

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

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John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta E. Piñeda
Director

May 14, 2012

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

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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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,

A handwritten signature in black ink, appearing to read "Bob Oswald". The signature is fluid and cursive, with the first name "Bob" being more prominent than the last name "Oswald".

Bob Oswald

Environmental Protection Specialist

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

Ec(w/encl): Steve Shuey, DRMS, Grand Junction
Barbara Coria, DRMS, Denver

Cc: Robert Ernst, Montrose BLM

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

COST SUMMARY WORK

Task description: Bond recalculation for AM-1 (EPP)

Site: Van 4 Shaft

Permit Action: AM-1

Permit/Job#: M1997032

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 3/20/2012

County: Montrose

Filename: M032-000

User: RCO

Agency or organization name: DRMS

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>SUBTOTALS:</u>				217.68	\$ \$57,733.41

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 50.00
Profit: 10.00

Total = \$1,166.21

Total = \$606.20

Total = \$2,965.00

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): 500.00
Engineering work and/or contract/bid preparation: 4.25
Reclamation management and/or administration: 5.00

Total = 500.00

Total = \$2,900.38

\$3,412.21

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$17,323.33

TOTAL BOND AMOUNT (direct + indirect) = \$75,056.74

DEMOLITION WORK

Task description: Remove and dispose of structures and debris

Site: Van 4 Shaft

Permit Action: AM-1

Permit/Job#: M1997032

PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 3/20/2012

County: Montrose

Filename: M032-001

User: RCO

Agency or organization name: DRMS

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

hydrocarbons, remove & dispose		removal - Drum solids/liquids, per drum, (1-6 drum job)				
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Job Hours:	<u>96.00</u>	Subtotal (unadjusted):	<u>\$22,203.28</u>	Total Cost (adjusted for location):	<u>\$21,514.98</u>
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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 WORKTask description: **Backfill vent shafts with waste rock**Site: **Van 4 Shaft**Permit Action: **AM-1**Permit/Job#: **M1997032****PROJECT IDENTIFICATION**Task #: **002**State: **Colorado**Abbreviation: **None**Date: **3/20/2012**County: **Montrose**Filename: **M032-002**User: **RCO**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

		Equipment Description
Truck Loader Team -Truck:		Generic 10-12 cy, 6x4
-Loader:		CAT 938H high lift
Support Equipment -Load Area:		NA
-Dump Area:		NA
Road Maintenance -Motor Grader:		NA
-Water Truck:		NA

Cost Breakdown:	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:	\$12.32	\$22.07	NA	NA	NA	NA
Operating cost/hour:	\$62.56	\$37.34	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		Maint: \$0.00	

Total work team cost/hour: **\$397.42****MATERIAL QUANTITIES**Initial volume: **2,400**

CCY

Swell factor: **1.000**Loose volume: **2,400**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,550**

Pounds/LCY

Description: **Sandstone**Rated Payload: **35,400**

Pounds

Payload Capacity: **13.88**

LCY

Truck Bed (volume) Basis:

Struck Volume:	10.00	LCY
Heaped Volume:	12.00	LCY
Average Volume:	11.00	LCY
Adjusted Volume:	12.00	LCY

Final Truck Volume Based on Number of Loader Passes: 9.65 LCY**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:Site Altitude (ft.): 6900 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	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 3 passes**Excavators and Front Shovels:**Machine Cycle Time vs. Job Condition Rating: NASelected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, 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 3.0Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	3.00	3.00	2824	0.314
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

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1800.00	-3.00	3.00	0.00	2938	0.638
2	1500.00	-1.00	3.00	2.00	2905	0.516
3	600.00	0.00	3.00	3.00	2874	0.209

Return Time: 1.363 minutesTotal Truck Cycle Time: 5.769 minutes

Loading Tool unit Production 360.84 LCY/Hour
 Truck Unit Production 100.39 LCY/Hour
 Optimal No. of Trucks: 4 Truck(s)

Adjusted for job efficiency: 299.50 LCY/Hour
 Adjusted for job efficiency: 83.32 LCY/Hour
 Selected Number of Trucks: 4 Truck(s)

Adjusted hourly truck team production: 333.29 LCY/Hour
 Adjusted single truck/loader team production: 299.50 LCY/Hour
 Adjusted multiple truck/loader team production: 299.50 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 8.01 HoursUnit 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 WORKTask description: Backfill Van 4 main shaft with waste rockSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-003User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

