STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215 Denver, Colorado 80203 Phone: (303) 866-3567 FAX: (303) 832-8106



John W. Hickenlooper Governor

Mike King Executive Director

Loretta Piñeda Director

May 22, 2013

Mr. Ed Cooley Shale Tech International Services L.L.C. 1354 County Road 246 Rifle, CO 81650

Re: Duck Creek Mine, Permit No. M-2013-022, 110(2) Reclamation Permit Application Package, Second Adequacy Review.

Dear Mr. Cooley:

The Division of Reclamation, Mining and Safety has finished the review process for the above referenced reclamation permit application. The application proposes to extract oil shale for offsite experimental purposes. Please review the final issue that needs to be addressed.

1) Please review the enclosed reclamation cost estimate. Notify me immediately if any calculations appear to be inaccurate. Also, the significant portion of the cost estimate reflects the proposed importation of topsoil and the proposed methods to revegetate the site.

Other issues may arise from other agency comments, and as more information is supplied. This application cannot be approved until all issues brought forth by Division staff are adequately addressed. Please submit a response to the following issues as soon as possible, but no later than May 28, 2013 so the decision due date set May 31, 2013 can be met. If your response or a written extension request are not received by May 28, 2013 this application may be denied.

If you need additional information, please contact me at the Division of Reclamation, Mining and Safety, Grand Junction Field Office, 101 S. 3rd St., Suite 301, Grand Junction, Colorado 81501, telephone no. (970) 241-2042.

Sincerely,

Travis Marshall

Environmental Protection Specialist

Enclosure(s): Final Reclamation Cost estimate

ec: Russ Means, DRMS

COST SUMMARY WORK

Duck Cr	eek Mine		Permit Action:	Reclamation Cost Estimate	_ Permit/J	ob#: <u>M2013022</u>
PROJEC'	Γ IDENTIFICA	TION				
Task #:	001	State:	Colorado	Abbi	reviation:	None
Date:	5/22/2013	County:	Rio Blanco	F	Filename:	M022-001
Date.						

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Transport and place 6,618 LCY of backfill in Area 1	LOADER	1	18.13	\$2,783.00
02a	Place and grade backfill in Area 1	EXCAVATE	1	7.57	\$1,574.00
03a	Place topsoil over Area 1	EXCAVATE	1	0.95	\$198.00
04a	Backfill Area 2	EXCAVATE	1	10.93	\$2,272.00
05a	Transport topsoil 500' to Area 2	LOADER	1	1.59	\$244.00
05b	Place topsoil on Area 2	EXCAVATE	1	0.86	\$179.00
06a	Backfill Area 3	DOZER	1	45.65	\$9,045.30
07a	Contour backfilled slope in Area 3	EXCAVATE	1	55.15	\$11,459.00
08a	Purchase 1,800 CY topsoil and deliver to site	TRUCK1] 1	415.58	\$162,098.07
09a	Transport 1,800 CY topsoil 300, from dump location to Area 3	LOADER	1	5.71	\$876.00
10a	Distribute 1,800 CY topsoil in Area 3	EXCAVATE	1	4.08	\$848.00
11a	Revegetate 5 acres distubance	REVEGE	1	24.00	\$108,171.75
12a	Mobilization	MOBILIZE	1	10.00	\$8,139.72
		SUBTO	TALS:	600.2	\$307,887.84

INDIRECT COSTS

OVERHEAD AND PROFIT:

2.02% Liability insurance: Total = \$6,219.33 Performance bond: 1.05% Total = \$3,232.82 Job superintendent: 300.10 hrs Total = \$19,629.54 Profit: 10.00% Total = \$30,788.78

TOTAL O & P = \$59,870.47 CONTRACT AMOUNT (direct + O & P) = \$367,758.31

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% \$18,387.92

CONTINGENCY: 3.00 Total = \$9,236.64

TOTAL INDIRECT COST = \$87,995.02

TOTAL BOND AMOUNT (direct + indirect) = __\$395,882.86_

WHEEL LOADER – LOAD AND CARRY WORK

Task description: Transport and place 6,618 LCY of backfill in Area 1 Permit Action: Reclamation Cost Site: Duck Creek Mine Estimate Permit/Job#: M2013022 PROJECT IDENTIFICATION Colorado Abbreviation: Task #: 01A State: None Date: 5/16/2013 County: Rio Blanco Filename: M022-01a User: THM Agency or organization name: **DRMS HOURLY EQUIPMENT COST** Basic Machine: **CAT 980H** Horsepower: 315 Attachment 1: **ROPS Cab** Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: \$43.47 NA Operating Cost/Hour: \$74.19 100 Operator Cost/Hour: \$35.82 NA Total Unit Cost/Hour: \$153.47 \$153.47 Total Fleet Cost/Hour: **MATERIAL QUANTITIES** CCY Initial volume: Swell factor: 1.000 Loose volume: LCY 6,618 Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook **HOURLY PRODUCTION** Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.550 minutes Cycle Time Factors Factor (min.) Source Material 3/4" to 6" diameter 0.00 Material: 0.000 (Cat HB) Stockpile: Conveyor or dozer piled 10 ft. high or less 0.01 0.010 (Cat HB) Truck Ownership: Independently owned trucks 0.04 0.040 (Cat HB) Operation: Constant operation -0.04 -0.040 (Cat HB) Dump Target: Fragile target 0.05 0.050 (Cat HB) Net Cycle Time Adjustment: 0.060 minutes Adjusted Basic Cycle Time: minutes 0.610 Rolling Resistance - Road Conditions Rutted dirt, little maintenance, no water, 2" tire penetration 5.0 Haul: Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0 Haul and Return Time Length Grade Res. Rolling Total Res. Travel Time Source

(feet)

200

200

Haul Route:

Return Route:

(%)

0.00

0.00

Res. (%)

5.00

5.00

(%)

5.00

5.00

(Cat HB)

(Cat HB)

(minutes)

