# 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 E. Piñeda Director

Christy Woodward Denison Mines (USA) Corp. 1050 17<sup>th</sup> Street, Suite 950 Denver, CO 80265

May 14, 2012

Re: Van 4 Mine, Permit No. M-1997-032, Amendment AM-1, Approval of Environmental Protection Plan, and Notice of Financial Warranty Increase.

Dear Ms. Woodward,

On May 10, 2012 the Division of Reclamation, Mining and Safety approved Amendment AM-1 to the Van 4 Mine 110d permit, which incorporates the Environmental Protection Plan (EPP) into the permit, as required by Hard Rock/Metal Rule 6.4.21.

The EPP includes requirements for the installation of a PVC ore pad liner, with said installation to commence during this 2012 construction season.

As part of the approval to incorporate these significant changes into this permit under Amendment AM-1, the amount of financial warranty (bond) was reviewed. The existing amount of financial warranty is \$61,691. The Division's review of the reclamation costs reveals that the current bond amount is insufficient. The updated reclamation costs were estimated to be \$75,057. This is a shortage of \$13,366. The updated reclamation costs are shown in the enclosed packet.

Please consider this letter to be your Notice of Financial Warranty increase. The additional amount must be provided to the Division, in an approvable format, within 60 days from the date of this letter. The present bond is in the form of a corporate surety, whose amount may be modified by providing a rider to the surety. Please direct all questions or submittals pertaining to the bond to Ms. Barbara Coria in the Division's Denver Office (see address in letterhead, above). You may reach her by phone at 303-866-3567 ext 8148.

In accordance with the MOU between the Division and the Bureau of Land Management (BLM), the two agencies have coordinated on the updated permit plans, and the BLM has had opportunity to review the Division's updated reclamation cost estimate. Approval of the estimate has been received from the BLM.

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Christy Woodward/M-1997-032 May 14, 2012 Page 2

The Division appreciates the diligence and cooperation shown by Denison throughout this amendment process. If you have questions, please contact me at the Division's Durango Field Office: 691 CR 233, Room A-2, Durango, CO 81301; telephone 970-247-5193.

Sincerely,

Bobannel

Bob Oswald Environmental Protection Specialist

Encl: Updated reclamation costs (3/20/12)

Ec(w/encl):Steve Shuey, DRMS, Grand Junction<br/>Barbara Coria, DRMS, DenverCc:Robert Ernst, Montrose BLM

(c:\12-05 docs\Van 4 AM-1 Appr/rco)

## COST SUMMARY WORK

Task de	scription:	Bond recalculati	on for AM-1 (EPP)		
Site: Van	4 Shaft	Pen	mit Action: <u>AM-1</u>	Permit/Job#:	M1997032
<u>PROJI</u>	E <u>CT IDENTIFI</u>	<u>CATION</u>			
Task		State:	Colorado	Abbreviation:	None
Da Us	te: <u>3/20/2012</u> er: RCO	County:	Montrose	Filename:	M032-000
	Agency or organ	ization name: DR	RMS		

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Remove and dispose of structures and debris	DEMOLISH	1	96.00	\$21,514.98
002	Backfill vent shafts with waste rock	TRUCK1	] 1	8.01	\$3,184.69
003	Backfill Van 4 main shaft with waste rock	TRUCK1	] 1	3.81	\$942.84
004	Pull up waste rock to 3:1 side slopes	EXCAVATE	] 1	17.57	\$1,915.00
005	Excavate onsite disposal pit	DOZER	] 1	11.67	\$3,068.08
006	Push broken structures and concrete into pit	DOZER	] 1	5.92	\$1,557.45
007	Contour waste rock sideslopes and top of dump	DOZER	] 1	11.48	\$3,019.14
008	Replace earthen cover over debris backfilled in pit	DOZER	1	9.18	\$2,413.68
009	Haul topsoil from stockpile to disturbed areas	SCRAPER1	1	9.42	\$3,648.08
010	Spread topsoil that has been hauled to disturbed area	DOZER	1	6.36	\$1,673.38
011	Rip compaction in disturbed areas	RIPPER	1	6.83	\$1,822.00
012	Revegetate disturbed areas	REVEGE	1	20.00	\$4,056.12
013	Remove and backfill ore pad liner and gravel	LOADER	1	3.43	\$336.00
014	Haul reclamation equipment to and from site	MOBILIZE	1	8.00	\$8,581.97
		<u>SUBTO</u>	TALS:	217.68	\$ \$57,733.41

### **INDIRECT COSTS**

### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$1,166.21
Performance bond:	1.05	Total =	\$606.20
Job superintendent:	50.00	Total =	\$2,965.00
Profit:	10.00	Total =	\$5,773.34
		TOTAL O & P =	\$10,510.75
		CONTRACT AMOUNT (direct + O & P) = $($	\$68,244.16

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.0	0 Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$2,900.38
Reclamation management and/or administration:	5.00		\$3,412.21
CONTINGENCY:	0.00	Total =	\$0.00
		TOTAL INDIRECT COST =	\$17 323 33

## **DEMOLITION WORK**

	Task description:	Remove and dispose of stru	ctures and debris		
Site:	Van 4 Shaft	Permit Action:	AM-1	Permit/Joł	o#: <u>M1997032</u>
<u>PROJE</u>	CT IDENTIFICATIO	N			
Task #:		State: Colorado		Abbreviation: 1	None
Date:	: _ 3/20/2012	County: Montrose	2	Filename:	M032-001
User:	RCO			_	
	Agency or organiza	tion name: DRMS			

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### UNIT COSTS

## Location adjustment: 96.90 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Ore bins, steel, cut up to dispose	30x10x10	Plant (1S) demo./on-site disposal in excavated pit - Max. 200 ft. push	3,000.00	CF	\$0.17	\$495.00
Storage bldg, steel, open sides	10x16x8	Plant (1S) demo./on-site disposal in excavated pit - Max. 200 ft. push	1,280.00	CF	\$0.17	\$211.20
Lube storage, steel, open side	12x8x8	Plant (1S) demo./on-site disposal in excavated pit - Max. 200 ft. push	768.00	CF	\$0.17	\$126.72
Change room/shop/compressor bldg	37x22x15	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 200 ft. push	12,210.00	CF	\$0.17	\$2,087.91
Shop/compressor - add'l room	12x16x8	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 200 ft. push	1,536.00	CF	\$0.17	\$262.66
Hoist bldg., all steel	24x32x15	Plant (1S) demo./on-site disposal in excavated pit - Max. 200 ft. push	11,520.00	CF	\$0.17	\$1,900.80
Operator-owned elec. powerpoles	180 LF	Powerline or telephone line, overhead, wood - Single pole	180.00	LF	\$2.60	\$467.64
Operator-owned elec. transformers	1.5 ft x 4 ft	Hazardous waste removal - Drum solids/liquids, per drum, (1-6 drum job)	6.00	DRUM	\$415.65	\$2,493.90
Compressor tank, steel	3 ft x 15 ft	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	5.00	CY	\$0.69	\$3.44
Vent shaft fans (qty 2)	6 ft x 4 ft H	Load/haul/dump demolished materials/debris into pit - Max. 5,000 ft. haul	10.00	CY	\$1.35	\$13.54
Concrete shaft collars (qty 2)	15x15x0.5 ft	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 50 ft. push	300.00	SF	\$1.60	\$480.00
Misc debris at shaft sites, bury	5 cy total	Push demolished materials/rubble/debris into pit - Max. 50 ft. push	5.00	CY	\$0.23	\$1.14
Compressor, steel,	5x3x10	Remove/load/haul to	6.00	CY	\$15.00	\$90.00

anchored to slab		excavated pit, 200 ft				
Concrete slab, storage bldg	10x16	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	160.00	SF	\$1.61	\$257.60
Concrete slab, change room/shop	37x22	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	814.00	SF	\$1.61	\$1,310.54
Concrete slab, shop/compressor add'l	12x12	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	144.00	SF	\$3.22	\$463.68
Concrete slab, hoist bldg	24x32	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	768.00	SF	\$3.22	\$2,472.96
Concrete slab, under ore bins	30x20	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$1.61	\$966.00
Conc footers, under ore bins (qty 4)	1x1x3	Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	6.00	LF	\$6.43	\$38.58
Hoist mechanism, misc gear	10 cy total	Remove/load/haul to excavated pit, 200 ft	10.00	CY	\$15.00	\$150.00
Concrete slab, under hoist	10x10x2 ft	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	200.00	SF	\$3.22	\$644.00
Misc debris in bldgs, bury	15 cy total	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	15.00	CY	\$0.69	\$10.31
Head frame, steel derrick, cut to dispose	80x15x15	Demo. only, large urban projects (multi-story bldgs.) - Steel structures	18,000.00	CF	\$0.18	\$3,186.00
Skip and misc mech, under head frame	25x5x5	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	23.00	CY	\$0.69	\$15.80
Concrete slab, under head frame	30x30x0.5 ft	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	900.00	SF	\$1.61	\$1,449.00
Concrete footers, head frame derrick (qty 4)	2x2x4 ea	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 50 ft. push	8.00	LF	\$19.15	\$153.20
Concrete perimeter footer, change room	1x2x140 ft	Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	140.00	LF	\$6.43	\$900.20
Concrete perimeter footer, hoist bldg	1x2x112 ft	Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	112.00	LF	\$6.43	\$720.16
Waste oil,	2 drums, est'd.	Hazardous waste	2.00	DRUM	\$415.65	\$831.30

