

Reclamation management and/or administration: 5.00 \$10,505.35

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$43,842.34

TOTAL BOND AMOUNT (direct + indirect) = \$221,112.34

TOTAL BOND AMOUNT (Rounded) = \$221,110.00

# **BULLDOZER WORK**

Task description:	Reduce active hig	hwall to 3H	:1V		
31 Road Pit	Perm	nit Action: _	2018	Permit/Job#:	M1987178
PROJECT IDENTIF	<u>ICATION</u>				
Task #: 01A	State:	Colorado		Abbreviation:	None
Date: $\frac{3/15/2018}{}$	County:	Mesa	<del></del> -	Filename:	M178-01a
User: $\frac{3/13/2010}{ACY}$		141034	·	i nename.	141170 014
Agency or orga	nization name: DR	MS			
HOURLY EQUIPMI	ENT COST				
	t D8T - 8SU				
Horsepower: 310			<u> </u>		
<u></u>	mi-Universal		_		
Attachment: NA			_		
	per day		<u> </u>		
	RG)		_		
Cost Breakdown:					
		46-1	<u>Utilization %</u>		
Ownership Cost/Hour:		\$83.81	NA 100		
Operating Cost/Hour:		\$66.17	100		
Ripper own. Cost/Hour:	-	\$0.00	NA 0		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$40.52	NA		
Total unit Cost/Hour:	\$190.50				
Total Fleet Cost/Hour:	\$381.00				
MATERIAL QUANT	<b>FITIES</b>				
Initial Volume: 40,0	000				
Swell factor: 1.18		_			
	200 LCY	_			
		_			
Source of estimated volu					
Source of estimated swel	ll factor: Cat Handb	ook			
<b>HOURLY PRODUC</b>	<u>TION</u>				
Average push distance:	75 feet				
Unadjusted hourly produ		/hr			
Materials consistency de	<u> </u>		nbankment 0.9		
·					
Average push gradient: Average site altitude:	-10 %				
Average site attitude:	4,700 feet				
Material weight:	2,400 lbs/LCY			_	
Weight description:	Clay and gravel - D	ry			
Job Condition Correction	n Factor		Source		
Operator		50	(AVG.)		
Material consist			(CAT HB))	<u>-</u>	
Dozing me		00	(GEN.)		
Visil	bility: 1.0	00	(AVG.)	<del>-</del>	

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.225	(CAT HB)
1.000	(CAT HB)
0.958	(CAT HB)
1.000	(PAT)
	0.800 1.225 1.000 0.958

Net correction: 0.5260

Adjusted unit production: 534.99 LCY/hr
Adjusted fleet production: 1069.98 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.356/LCY

Total job time: 44.11 Hours
Total job cost: \$16,807

# SCRAPER TEAM WORK

Task description:	Place topso	oil above highwal	l slopes			
Site: 31 Road Pit		Permit Action:	2018	Peri	mit/Job#: M198	7178
PROJECT IDEN	TIFICATION					
Task #: 02A	S	tate: Colorado		Abbre	viation: None	
Date: 3/15/20	018 Cou	ınty: Mesa		Fil	ename: M178-	02a
User: ACY						
Agency or	organization name:	DRMS				
HOURLY EQUIP	<u>PMENT</u>		COSTS	hift basis: 1 per d	<u>ay</u>	
			ent Description			
			7G w/push-pull			
Cuma			T - 8SU			
Suppo	ort Equipment -Load Dumi-	o Area: NA				
Road Ma	intenance – Motor (					
	-Water	Truck: NA				
Cost Breakdown:	Scraper Wor	·k Taam	Support Equi	nment	Maintenance	Equipment
Cost Dicardown.	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$99.75	\$83.81	NA	NA	NA	NA
Operating cost/hour:	\$118.23	\$66.17	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$41.46	\$40.52	NA	NA	NA	NA
Unit Subtotals:	\$259.44	\$190.50	NA	NA	NA	NA
Number of Units:	4	1	0	0	0	0
Group Subtotals:	Work:	\$1,228.26	Support:	\$0.00	Maint:	\$0.00
Total work team cost	t/hour: <b>\$1,228.26</b>					
MATERIAL QUA	<u>ANTITIES</u>					
Initial volume:	4,033	CCY	Swell fact	tor: 1.000		
Loose volume:	4,033	LCY				
	rce of estimated vo					
Source	of estimated swell f	actor: Cat Han	dbook			
HOURLY PROD	<u>UCTION</u>					
			Scraper B	owl (volume) Bas	is:	
Material weight:	1,600 lbs/LCY		Struck	Volume: 15.70	L	CY
Material description:	Top Soil			Volume: 22.00		CY
Rated Payload:	52,800 pounds		Average			CY
Payload Capacity:	33 00 LCY		Admsted (	Canacity: 18.85	1.	CY