0.1768

0.1599

			Total Travel Tin Total Cycle Tin		minutes minutes
Load Bucket Capacity					
Rated Capaci Bucket Fill Factor	or: 0.925		•	Bank (85%-100%) 0.9	25
Adjusted Capaci	ty: 6.94	_ LCY			
Job Condition Correction Site Altitude: 7350 feet	n Factors				
		Source			
Altitude Adj:	1.00	(CAT HB)		
Job Efficiency:	0.83	(1 shift/day	<u>y)</u>		
Net Correction:	0.83	multiplier			
Uı	nadjusted Hourly Unit	Production:	439.70	LCY/Hour	
	Adjusted Hourly Unit	Production:	364.95	LCY/Hour	
4	Adjusted Hourly Fleet	Production:	364.95	LCY/Hour	
JOB TIME AND CO	<u>OST</u>				
Fleet size:	1 Loader(s)		Total job time:	18.13	Hours
Unit cost: \$0	0.421 /LCY		Total job cost: _	\$2,783.00	_

Duck Creek Min	ne	Peri	mit Action:	Reclamation Cost Update		rmit/Job#:	M2013022
PROJECT IDEN	TIFICAT	<u>'ION</u>					
Task #: 02A Date: 5/20/2		State: County:	Colorado Rio Blanc	0		eviation: ilename:	None M022-02a
User: THM							
	organizatio		RMS	F1 1 5 57			
HOURLY EQUI							
Basic Machi Attachmen		45D L 12'-10 S Cab	" Stick		Horsepower: _ Veight (MT):		380 9.37
Attachmen	ti. Kort	3 Cao		•	Shift Basis:		er day
				I	Data Source:	(C	CRG)
Cost Breakdown:			15	TT: 11			
Ownership	Cost/Hour:	\$62.	38	Utilization % NA			
Operating		\$111.		100	-		
-	Cost/Hour:	\$33.		NA	5		
Total Unit	Cost/Hour:	\$207.	.76				
Total Fleet	Cost/Hour:	\$207	7.76				
MATERIAL QU		<u>s</u>					
Initial volume	. 2070						
			CCY	Swell facto	or: 1.000		
Loose volume			CCY LCY	Swell facto	or: <u>1.000</u>		
Loose volume	: 2,978 ource of estimates	mated volume:	LCY Division	of Reclamation, M			
Loose volume So Source	2,978 curce of estimate	d swell factor:	LCY Division	of Reclamation, M			
Loose volume So Source HOURLY PROI	e of estimate	d swell factor:	LCY Division Cat Hand	of Reclamation, M dbook	lining & Safety		
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Duck Creek Mine			nit Action:	Reclamation C Estimate	Cost	Pe	ermit/Job#:	M2013022
PROJECT IDENT Task #: 03A Date: 5/20/20		State: County:	Colorado Rio Blanc	0			reviation:	None M022-03a
User: THM								
Agency or o	rganizatio	n name: DR	MS					
HOURLY EQUIP	MENT C	COST						
Basic Machine Attachment		45D L 12'-10' S Cab	'Stick		Weigh Shif	epower: t (MT): t Basis: Source:	4 1 p	9.37 er day
Cost Breakdown:						•		
Oram analain C	/ I I	\$ (2.2		Utilization %				
Ownership Co Operating Co		\$62.3 \$111.4		NA 100	772.63			
Operator Co		\$33.9		NA				
Total Unit Co	ost/Hour:	\$207.	76					
Total Fleet C	ost/Hour:	\$207.	.76					
MATERIAL QUA	NTITIES	<u> </u>						
MATERIAL QUA								
Initial volume:		<u> </u>	CCY	Swell fac	ctor:	1.000		
Loose volume:	443 443 rce of estin	nated volume:	CCY LCY Division Cat Hand	Swell factory of Reclamation, dbook	_		у	
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Loose volume: Source of MOURLY PRODICE Excavator Cycle Time Load Bucket Capacity Rated Capacity Rated Capacity Adjusted Capacity Job Condition Correct Altitude Adjust Efficiency	443 443 rce of estimated UCTION e (load bud Sec y acity:	anated volume: d swell factor: cket, swing loa ondary Job Co 3.14 0.975 3.06 rs 0.96 0.83 0.80 d Hourly Unit d Hourly Unit	LCY Division Cat Hand ded, dump Basic Job Condition with LCY (he Loose m LCY Source (CAT H (1 shift/d multiplie Production: Production:	of Reclamation, dbook bucket, swing em Condition Descrip hin Basic Descrip Cycle Time V caped) haterial - mixed m Site B) ay) r 583.14 464.65	npty): ption: ption: /alue: Buck noist ag	AVERA AVERA 0.315 ket Size C gregates (AGE AGE Class: M (95-100%)	edium