Demo Worksheet Cont'd

Task # TTT

Page 3 of 3

hydrocarbons, remove & dispose	removal - Drum solids/liquids, per drum, (1-6 drum job)		
Job Hours:96.00	Subtotal (unadjusted):\$22,203.28	Total Cost (adjusted for location):	\$21,514.98

Estimate assumes that two remote vent shafts exist (on Rodman No. 4 and Curley No. 4 claims) and that they will be cleaned up, backfilled and graded. EPP states that shafts will be backfilled and sealed. EPP states that all buildings and structures will be removed and properly disposed of. Most of the rubble and debris items are inert and approved for onsite burial. Fluids, hydrocarbons, and electrical transformers will be properly sealed in containers and shipped to licensed facility for disposal.

## TRUCK/LOADER TEAM WORK

Site: Van 4 Shaft		Permi	t Action	n: <u>AM-1</u>		Permit/Job#:	M1997032
PROJECT IDEN	NTIFICATION	I					
Task #: 002		-	Colorad	lo		Abbreviation:	None
Date: $3/20/$	2012		Montro			Filename:	M032-002
User: RCO						-	11052 002
Agency of	r organization na	ne: DRM	ſS				Y
HOURLY EQUI	PMENT COS	Г			Shift l	basis: <u>1 per day</u>	
<u> </u>		-	Е	quipment Descr		<u> </u>	
	Fruck Loader Tea		Gene	ric 10-12 су, бх			
 		-Loader:		938H high lift			
Subt	ort Equipment -I	ump Area:	NA NA				
Road M	laintenance – Mot		NA				
	-Wa	ter Truck:	NA				
Cost Breakdown:	Truck/Lo	ader Team		Support	Equipment	Maint	enance Equipment
<u>COSt Di caraovin</u>	Truck	Loader		Load Area	Dump Area	Motor Grad	
%Utilization-machine:	100	100		NA	NA	NA	NA
Ownership cost/hour:	\$12.32	\$22.07	7	NA	NA	ŇA	NA
Operating cost/hour:	\$62.56	\$37.34	4	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00		NA	NA	NA	NA
Operator cost/hour:	\$0.00	\$38.49	)	NA	NA	NA	NA
Unit Subtotals:	\$74.88	\$97.90	)	NA	NA	NA	NA
Number of Units:	4	1		0	0	0	0
Group Subtotals:	Work:	\$397.42		Support:	\$0.00	Mai	nt: \$0.00
Total work team co	st/hour: <u>\$397.42</u>	2					
MATEDIAL OI							
MATERIAL QU							
Initial volume Loose volume		<u> </u>	CCY LCY	Swell	factor:1.000	)	
				470 I			
	urce of estimated of estimated swe			ndbook	on, Mining & Sa	afety	
50400	Material Purch	_	\$0.00	IIIIIIII			
		otal Cost: _	\$0.00				
		_					
HOURLY PRO	DUCTION						
Truck Capacity:							
Truck Payload (wei				D 1/7 077			
Material v	veight: <u>2,550</u> iption: Sandst			Pounds/LCY			
Rated Pa				Pounds			
Payload Ca				LCY			
· .	· •						

#### Truck/Loader Worksheet Cont'd

Task # 002

Truck Bed (volume) Basis:	
Struck Volume:	10.00
Heaped Volume:	12.00
Average Volume:	11.00

Adjusted Volume:

Final Truck Volume Based on Number of Loader Passes: 9.65 LCY

Site Altitude (ft.): 6900 feet

#### Loading Tool Capacity

		Bucket Size Class:	NA
Rated Capacity:	3.900	LCY (heaped)	
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825	
Adjusted Capacity:	3.218	LCY	· · _

#### Job Condition Corrections:

	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	

LCY

LCY

LCY

LCY

12.00

Loading Tool Cycle Time:	Number of Loadir	ng Tool Passes R	equired to Fill Truck:	3	passes
Excavators and Front Shovels:					
Machine Cycle Time vs. Jo	ob Condition Rating:	NA			
Selected Value with	in this Basic Rating:	NA			
Track Loaders – Ma	terial Description:				
Cycle Time Elements (min.):					
Load: NA	Maneuver:	NA	Dump:	0.100	
Wheel and Track Loaders - Un	adjusted Basic Loader	Cycle Time (lo	ad, dump, maneuver):	0.483	minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(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:	Small target 0.04	0.040	(Cat HB)
	Net Cycle Time Adjustment:	0.020	minutes
	Adjusted Loader Cycle Time:	0.503	minutes
	Net Load Time per Truck:	1.105	minutes

#### **Truck Cycle Time:**

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	1.105	Minutes	Adjusted for site altitude:	1.105	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

-	Haul Rou						<u> </u>		
	Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel Time	
		(Ft)			(%)	(%)	(fpm)	(min)	
ſ	1	600.0	0	0.00	3.00	3.00	2824	0.314	
Γ	2	1500.	00	1.00	3.00	4.00	2665	0.564	
	3	1800.	00	3.00	3.00	6.00	1855	1.023	
						Haul Time:	1.901	minutes	
г	Return Re		D:	$C = \frac{1}{2} \left( \frac{1}{2} \right)$	D - 11 D	T + 1 D -	77-1	Travel	
	Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Time	
		(Ft)			(%)	(%)	(fpm)	(min)	
	1	1800.		-3.00	3.00	0.00	2938	0.638	
	2	1500.		-1.00	3.00	2.00	2905	0.516	
Ĺ	3	600.0	0	0.00	_3.00	3.00	2874	0.209	
						Return Time:	1.363	minute	s
					Total Tru	ck Cycle Time:	5.769	minute	
т	andina Tar	-1 <i>i</i> +				-			
L	oading Too Produ	uction	360.84	LCY/Hour		Adjusted for i	ob efficiency:	299.50	LCY/Hour
Truck	Unit Prod	-				ridjusted for j	ob enterency.	277.50	
1.000	01111100		100.39	LCY/Hour		Adjusted for j	ob efficiency:	83.32	LCY/Hour
						• •	•		
Optima	al No. of T	rucks:	4	Truck(s)		Selected Num	ber of Trucks:	4	Truck(s)
				Adjuste	d hourly true	k team production	on: 333.	.29 LCY	//Hour
						er team production			/Hour
				Adjusted multip	le truck/loade	er team production	on: 299.	.50 LCY	/Hour
	JOB TI	<u>ME AN</u>	ID COST						
	Fleet	size: _	1	Team(s)	נ	Fotal job time:	8.01	Но	ours
	Unit	cost:	\$1.327	/LCY		Total job cost:	\$3,184	.69	

Task includes loader filling dump trucks at waste rock dump, and hauling to vent shaft sites. Distance and grade used is the average of the two vent shaft sites. Dozing waste rock into shafts is under separate dozer task.

## TRUCK/LOADER TEAM WORK

Site: Van 4 Shaft		Permit	t Action	n: <u>AM-1</u>		Permit/Job#:	M1997032
PROJECT IDEN           Task #:         003           Date:         3/20/20           User:         RCO		State: _	Colorad Montro			Abbreviation: _ Filename: _	None M032-003
Agency or o	organization nar	me: DRM	IS				
HOURLY EQUIE	<u>MENT COS</u>	<u>r</u>			Shift l	oasis: <u>1 per day</u>	
			E	quipment Descri	ption		
	uck Loader Tea			ric 10-12 cy, 6x4	4		
		-Loader:		938H high lift			
Suppo	rt Equipment -I -D	ump Area:	NA NA				
Road Ma	intenance – Mot		NA				
	-Wa	ater Truck:	NA				
<u>Cost Breakdown</u> :		ader Team		Support I	Equipment	Mainte	enance Equipment
	Truck	Loader		Load Area	Dump Area	Motor Grad	er Water Truck
%Utilization-machine:	100	100		NA	NA	NA	NA
Ownership cost/hour:	\$12.32	\$22.07	7	NA	NA	NA	NA
Operating cost/hour:	\$62.56	\$37.34	ł	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00		NA	NA	NA	NA
Operator cost/hour:	\$0.00	\$38.49	)	NA	NA	NA	NA
Unit Subtotals:	\$74.88	\$97.90	)	NA	NA	NA	NA
Number of Units:	2	1		0	0	0	0
Group Subtotals:	Work:	\$247.66		Support:	\$0.00	Mai	nt: \$0.00
Total work team cost <u>MATERIAL QUA</u> Initial volume:		<u> </u>	ССҮ	Swell	factor: 1.000	)	
Loose volume:	1,20	0	LCY			<u> </u>	
Sou	rce of estimated	volume:	Divisi	on of Reclamatio	n, Mining & S	afetv	
Source of	of estimated swe			andbook			
	Material Purch		\$0.00				
	10	otal Cost: _	\$0.00				
HOURLY PROI	DUCTION						
Truck Capacity:							
Truck Payload (weigh							
Material we	-			_ Pounds/LCY			
1 3							
Descrip Rated Pay				Pounds			