		Equipment Description
Truck Loader Team -Truck:		Generic 10-12 cy, 6x4
-Loader:		CAT 938H high lift
Support Equipment -Load Area:		NA
-Dump Area:		NA
Road Maintenance -Motor Grader:		NA
-Water Truck:		NA

Cost Breakdown:**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:	\$12.32	\$22.07	NA	NA	NA	NA
Operating cost/hour:	\$62.56	\$37.34	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	Maint:	\$0.00

Total work team cost/hour: \$247.66**MATERIAL QUANTITIES**Initial volume: 1,200

CCY

Swell factor: 1.000Loose volume: 1,200

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,550

Pounds/LCY

Description: SandstoneRated Payload: 35,400

Pounds

Payload Capacity: 13.88

LCY

Truck Bed (volume) Basis:

Struck Volume:	10.00	LCY
Heaped Volume:	12.00	LCY
Average Volume:	11.00	LCY
Adjusted Volume:	12.00	LCY

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

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:

Site Altitude (ft.): 6900 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

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA

Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, 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:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.020	minutes
Adjusted Loader Cycle Time:		0.463	minutes
Net Load Time per Truck:		1.025	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	1.025	Minutes	Adjusted for site altitude:	1.025	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time:
penetration 4.0

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	4.00	4.00	2665	0.323

Haul Time: 0.323 minutes**Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	4.00	4.00	2849	0.236

Return Time: 0.236 minutesTotal Truck Cycle Time: 2.984 minutes

Loading Tool unit
 Production 379.77 LCY/Hour
 Truck Unit Production
194.09 LCY/Hour
 Adjusted for job efficiency: 315.21 LCY/Hour
 Adjusted for job efficiency: 161.09 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s)
 Selected Number of Trucks: 2 Truck(s)
 Adjusted hourly truck team production: 322.18 LCY/Hour
 Adjusted single truck/loader team production: 315.21 LCY/Hour
 Adjusted multiple truck/loader team production: 315.21 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 3.81 Hours
 Unit cost: \$0.786 /LCY Total job cost: \$942.84

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

Task description: Pull up waste rock to 3:1 side slopes

Site: Van 4 Shaft

Permit Action: AM-1

Permit/Job#: M1997032

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 3/20/2012

County: Montrose

Filename: M032-004

User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 320D L 9'-6" Stick

Attachment 1: ROPS Cab

Horsepower: 148

Weight (MT): 21.55

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$24.63	NA
Operating Cost/Hour:	\$45.70	100
Operator Cost/Hour:	\$38.67	NA
Total Unit Cost/Hour:	\$109.00	
Total Fleet Cost/Hour:	\$109.00	

MATERIAL QUANTITIES

Initial volume: 2,639

CCY

Swell factor: 1.335

Loose volume: 3,523

LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE

Secondary Job Condition within Basic Description: AVERAGE

Cycle Time Value: 0.284 minutes

Load Bucket Capacity

Bucket Size Class: Medium

Rated Capacity: 1.54 LCY (heaped)

Bucket Fill Factor: 0.825 Blasted rock - avg. blasted (75 - 90%) 0.825

Adjusted Capacity: 1.27 LCY

Job Condition Correction Factors

Site Altitude: 6900 feet

Altitude Adj:	0.90	Source
Job Efficiency:	0.83	(CAT HB)
Net Correction:	0.75	(1 shift/day)
		multiplier

Unadjusted Hourly Unit Production: 268.42 LCY/Hour

Adjusted Hourly Unit Production: 200.51 LCY/Hour

Adjusted Hourly Fleet Production: 200.51 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 17.57 Hours

Unit cost: \$0.544 /LCY Total job cost: \$1,915.00

BULLDOZER WORKTask description: Excavate onsite disposal pitSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-005User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
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

Total unit Cost/Hour: \$262.94Total Fleet Cost/Hour: \$262.94**MATERIAL QUANTITIES**Initial Volume: 3,500Swell factor: 1.330Loose volume: 4,655 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 6,900 feetMaterial weight: 2,900 lbs/LCYWeight description: Decomposed rock - 50% Rock, 50% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
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:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 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 WORKTask description: Push broken structures and concrete into pitSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-006User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
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

