November 6, 2018

Martin Azcarraga M.A. Concrete Construction, Inc. 2323 River Road Grand Junction, CO 81505

1313 Sherman Street, Room 215 Denver, CO 80203

COLORADO

Division of Reclamation, Mining and Safety

Department of Natural Resources

### RE: Cole Gravel Pit, Permit No. M-2004-020, Reclamation Costs Update and Notice of Surety Increase (SI-1)

Dear Mr. Azcarraga:

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 <u>\$399,857.32</u> rounded up to <u>\$399,860.00</u>. This is an increase of <u>\$34,860.00</u> over the <u>\$335,000.00</u> currently held by the Division. This estimate is based on conditions observed during the October 29, 2018 inspection. *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, January 07, 2019. 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.yeldell@ state.co.us

Sincerely,

wy Geldell

*Amy Yeldell* Environmental Protection Specialist

Ec: Wally Erickson, Senior EPS, Grand Junction DRMS

Enc: Financial Warranty Cost Estimate



November 6, 2018

Martin Azcarraga M.A. Concrete Construction, Inc. 2323 River Road Grand Junction, CO 81505



COLORADO Division of Reclamation, Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215 Denver, CO 80203

### RE: Cole Gravel Pit, Permit No. M-2004-020, SI-1 Reclamation Cost Estimate

Dear Mr. Azcarraga:

This reclamation cost update was based on site conditions observed at the October 29, 2018 site inspection. There have been no surety increases since the permit issuance in 2004. It is Division policy to periodically update its costs to ensure that the Financial Warranty adequately, reflects the actual current cost of fulfilling the requirements of the approved reclamation plan.

Below is a table summarizing input values that have been used. This table does not account for price changes resulting from inflation or other RS Means cost changes. Bond calculations are based on a combination of field observations and worst case scenario based on the approved reclamation permit.

Task	Form Used	Change	Justification
01a	Scrapper	-	36,170 CCY w/ 600 Ft max push @ 1% (5000 LF of 12.5 ft vertical highwall) Previous:65,000 CCY W/ 800 Ft push at 16.5%
02a	Dozer	+	18,085 LCY@ 0% (grade half of transported up and down slope) Previous 8,664 LCY @ 30%
03a	Scrapper	-	3,703 CCY w/ 600 Ft max push @ 1% (5000 LF 40' slope = 4.59 ac @ 6" deep) Previous: 2000 CCY W/ 800 Ft push at 16.5%
04a	Dozer	-	3,703 LCY@ 0% (grade transported volume up and down slope) Previous 4,332 LCY (5.37 ac @ 6" deep @ 30%
05a	Reveg	-/+	4.59 ac with mix B, added weed treatment, power mulcher and improvised for biosol fertilizer Previous: 5.37 ac



06a	Ripper	+	65ac. Previous 60 ac
07a	Scrapper	+	52,434 CCY w/ 600 Ft max push @ 1% (65 ac pit floor @ 6" deep)
			Previous: 48,400 CCY W/ 800 Ft push at 16.5% (60 ac @ 6")
08a	Ripper	-	7.41 ac stockpile footprint. Previous 17.2 ac
09a	Grader	-/+	72.41 (65 ac pit floor + 7.41 stockpiles). Previous 72 ac
10a	Reveg	+	65 ac with mix A, added weed treatment, power mulcher and improvised for biosol fertilizer Previous: 60 ac
11a	Reveg	-	7.41 ac with mix B, added weed treatment, power mulcher and improvised for biosol fertilizer Previous: 17.2 ac
	Reveg	-	Removed erosion control blankets, redundant when already straw mulch and crimping
12a	Mob	-	Updated fleet size and made consistent. Added power mulcher
Indirect costs +		+	Added financial warranty processing and engineering work costs

Please feel free to contact me with any further questions. 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.yeldell@state.co.us

Sincerely,

Amy Geldell

*Amy Yeldell* Environmental Protection Specialist

Ec: Wally Erickson, Senior EPS, Grand Junction DRMS

### COST SUMMARY WORK

Task description:		Updated	Updated based on inspection 10-2018						
Site: Cole Gravel Pit		Permit Action:		Inspection 10-2018	Permit/Job	o#: <u>M2004020</u>			
<u>P</u> ]	ROJECT Task #: Date: User:	11/5/2018		State: County:	Colorado Mesa		Abbreviation: Filename:	None M020-ACY	

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Haul materials to establish 3:1 slopes in Phase 1 & 2	SCRAPER1	2	39.09	\$21,557.00
02a	Establish final grade for re-established slopes	DOZER	2	13.63	\$5,944.00
03a	Haul topsoil to slope	SCRAPER1	2	3.74	\$2,060.00
04a	Push topsoil over 4.59 ac of slope	DOZER	2	2.45	\$1,017.00
05a	Revegetation of 4.59 ac of slope area	REVEGE	1	6.50	\$11,971.00
06a	Rip 60 ac pit floor	RIPPER	2	46.75	\$20,936.00
07a	Replace topsoil over pit floor	SCRAPER1	2	51.46	\$28,379.00
08a	Rip 7.41 ac of topsoil/overburden stockpile footprint area	RIPPER	2	5.77	\$2,586.00
09a	Final grading of 72.41 acres of flat area	GRADER	1	46.38	\$7,266.00
10a	Revegetation of 65 acres on pit floor	REVEGE	1	88.00	\$181,231.00
11a	Revegetation of 7.41 ac of stockpile footprint area	REVEGE	1	10.00	\$20,660.00
12a	Initial mobilization	MOBILIZE	1	3.06	\$7,720.00
12b	Secondary mobilization	MOBILIZE	1	3.06	\$1,630.00
		319.89	\$312,957		

#### **INDIRECT COSTS**

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$6,321.73
Performance bond:	1.05	Total =	\$3,286.05
Job superintendent:	159.95	Total =	\$11,683.98
Profit:	10.00	Total =	\$31,295.70
		TOTAL O & P =	\$52,587.46
		CONTRACT AMOUNT (direct + $O \& P$ ) =	\$365,544.46

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$15,535.64
Reclamation management and/or administration:	5.00		\$18,277.22
CONTINGENCY:	0.00	Total =	\$0.00
	TOTAL I	NDIRECT COST =	\$86,900.32
TOTAL BO	\$399,857.32		
TOTAL DOND AM	¢200 Q60 00		