\_ passes

Minutes

Minutes

Minutes

	Cont'd	Task # 003			Page 2 of 3
Truck Bed (volume) Basis	:				
Struck Volume:	10.00	LCY			
Heaped Volume:	12.00	LCY			
Average Volume:	11.00	LCY			
Adjusted Volume:	12.00	LCY			
Fir	al Truck Volume	e Based on Number o	of Loader Passes:	9.65	LCY
Loading Tool Capacity					
			Buc	ket Size Class: N	IA
Rated Capacity:	3.900	LCY (heaped)			
Bucket Fill Factor:			avg. blasted (75	- 90%) 0.825	
Adjusted Capacity:			<u></u>		
Job Condition Correctio	ns:	S	Site Altitude (ft.):	6900 feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT H		
Job Efficiency:	0.830	0.830	(CAT H	<u> </u>	
Net Correction:	0.830	0.830			
Loading Tool Cycle Tim Excavators and Front Sho	vels:	r of Loading Tool Pa	asses Required to	Fill Truck:	<u>3</u> pa
Excavators and Front Sho Machine Cycle Time Selected Valu	vels:	on Rating: <u>NA</u> ic Rating: <u>NA</u>	asses Required to	Fill Truck:	<u>3</u> pa
Excavators and Front Sho Machine Cycle Time Selected Valu	vels: e vs. Job Conditio le within this Basi s – Material Descr	on Rating: <u>NA</u> ic Rating: <u>NA</u>	asses Required to	Fill Truck:	<u>3</u> pa
Excavators and Front Sho Machine Cycle Tim Selected Valu Track Loaders	vels: e vs. Job Conditio le within this Basi s – Material Descr 1.):	on Rating: <u>NA</u> ic Rating: <u>NA</u>	asses Required to	Fill Truck:	
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min	vels: e vs. Job Conditio e within this Basi - Material Descr 1.): M	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u>		Dump: 0.100	
Excavators and Front Sho Machine Cycle Tim Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader	vels: e vs. Job Conditio le within this Basi s – Material Descr 1.): M rs - Unadjusted Ba	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u>		Dump: 0.100 maneuver):0	) . <u>.483</u> minut
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA	vels: e vs. Job Conditio e within this Basi s – Material Descr n.): M rs - Unadjusted Ba s	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u>	me (load, dump,	Dump: 0.100 maneuver): 0 Factor (min.)	) .483 minut   Source
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Materia	vels: e vs. Job Conditio e within this Basi - Material Descr h.): M rs - Unadjusted Basi s s : Material 3/4'	on Rating: NA ic Rating: NA ription: Maneuver: NA asic Loader Cycle Ti ' to 6" diameter 0.00	me (load, dump,	Dump: 0.100 maneuver):0	) .483 minut Source (Cat HB)
Excavators and Front Sho Machine Cycle Tim Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor	vels: e vs. Job Conditio within this Basis – Material Descr h.): S – Unadjusted Basis S – Material 3/4' : Dumped by t	on Rating: NA ic Rating: NA ription: Maneuver: NA asic Loader Cycle Ti ' to 6" diameter 0.00	ime (load, dump,	Dump: 0.100 maneuver):0 Factor (min.) 0.000	) .483 minut   Source
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operatior	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u> asic Loader Cycle Ti ' to 6" diameter 0.00 ruck 0.02 nt - factor not applica eration -0.04	ime (load, dump,	Dump: 0.100 maneuver):0 Factor (min.) 0.000 0.020	) .483 minut Source (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpile Truck Ownership	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u> asic Loader Cycle Ti ' to 6" diameter 0.00 ruck 0.02 nt - factor not applic: tration -0.04 get 0.00	ime (load, dump, able 0.00	Dump: 0.100 maneuver):0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000	) .483 minut Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operatior	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: <u>NA</u> ic Rating: <u>NA</u> ription: Maneuver: <u>NA</u> asic Loader Cycle Ti ' to 6" diameter 0.00 ruck 0.02 nt - factor not applica ration -0.04 get 0.00 Net Cycle Tin	ime (load, dump, able 0.00 me Adjustment:	Dump: 0.100 maneuver):0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020	) .483 minut Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operatior	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: NA ic Rating: NA ription:	ime (load, dump, able 0.00 me Adjustment: ler Cycle Time:	Dump: 0.100 maneuver): 0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020 0.463	) .483 minut Source (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operatior	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: NA ic Rating: NA ription:	ime (load, dump, able 0.00 me Adjustment:	Dump: 0.100 maneuver):0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020	) .483 minut Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operatior	vels: e vs. Job Conditio e within this Basi = Material Descr a.): Material Descr s : Material Basi : Material 3/4' : Dumped by t : No adjustment : Constant ope	on Rating: NA ic Rating: NA ription:	ime (load, dump, able 0.00 me Adjustment: ler Cycle Time:	Dump: 0.100 maneuver): 0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020 0.463	) .483 minut Source (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Material Stockpile Truck Ownership Operation Dump Target	vels: e vs. Job Conditio e within this Basi - Material Descr a.): Material 3/4' : Dumped by t : No adjustment : Constant ope : Nominal targ	on Rating: NA ic Rating: NA ription:	ime (load, dump, able 0.00 me Adjustment: ler Cycle Time: Fime per Truck:	Dump: 0.100 maneuver): 0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020 0.463	) .483 minut Source (Cat HB) (Cat HB)
Excavators and Front Sho Machine Cycle Time Selected Valu Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loader Cycle Time Factor Materia Stockpile Truck Ownership Operatior Dump Target	vels: e vs. Job Conditio le within this Basi s – Material Descr h.): mes - Unadjusted Basi s Material 3/4' Material 3/4' Dumped by t Constant ope Constant ope Nominal targ	on Rating: NA ic Rating: NA ription:	ime (load, dump, able 0.00 me Adjustment: der Cycle Time: Fime per Truck: Adjusted	Dump: 0.100 maneuver): 0 Factor (min.) 0.000 0.020 0.000 -0.040 0.000 -0.020 0.463 1.025	) .483 minut Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes

Truck Travel (Haul & Return) Time: penetration 4.0

Road Condition: Rutted dirt, little maintenance, no water, 1" tire

Haul Rou	ite:							
Seg #	1	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	600.0	0	0.00	4.00	4.00	2665	0.323	
					Haul Time:	0.323	minutes	
Return Re	oute:				-			
Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	600.00	0	0.00	4.00	4.00	2849	0.236	
					Return Time:	0.236	minutes	
				Total Tru	ck Cycle Time:	2.984	minutes	
Loading Too	ol unit							
	uction	379.77	LCY/Hour		Adjusted for j	ob efficiency:	315.21	LCY/Hour
Truck Unit Produ	uction	194.09	LCY/Hour		A dim - 4 - d E - 11 1	.1	1.61.00	1 01/11
	-	194.09			Adjusted for j	ob efficiency:	161.09	LCY/Hour
Optimal No. of Tr	rucks:	2	Truck(s)		Selected Num	per of Trucks:	2	Truck(s)
					k team productio		.18 LCY/F	Iour
					er team production			
			Adjusted multipl	le truck/loade	er team production	on: <u>315</u> .	.21 LCY/F	Iour
JOB TI	ME AN	D COST						
Fleet	size:	1	Team(s)	7	Fotal job time:	3.81	Hou	CS
Unit	cost:	\$0.786	/LCY	,	Total job cost:	\$942.8	84	

Task includes one loader, filling dump trucks at waste rock dump, for hauling to shaft. Dozer used to push waste rock into shaft is included as separate task.