Site Altitude: 4700 feet

Cvcle Time:
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Scraper Loading Time: 0.90 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

	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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res	Velocity (fpm)	Travel Time (min)
1	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: **0.52** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

**0.42** minutes Return Time: Total Scraper team cycle time: 2.44 minutes Adjusted for job conditions: 769.45 LCY/Hour Selected Number of Scrapers: 2 Scraper(s) Adjusted single scraper team (unit) hourly production: 769.45 LCY/Hour Adjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/Hour

Unadjusted unit production/hour: 927.05 LCY/Hour Optimal Number of Scrapers per push dozer:

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

Fleet size: _	2	Team(s)	Total job time:	2.62	Hours
Unit cost:	\$0.798	/LCY	Total job cost:	\$3,219	

# **BULLDOZER WORK**

Task description:	Push to	psoil down regarded	highwall slopes		
: 31 Road Pit		Permit Action:	2018	Permit/Job#:	M1987178
PROJECT IDEN	TIFICATION	]			
Task #: 03A		State: Colorado		Abbreviation:	None
Date: 3/15/2	018	County: Mesa		Filename:	M178-03a
User: ACY		·	·	-	
A canay or	organization nar	ne: DRMS			
HOURLY EQUI	PMENT COST	<u>r</u>			
Basic Machine:	Cat D8T - 8SU	J			
Horsepower:	310				
Blade Type:	Semi-Universa	1	<del></del>		
Attachment:	NA				
Shift Basis:	1 per day		<u></u>		
Data Source:	(CRG)				
Cost Breakdown:					
			<u>Utilization %</u>		
Ownership Cost/H	our:	\$83.81	NA		
Operating Cost/H	our:	\$66.17	100		
Ripper own. Cost/H	our:	\$0.00	NA		
Ripper op. Cost/H	our:	\$0.00	0		
Operator Cost/H	our:	\$40.52	NA		
T . 1 C III	Φ100.50				
Total unit Cost/Hou					
Total Fleet Cost/Hor	ur: <b>\$381.00</b>				
MATERIAL QU	ANTITIES				
'-					
Initial Volume:	4,330				
Swell factor:	1.000				
Loose volume: _	<b>4,330</b> LCY				
Source of estimated	volume:	AM-01 values			
Source of estimated	swell factor:	Cat Handbook			
HOURLY PROD	OUCTION				
Average push distan		feet			
Unadjusted hourly p		017.1 LCY/hr			
Materials consistence		Loose stockpile 1.2			
Average push gradie					
Average site altitude		et			
Material weight:	1,600 lbs	/LCY			
Weight description:	Top Soil				
Job Condition Corre			Source		
	rator Skill:	0.750	(AVG.)		
Material co		1.200	(CAT HB)		
	ig method:	1.000	(GEN.)		
	Visibility:	1.000	(AVG.)		

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.225	(CAT HB)
1.000	(CAT HB)
1.438	(CAT HB)
1.000	(PAT)
	0.800 1.225 1.000 1.438

Page 2 of 2

Net correction: 1.0527

Adjusted unit production: 1,070.70 LCY/hr
Adjusted fleet production: 2141.4 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.178/LCY