**TOTAL BOND AMOUNT (Rounded) = \_\_\_\_\_\_\_\_\_\$399,860.00** 

Task # 01A

Page 1 of 2

## SCRAPER TEAM WORK

Site: Cole Gravel Pit		Permit Action:	Inspection 10-20	018 Peri	mit/Job#: M200	4020
PROJECT IDEN	<b>FIFICATION</b>					
Task #: 01A	S	tate: Colorado		Abbrev	viation: None	
Date: $11/5/20$	018 Cou	inty: Mesa		Fil	ename: M020-	01a
User: <u>ACY</u>						
Agency or o	organization name:	DRMS				
HOURLY EQUIE	MENT		COSTSI	nift basis: <u>1 per d</u>	<u>ay</u>	
		Equipmo	nt Description			
	-S	craper: Cat 631				
	-	Dozer: NA				
Suppo	rt Equipment -Loac Dump-					
Road Ma	intenance – Motor C	Grader: NA				
	-Water	Truck: NA				
Cost Breakdown:	Scraper Wor	k Team	Support Equip	oment	Maintenance	Equipment
Cost Di cuitao (mi	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water T
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$110.85	NA	NA	NA	NA	
Operating cost/hour:	\$119.02	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:	\$45.84	NA	NA	NA	NA	
Unit Subtotals:	\$275.71	NA	NA	NA	NA	
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$551.42	Support:	\$0.00	Maint:	\$0.00
Total work team cost	/hour: <u>\$551.42</u>					
MATERIAL OIL	NIDUDUDO					
MATERIAL QUA						
Initial volume: Loose volume:	<u>36,170</u> <b>42,138</b>	CCY LCY	Swell fact	or: <u>1.165</u>		
	· · · · · · · · · · · · · · · · · · ·					
	rce of estimated vol of estimated swell f		of vertical 12.5 ft lbook	highwall to 3:1		
Bouleev			- Jon			
HOURLY PROD	<b>UCTION</b>					
			Scraper Bo	owl (volume) Basi	is:	
Material weight:	2,900 lbs/LCY			Volume: 24.00		CY
Material description:	Decomposed rock 50% Earth	x - 50% Rock,	Heaped V			CY
Rated Payload:	81,600 pounds		Average V	Volume: 29.00	L	CY
Payload Capacity:	28.14 LCY		Adjusted C	Capacity: 28.14	I.	CY

## Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude:	5150 feet
----------------	-----------

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

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	600.00	1.00	5.00	6.00	1069	0.63

Haul Time: **0.63** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	-1.00	5.00	4.00	2744	0.47

Return Time:	0.47	minutes
Total Scraper team cycle time:	2.60	minutes
Adjusted for job conditions:	538.95	LCY/Hour
Selected Number of Scrapers:	1	Scraper(s)
Adjusted single scraper team (unit) hourly production:	538.95	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,077.90	LCY/Hour
Unadjusted unit production/hour: 649.34 I CY/Hour		

Unadjusted unit production/hour: 649.34 LCY/Hour Optimal Number of Scrapers per push dozer:

#### JOB TIME AND COST

Fleet size:	2	Team(s)	Total job time:	39.09	Hours
Unit cost:	\$0.512	/LCY	Total job cost:	\$21,557	_

<u>0.80</u> Minutes

0.70 Minutes

### BULLDOZER WORK

Task description:	Establish final g		•		
Cole Gravel Pit	Pe	rmit Action:	Inspection 10-2018	Permit/Job#:	M2004020
PROJECT IDENTI	FICATION				
Task #: 02A	State:	Colorado		Abbreviation:	None
Date: $\frac{02R}{11/5/2018}$		Mesa		Filename:	M020-02a
User: ACY	<u>county</u> .	Wiesa		i nename.	1v1020-02a
	anization name: D	RMS			
HOURLY EQUIPM	ENT COST				
	at D8T - 8SU				
Horsepower: 31					
	emi-Universal				
Attachment: 3-	shank ripper				
	per day				
	CRG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$8.93	NA		
Ripper op. Cost/Hour:		\$1.95	25		
		¢ 10 02	N A		
Operator Cost/Hour: Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN	\$218.07 <b>\$436.15</b>	\$40.23	NA		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: _18,	\$218.07 \$436.15 TITIES 085	\$40.23			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: <u>18</u> , Swell factor: <u>1.0</u>	\$218.07 \$436.15 TITIES 085	\$40.23			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated volt	\$218.07 <b>\$436.15</b> TITIES 085 00 085 LCY ume:Half of t	 	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18,	\$218.07 <b>\$436.15</b> TITIES 085 00 085 LCY ume:Half of t	 			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated swe	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t cat Han	 			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated vol Source of estimated swe	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t ell factor: Cat Han CTION	 			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated swe	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t cat Han CTION 50 feet	ransported vo dbook			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t cat Han CTION 50 feet uction: 1,400.0 LC	ransported vo dbook	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated vol Source of estimated swee HOURLY PRODUC Average push distance: Jnadjusted hourly prod	\$218.07         \$436.15         TITIES         085         00         085 LCY         ume:       Half of t         cat Han         Cat Han         CTION         uction:       50 feet         1,400.0 LC         escription:       Loose	 rransported vo dbook CY/hr	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol- Source of estimated vol- Source of estimated sween HOURLY PRODUC Average push distance: Jnadjusted hourly prod	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t cat Han CTION 50 feet uction: 1,400.0 LC	 rransported vo dbook CY/hr	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol- Source of estimated vol- Source of estimated swee HOURLY PRODUC Average push distance: Jnadjusted hourly prod Materials consistency de Average push gradient:	\$218.07         \$436.15         TITIES         085         00         085 LCY         ume:       Half of t         cat Han         CTION         scription:       50 feet         1,400.0 LC         escription:       Loose         0 %	 rransported vo dbook CY/hr	olume (task 01a)		
Fotal unit Cost/Hour:         Fotal Fleet Cost/Hour:         Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       18,         Swell factor:       1.0         Loose volume:       18,         Source of estimated vol       Source of estimated sweet         HOURLY PRODUC       Average push distance:         Jnadjusted hourly prod       Materials consistency de         Average push gradient:       Average site altitude:	\$218.07 \$436.15 TITIES 085 00 085 LCY ume: Half of t ell factor: Cat Han CTION uction: 1,400.0 LC escription: Loose 0 % 5,150 feet	ransported vo dbook	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol- Source of estimated vol- Source of estimated swe HOURLY PRODUC Average push distance: Jnadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: 'ob Condition Correction	$ \begin{array}{r} \$218.07 \\ \$436.15 \\ \hline TITIES \\ 085 \\ 00 \\ 085 LCY \\ ume: Half of t \\ ell factor: Cat Han \\ \hline C$	rransported vo dbook CY/hr stockpile 1.2	olume (task 01a)		
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol Source of estimated vol Source of estimated swe HOURLY PRODUC Average push distance: Jnadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: OD Condition Correction Operator	$\begin{array}{c c} \$218.07 \\ \$436.15 \\ \hline \\ \hline \\ \hline \\ \hline \\ \$436.15 \\ \hline \\ $	ransported vo dbook CY/hr stockpile 1.2 k - 50% Rock.			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated vol- Source of estimated vol- Source of estimated vol- Source of estimated swe HOURLY PRODUC Average push distance: Jnadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Operato Material consist	\$218.07         \$436.15         TITIES         085         00         085 LCY         ume:       Half of t         cat Han         CTION         uction:       50 feet         1,400.0 LC         escription:       Loose         0 %       5,150 feet         2,900 lbs/LCY       Decomposed rocl         on Factor       r         r Skill:       0	ransported vo dbook CY/hr stockpile 1.2 k - 50% Rock 0.750 1.200			
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 18, Swell factor: 1.0 Loose volume: 18, Source of estimated voltor Source of estimated voltor Source of estimated sweet HOURLY PRODUC Average push distance: Jnadjusted hourly prod Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Operator Material consist Dozing m	\$218.07 $$436.15$ TITIES         085         00         085 LCY         ume:       Half of t         ell factor:       Cat Han         CTION         uction: $50$ feet         uction: $1,400.0$ LC         escription:       Loose $0$ % $5,150$ feet $2,900$ lbs/LCY       Decomposed rock         on Factor       r         r Skill:       (0)         estency:       1         nethod:       1	ransported vo dbook CY/hr stockpile 1.2 k - 50% Rock.			