### HYDRAULIC EXCAVATOR WORK

Fask description:	Pull up waste roo	ck to 3:1 side	slopes			
Van 4 Shaft	Pen	mit Action: _	AM-1	P	ermit/Job#:	M1997032
PROJECT IDENTIFI	CATION					
Task #: 004	State:	Colorado			reviation:	None
Date: 3/20/2012	County:	Montrose		I	ilename:	M032-004
User: <u>RCO</u>						
Agency or organ	ization name: DR	MS				
HOURLY EQUIPME	NT COST					
	Cat 320D L 9'-6" S	tick		Horsepower:		148
Attachment 1:	ROPS Cab			Weight (MT):		1.55
				Shift Basis: Data Source:		er day CRG)
Cost Breakdown:				Dum Bourve.	(	
COST BIEAKUOWII.			Utilization %			
Ownership Cost/H			NA			
Operating Cost/H			100			
Operator Cost/H	· · · ·		NA	_		
Total Unit Cost/H	lour: \$109.	00				
Total Fleet Cost/I	Hour: \$109	.00				
MATERIAL QUANT	ITIES					
	639	CCY	Swell fact	tor: <u>1.335</u>		
Loose volume:	523	LCY				
HOURLY PRODUCT		ded, dump bu	icket, swing em	<u>oty):</u>		
			ndition Descript			
	Secondary Job Co	ndition withi	-		GE	
Load Bucket Capacity			Cycle Time Va	lue: 0.284		minutes
<u></u>				Bucket Size C	lass: Me	edium
Rated Capacity:	1.54	LCY (heap	ped)			
Bucket Fill Factor:			ck - avg. blasted	(75 - 90%) 0.3	325	
Adjusted Capacity:	1.27	_ LCY				-
Job Condition Correction	Factors		Site	Altitude: <u>6900</u>	feet	
		Source				
Altitude Adj:	0.90	(CAT HB				
Job Efficiency:	0.83	(1 shift/day	/)			
Net Correction:	0.75	multiplier				
	ljusted Hourly Unit ]		268.42	LCY/Hour		
	ljusted Hourly Unit I		200.51	LCY/Hour		
	justed Hourly Fleet I	roduction:	200.51	LCY/Hour		
IOB TIME AND COS	T					
Fleet size: 1						
	Excavato	r To	tal job time:	17.57	7	Hours
Unit cost: \$0.54		r To	tal job time: Total job cost:	17.5 <sup>7</sup> \$1,915		Hours

#### BULLDOZER WORK

Van 4 Shaft	Permit Action:	AM-1	Permit/Job#:	M1997032
ROJECT IDENTIF	<u>ICATION</u>			
Task #: 005	State: Colorado		Abbreviation:	None
Date: 3/20/2012	County: Montrose		Filename:	M032-005
User: RCO			-	
Agency or orga	nization name: DRMS			
IOURLY EQUIPMI	ENT COST			
	t D9T - 9SU			
Horsepower: 40		_		
I	mi-Universal	_		
	shank ripper	_		
	ber day			
<b>_</b>	RG)	_		
ost Breakdown:				
		Utilization %		
Ownership Cost/Hour:	\$80.19	NA		
Operating Cost/Hour:	\$140.68	100		
Ripper op. Cost/Hour:	\$3.59	50		
Operator Cost/Hour:	\$38.49	NA		
otal unit Cost/Hour:	\$262.94			
otal Fleet Cost/Hour:	\$262.94			
IATERIAL QUANT	<b>ITIES</b>			
Initial Mahaman 2 50				
Initial Volume: <u>3,50</u> Swell factor: <u>1.33</u>				
	55 LCY			
ource of estimated volu	me: Division of Reclamatio	n Mining & Safety		
		ii, winning & Barety		
ource of estimated swel				
ource of estimated swel	l factor: Cat Handbook			
ource of estimated swel	l factor: Cat Handbook			
ource of estimated swel IOURLY PRODUCT verage push distance:	1 factor: Cat Handbook TION 100 feet			
ource of estimated swel	1 factor: Cat Handbook TION 100 feet			
ource of estimated swel IOURLY PRODUCT verage push distance:	1 factor: Cat Handbook TION 100 feet ction: 1,243.2 LCY/hr			
ource of estimated swel IOURLY PRODUC verage push distance: inadjusted hourly produ laterials consistency des	I factor:       Cat Handbook         IION			
ource of estimated swel <b>IOURLY PRODUC</b> verage push distance: inadjusted hourly produ laterials consistency des verage push gradient:	I factor:       Cat Handbook         IION       100 feet         ction:       1,243.2 LCY/hr         scription:       Compacted fill or en         5 %			
ource of estimated swel IOURLY PRODUC verage push distance: inadjusted hourly produ laterials consistency des	I factor:       Cat Handbook         IION			
ource of estimated swel <b>IOURLY PRODUC</b> verage push distance: inadjusted hourly produ laterials consistency des verage push gradient:	I factor:       Cat Handbook         IION       100 feet         ction:       1,243.2 LCY/hr         scription:       Compacted fill or en         5 %			
ource of estimated swel <b>IOURLY PRODUC</b> verage push distance: inadjusted hourly produ laterials consistency des verage push gradient: verage site altitude:	I factor:       Cat Handbook <b>TION</b> 100 feet         ction:       1,243.2 LCY/hr         scription:       Compacted fill or em         5 %       6,900 feet	nbankment 0.9		
ource of estimated swel <b>IOURLY PRODUC</b> verage push distance: inadjusted hourly produ laterials consistency des verage push gradient: verage site altitude: laterial weight: Veight description:	I factor:       Cat Handbook <b>TION</b> 100 feet         ction:       1,243.2 LCY/hr         scription:       Compacted fill or en         5 %       6,900 feet         2,900 lbs/LCY       Decomposed rock - 50% Rock,			
ource of estimated swel IOURLY PRODUCT verage push distance: inadjusted hourly produ faterials consistency des verage push gradient: verage site altitude: faterial weight:	1 factor:       Cat Handbook <b>IION</b> 100 feet         ction:       1,243.2 LCY/hr         scription:       Compacted fill or en         5 %       6,900 feet         2,900 lbs/LCY       Decomposed rock - 50% Rock,         Factor       1	bankment 0.9 50% Earth		
ource of estimated swel <b>IOURLY PRODUC</b> verage push distance: nadjusted hourly produ laterials consistency des verage push gradient: verage site altitude: laterial weight: Veight description: ob Condition Correction	1 factor:       Cat Handbook <b>IION</b>			

Visibili	ty: 1.000	(AVG.)
Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradier	nt: 0.903	(CAT HB)
Altitud	le: 1.000	(CAT HB)
Material Weigl	nt: 0.793	(CAT HB)
Blade typ	be: 1.000	(PAT)
Net correction	on: 0.3209	
Adjusted unit production:	398.94 LCY/hr	
Adjusted fleet production:	398.94 LCY/hr	

### JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.659/LCY
Total job time:	11.67 Hours
Total job cost:	\$3,068.08

Disposal pit is 100 ft x 100 ft x 10 ft deep, centrally located near shaft and structures.

## BULLDOZER WORK

Task description:	Push broken structures and o	concrete into pit		
e: Van 4 Shaft	Permit Action:	AM-1	Permit/Job#:	M1997032
PROJECT IDENTI	FICATION			
Task #: 006	State: Colorado		Abbreviation:	None
Date: 3/20/2012			Filename:	M032-006
User: RCO				
Agency or org	anization name: DRMS			
HOURLY EQUIPM	<u>ENT COST</u>			
Basic Machine: C	at D9T - 9SU			
Horsepower: 40	05	_		
	emi-Universal			
· · ·	shank ripper	_		
	per day	_		
	CRG)	_		
		_		
Cost Breakdown:		Utilization %		
Ownership Cost/Hour:	\$80.19	NA		
Operating Cost/Hours		100		
Ripper op. Cost/Hour:		50		
Operator Cost/Hours	\$38.49	NA	- <u></u>	
Total unit Cost/Hour:	\$262.94			
Total Fleet Cost/Hour:	\$262.94	_ <del></del>		
MATERIAL QUAN	TITIES			
Initial Volume: 1,9	00			
Swell factor: 1.0				
	00 LCY			
Source of estimated vol Source of estimated swe		on, Mining & Safety		
Source of estimated swe	ell factor: Cat Handbook			
	TAN			
HOURLY PRODUC	LIION			
Average push distance:	150 feet			
Unadjusted hourly prod	uction: 910.5 LCY/hr			
Materials consistency de	escription: Dry, non-cohesive 0	.8		
Average push gradient:	-5 %			
Average push gradient: Average site altitude:	<u>-5 %</u> 6,900 feet			
Average one annuue:	0,200 1001			
Material weight:	2,900 lbs/LCY			
Weight description:	Decomposed rock - 50% Rock,	50% Earth		
Weight description: Job Condition Correctio	· · · ·			
Job Condition Correctio	n Factor	Source		
	<u>n Factor</u> r Skill:0.750			

Visibilit	y: 1.000	(AVG.)
Job efficienc	y: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradier	nt: 1.115	(CAT HB)
Altitud	le: 1.000	(CAT HB)
Material Weigh	nt: 0.793	(CAT HB)
Blade typ	e: 1.000	(PAT)
Net correctio	n: 0.3523	
Adjusted unit production:	320.77 LCY/hr	
Adjusted fleet production:	320.77 LCY/hr	
-		

#### JOB TIME AND COST

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.820/LCY	_
Total job time:	5.92 Hours	
Total job cost:	\$1,557.45	_

Task includes some amount of crushing of rubble and debris as it is dozed into pit. Backfilling of debris is carried out in strips along one edge of pit, then capped with waste rock, until entire mass of debris is incrementally backfilled into pit and covered. Assumes at least 4-foot depth of earthen cover replaced.