Task description:	Васк	tfill Area 2					
: _Duck Creek Mine		Permit Ac	tion: Recla Estim	mation Cost ate		ermit/Job#:	M2013022
PROJECT IDENT	IFICATI	<u>ON</u>					
Task #: 04A Date: 5/21/20 User: THM	13		orado Blanco		Andread Control of the Control of th	reviation: Filename:	None M022-04a
Agency or o	rganization	name: DRMS					
HOURLY EQUIP		-				-	
Basic Machine Attachment 1	: Cat 34:	5D L 12'-10" Stick	<u> </u>	W	Horsepower: eight (MT): Shift Basis: Data Source:	4 1 p	380 9.37 er day CRG)
Cost Breakdown:							
Ownership Co Operating Co Operator Co	ost/Hour: ost/Hour:	\$62.38 \$111.43 \$33.94		zation % NA 100 NA			
Total Unit Co	-	\$207.76					
Total Fleet C		\$207.76					
MATERIAL QUA Initial volume:							
Loose volume:	5,082 5,082	CC		Swell factor	: 1.000		
Loose volume:	5,082	LC	Y		: 1.000 ining & Safet	у	
Loose volume:	5,082	LC ated volume: Div	Y		·	y	
Loose volume:	5,082 ce of estimated	LC ated volume: Div	Y vision of Rec		(у	
Loose volume: Source o	5,082 ce of estimated JCTION	ated volume: Div swell factor: Car	Y vision of Rec t Handbook	lamation, Mi	ining & Safet	y	
Loose volume: Source o HOURLY PRODU	5,082 ce of estimated JCTION e (load buck	ated volume: Div swell factor: Careet, swing loaded, d	yision of Rec t Handbook lump bucket, Job Conditio	lamation, Minimum swing empty	ining & Safety (1): on: AVERA		
Loose volume: Source o HOURLY PRODU	5,082 ce of estimated JCTION e (load buck	ated volume: Div swell factor: Car	vision of Rec t Handbook lump bucket, Job Condition within Bas	swing empty on Description	ining & Safety (1): on: AVERA AVERA	AGE	minutes
Loose volume: Source o HOURLY PRODU	5,082 ce of estimated f estimated CTION c (load buck	ated volume: Div swell factor: Careet, swing loaded, d	vision of Rec t Handbook lump bucket, Job Condition within Bas	lamation, Minimum swing empty	ining & Safety (1): on: AVERA AVERA	AGE	minutes
Loose volume: Source o HOURLY PRODU Excavator Cycle Time	5,082 ce of estimated f estimated CTION c (load buck	ated volume: Div swell factor: Careet, swing loaded, d	vision of Rec t Handbook lump bucket, Job Condition within Bas	swing empty on Description ic Description de Time Valu	ining & Safety (1): on: AVERA AVERA	AGE AGE	minutes
Loose volume: Source o HOURLY PRODU Excavator Cycle Time	5,082 ce of estimated f estimated JCTION c (load buck Second city: ctor:	ated volume: Div Swell factor: Care Swell factor: Div Swell factor: Care Swell factor: Div Swell factor: Care Swell factor: Car	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl	swing empty on Description ic Description le Time Valu	ining & Safety (y): on: AVERA on: AVERA 10: 0.315	AGE AGE Class: M	edium
Loose volume: Source of HOURLY PRODUCE Excavator Cycle Times Load Bucket Capacity Rated Capacity Bucket Fill Fa	5,082 ce of estimated JCTION e (load buck Second city: city: city:	ated volume: Div Swell factor: Care Swell factor:	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl	swing empty on Description ic Description le Time Valu	ining & Safety (v): on: AVERA on: AVERA ie: 0.315 Bucket Size (AGE AGE Class: <u>M</u>	edium
Loose volume: Source of MOURLY PRODU Excavator Cycle Time Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa	5,082 ce of estimated JCTION e (load buck Second city: city: city:	ated volume: Div Swell factor: Car Swell factor:	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl	swing empty on Description ic Description le Time Valu	ining & Safety (y): on: AVERA on: AVERA ie: 0.315 Bucket Size Cost aggregates (AGE AGE Class: <u>M</u>	edium
Loose volume: Source of MOURLY PRODU Excavator Cycle Time Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa	5,082 ce of estimated JCTION e (load buck second city:	ated volume: Div Swell factor: Car Swell factor:	vision of Rec t Handbook lump bucket, Job Condition m within Bas Cycl CY (heaped) ose material	swing empty on Description ic Description le Time Valu	ining & Safety (y): on: AVERA on: AVERA ie: 0.315 Bucket Size Cost aggregates (AGE AGE Class: <u>M</u>	edium
Loose volume: Source of MOURLY PRODUE Excavator Cycle Time Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Adjusted Capa Job Efficiency Net Correction	second Se	ated volume: Div Swell factor: Car Swell factor:	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl Y (heaped) ose material Y Source AT HB) shift/day) litiplier action:	swing empty on Description ic Description le Time Valu	ining & Safety (y): on: AVERA on: AVERA ie: 0.315 Bucket Size Cost aggregates (AGE AGE Class: <u>M</u>	edium
Loose volume: Source of MOURLY PRODUE Excavator Cycle Time Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Adjusted Capa Job Efficiency Net Correction	second Se	ated volume: Div Swell factor: Car Swell factor:	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl Y (heaped) ose material Y Source AT HB) shift/day) litiplier action:	swing empty on Description ic Description le Time Value - mixed mois Site A	ining & Safety in: AVERA in: AVERA in: O.315 Bucket Size Constaggregates (Altitude: 7350 LCY/Hour LCY/Hour LCY/Hour	AGE AGE Class: <u>M</u>	edium
Loose volume: Source of HOURLY PRODUE Excavator Cycle Time Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Adj Job Efficiency Net Correction	second Se	ated volume: Div Swell factor: Car Swell factor:	vision of Rec t Handbook lump bucket, Job Condition within Bas Cycl Y (heaped) ose material Y Source AT HB) shift/day) litiplier action:	swing empty on Description ic Description le Time Valu mixed mois Site A 583.14 464.65	ining & Safety in: AVERA in: AVERA in: O.315 Bucket Size Constaggregates (Altitude: 7350 LCY/Hour LCY/Hour LCY/Hour	AGE AGE Class: <u>M</u> (95-100%)	edium

WHEEL LOADER – LOAD AND CARRY WORK

Task description:

Transport topsoil 500' to Area 2

Permit Action:

Reclamation Cost

Site: Duck Creek Mine

Estimate

Permit/Job#: M2013022

PROJECT IDENTIFICATION

Task #:

05A

State: County: Colorado

Abbreviation:

None

Date: 5/21/2013 User:

THM

Rio Blanco

Filename:

M022-05a

Agency or organization name:

DRMS

HOURLY EQUIPMENT COST

Basic Machine:

CAT 980H

Horsepower:

315

Attachment 1:

ROPS Cab

Shift Basis:

1 per day

Data Source:

(CRG)

Cost Breakdown:

Ownership Cost/Hour: Operating Cost/Hour:

Operator Cost/Hour:

\$35.82 \$153.47

\$43.47

\$74.19

Total Unit Cost/Hour: Total Fleet Cost/Hour:

\$153.47

MATERIAL QUANTITIES

Initial volume:

CCY

Swell factor: 1.000

Utilization %

NA

100

NA

Loose volume:

380

LCY

Division of Reclamation, Mining & Safety

Source of estimated swell factor:

Source of estimated volume:

Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time:

Unadjusted Basic Cycle Time (load, dump, maneuver):

0.550

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Fragile target 0.05	0.050	(Cat HB)

Net Cycle Time Adjustment: Adjusted Basic Cycle Time: 0.010 0.560

minutes minutes

Rolling Resistance - Road Conditions

Haul:

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

Return:

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

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res.	Travel Time (minutes)	Source
Haul Route:	500	-5.00	5.00	0.00	0.3218	(Cat HB)
Return Route:	500	5.00	5.00	10.00	0.5644	(Cat HB)

			Total Travel Tir Total Cycle Tir		minutes minutes
Load Bucket Capacity					
Rated Capac Bucket Fill Fac Adjusted Capac	tor: 0.925	LCY (hea Loose ma	•	" (90 - 95%) 0.925	
Job Condition Correcti Site Altitude: 7350 feet					
		Source			
Altitude Adj:	1.00	(CAT HB	5)		
Job Efficiency:	0.83	(1 shift/day	y)		
Net Correction:	0.83	_ multiplier			
U	nadjusted Hourly U	nit Production:	287.83	LCY/Hour	
	Adjusted Hourly U	nit Production:	238.90	LCY/Hour	
	Adjusted Hourly Flo	eet Production:	238.90	LCY/Hour	
JOB TIME AND C	<u>OST</u>				
Fleet size:	1 Loader	(s)	Total job time:	1.59	Hours

Unit cost: \$0.642 /LCY Total job cost: \$244.00

Duck Creek Mine	2	Permit Ac	tion: Reclamation Co Estimate	ost Permit/J	ob#: M2013022
PROJECT IDENT	TIFICATION TO THE PROPERTY OF	<u>ON</u>			
Task #: 05B Date: 5/21/20 User: THM	013		orado Blanco	Abbreviati Filenar	
		DDMC			
	organization				
HOURLY EQUIP					
Basic Machine Attachment		SD L 12'-10" Stick		Horsepower: Weight (MT):	<u>380</u> 49.37
				Shift Basis:	1 per day
				Data Source:	(CRG)
Cost Breakdown:			Utilization %		
Ownership C		\$62.38	NA		
Operating Co	ost/Hour:	\$111.43	100	 _	
Operator Co Total Unit Co	_	\$33.94	NA	_	
	_	\$207.76			
Total Fleet C	Cost/Hour: _	\$207.76			
MATERIAL QUA			•		
Initial volume:	380	cc		tor:1.000	
Loose volume:	380	LC	Y		
	rce of estimated:	the state of the s	vision of Reclamation, It Handbook	Mining & Safety	
		swell factor. Cal	. Halldbook		
HOURLY PRODU					
Excavator Cycle Tim	e (load buck	et, swing loaded, d	ump bucket, swing emp	oty):	
		Basic	Job Condition Descript	tion: AVERAGE	
The same of the same	Secon		n within Basic Descript	tion: AVERAGE	
				tion: AVERAGE	minutes
Load Bucket Capacit			n within Basic Descript	tion: AVERAGE 0.315	
Load Bucket Capacit	У	ndary Job Conditio	n within Basic Descript Cycle Time Va	tion: AVERAGE	minutes Medium
Load Bucket Capacit Rated Capa Bucket Fill Fa	Y acity:	3.14 LC 0.925 Log	n within Basic Descript Cycle Time Va Y (heaped) ose material - 1/8" to 3/	tion: AVERAGE alue: 0.315 Bucket Size Class:	
Load Bucket Capacit	Y acity:	ndary Job Conditio 3.14 LC	n within Basic Descript Cycle Time Va Y (heaped) ose material - 1/8" to 3/	tion: AVERAGE alue: 0.315 Bucket Size Class:	
Load Bucket Capacit Rated Capa Bucket Fill Fa	acity:actor:	3.14 LC 0.925 Log	r within Basic Descript Cycle Time Va Y (heaped) ose material - 1/8" to 3/Y	tion: AVERAGE alue: 0.315 Bucket Size Class:	
Load Bucket Capacit Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correc	y acity: actor: acity: ction Factors	3.14 LC 0.925 Loc 2.90 LC	Y (heaped) Site Source	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925	
Load Bucket Capacity Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Ad	acity:actor:acity:acity:acity:acity:acity:acity:acity:aciton Factors	3.14 LC 0.925 Loc 2.90 LC	Y (heaped) Ose material - 1/8" to 3/Y Site	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925	
Load Bucket Capacit Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Ad Job Efficiency	y acity: actor: acity: ction Factors j: y: 0.	3.14 LC 0.925 Loc 2.90 LC 96 (CA 83 (1 s	Y (heaped) ose material - 1/8" to 3/Y Site Source AT HB) hiff/day)	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925	
Rated Capacity Rated Capacity Bucket Fill Farandisted Capacity Adjusted Capacity Job Condition Correct Altitude Ad Job Efficiency Net Correction	acity: actor: acity: ction Factors j: 0. y: 0. n: 0.	3.14 LC 0.925 Loc 2.90 LC S 96 (C) 83 (1 s) 80 mul	Y (heaped) Ose material - 1/8" to 3/Y Site ource AT HB) hift/day) tiplier	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925 Altitude: 7350 feet	
Rated Capacity Rated Capacity Bucket Fill Farandisted Capacity Adjusted Capacity Job Condition Correct Altitude Ad Job Efficiency Net Correction	acity: acity: acity: ction Factors j: y: 0. u: 0. Unadjusted	3.14 LC 0.925 Loc 2.90 LC S 96 (CA 83 (1 s) 80 mul Hourly Unit Product	Y (heaped) Ose material - 1/8" to 3/Y Site ource AT HB) hift/day) tiplier ction: 553.24	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925 Altitude: 7350 feet LCY/Hour	
Rated Capacity Rated Capacity Bucket Fill Farandisted Capacity Adjusted Capacity Job Condition Correct Altitude Ad Job Efficiency Net Correction	y acity: actor: acity: ction Factors j: 0. y: 0. h: 0. Unadjusted Adjusted	3.14 LC 0.925 Loc 2.90 LC S 96 (C) 83 (1 s) 80 mul	Y (heaped) Ose material - 1/8" to 3/Y Site ource AT HB) hift/day) tiplier ction: 553.24 ction: 440.82	AVERAGE 0.315 Bucket Size Class: (8" (90 - 95%) 0.925 Altitude: 7350 feet	
Rated Capacit Rated Capa Bucket Fill Fa Adjusted Capa Job Condition Correct Altitude Ad Job Efficiency Net Correction	y acity: acity: ction Factors j: 0. y: 0. h: 0. Unadjusted Adjusted Adjusted I	3.14 LC 0.925 Loc 2.90 LC S 96 (CA 83 (1 s 80 mul Hourly Unit Product Hourly Unit Product	Y (heaped) Ose material - 1/8" to 3/Y Site ource AT HB) hift/day) tiplier ction: 553.24 ction: 440.82	AVERAGE 0.315 Bucket Size Class: 8" (90 - 95%) 0.925 Altitude: 7350 feet LCY/Hour LCY/Hour	
Rated Capacity Rated Capacity Bucket Fill Farandisted Capacity Adjusted Capacity Job Condition Correct Altitude Ad Job Efficiency Net Correction	y acity: acity: ction Factors j: 0. y: 0. h: 0. Unadjusted Adjusted Adjusted I	3.14 LC 0.925 Loc 2.90 LC S 96 (CA 83 (1 s 80 mul Hourly Unit Product Hourly Unit Product	Y (heaped) Ose material - 1/8" to 3/Y Site ource AT HB) hift/day) tiplier ction: 553.24 ction: 440.82	AVERAGE 0.315 Bucket Size Class: 8" (90 - 95%) 0.925 Altitude: 7350 feet LCY/Hour LCY/Hour	