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4739	
unit production: 66	53.46 LCY/hr	
<b>n</b>		

Adjusted unit production:	663.46 LCY/hr
Adjusted fleet production:	1326.92 LCY/hr

Fleet size:	2 Dozer(s)
Unit cost:	\$0.329/LCY

Total job time:	13.63 Hours
Total job cost:	\$5,944

Page 1 of 2

## SCRAPER TEAM WORK

Site: Cole Gravel Pit	F	Permit Action:	Inspection 10-20	018 Perr	nit/Job#: <u>M20</u>	04020
PROJECT IDEN	<b>TIFICATION</b>					
Task #: 03A	State	e: Colorado		Abbrev	viation: None	
Date: $11/5/20$	018 County	/: Mesa		File	ename: M020	)-03a
User: ACY						
Agency or o	organization name:	DRMS				
HOURLY EQUIP	MENT		COSTSh	nift basis: <u>1 per da</u>	ay	
		Equipmo	nt Description			
	-Scra					
	-Do					
Suppo	rt Equipment -Load A -Dump A					
Road Ma	intenance – Motor Gra					
. <u></u>	-Water Tru	ick: NA				
Cost Breakdown:	Scraper Work 7	`eam	Support Equip	oment	Maintenanc	e Equipmer
<u></u> ,	Scraper	Dozer	Load Area	Dump Area	Motor Grader	
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$110.85	NA	NA	NA	NA	
Operating cost/hour:	\$119.02	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: Unit Subtotals:	\$45.84	NA	NA	NA	NA	
Number of Units:	\$275.71	NA 0	NA 0	<u>NA</u>	NA 0	
Group Subtotals:	Work:	\$551.42	Support:	\$0.00	Maint:	
		<i>~~~</i>	Support	<i>Q</i> 0.000		401
Total work team cost	/nour: <u>\$551.42</u>					
MATERIAL QUA	NTITIES					
Initial volume:	3,703	CCY	Swell fact	or: 1.125		
Loose volume:	4,166	LCY				
Sou	rce of estimated volun	ne: 4.59 ac (4	40' slope x 5000 I	LF) @ 6" Deep		
Source of	of estimated swell factor	or: Cat Hand	lbook			
HOURLY PROD	TCTION					
			Conseron D	ul (volume) De-	c.	
M.( 11 11)	0.550 11 . / CN			wl (volume) Basi		
Material weight: Material description:	2,550 lbs/LCY Earth - Dry packed		Struck V Heaped V	Volume: 24.00 Volume: 34.00		LCY LCY
Rated Payload:	81,600 pounds		Average V			LCY
Payload Capacity:	32.00 LCY		Adjusted C			LCY

<u>0.80</u> Minutes

<u>0.70</u> Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 5150 feet

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

#### 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	600.00	1.00	5.00	6.00	1069	0.62

Haul Time: **0.62** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	-1.00	5.00	4.00	2744	0.47
				Return Time:	0.47	minutes
			Total Scrap	er team cycle time:	2.59	minutes
			Adjusted	for job conditions:	557.61	LCY/Hour
			Selected N	umber of Scrapers:	1	Scraper(s)
	Adjuste	d single scrap	per team (unit)	hourly production:	557.61	LCY/Hour
	Adjusted n	nultiple scrap	er team (fleet)	hourly production:	1,115.21	LCY/Hour
Optim	Unadjusted unit pro al Number of Scrapers pe		-	_ LCY/Hour		

Fleet size:	2	Team(s)	Total job time:	3.74	Hours
Unit cost:	\$0.494	/LCY	Total job cost:	\$2,060	