Total unit Cost/Hour: \$262.94Total Fleet Cost/Hour: \$262.94**MATERIAL QUANTITIES**Initial Volume: 1,900Swell factor: 1.000Loose volume: 1,900 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 910.5 LCY/hrMaterials consistency description: Dry, non-cohesive 0.8Average push gradient: -5 %Average site altitude: 6,900 feetMaterial weight: 2,900 lbs/LCYWeight description: Decomposed rock - 50% Rock, 50% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.000	(GEN.)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 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 WORKTask description: Contour waste rock sideslopes and top of dumpSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 007State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-007User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
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

Total unit Cost/Hour: \$262.94Total Fleet Cost/Hour: \$262.94**MATERIAL QUANTITIES**Initial Volume: 3,523Swell factor: 1.000Loose volume: 3,523 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 6,900 feetMaterial weight: 3,300 lbs/LCYWeight description: Decomposed rock - 75% Rock, 25% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)

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:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 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 WORKTask description: Replace earthen cover over debris backfilled in pitSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 008State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-008User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
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

Total unit Cost/Hour: \$262.94Total Fleet Cost/Hour: \$262.94**MATERIAL QUANTITIES**Initial Volume: 4,600Swell factor: 1.000Loose volume: 4,600 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 1,460.1 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 5 %Average site altitude: 6,900 feetMaterial weight: 2,900 lbs/LCYWeight description: Decomposed rock - 50% Rock, 50% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)

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: 501.11 LCY/hr
Adjusted fleet production: 501.11 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.

SCRAPER TEAM WORKTask description: Haul topsoil from stockpile to disturbed areasSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 009State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-009User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 623G
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	50	NA	NA	NA	NA
Ownership cost/hour:	\$64.15	\$80.19	NA	NA	NA	NA
Operating cost/hour:	\$109.22	\$70.34	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$24.95	\$38.49	NA	NA	NA	NA
Unit Subtotals:	\$198.32	\$189.01	NA	NA	NA	NA
Number of Units:	1	1	0	0	0	0
Group Subtotals:	Work: \$387.33		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$387.33****MATERIAL QUANTITIES**Initial volume: 3,300

CCY

Swell factor: 1.125Loose volume: 3,713

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,550 lbs/LCY
 Material description: Earth - Dry packed
 Rated Payload: 55,200 pounds
 Payload Capacity: 21.65 LCY

Struck Volume: 18.00 LCY
 Heaped Volume: 23.00 LCY
 Average Volume: 20.50 LCY
 Adjusted Capacity: 20.50 LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes

Maneuver and Spread Time: 0.70 Minutes

Job Condition Correction:

Site Altitude: 6900 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul 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 Scraper team cycle time: 2.59 minutes

Adjusted for job conditions: 394.17 LCY/Hour

Selected Number of Scrapers: 1 Scraper(s)

Adjusted single scraper team (unit) hourly production: 394.17 LCY/Hour

Adjusted multiple scraper team (fleet) hourly production: 394.17 LCY/Hour

Unadjusted unit production/hour: 474.90 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 9.42 Hours

Unit cost: \$0.983 /LCY 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 WORKTask description: Spread topsoil that has been hauled to disturbed areaSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 010State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-010User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
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

Total unit Cost/Hour: \$262.94Total Fleet Cost/Hour: \$262.94**MATERIAL QUANTITIES**Initial Volume: 5,074Swell factor: 1.000Loose volume: 5,074 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 60 feetUnadjusted hourly production: 1,872.0 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 5 %Average site altitude: 6,900 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)

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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 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: Rip compaction in disturbed areas

Site: Van 4 Shaft

Permit Action: AM-1

Permit/Job#: M1997032

PROJECT IDENTIFICATION

Task #: 011

State: Colorado

Abbreviation: None

Date: 3/20/2012

County: Montrose

Filename: M032-011

User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 405

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$80.19	NA
Operating Cost/Hour:	\$140.68	100
Ripper Operating Cost/Hour:	\$7.17	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$266.52	
Total Fleet Cost/Hour:	\$266.52	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 5.00 acres Rip Depth (ft): 1.50 Volume: 12,100 BCY or CCY