### BULLDOZER WORK

Task description:	Contour waste rock sideslope	es and top of dump		
e: Van 4 Shaft	Permit Action:	AM-1	Permit/Job#:	M1997032
PROJECT IDENTIFI	CATION			
Task #:007	State: Colorado		Abbreviation:	None
Date: 3/20/2012	County: Montrose		Filename:	M032-007
User: RCO				
Agency or organ:	ization name: DRMS			
HOURLY EQUIPME	NT COST			
Basic Machine: Cat I	D9T - 9SU			
Horsepower: 405				
Blade Type: Sem	i-Universal	_		
Attachment: 3-sh	ank ripper			
Shift Basis: <u>1 pe</u>	r day			
Data Source: (CR	G)			
Cost Breakdown:				
		Utilization %		
Ownership Cost/Hour:	\$80.19	NA		
Operating Cost/Hour:	\$140.68	100		
Ripper op. Cost/Hour:	\$3.59	50		
Operator Cost/Hour:	\$38.49	NA		
	\$50.47	INA		1
Total unit Cost/Hour:	\$262.94			
Total Fleet Cost/Hour:	\$262.94			
MATERIAL QUANTI           Initial Volume:         3,523           Swell factor:         1.000				
Loose volume: 3,523				
Source of estimated volum Source of estimated swell		on, Mining & Safety		
Source of estimated swell.				
HOURLY PRODUCT	ION			
Average push distance:	100 feet			
Unadjusted hourly product				
Unaujusieu nourry product	1011: 1,245.2101711			
Materials consistency desc	ription: Compacted fill or en	nbankment 0.9		
Average push gradient:				
Average site altitude:	5%			
	5 % 6.900 feet			
	5 % 6,900 feet			
Material weight:			=	
-	6,900 feet	25% Earth	=,	
Material weight:	6,900 feet 3,300 lbs/LCY Decomposed rock - 75% Rock,		-,	
Material weight: Weight description:	6,900 feet 3,300 lbs/LCY Decomposed rock - 75% Rock, Factor	Source		
Material weight:	6,900 feet 3,300 lbs/LCY Decomposed rock - 75% Rock, Factor kill: 0.750			

Visibilit	y: 1.000	(AVG.)
Job efficiency	y: 0.830	(1 SHIFT/DAY)
Spoil pil	e: 0.700	(FND-MF)
Push gradien	t: 0.903	(CAT HB)
Altitud	e: 1.000	(CAT HB)
Material Weigh	t: 0.697	(CAT HB)
Blade type	e: 1.000	(PAT)
Net correction	n:0.2468	
Adjusted unit production:	306.82 LCY/hr	
Adjusted fleet production:	306.82 LCY/hr	

#### JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.857/LCY
Total job time:	11.48 Hours
Total job cost:	\$3,019.14

Task includes minor contouring of sideslope material (has been largely completed by excavator) and mainly concentrates on spreading pulled-up material across the top of waste rock dump.

## BULLDOZER WORK

Task description:	Replace earthen cover over d	ebris backfilled in pit		
Van 4 Shaft	Permit Action:	AM-1	Permit/Job#:	M1997032
PROJECT IDENTIF	ICATION			
Task #: 008	State: Colorado		Abbreviation:	None
Date: 3/20/2012	County: Montrose		Filename:	M032-008
User: RCO			-	
Agency or orga	nization name: DRMS			
HOURLY EQUIPMI	ENT COST			
	t D9T - 9SU			
Horsepower: 40:	5	_		
Blade Type: Ser	mi-Universal	_		
Attachment: 3-s	hank ripper	_		
	er day			
Data Source: (C	RG)			
Cost Breakdown:	· · · · · · · · · · · · · · · · · · ·			
2051 DICANUOWII.	1	Utilization %		
Ownership Cost/Hour:	\$80.19	NA		
Operating Cost/Hour:	\$140.68	100		
Ripper op. Cost/Hour:	\$3.59	50		
Operator Cost/Hour:	\$38.49			
Operator Costribut.	\$38:49	NA		
Fotal unit Cost/Hour:	\$262.94			
Fotal Fleet Cost/Hour:	\$262.94			
MATERIAL QUANT	TITIES			
Tuitial Values ACC				
Initial Volume: 4,60				
Swell factor: 1.00				
Loose volume: 4,60	0 LCY			
Source of estimated volu	me: Division of Reclamation	on, Mining & Safety		
Source of estimated swel		V V		
HOURLY PRODUCT	ΓΙΟΝ			
Average push distance:	80 feet			
Jnadjusted hourly produce	ction: 1,460.1 LCY/hr			
Materials consistency des	scription: Partly consolidated s	tockpile 1.1		
wara ca much aradiant	5 0/			
Verage push gradient:	<u>5 %</u>			
Verage push gradient: Verage site altitude:	5 % 6,900 feet			
verage site altitude:	6,900 feet			
Average site altitude: Material weight:	_6,900 feet 2,900 lbs/LCY	500/ Taret	_	
Average site altitude: Material weight: Veight description:	6,900 feet 2,900 lbs/LCY Decomposed rock - 50% Rock,	50% Earth	_	
Average site altitude: Material weight: Veight description: ob Condition Correction	6,900 feet 2,900 lbs/LCY Decomposed rock - 50% Rock, Factor	Source		
Average site altitude: Material weight: Veight description: <u>ob Condition Correction</u> Operator		Source (AVG.)		
Average site altitude: Material weight: Veight description: ob Condition Correction		Source		

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3432	
Adjusted unit production: 50	)1.11 LCY/hr	
Adjusted fleet production: 50	)1.11 LCY/hr	

#### JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.525/LCY
Total job time:	9.18 Hours
Total job cost:	\$2,413.68

This task of dozing to cover debris was not included in dozing task of backfilling debris (no. 006). Assumes four foot depth of earthen cap replaced, with remainder of material either spread across central area of site or used to backfill main shaft nearby.

### Page 1 of 2

## SCRAPER TEAM WORK

Site: Van 4 Shaft		Permit A	Action:	AM-1	Per	mit/Job#: <u>M199</u>	7032
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 009		State: Co	olorado		Abbre	viation: None	
Date: 3/20/20			ontrose			lename: M032-	009
User: RCO							
Agency or o	organization name	DRMS					
HOURLY EQUI	MENT			COSTS	hift basis: <u>1 per d</u>	<u>lay</u>	
				nt Description			
		-	Cat 623				
Suppo	rt Equipment -Loa		Cat D91 NA	- 980			
Dappo			NA				
Road Ma	intenance – Motor	Grader:	NA				
	-Water	Truck:	NA				
Cost Breakdown:	Scraper Wo	rk Team		Support Equi	nment	Maintenance	Equipment
<u></u>	Scraper	Doze	r	Load Area	Dump Area	Motor Grader	Water Tr
%Utilization-machine:	100	50		NA	NA	NA	NA
Ownership cost/hour:	\$64.15	\$80.1	9	NA	NA	NA	NA
Operating cost/hour:	\$109.22	\$70.3	4	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	2	NA	NA	NA	NA
Operator cost/hour:	\$24.95	\$38.4	.9	NA	NA	NA	NA
Unit Subtotals:	\$198.32	\$189.0	01	NA	NA	NA	NA
Number of Units:	1	1		0	0	0	0
Group Subtotals:	Work:	\$387.3	33	Support:	\$0.00	Maint:	\$0.00
Total work team cost	NTITIES						
Initial volume: Loose volume:	3,300 		CY CY	Swell fact	tor: <u>1.125</u>		
	rce of estimated vo of estimated swell :		Division Cat Hand		Mining & Safety		
HOURLY PROD	UCTION						
	_			Scraper Be	owl (volume) Bas	<u>is:</u>	
Material weight:	2,550 lbs/LCY			Struck	Volume: 18.00	I.	CY
Material description:	Earth - Dry pack	ed		Heaped			CY
Rated Payload: Payload Capacity:	55,200 pounds 21.65 LCY			Average	Volume: 20.50	L	CY
				Adjusted C	Capacity: 20.50		CY

Site Altitude: 6900 feet

Cycle Time:

Scraper Loading Time:	0.90 Minutes
Maneuver and Spread Time:	0.70 Minutes

Job Condition Correction:

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

#### Travel Time:

Road Condition: <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	550.00	0.00	5.00	5.00	1292	0.52

Haul Time: 0.52 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	550.00	0.00	5.00	5.00	2359	0.47
				Return Time:	0.47	minutes
			Total Scrape	r team cycle time:	2.59	minutes
			Adjusted	for job conditions:	394.17	LCY/Hour
			Selected Nu	imber of Scrapers:	1	Scraper(s)
	Adjusted	l single scra	per team (unit) l	nourly production:	394.17	LCY/Hour
	Adjusted m	ultiple scrap	er team (fleet) l	nourly production:	394.17	LCY/Hour
Optima	Unadjusted unit prod al Number of Scrapers pe			LCY/Hour		
JOB TI	ME AND COST					
Flee	t size: 1	Team(s)	Т	otal job time:	9.42	Hours
Unit	t cost: \$0.983	/LCY	Т	Total job cost:	\$3,648.08	

Task includes hauling topsoil to disturbed areas only near Van 4 shaft complex, and not to remote vent shaft sites.