### BULLDOZER WORK

Fask description:	1 451		r 4.59 ac of s	slope		
Cole Gravel Pit		Peri	mit Action:	Inspection 10-2018	Permit/Job#:	M2004020
PROJECT IDEN	TIFICATIO	DN				
Task #: 04A		State:	Colorado		Abbreviation:	None
Date: $11/5/20$	018	County:	Mesa		Filename:	M020-04a
User: ACY		county.				11020 0 14
Agency or	organization r	name: DR	RMS			
HOURLY EQUI	PMENT CO	<u>ST</u>				
Basic Machine:	Cat D8T - 8	SU				
Horsepower:	310					
Blade Type:	Semi-Unive	rsal				
Attachment:	NA					
Shift Basis:	1 per day					
Data Source:	(CRG)					
Cost Breakdown:				<b></b>		
			¢02.62	<u>Utilization %</u>		
Ownership Cost/Ho			\$93.62	NA		
Operating Cost/Ho			\$73.35	100 NA		
Ripper own. Cost/Ho			\$0.00 \$0.00	NA		
Ripper op. Cost/Ho	-			25		
Operator Cost/Ho	our:		\$40.23	NA		
Fotal unit Cost/Hour Fotal Fleet Cost/Hou MATERIAL QUA	ır: <b>\$414.4</b>					
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor:	nr: <b>\$414.4</b> ANTITIES 3,703 1.000					
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor:	ur: <b>\$414.4</b> ANTITIES 3,703					
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor:	ar: \$414.4 ANTITIES 3,703 1.000 3,703 LCY	1	 	nsported volume		
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume:	ur: \$414.4 ANTITIES 3,703 1.000 3,703 LCY volume:	1		nsported volume		
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated source of estimated sourc	ar:       \$414.4         ANTITIES         3,703         1.000         3,703 LCY         volume:         swell factor:	1 4.59 ac @		nsported volume		
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated	ar:       \$414.4         ANTITIES         3,703         1.000         3,703 LCY         volume:         swell factor:	1 4.59 ac @		nsported volume		
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated source of estimated sourc	r: <b>\$414.4</b> <b>ANTITIES</b> 3,703 1.000 <b>3,703</b> LCY volume: swell factor: <b>UCTION</b>	1 4.59 ac @		nsported volume		
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated	ur: \$414.4 ANTITIES 3,703 1.000 3,703 LCY volume: swell factor: UCTION ce:	1 4.59 ac @ Cat Hand	book	nsported volume		
Fotal Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated source of estimated sourc	antifies         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC	book			
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         Average push distand         Unadjusted hourly problematic         Materials consistency	antifies         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         cce:         roduction:         y description:	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC	book Y/hr			
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated source	antifies         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         y description:         nt:       0 %	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s	book Y/hr			
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         HOURLY PROD         Average push distance         Unadjusted hourly production         Materials consistence	antifies         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         y description:         nt:       0 %         :       5,150	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s	book Y/hr			
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         Average push distance         Unadjusted hourly pr         Materials consistence         Average push gradie         Average site altitude	ar:       \$414.4         antifies       3,703         1.000       3,703 LCY         volume:       swell factor:         wolume:       well factor:         UCTION       ce:         roduction:          y description:          nt:       0 %         :           2,550 I	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s feet	book Y/hr stockpile 1.2			
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         Source of estimated         Materials consistency         Average push distance         Average push gradie         Average site altitude         Material weight:         Weight description:         Iob Condition Correct	antifies         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         y description:         nt:       0 %         2,550 1         Earth -         ction Factor	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s feet bs/LCY Dry packed	book Y/hr stockpile 1.2	Source		
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Average push distance         Materials consistence         Average push gradie         Average site altitude         Material weight:         Weight description:         Iob Condition Correat         Oper	ur:       \$414.4         ANTITIES         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         y description:         nt:       0 %         2,550 I         Earth -         ction Factor         ator Skill:	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s feet bs/LCY Dry packec 0.	book Y/hr stockpile 1.2	<u>Source</u> (AVG.)		
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         MATERIAL QUA         Initial Volume:         Loose volume:         Source of estimated         Source of estimated         Average push distand         Unadjusted hourly put         Materials consistency         Average push gradie         Average site altitude         Material weight:         Weight description:         Iob Condition Correet         Oper         Material corr	arr:       \$414.4         ANTITIES         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         g         description:         nt:       0 %         2,550 I         Earth -         ction Factor         ator Skill:         nsistency:	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s feet bs/LCY Dry packed 0. 1.	book Y/hr stockpile 1.2	<u>Source</u> (AVG.) (CAT HB)		
Total Fleet Cost/Hou         MATERIAL QUA         Initial Volume:         Swell factor:         Loose volume:         Source of estimated         Source of estimated         Source of estimated         MATERIAL QUA         Initial Volume:         Loose volume:         Source of estimated         Source of estimated         Average push distand         Unadjusted hourly provide         Materials consistency         Average push gradie         Average site altitude         Material weight:         Weight description:         Iob Condition Correation         Oper         Material con         Dozing	ur:       \$414.4         ANTITIES         3,703         1.000         3,703 LCY         volume:         swell factor:         UCTION         ce:         roduction:         y description:         nt:       0 %         2,550 I         Earth -         ction Factor         ator Skill:	1 4.59 ac @ Cat Hand 50 feet 1,400.0 LC Loose s feet bs/LCY Dry packed 0. 1. 1.	book Y/hr stockpile 1.2	<u>Source</u> (AVG.)		

Task # 04A

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.5390	
Adjusted unit production: 75	54.60 LCY/hr	
Adjusted fleet production: 15	509.2 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.275/LCY

Total job time:	<b>2.45</b> Hours
Total job cost:	\$1,017

## **REVEGETATION WORK**

Task descri	ption:	Revegetation of	4.59 ac of slo	ope area		
te: Cole Gra	vel Pit	Per	mit Action:	Inspection 10-2018	Permit/Job	o#: <u>M2004020</u>
<b>PROJECT</b>	<u>IDENTIFIC</u>	CATION				
Task #:	05A	State:	Colorado		Abbreviation:	None
Date:	11/5/2018	County:	Mesa		Filename:	M020-05a
User:	ACY					

### **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium sulfate, 21-0-0 with 24% S	5.00	pound	\$0.34	\$1.70
Richlawn 3-6-3 w/ mycorrihiza humates	500.00	pound	\$0.46	\$227.80
(Pounds)				
			Total Fertilizer Materials Cost/Acre	\$229.50

### Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$34.72
	Total Fertilizer Application Cost/Acre	\$34.72

## TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.25	0.31	\$17.97
Indian Ricegrass - Paloma	3.00	9.71	\$29.25
Galleta	2.00	7.30	\$50.58
Rabbitbrush, Rubber	0.12	1.79	\$7.90
Sage, Fringed	0.06	5.01	\$2.52
Sagebrush, Mountain or Big	0.12	6.34	\$2.43
Saltbush, Four Wing	2.00	2.75	\$25.60
Globemallow, Scarlet (or copper)	0.50	5.66	\$69.38
Timothy - Climax	2.00	57.39	\$3.20