Source of estimated quantity: AM-1 maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.63 mph
Average Ripping Width: 7.67 degrees
Average Ripping Length: 400.00 feet
Average Dozer Speed: 88.00 feet
Average Maneuver Time: 0.25 feet
Production per unit area: 0.881 acres/hour

Job Condition Correction Factors

Unadjusted 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: 0.83 multiplier

Adjusted Hourly Unit Production: 0.73 Acres/hr

Adjusted Hourly Fleet Production: 0.73 Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 6.84 Hours

Unit cost: \$364.387 Per acre Total job cost: \$1,822.00

REVEGETATION WORKTask description: Revegetate disturbed areasSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 012State: ColoradoAbbreviation: NoneDate: 3/20/2012County: MontroseFilename: M032-012User: RCOAgency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$92.35
Weed control spraying (MEANS 31 31 16.13 3100)	\$145.20
Total Tilling Cost/Acre	\$237.55

SEEDING

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

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Description	Cost /Acre
Drill seeding {DMG}	\$90.11
Total Seed Application Cost/Acre	\$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
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres: 8.4
 Estimated Failure Rate: 30%
 *Selected Replanting Work Items: TILLING,SEEDING

Cost /Acre: \$371.44
 Cost /Acre*: \$371.44

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 WORKTask description: **Remove and backfill ore pad liner and gravel**Site: **Van 4 Shaft**Permit Action: **AM-1**Permit/Job#: **M1997032****PROJECT IDENTIFICATION**Task #: **013**State: **Colorado**Abbreviation: **None**Date: **3/21/2012**County: **Montrose**Filename: **M032-013**User: **RCO**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **CAT 938H high lift**Horsepower: **172**Attachment 1: **ROPS Cab**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$22.07	NA
Operating Cost/Hour:	\$37.34	100
Operator Cost/Hour:	\$38.49	NA
Total Unit Cost/Hour:	\$97.90	
Total Fleet Cost/Hour:	\$97.90	

MATERIAL QUANTITIESInitial volume: **556**

CCY

Swell factor: **1.060**Loose volume: **589**

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): **0.483** minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.483	minutes

Rolling Resistance – Road ConditionsHaul: **Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**Return: **Rutted dirt, little maintenance, no water, 1" tire penetration 4.0****Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	300	0.00	4.00	4.00	0.2477	(Cat HB)
Return Route:	300	0.00	4.00	4.00	0.2310	(Cat HB)

Total Travel Time: 0.4787 minutes
 Total Cycle Time: 0.9612 minutes

Load Bucket Capacity

Rated Capacity: 3.90 LCY (heaped)
 Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850
 Adjusted Capacity: 3.32 LCY

Job Condition Correction FactorsSite Altitude: 6900 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.83</u>	(CAT HB)
Net Correction:	<u>0.83</u>	(1 shift/day)
		multiplier

Unadjusted Hourly Unit Production: 206.92 LCY/Hour
 Adjusted Hourly Unit Production: 171.75 LCY/Hour
 Adjusted Hourly Fleet Production: 171.75 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 3.43 Hours
 Unit cost: \$0.570 /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/DEMOBILIZATIONTask description: Haul reclamation equipment to and from siteSite: Van 4 ShaftPermit Action: AM-1Permit/Job#: M1997032**PROJECT IDENTIFICATION**Task #: 014State: ColoradoAbbreviation: NoneDate: 3/21/2012County: MontroseFilename: M032-014User: RCOAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck 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 Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D9T - 9SU	66.13	\$80.19	\$125.45	1	\$205.64	\$125.45	\$250.00
Cat 320D L 9'-6" Stick	23.70	\$24.63	\$88.67	1	\$113.30	\$88.67	\$250.00
CAT 938H high lift	16.34	\$22.07	\$88.67	1	\$110.74	\$88.67	\$250.00
Cat 623G	41.35	\$64.15	\$117.55	1	\$181.70	\$117.55	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$41.07	\$88.67	1	\$129.74	\$88.67	\$250.00

Subtotals: **\$741.12** **\$509.01** **\$1,250.00****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**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>NATURITA</u>	
Total one-way travel distance:	<u>15.00</u>	miles
Average Travel Speed:	<u>30.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$8,196.85</u>
** two round trips with haul rig:	

Total Roadable Mob/Demob Cost **	<u>\$385.12</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time:	<u>8.00</u>	Hours
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Total job cost:	<u>\$8,581.97</u>
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