Total job time: 2.02 Hours
Total job cost: \$770

# **BULLDOZER WORK**

Task description:	Remove	and spread visual be	erm material		
e: 31 Road Pit		Permit Action:	2018	Permit/Job#:	M1987178
PROJECT IDEN	NTIFICATION				
Task #: 04A		State: Colorado		Abbreviation:	None
Date: 3/15/	2018	County: Mesa		Filename:	M178-04a
User: ACY					
Agency or	r organization nan	ne: DRMS			
HOURLY EQUI	IPMENT COST	<u>r</u>			
Basic Machine:	Cat D8T - 8SU	ſ	<u> </u>		
Horsepower: Blade Type:	310 Semi-Universa	1	<u> </u>		
Attachment:	NA	1			
Shift Basis:	1 per day		<del></del>		
Data Source:	(CRG)		<del>_</del>		
Cost Breakdown:					
			<u>Utilization %</u>		
Ownership Cost/F		\$83.81	NA		
Operating Cost/H		\$66.17	100		
Ripper own. Cost/F		\$0.00	NA O		
Ripper op. Cost/F		\$0.00	0		
Operator Cost/F	lour:	\$40.52	NA		
Total unit Cost/Hou	ur: \$190.50				
Total Fleet Cost/Ho			<del></del>		
	400200				
MATERIAL QU	IANTITIES				
Initial Volume:	1,833				
Swell factor:	1.215				
Loose volume:	<b>2,227</b> LCY				
Source of estimated	l volume:	AM-01 values			
Source of estimated	l swell factor:	Cat Handbook			
<b>HOURLY PROI</b>	<u>DUCTION</u>				
Average push dista	nce: 80	feet			
Unadjusted hourly		4.2 LCY/hr			
Materials consisten		Loose stockpile 1.2			
		*			
Average push gradi Average site altitud		t			
Material weight:	1,600 lbs.	LCY			
Weight description	: Top Soil				
Job Condition Corr	ection Factor		Source		
	erator Skill:	0.750	(AVG.)		
	onsistency:	1.200	(CAT HB)		
Dozi	ng method:	1.000	(GEN.)		
	Visibility:	1.000	(AVG.)		

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.115	(CAT HB)
1.000	(CAT HB)
1.438	(CAT HB)
1.000	(PAT)
	0.800 1.115 1.000 1.438

Net correction: 0.9582

Adjusted unit production: 943.06 LCY/hr
Adjusted fleet production: 1886.12 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.202/LCY

Total job time: 1.18 Hours \$450

# SCRAPER TEAM WORK

Task # 05A

Task description:	Place topso	il above high	wall slopes			
Site: 31 Road Pit		Permit Acti	on: 2018	Per	mit/Job#: <u>M198</u>	7178
PROJECT IDEN	<u> FIFICATION</u>					
Task #: 05A		tate: Color			viation: None	
Date: $\frac{3/15/20}{\text{User:}}$	018 Cou	ınty: Mesa		Fil	ename: <u>M178-</u>	)5a
Agency or o	organization name:	DRMS				
HOURLY EQUIF	PMENT_		COSTS	Shift basis: 1 per d	<u>ay</u>	
		Equ	ipment Description			
			627G w/push-pull			
	- ort Equipment -Load		D8T - 8SU			
Suppo		Area: NA				
Road Ma	intenance – Motor (					
	-Water	Truck: NA	<b>L</b>			
Cost Breakdown:	Scraper Wor	·k Team	Support Equi	inment	Maintenance	Equipment
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	10	00 NA	NA	NA	NA
Ownership cost/hour:	\$99.75	\$83.8	NA NA	NA	NA	NA
Operating cost/hour:	\$118.23	\$66.	NA NA	NA	NA	NA
%Utilization-ripper:	NA	N	A NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.0	NA NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.0	00 NA	NA	NA	NA
Operator cost/hour:	\$41.46	\$40.5	NA NA	NA	NA	NA
Unit Subtotals:	\$259.44	\$190.5	NA NA	NA	NA	NA
Number of Units:	4		1 0	0	0	(
Group Subtotals:	Work:	\$1,228.26	Support:	\$0.00	Maint:	\$0.00
Total work team cost	t/hour: <b>\$1,228.26</b>					
MATERIAL QUA	<u>ANTITIES</u>					
Initial volume:	85,507	CCY	Y Swell fac	etor: 1.000		
Loose volume:	85,507	LCY	7			
Sou	rce of estimated vo	lume: 53 a	c 12" thick			
Source of	of estimated swell f	actor: Cat	Handbook			
HOURLY PROD	<u>UCTION</u>					
			Scraper B	Bowl (volume) Bas	is:	
Material weight:	1,600 lbs/LCY		Struck	Volume: _15.70	L	CY
Material description:	Top Soil			Volume: 22.00		CY
Rated Payload:	52,800 pounds 33 00 LCY			Volume: 18.85		CY CY