Yarrow, Western	0.12	7.30	\$5.14
Totals Seed Mix	10.17	103.56	\$213.96

#### Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
То	tal Seed Application 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	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$578.81

#### Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
Total Mulch	Application Cost/Acre \$234.78

#### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	ek Cost / Acre	\$0.00

Estimat	No. of Acres: ed Failure Rate:		Cost /Acre: Cost /Acre*:	
			LING,SEEDING,MU	
Initial Job Cost:	¢7 /Q1 0Q	Lening		
Reseeding Job Cost:	\$4,489.19			
Total Job Cost: Job Hours:				

## BULLDOZER RIPPING WORK

	Task description	: <u>Rip</u>	60 ac pit floor					
Site	: Cole Gravel	Pit	Permit Action:	Inspection 10-	-2018 H	Permit/Job#	: <u>M20040</u>	020
	PROJECT ID	ENTIFICAT	ION					
	Task #: 06	δA	State: Colorado		Abl	previation:	None	
		/5/2018	County: Mesa			Filename:	M020-06	5a
	User: A	CY						
	Agenc	y or organizatio	n name: DRMS					
	HOURLY EQ	UIPMENT C	COST					
	Basic	Machine: Ca	at D8T - 8SU		Horsepower:		310	
	Ripper At	tachment: 3-	Shank Ripper		Shift Basis:		per day	
					Data Source:	(	CRG)	
	Cost Breakdowr	<u>ı:</u>						
					Utilization %			
		Ownership (		\$93.62	NA	_		
	D'	Operating (		\$73.35	100	_		
		per Ownership ( oper Operating (		\$8.93 \$7.78	NA 100	_		
	Кір	Operating C Operator (		\$40.23	NA	_		
		Total Unit C		\$223.91	1471			
		Total Fleet C	Cost/Hour: \$447	.82				
	MATERIAL	QUANTITIE	<u>S</u> Sele	cted estimating	g method: Are	a		
	Alternate Metho	ds:						
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	60.00	acres	Rip Depth (ft):	2.00	Volume:	193,600		BCY or CCY
		Source of est	imated quantity: Reclam	ation Plan				
	UALIDI V DD		j					
	HOURLY PR	ODUCTION						
	<u>Seismic:</u>		C	NT A	C I.	1		
			Seismic Velocity:	NA	feet/see	cond		
	Area:							
			ge Ripping Depth:	2.00	mph			
			ge Ripping Width:	7.08 200.00	degree	S		
			ge Ripping Length: erage Dozer Speed:	88.00	feet feet			
			ge Maneuver Time:	0.25	feet			
			ction per unit area:	0.773	acres/h	our		
	Job Condition C	orrection Facto	rs					
			y Unit Production:	0.773	Acres/	hr		
	U.	naujusteu 110un	•					
			Site Altitude:	5,150 1.00	feet			
			Altitude Adj: Job Efficiency:	0.83	(CAT ) (1 shift			
			Net Correction:	0.83	(1 shift multipl	•		
			d Hourly Unit Production:	0.64	Acres/hr			
		·	Hourly Fleet Production:	1.28	Acres/hr			
	JOB TIME A	ND COST						
	Fleet size:	2	Grader(s)	Total job tim	ne:	46.75	Но	ours
	Unit cost:	\$348.931	Per acre	Total job co	st:\$	20,936		

Page 1 of 2

## SCRAPER TEAM WORK

Site: Cole Gravel Pit		Permit	t Action:	Inspection 10-201	18 Perm	nit/Job#: M200	04020
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 07A	S	tate:	Colorado		Abbrev	viation: None	
Date: $11/5/2$	018 Cou	nty:	Mesa		File	ename: M020	-07a
User: ACY							
Agency or	organization name:	DRM	IS				
HOURLY EQUI	<u>PMENT</u>			COSTShi	ft basis: <u>1 per da</u>	<u>iy</u>	
				nt Description			
		craper:	Cat 631	G			
Suppo	- ort Equipment -Load	Dozer:	NA NA				
Buppe	-Dump		NA				
Road Ma	intenance – Motor C	Brader:	NA				
	-Water	Truck:	NA				
Cost Breakdown:	Scraper Wor	k Team		Support Equipm	nent	Maintenance	e Equipment
	Scraper	Do	zer	Load Area	Dump Area	Motor Grader	Water Tru
%Utilization-machine:	100		NA	NA	NA	NA	
Ownership cost/hour:	\$110.85		NA	NA	NA	NA	
Operating cost/hour:	\$119.02		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:	\$45.84		NA	NA	NA	NA	
Unit Subtotals:	\$275.71		NA	NA	NA	NA	
Number of Units:	2		0	0	0	0	
Group Subtotals:	Work:	\$551	1.42	Support:	\$0.00	Maint:	\$0.00
Total work team cost	t/hour: <u>\$551.42</u>						
MATERIAL QUA	ANTITIES						
Initial volume:	52,434		CCY	Swell factor	r: 1.125		
Loose volume:	58,988		LCY				
Sou	rce of estimated vol	ume:	55 ac exis	sting pit floor + 10	ac stripped area		
Source	of estimated swell fa	actor:	Cat Hand	lbook			
HOURLY PROD	UCTION						
				Scraper Boy	vl (volume) Basi	<u>s:</u>	
Material weight:	2,550 lbs/LCY			Struck V	olume: 24.00	I	LCY
Material description: Rated Payload:	Earth - Dry packe 81,600 pounds	d		Heaped V Average V			LCY LCY

<u>0.80</u> Minutes

<u>0.70</u> Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 5150 feet

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

#### 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	600.00	0.00	5.00	5.00	1343	0.55

Haul Time: **0.55** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	2445	0.47
				Return Time:	0.47	minutes
			Total Scrap	per team cycle time:	2.52	minutes
			Adjusted	l for job conditions:	573.10	LCY/Hour
			Selected N	Number of Scrapers:	1	Scraper(s)
	Adjuste	d single scra	per team (unit)	) hourly production:	573.10	LCY/Hour
	Adjusted n	nultiple scrap	per team (fleet)	) hourly production:	1,146.19	LCY/Hour
Optim	Unadjusted unit pro al Number of Scrapers pe			LCY/Hour		
JOB T	IME AND COST					
Flee	t size: 2	Team(s)		Total job time:	51.46	Hours
Uni	t cost:\$0.481	/LCY		Total job cost:	\$28,379	