## BULLDOZER WORK

Task description:	Spread topsoil that				
Van 4 Shaft	Permi	t Action:	AM-1	Permit/Job#:	M1997032
PROJECT IDENTII	FICATION				
Task #: 010	State:	Colorado		Abbreviation:	None
Date: 3/20/2012	County:	Montrose		Filename:	M032-010
User: RCO					
Agency or org	anization name:	IS			
HOURLY <u>EQUIPM</u>	ENT COST				
	at D9T - 9SU				
Horsepower: 40			_		
· ·	emi-Universal		_		
	shank ripper				
	per day		_		
	RG)		_		
			_		
<u>Cost Breakdown</u> :		1	TT:11 .1 A/		
	<b>#00.40</b>		<u>Utilization %</u>		
Ownership Cost/Hour:			NA 100		
Operating Cost/Hour:			100		
Ripper op. Cost/Hour:			50		
Operator Cost/Hour:	\$38.49		NA		
Fotal unit Cost/Hour	\$262.94				
Fotal unit Cost/Hour:	\$262.94 \$262.94				
Fotal unit Cost/Hour: Fotal Fleet Cost/Hour:	\$262.94 <b>\$262.94</b>				
Total Fleet Cost/Hour:	\$262.94				
	\$262.94				
Total Fleet Cost/Hour:	\$262.94 TITIES				
Total Fleet Cost/Hour: MATERIAL QUAN	<b>\$262.94</b> TITIES 74				
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.00'	<b>\$262.94</b> TITIES 74				
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.00         Loose volume:       5,0'	\$262.94 TITIES 74 00 74 LCY	Poolometi			
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu	\$262.94 TITIES 74 00 74 LCY ume: Division of		on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.00         Loose volume:       5,0'	\$262.94 TITIES 74 00 74 LCY ume: Division of		on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.00         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe	\$262.94           TITIES           74           00           74 LCY           ime:         Division of           11 factor:         Cat Handbo		on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu	\$262.94           TITIES           74           00           74 LCY           ime:         Division of           11 factor:         Cat Handbo		on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:	\$262.94           TITIES           74           00           74 LCY           11 factor:           Division of           Cat Handbo           CTION           60 feet		on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUCC	\$262.94           TITIES           74           00           74 LCY           11 factor:           Division of           Cat Handbo           CTION           60 feet	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:	\$262.94           TITIES           74           00           74 LCY           11 factor:           Division of           Cat Handbo           CTION           60 feet	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:	\$262.94         TITIES         74         00         74 LCY         ume:       Division of         11 factor:       Cat Handbo         CTION         action:       60 feet         1,872.0 LCY/I	ok	 on, Mining & Safety 		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly produ         Materials consistency de	\$262.94           TITIES           74           00           74 LCY           ime:         Division of           11 factor:         Cat Handbo           TION           action:         60 feet           interime:         1,872.0 LCY/I           escription:         Loose store	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly produce         Materials consistency de         Average push gradient:	\$262.94         TITIES         74         00         74 LCY         ime:       Division of         11 factor:       Cat Handbo         TION         action:       60 feet         1,872.0 LCY/it         escription:       Loose store         5 %	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly produ         Materials consistency de	\$262.94           TITIES           74           00           74 LCY           ime:         Division of           11 factor:         Cat Handbo           TION           action:         60 feet           interime:         1,872.0 LCY/I           escription:         Loose store	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly product         Materials consistency de         Average push gradient:         Average site altitude:	\$262.94           TITIES           74           00           74 LCY           ame:         Division of           11 factor:         Cat Handbo           CTION           action:         60 feet           action:         1,872.0 LCY/I           escription:         Loose stor           5 %         6,900 feet	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly produce         Materials consistency de         Average push gradient:	\$262.94         TITIES         74         00         74 LCY         ime:       Division of         11 factor:       Cat Handbo         TION         action:       60 feet         1,872.0 LCY/it         escription:       Loose store         5 %	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly product         Materials consistency de         Average push gradient:         Average site altitude:	\$262.94           TITIES           74           00           74 LCY           ame:         Division of           11 factor:         Cat Handbo           CTION           action:         60 feet           action:         1,872.0 LCY/I           escription:         Loose stor           5 %         6,900 feet	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN'         Initial Volume:       5,0'         Swell factor:       1.00         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly product         Materials consistency de         Average site altitude:         Material weight:	\$262.94         TITIES         74         00         74 LCY         ame:       Division of         11 factor:       Cat Handbo         201 factor:       Cat Handbo         201 factor:       60 feet         action:       1,872.0 LCY/I         escription:       Loose stor         5 %       6,900 feet         2,550 lbs/LCY       Earth - Dry packed	ok	on, Mining & Safety		
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu         Source of estimated swe         HOURLY PRODUC         Average push distance:         Unadjusted hourly product         Average push gradient:         Average site altitude:         Material weight:         Weight description:	\$262.94         TITIES         74         00         74 LCY         ime:       Division of         11 factor:       Cat Handbo         200         200         74         200         200         2,550 lbs/LCY         Earth - Dry packed         n Factor	hr ckpile 1.2			
Total Fleet Cost/Hour:         MATERIAL QUAN         Initial Volume:       5,0'         Swell factor:       1.0'         Loose volume:       5,0'         Source of estimated volu       5,0'         Source of estimated volu       Source of estimated swe         HOURLY PRODUC       Average push distance:         Unadjusted hourly product       Materials consistency de         Average push gradient:       Average site altitude:         Material weight:       Weight description:         Ob Condition Correction       1000000000000000000000000000000000000	\$262.94         TITIES         74         00         74 LCY         ime:       Division of         11 factor:       Cat Handbo         TION         action:       60 feet         intervention:       Loose store         5 %       6,900 feet         2,550 lbs/LCY       Earth - Dry packed         n Factor       0.75	ok hr ckpile 1.2			

Visibilit	y: 1.000	(AVG.)
Job efficienc	y: 0.830	(1 SHIFT/DAY)
Spoil pil	e: 0.700	(FND-MF)
Push gradien	t: 0.903	(CAT HB)
Altitud	e: 1.000	(CAT HB)
Material Weigh	t: 0.902	(CAT HB)
Blade typ	e: 1.000	(PAT)
Net correction	n: 0.4259	
Adjusted unit production:	797.28 LCY/hr	
Adjusted fleet production:	797.28 LCY/hr	

### JOB TIME AND COST

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.330/LCY	
Total job time:	6.36 Hours	
Total job cost:	\$1,673.38	

Task includes spreading 3712 cy of topsoil that has been hauled to disturbed areas by scraper, plus other in situ soil materials to be graded.