	Permit Action:	Reclamation Cost		
Duck Creek Mine		Estimate	Permit/Job#:	M2013022
PROJECT IDENTIF	<u>ICATION</u>			
Task #:06A	State: Colorado		Abbreviation:	None
Date: 5/21/2013	County: Rio Blanc	0	Filename:	M022-06a
User: THM				
Agency or orga	nization name: DRMS			
HOURLY EQUIPMI	ENT COST			
	t D8T - 8SU			
Horsepower: 310				
	ni-Universal			
Attachment: NA Shift Basis: 1 p	er day			
	er day RG)			
	/	—		
Cost Breakdown:		Utilization %		
Ownership Cost/Hour:	\$56.69	NA		
Operating Cost/Hour:	\$104.03	100		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$37.41	NA		
Initial Volume: 23,0 Swell factor: 1.00 Loose volume: 23,0	00			
Source of estimated volu	me: Division of Reclamat	ion, Mining & Safety		
Source of estimated volu Source of estimated swel		ion, Mining & Safety		
	l factor: Cat Handbook	ion, Mining & Safety		
Source of estimated swell HOURLY PRODUC	l factor: Cat Handbook	ion, Mining & Safety		
Source of estimated swel	Cat Handbook FION 100 feet	ion, Mining & Safety		
HOURLY PRODUCTAVerage push distance:	Cat Handbook FION 100 feet ction: 852.6 LCY/hr			
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de	Cat Handbook FION 100 feet ction: 852.6 LCY/hr scription: Loose stockpile 1.2			
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient:	I factor: Cat Handbook FION 100 feet ction: 852.6 LCY/hr scription: Loose stockpile 1.2			
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de	Cat Handbook FION 100 feet ction: 852.6 LCY/hr scription: Loose stockpile 1.2			
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient:	I factor: Cat Handbook FION 100 feet ction: 852.6 LCY/hr scription: Loose stockpile 1.2			
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient: Average site altitude:	Cat Handbook FION 100 feet ction: 852.6 LCY/hr scription: Loose stockpile 1.2 5 % 7,350 feet			
HOURLY PRODUCTA Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	I factor: Cat Handbook FION 100 feet 852.6 LCY/hr scription: Loose stockpile 1.2 5 % 7,350 feet 2,100 lbs/LCY Shale	Source		
HOURLY PRODUC' Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description:	TION			

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5909

Adjusted unit production:

503.80 LCY/hr

Adjusted fleet production:

503.8 LCY/hr

JOB TIME AND COST

Fleet size:

1 Dozer(s)

Unit cost:

\$0.393/LCY

Total job time: _

45.65 Hours

Total job cost:

\$9,045.30

: Duck Creek M	Aine	Permit Action:	Reclamation Co Estimate		b#: <u>M201302</u> 2
PROJECT IDI	ENTIFICATI	ON			
Task #: 07/		State: Colorado	1	Abbreviation	n: None
	21/2013	County: Rio Bland		Filenam	
User: TH	IM				
Agency	or organization	name: DRMS			
HOURLY EQ	UIPMENT CO	<u>OST</u>			
Basic Mad	chine: Cat 34:	5D L 12'-10" Stick		Horsepower:	380
Attachm	ent 1: ROPS	Cab	1	Weight (MT):	49.37
				Shift Basis:	1 per day
				Data Source:	(CRG)
Cost Breakdown:	<u>.</u>				
O11	in Cost/II	¢(2.29	Utilization %		
	ip Cost/Hour: ng Cost/Hour:	\$62.38 \$111.43	NA 100	_	
	or Cost/Hour:	\$33.94	NA		
•	nit Cost/Hour:	\$207.76	NA.	_	
	eet Cost/Hour:	\$207.76			
	•				
MATERIAL C Initial volur		CCY	Swell factor	or: 1.000	
Loose volur		LCY	Swell lacu	01. 1.000	
Sour	Source of estimated		n of Reclamation, N Idbook	Mining & Safety	22
HOURLY PRO	rce of estimated ODUCTION		dbook		- 22 - 19 - 22 - 19 84
HOURLY PRO	rce of estimated ODUCTION	swell factor: Cat Han	dbook	oty):	
HOURLY PRO	rce of estimated ODUCTION Time (load buck	swell factor: Cat Han	bucket, swing emp Condition Descript thin Basic Descript	oty): ion: AVERAGE ion: AVERAGE	
HOURLY PRO	rce of estimated ODUCTION Time (load buck	swell factor: Cat Han set, swing loaded, dump Basic Job 6	bucket, swing emp	oty): ion: AVERAGE ion: AVERAGE	minutes
HOURLY PRO	rce of estimated ODUCTION Time (load buck	swell factor: Cat Han set, swing loaded, dump Basic Job 6	bucket, swing emp Condition Descript thin Basic Descript	ion: AVERAGE ion: AVERAGE lue: 0.315	
HOURLY PRO Excavator Cycle Load Bucket Cap	operation of estimated operation of estimated operation of the control operation operation of the control operation operation operation operation of the control operation	swell factor: Cat Han set, swing loaded, dump Basic Job ondary Job Condition with	bucket, swing emp Condition Descript hin Basic Descript Cycle Time Va	oty): ion: AVERAGE ion: AVERAGE	minutes Medium
HOURLY PRO Excavator Cycle Load Bucket Cap	ODUCTION Time (load buck Seconacity Capacity:	Swell factor: Cat Han Set, swing loaded, dump Basic Job Condition wit 3.14 LCY (he	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va	ion: AVERAGE ion: AVERAGE lue: 0.315	
HOURLY PRO Excavator Cycle Load Bucket Cap	ODUCTION Time (load buck Seconacity Capacity:	Swell factor: Cat Han Set, swing loaded, dump Basic Job Condition wit 3.14 LCY (he	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va	ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class:	
HOURLY PRO Excavator Cycle Load Bucket Cap Rated O Bucket Fi	Seconacity Capacity: Capacity: Capacity: Capacity: Capacity: Capacity:	Swell factor: Cat Han Set, swing loaded, dump Basic Job 6 Indary Job Condition with 3.14 LCY (ho 0.875 Loose m 2.75 LCY	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va eaped)	ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class:	
HOURLY PRO Excavator Cycle Load Bucket Cap Rated (Bucket Fi Adjusted (Job Condition Co	Seconacity Capacity:	Swell factor: Cat Han Set, swing loaded, dump Basic Job 6 Indary Job Condition with 3.14 LCY (ho 0.875 Loose m 2.75 LCY Source	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va eaped) naterial - 1" and ov Site	oty): ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class: er (85 - 90%) 0.875	
HOURLY PRO Excavator Cycle Load Bucket Cap Rated (Bucket Fi Adjusted (Job Condition Co	Seconacity Capacity:	Swell factor: Cat Han Set, swing loaded, dump Basic Job Condition with 3.14 LCY (ho 0.875 Loose m 2.75 LCY Source 0.96 (CAT H	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va eaped) naterial - 1" and ov Site	oty): ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class: er (85 - 90%) 0.875	
HOURLY PRO Excavator Cycle Load Bucket Cap Rated (Bucket Fi Adjusted (Job Condition Co	Seconacity Capacity: Capa	Swell factor: Cat Handelet, swing loaded, dump Basic Job Condition with State of the Carlot of the	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va eaped) naterial - 1" and ov Site e (B)	oty): ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class: er (85 - 90%) 0.875	
HOURLY PRO Excavator Cycle Load Bucket Cap Rated (Bucket Fi Adjusted (Job Condition Co	Seconacity Capacity: Capa	Swell factor: Cat Ham Set, swing loaded, dump Basic Job Condition with 3.14 LCY (ho 0.875 Loose m 2.75 LCY Source (CAT H 0.83 (1 shift/c) 0.80 multiplie	bucket, swing emp Condition Descript thin Basic Descript Cycle Time Va eaped) naterial - 1" and ov Site e IB)	oty): ion: AVERAGE ion: AVERAGE lue: 0.315 Bucket Size Class: er (85 - 90%) 0.875	
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TRUCK/LOADER TEAM WORK

Task description:

Purchase 1,800 CY topsoil and deliver to site

Permit Action:

Reclamtion Cost

Site: Duck Creek Mine

Estimate

Permit/Job#: M2013022

PROJECT IDENTIFICATION

Task #:

08A

State:

Colorado

Abbreviation:

None

Date: User:

Cost Breakdown:

5/22/2013 THM

Rio Blanco County:

Filename:

M022-08a

Agency or organization name:

DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description Generic 15-18 cy, 6x4

Truck Loader Team -Truck: -Loader:

CAT 980H

Support Equipment -Load Area: NA

-Dump Area: NA

Road Maintenance - Motor Grader: NA

-Water Truck: NA

Truck/Loader Team

Support Equipment Maintenance Equipment

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$17.98	\$43.47	NA	NA	NA	NA
Operating cost/hour:	\$74.65	\$74.19	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$25.66	\$35.82	NA	NA	NA	NA
Unit Subtotals:	\$118.29	\$153.47	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work:	\$390.05	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: \$390.05

MATERIAL QUANTITIES

Initial volume:

CCY

Swell factor: 1.000

Loose volume:

1,800 Source of estimated volume: LCY

Division of Reclamation, Mining & Safety

Source of estimated swell factor:

Cat Handbook

Material Purchase Cost:

\$10.00

Total Cost:

\$18,000.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 1,600 Pounds/LCY

Description: Rated Payload: Top Soil 63,980

Pounds

Payload Capacity:

39.99

LCY

Truck Bed (volume) Basis	_					
Struck Volume:	15.00	LCY				
Heaped Volume:	18.00	LCY				
Average Volume:	16.50	LCY				
Adjusted Volume:	18.00	LCY				
Fir	al Truck Volum	e Based on Number of	Loader Passes:	13.13	LCY	
Loading Tool Capacity			•			
			Buck	et Size Class: N	A	_
Rated Capacity:	7.500	LCY (heaped)				
Bucket Fill Factor:	0.875	Loose material -	1/2" to 3/4" (85	- 90%) 0.875		_
Adjusted Capacity:	6.563	LCY				
Job Condition Correctio	ns:	Site	e Altitude (ft.): <u>6</u>	500 feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HB)		
Job Efficiency:	0.830	0.830	(CAT HB)		
Net Correction:	0.830	0.830				
		·	-1.			
	e within this Bas	sic Rating: NA				
	- Material Desc	ription:				
Cycle Time Elements (min	1.):					
Load: NA		Maneuver: NA		Dump:0.100	<u> </u>	
Wheel and Track Loader	s - Unadjusted B	asic Loader Cycle Tim	e (load, dump, n	naneuver):0	.550 min	utes
Cycle Time Factor	s			Factor (min.)	Source	
Materia	: Material 1/8	" to 3/4" diameter -0.02	2	-0.020	(Cat HB)	_
Stockpile	: Dumped by	truck 0.02		0.020	(Cat HB)	_
Truck Ownership	: Independent	ly owned trucks 0.04		0.040	(Cat HB)	
Operation	: Constant op	eration -0.04		-0.040	(Cat HB)	_
Dump Targe	: Nominal tar	get 0.00		0.000	(Cat HB)	
		Net Cycle Time	Adjustment:	0.000	minutes	
		Adjusted Loade	r Cycle Time:	0.550	minutes	
		Net Load Ti	me per Truck:	0.650	minutes	
Truck Cycle Time:						
Truck Exchange Ti						
	me: 0.50	Minutes	Adjusted	for site altitude:	0.500	Minı
Truck Load Ti	me: 0.650	Minutes Minutes	•	for site altitude: for site altitude:	0.500 0.650	Minu Minu

Truck Travel (Haul & Return) 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	343200.00	2.00	3.00	5.00	1867	183.905

Haul Time: 183.905 minutes

Return Route:

Seg#	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	343200.00	-2.00	3.00	1.00	2963	115.862

Return Time: 115.862 minutes
Total Truck Cycle Time: 301.817 minutes

Loading Tool unit

Production 684.78 LCY/Hour Adjusted for job efficiency: 568.37 LCY/Hour Truck Unit Production

2.61 LCY/Hour Adjusted for job efficiency: 2.17 LCY/Hour

Optimal No. of Trucks: 262 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production:
Adjusted single truck/loader team production:
Adjusted multiple truck/loader team production:
4.33
LCY/Hour
4.33
LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 415.58 Hours

Unit cost: \$90.054 /LCY Total job cost: \$162,098.07

WHEEL LOADER – LOAD AND CARRY WORK

Task description: Transport 1,800 CY topsoil 300, from dump location to Area 3 Permit Action: **Reclamation Cost** Site: Duck Creek Mine Estimate Permit/Job#: M2013022 PROJECT IDENTIFICATION Task #: 09A State: Colorado Abbreviation: None Date: 5/22/2013 County: Rio Blanco Filename: M022-09a User: THM Agency or organization name: **DRMS** HOURLY EQUIPMENT COST Basic Machine: **CAT 980H** Horsepower: 315 Attachment 1: **ROPS Cab** Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: \$43.47 NA Operating Cost/Hour: 100 \$74.19 Operator Cost/Hour: \$35.82 NA Total Unit Cost/Hour: \$153.47 Total Fleet Cost/Hour: \$153.47 **MATERIAL QUANTITIES** CCY Initial volume: 1.800 Swell factor: 1.000 Loose volume: 1.800 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook HOURLY PRODUCTION Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.550 minutes Cycle Time Factors Source Factor (min.) Material 1/8" to 3/4" diameter -0.02 Material: -0.020(Cat HB) Stockpile: Dumped by truck 0.02 (Cat HB) 0.020 Truck Ownership: No adjustment - factor not applicable 0.00 0.000 (Cat HB) Operation: Inconsistent operation 0.04 0.040 (Cat HB) Dump Target: Nominal target 0.00 0.000 (Cat HB) Net Cycle Time Adjustment: 0.040 minutes Adjusted Basic Cycle Time: 0.590 minutes Rolling Resistance - Road Conditions Rutted dirt, little maintenance, no water, 2" tire penetration 5.0 Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0 Return: Haul and Return Time Grade Res. Total Res. Travel Time Length Rolling Source (feet) (%) Res. (%) (%) (minutes)

Haul Route:

Return Route:

300

300

-3.00

3.00

5.00

5.00

2.00

8.00

(Cat HB)

(Cat HB)

0.2190

0.2870

			Total Travel Tim Total Cycle Tim		minutes minutes
Load Bucket Capacity					
Rated Capaci Bucket Fill Fact Adjusted Capaci	or: 0.925	LCY (heaped Loose materi	•	(90 - 95%) 0.925	
Job Condition Correction Site Altitude: 7350 feet					
Altitude Adj: Job Efficiency: Net Correction:	1.00 0.83 0.83	Source (CAT HB) (1 shift/day) multiplier			
	nadjusted Hourly Unit Pr Adjusted Hourly Unit Pr Adjusted Hourly Fleet Pr	oduction:	379.79 315.22 315.22	LCY/Hour LCY/Hour LCY/Hour	
JOB TIME AND CO	<u>DST</u>				
Fleet size:	l Loader(s)	То	otal job time: _	5.71	Hours
Unit cost:\$0).487 /LCY	T	otal job cost:	\$876.00	