CIRCES Cost Estimating Software

## BULLDOZER RIPPING WORK

	Task description:	Rip 7.41 ac of to	opsoil/overbu	rden stockpile	footprint area			
Site	: Cole Gravel P	it Pe	rmit Action:	Inspection 10-	2018 Pe	ermit/Job#	: <u>M20040</u>	20
	PROJECT ID	ENTIFICATION						
	Task #: 084	A State:	Colorado		Abbi	eviation:	None	
		5/2018 County:	Mesa		H	Filename:	M020-08	a
	User: AC							
	Agency	or organization name:	RMS					
	HOURLY EQ	UIPMENT COST						
	Basic	Machine: Cat D8T - 8SU	ſ		Horsepower:		310	
	Ripper Att	achment: <u>3-Shank Rippe</u>	r		Shift Basis:		per day	
					Data Source:	(	CRG)	
	Cost Breakdown:				Utilization %			
		Ownership Cost/Hour:		\$93.62	NA			
		Operating Cost/Hour:		\$73.35	100			
		er Ownership Cost/Hour:		\$8.93	NA			
	Ripp	er Operating Cost/Hour: _ Operator Cost/Hour:		\$7.78 \$40.23	100 NA			
		Total Unit Cost/Hour:		\$223.91	INA			
		-	ф <b>4</b> 4 5					
		Total Fleet Cost/Hour:	\$447	.82				
	MATERIAL (	<u>DUANTITIES</u>	Sele	ected estimating	method: Area			
	Alternate Method	l <u>s:</u>						
Seismic:	NA	Ba	nk Volume:	NA	BCY		NA	
Area:	7.41	acres Rip	Depth (ft):	2.00	Volume: 2	23,910		BCY or CCY
		Source of estimated quant	ity: Reclam	nation Plan				
	HOURLY PRO	DDUCTION						
	Seismic:							
	<u>Beisinie.</u>	Seismic Vel	ocity:	NA	feet/sec	ond		
	Area:		•					
	<u>Aita.</u>	Average Ripping I	Depth:	2.00	mph			
		Average Ripping V	Vidth:	7.08	degrees			
		Average Ripping Le		200.00	feet			
		Average Dozer S Average Maneuver		88.00 0.25	feet feet			
		Production per unit		0.23	acres/ho	our		
	Job Condition Co	prrection Factors						
				0 772	A	_		
	Un	adjusted Hourly Unit Produ		0.773	Acres/h	ſ		
		Site Alt		5,150	feet	<b>D</b> )		
		Altitude Job Effici		<u>1.00</u> 0.83	(CAT H (1 shift/			
		Net Corre		0.83	multipli	-		
		Adjusted Hourly Uni		0.64	Acres/hr			
		Adjusted Hourly Flee		1.28	Acres/hr			
	JOB TIME AN							
				Total ish the			TT -	1140
	Fleet size:	2 Grader(s)	1	Total job tim	e	5.77	Ho	urs
	Unit cost:	\$348.931 Per acre		Total job cos	st:\$2	2,586		

### MOTOR GRADER WORK

Task description:	Final grading of 72.41	acres of flat area			
Cole Gravel Pit	Permit A	ction: Inspection 10	P-2018 P	ermit/Job#:	M2004020
PROJECT IDENTI	FICATION				
Task #: 09A	State: Col	orado	Abb	previation:	None
Date: 11/5/2018				Filename:	M020-09a
User: ACY	·			-	
Agency or org	anization name: DRMS				
HOURLY EQUIPM	<u>ENT COST</u>				
Basic Machin			Horsepower:		259
Ripper Attachme	nt:		Shift Basis:		er day
			Data Source:		CRG)
Cost Breakdown:					
			Utilization %		
	ership Cost/Hour:	\$60.13	NA	_	
	erating Cost/Hour:	\$50.87	100	_	
	ership Cost/Hour:	\$0.00	NA	_	
	erating Cost/Hour:	\$0.00		_	
-	perator Cost/Hour:	\$45.64	NA	_	
Tot	al Unit Cost/Hour:	\$156.64			
Tota	l Fleet Cost/Hour:	\$156.64			
	a to be graded or ripped: rce of estimated acreage:	65 ac pit floor + 7.41	ac stockpile areas	5	acres
HOURLY PRODUC	TION				
<u>House House</u>	Average Grader Speed:	1.50	mah		
	Selected Application:	1.50	mph grading (0-2.5 m	(nh) = 1.5	
	Selected Blade Angle:	30	degrees		
	Effective Blade Length:	12.10	feet	-	
Width	of blade overlap per pass:	2.00	feet		
	g or ripping width per pass:	10.10	feet		
Unadjuste	ed Hourly Unit Production:	1.8364	acres/h	our	
Job Condition Correction	n Factors	S	ite Altitude: 5150	<u>)</u> feet	
		Source			
Altitude Adj:		CAT HB)			
Job Efficiency:		h/d, mod.)			
Net Correction:	0.8500 mu	ltiplier			
	Adjusted Hourly Unit Produ	uction: 1.5609	acres/Hour		
	Adjusted Hourly Fleet Produ		acres/Hour		
	5 5 5 6 6 6				
JOB TIME AND CO	<u>)ST</u>				
Fleet size:	1 Grader(s)	Total job tim	e: 46.3	39	Hours
Unit cost: \$1	00.35 per acre	Total job cos	st: \$7,2	66	
	<b>*</b>	5			

## **REVEGETATION WORK**

Т	Task description: Reveg		Revegetation of 6	egetation of 65 acres on pit floor				
Site:	Cole Gra	vel Pit	Per	mit Action:	Inspection 10-2018	Permit/Job	#: <u>M2004020</u>	
<u>PI</u>	ROJECT	IDENTIFIC	CATION					
	Task #:	10A	State:	Colorado		Abbreviation:	None	
	Date:	11/5/2018	County:	Mesa		Filename:	M020-10a	
	User:	ACY				=		

### **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium sulfate, 21-0-0 with 24% S	5.00	pound	\$0.34	\$1.70
Richlawn 3-6-3 w/ mycorrihiza humates	500.00	pound	\$0.46	\$227.80
(Pounds)				
			Total Fertilizer Materials Cost/Acre	\$229.50

### Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$34.72
	Total Fertilizer Application Cost/Acre	\$34.72

### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

#### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	1.00	3.24	\$9.75
Galleta	2.00	7.30	\$50.58
Milk Vetch, Cicer - Monarch	20.00	66.57	\$168.00
Saltbush, Four Wing	2.00	2.75	\$25.60
Globemallow, Scarlet (or copper)	0.50	5.66	\$69.38
Timothy - Climax	2.00	57.39	\$3.20
Totals Seed Mix	27.50	142.92	\$326.51

#### Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
	Total Seed Application 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	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$578.81

#### Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

#### **NURSERY STOCK PLANTING**

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

	No. of Acres:	65	Cost /Acre:	\$1,742.61
Estimate	ed Failure Rate:	60%	Cost /Acre*:	\$1,742.61
*Selected Replanti	ng Work Items:	FERTILIZING,TIL	LING,SEEDING,MU	
		LCHING		
Initial Job Cost:	\$113,269.65			
Reseeding Job Cost:	\$67,961.79			
Total Job Cost:	\$181,231			
Job Hours:	88.00			

## **REVEGETATION WORK**

Task desc	ription:	Revegetation of '	7.41 ac of sto	ockpile footprint area		
Site: Cole G	ravel Pit	Per	mit Action:	Inspection 10-2018	Permit/Jol	o#: <u>M2004020</u>
<b>PROJEC</b>	T IDENTIFIC	CATION				
Task #	: 11A	State:	Colorado		Abbreviation:	None
Date	: 11/5/2018	County:	Mesa		Filename:	M020-11a
User	: ACY					

### **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium sulfate, 21-0-0 with 24% S	5.00	pound	\$0.34	\$1.70
Richlawn 3-6-3 w/ mycorrihiza humates	500.00	pound	\$0.46	\$227.80
(Pounds)				
			Total Fertilizer Materials Cost/Acre	\$229.50

### Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$34.72
	Total Fertilizer Application Cost/Acre	\$34.72

### **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

#### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	1.00	3.24	\$9.75
Galleta	2.00	7.30	\$50.58
Milk Vetch, Cicer - Monarch	20.00	66.57	\$168.00
Saltbush, Four Wing	2.00	2.75	\$25.60
Globemallow, Scarlet (or copper)	0.50	5.66	\$69.38
Timothy - Climax	2.00	57.39	\$3.20
Totals Seed Mix	27.50	142.92	\$326.51

#### Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
	Total Seed Application 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	\$2.81	\$2.81
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$578.81

#### Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

#### **NURSERY STOCK PLANTING**

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

Estimate	No. of Acres: ed Failure Rate:	7.41	Cost /Acre: Cost /Acre*:	,	
*Selected Replanti	ng Work Items:	FERTILIZING,TIL	LING,SEEDING,MU		
×.	0	LCHING			
Initial Job Cost:	\$12,912.74				
Reseeding Job Cost:	\$7,747.64				
Total Job Cost:	\$20,660				
Job Hours:	10.00				