## BULLDOZER RIPPING WORK

	Task description:	<u>Rip</u> c	ompaction in distu	irbed areas				
Site	: Van 4 Shaft		Permit Act	ion: <u>AM-1</u>	Permit/Job#	#: M1997032		
	PROJECT ID	ENTIFICATIO	<u>DN</u>					
	<b>Task #: 01</b>	1	State: Color	rado	Abbreviation:	None		
	Date: 3/2	0/2012	County: Mont		Filename:	M032-011		
	User: RC	0						
	Agency	or organization	name: DRMS					
	HOURLY EQ	UIPMENT CC	<u>ost</u>					
	Basic I	Machine: Cat	D9T - 9SU		Horsepower:	405		
	Ripper Att		ank Ripper		·	per day		
					Data Source:	(CRG)		
	Cost Breakdown:	<u>.</u>						
					Utilization %			
		Ownership Co		\$80.19	NA			
	<b>D</b> :	Operating Co		\$140.68	100			
	Ripi	per Operating Co		\$7.17	<u>100</u>			
		Operator Co Total Unit Co	· · · · · · · · · · · · · · · · · · ·	\$38.49 \$266.52	NA			
		Total Fleet Co	st/Hour:	\$266.52				
	MATERIAL C	<u>DUANTITIES</u>		Selected estimating	method: Area	···		
	Alternate Method	<u>ls:</u>						
Seismic:	NA		Bank Volur	ne: NA	BCY	NA		
Area:	5.00	acres	Rip Depth (	ft): <u>1.50</u>	Volume: 12,100	BCY or CCY		
		Source of estim	ated quantity: A	M-1 maps				
	HOURLY PRO	DUCTION						
	Seismic:							
	<u>Seisime.</u>	S	eismic Velocity:	NA	feet/second			
	A							
	<u>Area:</u>	Averore	Ripping Depth:	2.63	mah			
			Ripping Width:	7.67	mph degrees			
			Ripping Length:	400.00	feet			
			ge Dozer Speed:	88.00	feet			
			Maneuver Time:	0.25	feet			
			on per unit area: 🔤	0.881	acres/hour			
	Job Condition Correction Factors							
	Un	adjusted Hourly	Unit Production:	0.881	Acres/hr			
			Site Altitude:	6,900	feet			
			Altitude Adj:	1.00	(CAT HB)			
			Job Efficiency:	0.83	(1 shift/day)			
			Net Correction:	multiplier				
		Adjusted I	Hourly Unit Product	tion: 0.73	Acres/hr			
		-	lourly Fleet Product		Acres/hr			
	JOB TIME AN	D COST						
	Fleet size:	1	Grader(s)	Total job time	6.84	Hours		
	Unit cost:	\$364.387	Per acre	Total job cost	t: \$1,822.00			

## **REVEGETATION WORK**

Van 4 Shaft	Permit Action: AM-1			Permit/Job#	#: <u>M199703</u>
PROJECT IDENTI	<b>FICATION</b>				
Task #: 012		State: Colorado Abbreviat		Abbreviation:	None
Date: 3/20/2012 User: RCO	2 County:	Montrose		Filename:	M032-012
		(0			
Agency or org	anization name: <u>DRM</u>	48			
FERTILIZING					
Materials					
Description		Units / Acre	Unit	Cost / Unit	Cost /Acre
				\$	\$
				Total Fertilizer Materials	
				Cost/Acre	\$0.00
Application					
Description					Cost /Acre
					¢.
					\$
		Total	Fertilizer A	pplication Cost/Acre	\$ \$0.00
TILLING		Total	Fertilizer A	pplication Cost/Acre	
		Total	Fertilizer A	pplication Cost/Acre	
Description Disc harrowing, 6" de	ep (MEANS 32 91 13.23	3 6100)	Fertilizer A	pplication Cost/Acre	\$0.00 Cost /Acre \$92.35
Description Disc harrowing, 6" de	ep (MEANS 32 91 13.23 3 (MEANS 31 31 16.13 3	3 6100)	Fertilizer A	pplication Cost/Acre	\$0.00 Cost /Acre

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	0.75	2.43	\$4.95
Sand Dropseed	0.10	11.94	\$0.68
Slender Wheatgrass - Native	3.00	10.95	\$6.60
Western Wheatgrass - Native	1.25	3.16	\$3.73
Saltbush, Four Wing	2.65	3.65	\$27.83
Totals Seed Mix	7.75	32.12	\$43.78

Application

Description		Cost /Acre
Drill seeding {DMG}		\$90.11
	<b>Total Seed Application Cost/Acre</b>	\$90.11

#### MULCHING and MISCELLANEOUS

#### Materials

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

#### Application

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

#### NURSERY STOCK PLANTING

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

### JOB TIME AND COST

No. of Acres:	8.4	Cost /Acre:	\$371.44
Estimated Failure Rate:	30%	Cost /Acre*:	\$371.44
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	\$3,120.10
Reseeding Job Cost:	\$936.03
Total Job Cost:	\$4,056.12
Job Hours:	20.00

### WHEEL LOADER - LOAD AND CARRY WORK

Van 4 Shaft		Permit Action	on: <u>AM-1</u>		Permit/Job#:	M1997032
PROJECT IDEN	TIFICATION					
Task #: 013		State: Colora	obe		Abbreviation:	None
Date: $3/21/2$	012	County: Montr			Filename:	M032-013
User: RCO					i nomine.	
Agency or	organization nan	ne: DRMS				
IOURLY EQUI	PMENT COST	[				
Basic Machin	ie: CAT 938H	high lift		Horsepo	wer:	172
Attachment			-	Shift E		er day
			-	Data So		CRG)
Cost Breakdown:						¥
JOST DICARUOWII.			Utilizatio	on %		
Ownership C	Cost/Hour:	\$22.07	NA			
Operating C		\$37.34	100	the second se		
Operator C		\$38.49	NA			
Total Unit C	ost/Hour:	\$97.90	·			
Total Fleet (	~oet/Hour	\$97.90				
Total Pleet		\$97.90				
MATERIAL QUA	ANTITIES					
Initial volume:	556	CCY	Swe	ell factor: 1.0	)60	
Loose volume:	589	LCY				
Sou	rce of estimated	volume: Divis	ion of Peolom	tion Mining &	Safata	
	rce of estimated			ation, Mining &	Safety	
	rce of estimated of estimated swe		tion of Reclams Iandbook	ation, Mining &	Safety	
Source	of estimated swe			ation, Mining &	Safety	
Source	of estimated swe	ll factor: Cat F	Iandbook			
Source	of estimated swe		Iandbook		0.483	minutes
Source	of estimated swe <u>UCTION</u> Unadjuste	ll factor: Cat F	Iandbook			minutes Source
Source o IOURLY PROD oader Cycle Time: Cycle Time H	of estimated swe <u>UCTION</u> Unadjuste <u>Factors</u> aterial: Materi	Il factor: Cat F ed Basic Cycle T: al 3/4" to 6" dian	Iandbook ime (load, dum neter 0.00	p, maneuver):	0.483	
Source of HOURLY PROD Loader Cycle Time: Cycle Time F Ma Stor	of estimated swe UCTION Unadjuste Factors aterial: Materi ckpile: No adj	ed Basic Cycle T al 3/4" to 6" dian ustment - factor	Iandbook ime (load, dum neter 0.00 not applicable (	p, maneuver):	0.483 Factor (min.)	Source
Source of HOURLY PROD Loader Cycle Time: Cycle Time F Ma Stor Truck Own	of estimated swe UCTION Unadjusta <sup>3</sup> actors aterial: Materi ckpile: No adj ership: No adj	ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable (	p, maneuver):	0.483 Factor (min.) 0.000 0.000 0.000	Source (Cat HB) (Cat HB) (Cat HB)
Source of HOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Truck Own Ope	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta	ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r unt operation -0.0	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable (	p, maneuver):	0.483 Factor (min.) 0.000 0.000 0.000 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Source of HOURLY PROD Loader Cycle Time: Cycle Time F Ma Stor Truck Own	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta	ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r unt operation -0.0 target 0.04	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4	p, maneuver): 0.00	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Source of OURLY PROD oader Cycle Time: Cycle Time H Ma Stoo Truck Own Ope	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta	ed Basic Cycle T al 3/4" to 6" dian ustment - factor n ustment - factor n int operation -0.0 target 0.04	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A	p, maneuver): ).00 ).00 djustment:	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040 0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of OURLY PROD oader Cycle Time: Cycle Time H Ma Stoo Truck Own Ope	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta	ed Basic Cycle T al 3/4" to 6" dian ustment - factor n ustment - factor n int operation -0.0 target 0.04	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4	p, maneuver): ).00 ).00 djustment:	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Source of OURLY PROD oader Cycle Time: Cycle Time H Ma Sto Truck Own Ope Dump T	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small	ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r unt operation -0.0 target 0.04 Net Ad	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A	p, maneuver): ).00 ).00 djustment:	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040 0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of IOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Truck Owna Ope Dump T Lolling Resistance –	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small Road Conditions	ll factor: Cat F ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r int operation -0.0 target 0.04 Net Ad	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic C	p, maneuver): ).00 ).00 djustment: ycle Time:	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040 0.040 0.000 0.483	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of IOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Stor Ope Dump T Lolling Resistance – H	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Target: Small Road Conditiona [aul: Rutted di	Il factor: Cat F ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r int operation -0.0 target 0.04 Net Ad s irt, little maintena	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic Cy unce, no water,	p, maneuver): ).00 ).00 djustment: ycle Time: 1" tire penetrat	0.483 Factor (min.) 0.000 0.000 -0.040 0.040 0.040 0.040 0.0483 ion 4.0	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of IOURLY PROD Coader Cycle Time: Cycle Time H Ma Stor Truck Owne Ope Dump T Colling Resistance – H Ret	of estimated swei UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small Road Conditions Road Conditions Iaul: Rutted di urn: Rutted di	ll factor: Cat F ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r int operation -0.0 target 0.04 Net Ad	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic Cy unce, no water,	p, maneuver): ).00 ).00 djustment: ycle Time: 1" tire penetrat	0.483 Factor (min.) 0.000 0.000 -0.040 0.040 0.040 0.040 0.0483 ion 4.0	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of HOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Truck Owne Ope Dump T Lolling Resistance – H Ret	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small Road Conditions Road Conditions Iaul: Rutted di urn: Rutted di	Il factor: Cat F ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r int operation -0.0 target 0.04 Net Ad s irt, little maintena	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic Cy unce, no water,	p, maneuver): ).00 ).00 djustment: ycle Time: 1" tire penetrat	0.483 Factor (min.) 0.000 0.000 -0.040 0.040 0.040 0.040 0.0483 ion 4.0	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
Source of HOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Truck Owne Ope Dump T Lolling Resistance – H Ret	of estimated swei UCTION Unadjuste Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small Road Conditions Iaul: Rutted di urn: Rutted di ter	ll factor: Cat H ed Basic Cycle T: al 3/4" to 6" dian ustment - factor n ustment - factor	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic Cy ince, no water, ince, no water,	p, maneuver): ).00 ).00 djustment: ycle Time: 1" tire penetrat 1" tire penetrat	0.483 Factor (min.) 0.000 0.000 0.000 -0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.000 0.483	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes
Source of HOURLY PROD Loader Cycle Time: Cycle Time H Ma Stor Truck Owna Ope Dump T Colling Resistance – H	of estimated swe UCTION Unadjusta Factors aterial: Materi ckpile: No adj ership: No adj ration: Consta Farget: Small Road Conditions Road Conditions Iaul: Rutted di urn: Rutted di	Il factor: Cat F ed Basic Cycle T al 3/4" to 6" dian ustment - factor r ustment - factor r int operation -0.0 target 0.04 Net Ad s irt, little maintena	Iandbook ime (load, dum neter 0.00 not applicable ( not applicable ( 4 Cycle Time A justed Basic Cy unce, no water,	p, maneuver): ).00 ).00 djustment: ycle Time: 1" tire penetrat	0.483 Factor (min.) 0.000 0.000 -0.040 0.040 0.040 0.040 0.0483 ion 4.0	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes

4.00

4.00

300

300

Haul Route:

Return Route:

0.00

0.00

0.2477

0.2310

(Cat HB)

(Cat HB)

4.00

4.00

			Total Travel Tir Total Cycle Tir		minutes minutes
Load Bucket Capacity					
Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	0.850	LCY (hea Hard, tou LCY	aped) gh clay (80% - 90%	6) 0.850	
Job Condition Correction I Site Altitude: <u>6900</u> feet	Factors				
Ad	1.00 0.83 0.83 justed Hourly Unit justed Hourly Unit usted Hourly Fleet	Production:	<u>y)</u>	LCY/Hour LCY/Hour LCY/Hour	
JOB TIME AND COS Fleet size:1	·		Total job time:	3.43	Hours
Unit cost: \$0.57	70 /LCY		Total job cost: _	\$336.00	

Job includes underground disposal (burial in disposal pit or down main shaft) of all liner material plus gravel cap materials.

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

		Permit	Action: <u>AM-1</u>		Pe	rmit/Job#: <u>M1</u>	997032
PROJECT IDE	NTIFICAT	ION					
Task #:014		State: Co	olorado		Abbr	eviation: Non	e
Date: 3/21/ User: RCC	/2012	County: M	ontrose		F	ilename: M03	32-014
Agency o	or organizatio	n name: DRMS					
EQUIPMENT 1	RANSPOR	RT RIG COST					
					Shift ba	asis: 1 per o	lav
					Cost Data Sou		
Truck	Tractor Desc	ription: GEN	ERIC ON-HIGH			DR, 6X4, DIESE	L POWERED,
Truck	Trailer Desc	rintion. <u> </u>	DIC FOI DNIC		P (2ND HALF,		
TIUCK	Trailer Desc	Alpholi: GENE	KIC FOLDING		, 50T, AND 1	DECK EQUIPM	ENTIRALLER
				(231	, 501, AND IC		
Cost Breakdown:							
Available Rig Car	pacities	0-25 Tons	26-50 Tons	51	+ Tons		
Ownership		\$16.63	\$18.37	\$	22.33		
	Cost/Hour:	\$44.38	\$46.13	\$	50.07		
Operator	Cost/Hour:	\$27.66	\$27.66	\$	27.66		
operator		<b><i><i>q</i></i></b> = <i>vv</i>	$\psi 2 / .00$				
	Cost/Hour:	\$0.00	\$25.39		25.39		
	Cost/Hour:			\$			
Helper Total Unit	Cost/Hour: Cost/Hour: LE EQUIP	\$0.00 \$88.67	\$25.39	\$	25.39		
Helper Total Unit	Cost/Hour: Cost/Hour:	\$0.00 \$88.67	\$25.39	\$	25.39	Return Trip	DOT Permit
Helper Total Unit NON ROADAB Machine	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit	\$0.00 \$88.67 MENT:	\$25.39 \$117.55	\$ \$:	25.39 125.45	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Helper Total Unit NON ROADAB Machine Description	Cost/Hour: Cost/Hour: LE EQUIP Weight/	\$0.00 \$88.67 MENT: Owner ship	\$25.39 \$117.55 Haul Rig	\$ \$ Fleet	25.39 125.45 Haul Trip	Return Trip Cost/hr/ fleet	
Helper Total Unit NON ROADAB Machine Description Cat D9T - 9SU	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit	\$0.00 \$88.67 MENT: Owner ship	\$25.39 \$117.55 Haul Rig	\$ \$ Fleet	25.39 125.45 Haul Trip Cost/hr/	Return Trip Cost/hr/ fleet \$125.45	Cost/ fleet
Helper Total Unit NON ROADAB Machine Description Cat D9T - 9SU Cat 320D L 9'-6" Stick	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit (TONS)	\$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit	\$25.39 \$117.55 Haul Rig Cost/hr/unit	Fleet Size	25.39 125.45 Haul Trip Cost/hr/ fleet	Cost/hr/ fleet	
Helper Total Unit NON ROADAB Machine Description Cat D9T - 9SU Cat 320D L 9'-6" Stick CAT 938H high lift	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit (TONS) 66.13 23.70 16.34	\$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$80.19 \$24.63 \$22.07	\$25.39 \$117.55 Haul Rig Cost/hr/unit \$125.45 \$88.67 \$88.67	Fleet Size	25.39 125.45 Haul Trip Cost/hr/ fleet \$205.64	Cost/hr/ fleet \$125.45	\$250.00 \$250.00
Helper Total Unit NON ROADAB Machine Description Cat D9T - 9SU Cat 320D L 9'-6" Stick CAT 938H high lift Cat 623G	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit (TONS) 66.13 23.70 16.34 41.35	\$0.00 \$88.67 MENT: Owner ship Cost/hr/ unit \$80.19 \$24.63 \$22.07 \$64.15	\$25.39 \$117.55 Haul Rig Cost/hr/unit \$125.45 \$88.67	Fleet Size	25.39 125.45 Haul Trip Cost/hr/ fleet \$205.64 \$113.30	Cost/hr/ fleet \$125.45 \$88.67	Cost/ fleet \$250.00
Helper Total Unit NON ROADAB Machine Description Cat D9T - 9SU Cat 320D L 9'-6" Stick	Cost/Hour: Cost/Hour: LE EQUIP Weight/ Unit (TONS) 66.13 23.70 16.34	\$0.00 \$88.67 <b>MENT:</b> Owner ship Cost/hr/ unit \$80.19 \$24.63 \$22.07	\$25.39 \$117.55 Haul Rig Cost/hr/unit \$125.45 \$88.67 \$88.67	Fleet Size	25.39 125.45 Haul Trip Cost/hr/ fleet \$205.64 \$113.30 \$110.74	Cost/hr/ fleet \$125.45 \$88.67 \$88.67	Cost/ fleet \$250.00 \$250.00 \$250.00

## **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$97.17	3	\$291.51	\$291.51
Fuel Tanker, 4x2, 170 HP	\$93.61	1	\$93.61	\$93.61
		Subtotals:	\$385.12	\$385.12

## Mobilization Worksheet Cont'd

**EQUIPMENT HAUL DISTANCE and Time** 

NATURITA	
15.00	miles
30.00	mph
\$8,196.85	
\$385.12	
	15.00 30.00 \$8,196.85

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.50	0.50
Return Time (Hours):	0.50	0.50
Loading Time (Hours):	1.50	NA
Unloading Time (Hours):	1.50	NA
Subtotals:	4.00	1.00

## JOB TIME AND COST

Total job time: **8.00** Hours

Total job cost: \_\_\_\_\_\_\$8,581.97