Site Altitude: 4700 feet

Cycle Time:
-------------

Scraper Loading Time: 0.90 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

	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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res	Velocity (fpm)	Travel Time (min)
1	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: 0.52 minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

**0.42** minutes Return Time: Total Scraper team cycle time: 2.44 minutes Adjusted for job conditions: 769.45 LCY/Hour Selected Number of Scrapers: 2 Scraper(s) Adjusted single scraper team (unit) hourly production: 769.45 LCY/Hour Adjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/Hour

Unadjusted unit production/hour: 927.05 LCY/Hour Optimal Number of Scrapers per push dozer:

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

Fleet size:	2	Team(s)	Total job time:	55.56	Hours
Unit cost:	\$0.798	/LCY	Total job cost:	\$68,247	

# **MOTOR GRADER WORK**

Task description:	Spi	read overburd	len on pit flo	or 12" thick			
: 31 Road Pit		Peri	mit Action:	2018	Perm	nit/Job#:	M1987178
PROJECT IDI	ENTIFICAT	<u> ION</u>					
Task #:	5/2018	State: County:	Colorado Mesa		Abbrev File	iation: ename:	None M178-06a
Agency	or organizatio	on name: DR	RMS				
HOURLY EQ	UIPMENT (	COST					
Basic l Ripper Att		AT 120M		_	Horsepower: Shift Basis: Data Source:	1 p	138 per day CRG)
Cost Breakdown:							
Rippe	Ownership ( Operating ( er Ownership ( oer Operating (	Cost/Hour: Cost/Hour:		\$32.40 \$28.16 \$0.00 \$0.00 \$38.16	Utilization % NA 100 NA NA		
	Total Unit			\$98.72			
	Total Fleet	Cost/Hour:	\$98	.72			
MATERIAL Q		<b>S</b> graded or rippe	d: 53.00				acres
	·	stimated acreag	·	stimates			
HOUDI W DD		_					
HOURLY PRO		rage Grader Sp	and.	1.50	mah		
		lected Applica		1.50 Finish	mph grading (0-2.5 mph)	- 1.5	
		ected Blade Aı		30	degrees		
		tive Blade Ler		10.40	feet		
37		le overlap per p		2.00	feet		
		ing width per p		8.40	feet		
	•	ly Unit Produc	uon:	1.5273	acres/hour	. 4	
Job Condition Co	nection Facto	118	Source	51	te Altitude: 4700 fee	π	
Altitude Job Effici Net Corre	ency:	1.00 0.85 0.8500	(CAT HE (1sh/d, mo multiplier				
	•	d Hourly Unit d Hourly Fleet		1.2982 1.2982	acres/Hour acres/Hour		
JOB TIME AN	D COST						
Fleet size:	1	Grader(s)		Total job time	40.83		Hours
Unit cost:	\$76.04	per acre		Total job cost	<b>\$4,030</b>		
				, ,			•

# SCRAPER TEAM WORK

Task description:	Spread top	soil on pit	floor 35	ac 12" thick			
Site: 31 Road Pit		Permit A	Action:	2018	Peri	mit/Job#: <u>M198</u>	7178
PROJECT IDE	NTIFICATION						
Task #: 07A		State: Co	olorado			viation: None	
		unty: Mo	esa		Fil	ename: M178-	07a
User: ACY	<u></u>						
Agency o	r organization name:	DRMS					
HOURLY EQU	<u>IPMENT</u>			COSTSI	hift basis: 1 per d	<u>ay</u>	
		Е	quipmei	nt Description			
		Scraper:	Cat 6270	G w/push-pull			
			Cat D8T	C - 8SU			
Sup	port Equipment -Loa Dum-		NA NA				
Road N	Maintenance – Motor		NA				<del></del>
	-Water	Truck:	NA				
Cost Breakdown:	Scraper Wo	rlr Toom		Support Equip	rmant	Maintananaa	Equipment
Cost Breakdown:	Scraper Wo	Doze	r	Load Area	Dump Area	Maintenance Motor Grader	Water Truck
%Utilization-machine	-		100	NA	NA	NA	NA
Ownership cost/hour		\$8	33.81	NA	NA	NA	NA
Operating cost/hour			56.17	NA	NA	NA	NA
%Utilization-ripper		· ·	NA	NA	NA	NA	NA
Ripper own. cost/hour		9	80.00	NA	NA	NA	NA
Ripper op. cost/hour		9	80.00	NA	NA	NA	NA
Operator cost/hour		\$4	10.52	NA	NA	NA	NA
Unit Subtotals	: \$259.44	\$19	90.50	NA	NA	NA	NA
Number of Units	: 4		1	0	0	0	(
Group Subtotals	: Work:	\$1,228.	26	Support:	\$0.00	Maint:	\$0.00
Total work team co	ost/hour: <b>\$1,228.26</b>						
MATERIAL QU	<u>JANTITIES</u>						
Initial volume			CCY	Swell fact	or: 1.000		
Loose volume	e: <b>85,507</b>	L	CY				
	ource of estimated vo		3 ac 12"				
Source	e of estimated swell	factor: C	at Hand	book			
HOURLY PRO	<u>DUCTION</u>						
				Scraper Bo	owl (volume) Basi	is:	
Material weight	t: 1,600 lbs/LCY			Struck '	Volume: 15.70	L	CY
Material description				Heaped			CY
Rated Payload				Adjusted C	Volume: 18.85		CY CY
r avioau CanaciiN	. )).UUTA.T			Admisted C	анасиу. <b>ТА АЭ</b>	1.7	4 . I