:	Duck Creek Mine	e		Per	mit Action:	Reclamation C Estimate	Cost	Pe	ermit/Job#:	M2013022
PR	OJECT IDEN	TIFIC	ATION	N						
	Task #: 10A			- State:	Colorado			A bbr	reviation:	None
	Date: 5/22/20	013		County:	Rio Blanc	20	_		Filename:	M022-10a
	User: THM							-		111022 104
	Agency or o	organiza	ation na	me: DI	RMS					
HC	OURLY EQUIP	MEN	r cos	<u>T</u>						
	Basic Machine	e: Ca	at 345D	L 12'-10	" Stick		Hor	sepower:		380
	Attachment	1: RO	OPS Cal	b				ht (MT):	4	9.37
								ift Basis:		er day
							Data	Source:	(CRG)
Cos	st Breakdown:				1					
	Ownership C	ost/Hou	ır·	\$62.	38	Utilization % NA				
	Operating C			\$111		100				
	Operator C			\$33.		NA				
	Total Unit C	ost/Hou	ır:	\$207	.76					
	Total Fleet C	Cost/Ho	ur:	\$207	7.76					
M.	ATERIAL QUA	NTIT	<u>IES</u>							
	Initial volume:	1 00								
		1,800			CCY	Swell fa	ctor:	1.000		
	Loose volume:	1,80	0		LCY					
	Loose volume:	1,800	0 stimated	d volume:	LCY Division	of Reclamation,			y	
HC	Loose volume:	1,800 arce of estimates	0 stimated ated sw		LCY Division	of Reclamation,			y	1,000
	Loose volume: Sou Source o	1,800 arce of estimated	0 stimated ated sw	ell factor:	LCY Division Cat Han	of Reclamation, dbook	Minir		y	
	Loose volume: Sou Source o	1,800 arce of estimated	0 stimated ated sw	ell factor:	LCY Division Cat Handaded, dump	of Reclamation, dbook bucket, swing en	Minir	ng & Safety		
	Loose volume: Sou Source o	1,800 rce of extim- UCTIO	stimated ated sw DN bucket,	ell factor:	LCY Division Cat Handaded, dump Basic Job (of Reclamation, dbook bucket, swing en Condition Descri	Minir	ng & Safety AVERA	\GE	
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REVEGETATION WORK

Task description:

Revegetate 5 acres distubance

Permit Action:

Reclamation Cost

Site: Duck Creek Mine

Estimate

Permit/Job#: M2013022

PROJECT IDENTIFICATION

5/22/2013

11A

Task #: Date:

State: Colorado County: Rio Blanco Abbreviation:

None Filename: M022-11a

User: THM

Agency or organization name:

DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials	
			Cost/Acre	\$0.00

Application

Description		Cost /Acre
		\$
	Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description		Cost /Acre
Hand raking (MEANS 32 91 13.23 0250)		\$1,219.68
	Total Tilling Cost/Acre	\$1,219.68

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	4.00	12.95	\$28.32
Bluebunch Wheatgrass - Secar	4.00	12.86	\$27.36
Bitterbrush, Antelope	2.00	0.62	\$40.52
Thickspike Wheatgrass - Critana	4.00	14.14	\$20.68
Sweetvetch, Utah or Northern	2.00	0.91	\$81.72
Western Wheatgrass - Rosanna	4.00	10.10	\$14.04
Prairie Junegrass	2.00	106.31	\$68.80
Sagebrush, Wyoming Big	4.00	236.55	\$141.00
Saltbush, Four Wing	2.00	2.75	\$21.46

Totals Seed Mix	28.00	397.18	\$443.90
			Cost /Acre
			\$261.28

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	6.00	ACRE	\$1.23	\$7.38
Jute mesh #2, stapled (MEANS 31 25 14.16 0300)	5.00	ACRE	\$2,226.40	\$11,132.00
Silt fence, adverse cond. (MEANS 31 25 14.16 1100)	2,400.00	LINEAR FOOT	\$0.84	\$2,016.00
Total Mulch Materials Cost/Acre				\$13,155.38

Application

Description		Cost /Acre
Jute mesh #2 (MEANS 31 25 14.16 0300)		\$2,226.40
Silt fence, adverse cond. (MEANS 32 25 14.16 1100)		\$0.84
	Total Mulch Application Cost/Acre	\$2,227.24

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		То	tals Nursery Stoo	k Cost / Acre	\$0.00

JOB TIME AND COST

No. of Acres: 5

Cost /Acre*: \$17,307.48 Cost /Acre*: \$17,307.48 Estimated Failure Rate: 25% C
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$86,537.40

Reseeding Job Cost: \$21,634.35

Total Job Cost: \$108,171.75

Job Hours: 24.00

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Mobilization	
_		

Permit Action: Reclamation Cost

Site: Duck Creek Mine Estimate Permit/Job#: M2013022

PROJECT IDENTIFICATION

Task #:12AState:ColoradoAbbreviation:NoneDate:5/22/2013County:Rio BlancoFilename:M022-12a

User: THM

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,

400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER

(25T, 50T, AND 100T)

Cost Breakdown:

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	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
	(TONS)				fleet		
Cat 345D L 12'-	54.31	\$62.38	\$125.45	1	\$187.83	\$125.45	\$250.00
10" Stick							
CAT 980H	33.12	\$43.47	\$117.55	2	\$322.03	\$235.10	\$500.00
Cat D8T - 8SU	47.71	\$56.69	\$117.55	1	\$174.24	\$117.55	\$250.00

Subtotals: \$684.10 \$478.10 \$1,000.00

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.	\$15.34	2	\$30.68	\$30.68

Subtotals: \$30.68 \$30.68

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION	
Total one-way travel distance:	90.00	miles
Average Travel Speed:	45.00	mph

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

\$8,017.00

\$122.72

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	2.00	2.00
Return Time (Hours):	2.00	2.00
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	5.00	4.00

JOB TIME AND COST

Total job time:	10.00	Hours
Total job cost:	\$8,139.72	