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

	ask descript		tial mobilization					
: _	Cole Grav	el Pit	Permit	Action: Inspe	ction 10-20	018	Permit/Job#: <u>M</u>	2004020
PR	OJECT I	DENTIFICATI	ON					
	Task #:	12A		olorado			eviation: None	
	Date: User:	11/5/2018 ACY	County: M	esa		Fi	ilename: M020	)-12a
	Ager	cy or organization	n name: DRMS					
EQ	UIPMEN	T TRANSPOR	T RIG COST					
						Shift ba		
					C	lost Data Sour	rce: CRG Da	ta
	Т	ruck Tractor Desc	ription: GENE	RIC ON-HIGH	WAY TRU	CK TRACTO	OR, 6X4, DIESEL	POWERED.
			I · · · ·			(2ND HALF,		,
	Г	ruck Trailer Desc	ription: G	ENERIC FOLD	ING GOO	SENECK, DF	ROP DECK EQUI	IPMENT
				]	<b>FRAILER</b> (	25T, 50T, AN	ND 100T)	
						· · · · ·	,	
	t <b>Brookdo</b> u	/n·						
Cos	st Breakdow	<u>, , , , , , , , , , , , , , , , , , , </u>						
	vailable Ri	g Capacities	0-25 Tons	26-50 Tons	51+	Tons		
	vailable Ri Owner	<b>g Capacities</b> ship Cost/Hour:	<b>0-25 Tons</b> \$16.63	<b>26-50 Tons</b> \$18.37		<b>Tons</b> 2.33		
	vailable Ri Owner	g Capacities			\$2			
	vailable Ri Owner Opera	<b>g Capacities</b> ship Cost/Hour:	\$16.63	\$18.37	\$2 \$5	2.33		
	vailable Ri Owner Opera Oper	<b>g Capacities</b> ship Cost/Hour: ting Cost/Hour:	\$16.63 \$44.38	\$18.37 \$46.13	\$2 \$5 \$2	2.33 0.07		
	vailable Ri Owner Opera Oper He	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour:	\$16.63 \$44.38 \$27.66	\$18.37 \$46.13 \$27.66	\$2 \$5 \$2 \$2 \$2	2.33 0.07 7.66 5.39		
	vailable Ri Owner Opera Oper He	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour:	\$16.63 \$44.38 \$27.66 \$0.00	\$18.37 \$46.13 \$27.66 \$25.39	\$2 \$5 \$2 \$2 \$2	2.33 0.07 7.66		
A	vailable Ri Owner Opera Oper He Total	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour:	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67	\$18.37 \$46.13 \$27.66 \$25.39	\$2 \$5 \$2 \$2 \$2	2.33 0.07 7.66 5.39		
A	vailable Ri Owner Opera Oper He Total	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour: Unit Cost/Hour: ABLE EQUIPN	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b>	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55	\$2 \$5 \$2 \$2 \$2	2.33 0.07 7.66 5.39 25.45	Return Trip	DOT Permit
A	vailable Ri Owner Opera Oper He Total	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour: Unit Cost/Hour: ABLE EQUIPN Weight/	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig	\$2 \$5 \$2 \$2 \$12 Fleet	2.33 0.07 7.66 5.39 25.45 Haul Trip	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
A	vailable Ri Owner Opera Oper He Total	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour: Unit Cost/Hour: ABLE EQUIPN Weight/ Unit	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b>	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55	\$2 \$5 \$2 \$2 \$12	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/		
A NO M D	vailable Ri Owner Opera Oper He Total	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS)	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni	\$2 \$5 \$2 \$2 \$12 Fleet	2.33 0.07 7.66 5.39 25.45 Haul Trip		
A NO M D	vailable Ri Owner Opera Oper He Total ON ROAD	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS) 53.08	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$125.45	\$2 \$5 \$2 \$2 \$12 Fleet Size	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet \$456.00	Cost/hr/ fleet \$250.90	Cost/ fleet
A NO M D Ca Ca	vailable Ri Owner Opera Oper He Total ON ROAD Iachine Description at D8T - 8SU	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS)	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$102.55	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t	\$2 \$5 \$2 \$2 \$12 Fleet Size 2	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet	Cost/hr/ fleet	Cost/ fleet \$500.00
A NO M D Ca Ca Ca	vailable Ri Owner Opera Oper He Total ON ROAD Iachine Description at D8T - 8SU at 631G	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: liper Cost/Hour: Unit Cost/Hour: ABLE EQUIPN Weight/ Unit (TONS) J 53.08 52.50 23.57	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$102.55 \$110.85	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$125.45 \$125.45	\$2 \$5 \$2 \$2 \$12 Fleet Size 2 2	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet \$456.00 \$472.60	Cost/hr/ fleet \$250.90 \$250.90	Cost/ fleet \$500.00 \$750.00
A NO M D C C C C C D	vailable Ri Owner Opera Oper He Total ON ROAD Iachine eescription at D8T - 8SU at 631G AT 14M	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: lper Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS) J 53.08 52.50 23.57	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$102.55 \$110.85 \$60.13	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$125.45 \$125.45 \$88.67	\$2 \$5 \$2 \$2 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet \$456.00 \$472.60 \$148.80	Cost/hr/ fleet \$250.90 \$250.90 \$88.67	Cost/ fleet \$500.00 \$750.00 \$250.00
A NC M D C C C C C C S C	vailable Ri Owner Opera Oper He Total ON ROAD Iachine vescription at D8T - 8SU at 631G AT 14M rill/Broadcas	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS) 53.08 52.50 23.57 t 25.00	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$102.55 \$110.85 \$60.13	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$125.45 \$125.45 \$88.67	\$2 \$5 \$2 \$2 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet \$456.00 \$472.60 \$148.80 \$104.21	Cost/hr/ fleet \$250.90 \$250.90 \$88.67 \$88.67	Cost/ fleet \$500.00 \$750.00 \$250.00 \$250.00
A NO M D Ca Ca Ca Ca Ca Ca Ca Ca Ca Ca Ca Ca Ca	vailable Ri Owner Opera Oper He Total ON ROAD Iachine vescription at D8T - 8SU at 631G AT 14M rill/Broadcas eeder with	g Capacities ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour: ABLE EQUIPM Weight/ Unit (TONS) 53.08 52.50 23.57 t 25.00 r 6.00	\$16.63 \$44.38 \$27.66 \$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$102.55 \$110.85 \$60.13	\$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$125.45 \$125.45 \$88.67	\$2 \$5 \$2 \$2 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$12 \$	2.33 0.07 7.66 5.39 25.45 Haul Trip Cost/hr/ fleet \$456.00 \$472.60 \$148.80	Cost/hr/ fleet \$250.90 \$250.90 \$88.67	Cost/ fleet \$500.00 \$750.00 \$250.00

Subtotals: \$1,278.61 \$767

## \$767.81 \$2,000.00

### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 4x2, 30K GVW	\$27.39	1	\$27.39	\$27.39
Water Tanker, 7,000 Gal.	\$106.29	1	\$106.29	\$106.29
		Subtotals:	\$133.68	\$133.68

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

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	GRAND JUNCTION 12.00 45.00	miles mph
Total Non-Roadable Mob/Demob Cost *	\$7,648.64	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$71.30	

Transportation Cycle Time:

	Non- Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.27	0.27
Return Time (Hours):	0.27	0.27
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.53	0.53

#### JOB TIME AND COST

Total job time: **3.07** Hours

Total job cost: \$7,720

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Sec	ondary mobilizat	ion				
: <u>Cole Gravel P</u>	it	Permit	Action: <u>Ins</u>	pection 10-20	) <u>18</u> ]	Permit/Job#:	M2004020
PROJECT IDE	NTIFICATI	<u>ON</u>					
Task #: 12H	3	State: Co	lorado		Abbre	viation: Non	e
Date: 11/	5/2018		esa				20-12b
User: AC	Y						
Agency	or organization	name: DRMS					
EQUIPMENT 1	<u>"RANSPOR"</u>	<u>T RIG COST</u>					
					Shift ba	sis: 1 per o	lay
				C	Cost Data Sour	rce: CRG I	Data
Truck	Tractor Desci	ription: GENE	RIC ON-HIG	HWAY TRU	CK TRACTO	R 6X4 DIESE	EL POWERED,
Ther	Theter Deser				(2ND HALF,		Le i o ii Litelo,
Truc	k Trailer Desci	ription: G	ENERIC FOI			OP DECK EQ	UIPMENT
					25T, 50T, AN		
						,	
Cost Breakdown:							
Available Rig C	apacities	0-25 Tons	26-50 Ton	ns 51+	Tons		
Ownership	Cost/Hour:	\$16.63	\$18.37	\$2	2.33		
Operating	Cost/Hour:	\$44.38	\$46.13	\$5	0.07		
	Cost/Hour:	\$27.66	\$27.66	\$2	7.66		
	Cost/Hour:	\$0.00	\$25.39	\$2	5.39		
Total Unit	Cost/Hour:	\$88.67	\$117.55	\$12	25.45		
NON ROADAB	LE EQUIPN	<u>/IENT:</u>					
Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/uni	i Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
L	(TONS)		t		fleet		
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
(Dowie LD-90)							

**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	\$47.74	1	\$47.74	\$47.74
		Subtotals:	\$47.74	\$47.74

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

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	GRAND JUNCTION 12.00 45.00	miles mph
Total Non-Roadable Mob/Demob Cost *	\$1,604.31	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$25.46	

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.27	0.27
Return Time (Hours):	0.27	0.27
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.53	0.53

#### JOB TIME AND COST

Total job time: \_\_\_\_\_ Hours

Total job cost: \$1,630