Site Altitude: 4700 feet

Cyc	le '	Time	
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Scraper Loading Time: 0.90 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

	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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	1.00	3.00	4.00	2665	0.52

Haul Time: **0.52** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-1.00	3.00	2.00	2905	0.42

**0.42** minutes Return Time: Total Scraper team cycle time: 2.44 minutes Adjusted for job conditions: 769.45 LCY/Hour Selected Number of Scrapers: 2 Scraper(s) Adjusted single scraper team (unit) hourly production: 769.45 LCY/Hour Adjusted multiple scraper team (fleet) hourly production: 1,538.90 LCY/Hour

Unadjusted unit production/hour: 927.05 LCY/Hour Optimal Number of Scrapers per push dozer:

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

Fleet size:	2	Team(s)	Total job time:	55.56	Hours
Unit cost:	\$0.798	/LCY	Total job cost:	\$68,247	

# **MOTOR GRADER WORK**

Task descrip	ption:	Sprea	d topsoil o	n pit floor 12	2" thick				
te: 31 Road Pit			Permit Action: 2018			Permit	/Job#:	M1987178	
PROJECT	Γ IDENTI	FICATIO	<u>N</u>						
Task #: Date: User:	08A 3/15/201 ACY	8	State: County:	Colorado Mesa		Abbreviat Filena	_	None M178-08a	
Ag	gency or org	ganization r	name: DF	RMS					
HOURLY	EQUIPM	IENT CO	<u>ST</u>						
	Basic Machi er Attachme		7 120M			Horsepower: Shift Basis:		138 er day	
Kippe	er Attacinne	·····				Data Source:		CRG)	
Cost Break	down:								
		1. 6			<b>#22.40</b>	Utilization %			
		nership Cos			\$32.40	NA 100			
	Op Ripper Ow	erating Cos			\$28.16 \$0.00	100 NA			
		nership Cosperating Cos			\$0.00	NA			
		perating Cos			\$38.16	NA			
		tal Unit Cos			\$98.72	1471			
		al Fleet Cos	_	\$98	<u> </u>				
	100	ar ricet eo.		Ψ20	./2				
MATERIA	AL QUAN	<u>NTITIES</u>							
	Total Are	ea to be gra	ded or rippe	ed: 53.00				acres	
	Sou	rce of estin	nated acreag	ge: Field es	stimates				
HOURLY	PRODU	CTION							
		Averag	e Grader Sp	peed:	1.50	mph			
			ted Applica			grading (0-2.5 mph) -	1.5		
			ed Blade A		30	degrees			
	XX7: 1.:		e Blade Lei		10.40	feet			
			overlap per j g width per j		2.00	feet			
	_		g widtn per j Unit Produc	<u> </u>	8.40 1.5273	feet acres/hour			
Job Condition		•	omi i roude			te Altitude: 4700 feet			
500 Condition		0.11 1 UC (UIS		Source	51				
Al	titude Adj:	1.0	00	(CAT HE	3)				
	Efficiency:	0.8	35	(1sh/d, mo					
Net (	Correction:	0.83	500	multiplier	<del></del> =				
		Adjusted I	Hourly Unit	Production:	1.2982	acres/Hour			
			•	Production:	1.2982	acres/Hour			
JOB TIM	E AND C	OST							
Fleet siz		1	Grader(s)		Total job time	: 40.83		Hours	
I T	ot:	 76.04	<b>n</b> or 05		Total interes	. ¢4.020			
Unit co	st: \$	76.04	per acre		Total job cost	:: <b>\$4,030</b>			

# **REVEGETATION WORK**

31 Road Pit		Permit Action: 2018 Permit/Job#:					t: <u>M1987178</u>
OJECT IDENT	<u>IFICATION</u>						
Task #: 09A	Sta	ite: Ci	olorado		Ał	breviation:	None
Date: $\frac{3/15/20}{3}$			lesa				M178-09a
User: ACY			.coa				111170 074
Agency or o	rganization name:	DRMS					
DTH IZING							
ERTILIZING nterials							
iteriais			Units /				
Description			Acre	Unit	Co	st / Unit	Cost /Acre
					\$		\$
					Ψ		Ψ
					To	tal Fertilizer	
						Materials	
						Cost/Acre	\$0.00
_							Cost /Acre
plication  Description							Cost /Acre
_			Total	l Fertilizer	Application	on Cost/Acre	
Description			Total	l Fertilizer	Application	on Cost/Acre	\$
Description  LLING			Total	l Fertilizer	Application	on Cost/Acre	\$0.00
LLING  Description	deen (MEANS 32 9	91 13 23		l Fertilizer	Application	on Cost/Acre	\$ \$0.00 Cost /Acre
Description  LLING  Description	deep (MEANS 32 s	91 13.23		l Fertilizer	Application	on Cost/Acre	\$0.00
Description  LLING  Description	deep (MEANS 32 9	91 13.23				on Cost/Acre	\$0.00 Cost /Acre \$106.29
Description  LLING  Description  Disc harrowing, 6'	deep (MEANS 32 9	91 13.23					\$ \$0.00 Cost /Acre
Description  LLING  Description  Disc harrowing, 6'	deep (MEANS 32 s	91 13.23			Γotal Tillin	ng Cost/Acre	\$0.00 Cost /Acre \$106.29 \$106.29
Description  LLING  Description  Disc harrowing, 6'	deep (MEANS 32 9	91 13.23			Fotal Tillin	ng Cost/Acre	\$0.00 Cost /Acre \$106.29
Description  LLING  Description  Disc harrowing, 6'	deep (MEANS 32 s	91 13.23			Rate – PLS LBS /	ng Cost/Acre  Seeds per SO.	\$0.00 Cost /Acre \$106.29 \$106.29
Description  LLING  Description  Disc harrowing, 6'		91 13.23			Rate – PLS LBS / Acre	Seeds per SQ. FT	\$0.00  Cost /Acre \$106.29  \$106.29
Description  LLING  Description  Disc harrowing, 6'  EDING  Seed Mix  Indian Ricegrass -	Paloma	91 13.23			Rate – PLS LBS / Acre 2.26	Seeds per SQ. FT	\$0.00  Cost /Acre \$106.29  \$106.29  Cost /Acre
Description  LLING  Description  Disc harrowing, 6'  EDING  Seed Mix  Indian Ricegrass - Crested Wheatgras	Paloma	91 13.23			Rate – PLS LBS / Acre 2.26 1.26	Seeds per SQ. FT 7.32 5.79	\$0.00  Cost /Acre \$106.29  \$106.29  Cost /Acre \$22.04 \$4.62
Description  LLING  Description  Disc harrowing, 6'  EDING  Seed Mix  Indian Ricegrass - Crested Wheatgras Sand Dropseed	Paloma	91 13.23			Rate – PLS LBS / Acre 2.26 1.26 0.26	Seeds per SQ. FT 7.32 5.79 31.04	\$0.00  Cost /Acre \$106.29  \$106.29  Cost /Acre \$22.04 \$4.62 \$2.82
Description  LLING  Description  Disc harrowing, 6'  EDING  Seed Mix  Indian Ricegrass - Crested Wheatgrass	Paloma ss - Ephraim	91 13.23			Rate – PLS LBS / Acre 2.26 1.26	Seeds per SQ. FT 7.32 5.79	\$0.00  Cost /Acre \$106.29  \$106.29  Cost /Acre \$22.04 \$4.62

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	\$2.74	\$2.74
Total Mulch Materials Cost/Acre				\$2.74

Application

Description		Cost /Acre
Weed spray, truck, non-aquatic area, nox. [DMG]		\$71.50
	<b>Total Mulch Application Cost/Acre</b>	\$71.50

#### **NURSERY STOCK PLANTING**

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

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

 No. of Acres:
 5
 Cost /Acre:
 \$565.33

 Estimated Failure Rate:
 40%
 Cost /Acre\*:
 \$565.33

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

Initial Job Cost: \$2,826.65

Reseeding Job Cost: \$1,130.66

Total Job Cost: \$3,957

Job Hours: 16.00

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Ini	tial Mobilization	!		
e: 31 Road Pit	Permit	t Action: 2018	Permit/.	Job#: <u>M1987178</u>
PROJECT IDENTIFICATI	ON			
Task #: 10A	State: C	olorado	Abbreviation	: None
Date: 3/15/2018 User: ACY	County: N	lesa	Filename	: M178-10a
Agency or organization	n name: DRMS	S		
EQUIPMENT TRANSPOR	T RIG COST			
	1110 0001		Shift basis:	1 per day
			Cost Data Source:	CRG Data
Truck Tractor Desc	ription: GENI		AY TRUCK TRACTOR, 6X4 400 HP (2ND HALF, 2006)	4, DIESEL POWERED,
Truck Trailer Desc	ription:		IG GOOSENECK, DROP DE	CK EQUIPMENT
			AILER (25T, 50T, AND 100	-
Cost Breakdown:				
Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons	
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33	
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07	
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66	
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39	

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

Total Unit Cost/Hour:

\$88.67

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		
Cat D8T - 8SU	47.71	\$83.81	\$117.55	2	\$402.72	\$235.10	\$250.00
Cat 627G w/push-	43.48	\$99.75	\$117.55	4	\$869.20	\$470.20	\$500.00
pull							
CAT 120M	15.53	\$32.40	\$88.67	1	\$121.07	\$88.67	\$250.00
Drill/Broadcast	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Seeder with							
Tractor							

\$117.55

\$125.45

Subtotals: \$1,493.88 \$882.64 \$1,250.00

### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$40.79	1	\$40.79	\$40.79

Subtotals	\$40.79	\$40.79

#### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: GRAND JUNCTION,

CO Total one-way travel distance: 10.00 miles Average Travel Speed: 40.00 mph

Total Non-Roadable Mob/Demob Cost \* \$6,676.02 \*\* two round trips with haul rig: Total Roadable Mob/Demob Cost \*\* \$20.40

\*\* one round trip, no haul rig:

**Transportation Cycle Time:** 

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.25	0.25
Return Time (Hours):	0.25	0.25
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.50	0.50

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

Total job time:	3.00	Hours

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Se	condary Mobiliza	ation		
ee: 31 Road Pit	Permi	t Action: 2018	Permit/Jo	ob#: <u>M1987178</u>
PROJECT IDENTIFICAT	<u>ION</u>			
Task #: 11A Date: 3/15/2018 User: ACY		Colorado Mesa	Abbreviation: Filename:	None M178-11a
Agency or organization	on name: DRM	S		
EQUIPMENT TRANSPO	RT RIG COST			
			Shift basis: Cost Data Source:	1 per day CRG Data
Truck Tractor Des	cription: GENI		AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006)	, DIESEL POWERED,
Truck Trailer Des	cription:		IG GOOSENECK, DROP DEC AILER (25T, 50T, AND 100T	-
Cost Breakdown:				
Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons	
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33	
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07	
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66	
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39	
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45	

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

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/uni t	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00

Subtotals: \$100.89 \$88.67 \$250.00

# **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$40.79	1	\$40.79	\$40.79

Subtotals: \$40.79 \$40.79

#### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: GRAND JUNCTION,

Total Non-Roadable Mob/Demob Cost \*

\* two round trips with haul rig:

Total Roadable Mob/Demob Cost \*\*

\*\* one round trip, no haul rig:

g: \$20.40

\$796.56

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

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.25	0.25
Return Time (Hours):	0.25	0.25
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.50	0.50

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

3.00	Hours
	3.00

Total job cost: \$817