

COST SUMMARY WORK

**BOND RECALCULATION
FOR AMENDMENT AM-1**

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

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-000

User: RCO

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Demolition of vent collars, removal of fans, onsite disposal	DEMOLISH	1	48.00	\$14,051.86
002	Demolition of structures at portal and pad, onsite disposal	DEMOLISH	1	16.00	\$3,836.27
003	Excavate at vent collars for capping	EXCAVATE	1	2.80	\$305.00
004	Install atmospheric bulkhead underground	MINESEAL	1	16.00	\$1,500.00
005	Portal closure	MINESEAL	1	40.00	\$1,500.21
006	Recontour vent access roads	EXCAVATE	1	6.25	\$682.00
007	Rip compaction on vent pad areas	RIPPER	1	2.99	\$810.00
008	Grade vent pad areas	DOZER	1	6.14	\$1,592.30
009	Revegetate vent pad areas	REVEGE	1	4.00	\$1,577.84
010	Rip compaction on vent roads	RIPPER	1	4.69	\$1,270.00
011	Grade vent access roads	DOZER	1	4.04	\$1,047.53
012	Revegetate vent access roads	REVEGE	1	8.00	\$2,892.71
013	Grade dump slopes, push up to 2:1	DOZER	1	34.24	\$8,880.75
014	Grade dump pad, push against cut face	DOZER	1	29.19	\$7,570.31
015	Rip compaction on waste dump pad and access road	RIPPER	1	11.26	\$3,049.00
016	Contour portal and cut face, shape pad	DOZER	1	7.67	\$1,989.77
017	Haul topsoil from stockpile to waste dump	TRUCK1	1	12.26	\$3,037.48
018	Spread topsoil on contoured waste dump pad	DOZER	1	2.81	\$728.55
019	Close and seal water quality monitoring wells	BOREHOLE	1	30.00	\$1,144.58
020	Grade and contour access roads	DOZER	1	2.68	\$695.78
021	Recontour upland diversions and runoff catchments	EXCAVATE	1	1.31	\$143.00
022	Revegetate waste dump, access road, and SWMPs	REVEGE	1	20.00	\$8,562.43
023	Grade/shape closed well site surfaces	LOADER	1	0.22	\$22.00
024	Haul reclamation equipment to and from site	MOBILIZE	1	8.00	\$5,283.96
<u>SUBTOTALS:</u>				318.55	\$ \$72,173.33

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 79.28

Total = \$1,457.90
Total = \$757.82
Total = \$4,701.01

Profit: 10.00

Total =	\$7,217.33
TOTAL O & P =	\$14,134.06
CONTRACT AMOUNT (direct + O & P) =	\$86,307.39

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$3,668.06
Reclamation management and/or administration:	5.00		\$4,315.37

CONTINGENCY:	0.00	Total =	\$0.00
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TOTAL INDIRECT COST =	\$22,617.49
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TOTAL BOND AMOUNT (direct + indirect) =	\$94,790.82
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DEMOLITION WORK

Task description: Demolition of vent collars, removal of fans, onsite disposal

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-001

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
Remove steel fans/diffusers	4 ft H x 6 ft Diam	Loading and 2 mile haul, no salvage - Machine loading	24.00	CY	\$15.10	\$362.40
Break concrete collars, push down shafts	12 ft Diam x 1 ft thick	Floor, concrete, demolition only, average reinforcing - 12 in. thick	510.00	SF	\$3.10	\$1,581.00
Cut off steel casings (6)	6 ft Diam x 3 ft H	Welding truck/labor	6.00	EA	\$945.00	\$5,670.00
Weld on steel plates (6)	6' x 6' x 0.5"	Welding truck/labor	6.00	EA	\$315.00	\$1,890.00
Frame/pour reinf'd concrete caps	6' x 6' x 6"	Onsite batch/pour	6.00	EA	\$819.00	\$4,914.00
Set location monuments (6)	NA	Manual install during backfill	6.00	EA	\$14.00	\$84.00

Job Hours: 48.00

Subtotal
(unadjusted): \$14,501.40

Total Cost
(adjusted for location): \$14,051.86

DEMOLITION WORK

Task description: Demolition of structures at portal and pad, onsite disposal

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-002

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
Shop building	35x20x20	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	14,000.00	CF	\$0.16	\$2,184.00
Shop bldg concrete slab	35x20	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	700.00	SF	\$1.05	\$735.00
Water tanks with cribbing	10x10x10 ft mass	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	1,000.00	CF	\$0.16	\$156.00
Hydrocarbon storage	10x5x5 ft	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	250.00	CF	\$0.16	\$39.00
Electric switch gear	10x5x5 ft	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	250.00	CF	\$0.16	\$39.00
Receiver tank and piping	10x10x5 ft	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	500.00	CF	\$0.16	\$78.00
Portal shed, steel sets, timbers	10x10x15 ft	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	1,500.00	CF	\$0.15	\$228.00
Backfill ore pad liner and gravel	100x100x1.5 ft	Loader pick up and carry, disposal in adit	1.00	EA	\$500.00	\$500.00

Job Hours: 16.00

Subtotal
(unadjusted): \$3,959.00

Total Cost
(adjusted for location): \$3,836.27

HYDRAULIC EXCAVATOR WORK

Task description: Excavate at vent collars for capping

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-003

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: 450

CCY

Swell factor: 1.330

Loose volume: 599

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: BELOW AVERAGE

Secondary Job Condition within Basic Description: AVERAGE

Cycle Time Value: 0.323 minutes

Load Bucket Capacity

Bucket Size Class: Medium

Rated Capacity: 1.54 LCY (heaped)

Bucket Fill Factor: 1.000 Rock - Well Blasted (95%-105%) 1.000

Adjusted Capacity: 1.54 LCY

Job Condition Correction Factors

Site Altitude: 7000 feet

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

Unadjusted Hourly Unit Production: 286.07 LCY/Hour

Adjusted Hourly Unit Production: 213.69 LCY/Hour

Adjusted Hourly Fleet Production: 213.69 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 2.80 Hours

Unit cost: \$0.510 /LCY

Total job cost: \$305.00

SAFEGUARDING UNDERGROUND OPENINGS

Task description: Install atmospheric bulkhead underground

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-004

User: RCO

Agency or organization name: DRMS

UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Underground workings	12x15	PUF block wall, non-backed	1.00	EA	\$1,500.00	\$1,500.00

Job Hours: 16.00

Total Cost: \$1,500.00

SAFEGUARDING UNDERGROUND OPENINGS

Task description: Portal closure

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 3/15/2012

County: San Miguel

Filename: M055-005

User: RCO

Agency or organization name: DRMS

UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Place debris in adit	10x10	Adit closure - backfilling (per cu. yd.)	600.00	CY	\$2.11	\$1,266.00
Earthen backfill, 30 ft.	10x10	Adit closure - backfilling (per cu. yd.)	111.00	CY	\$2.11	\$234.21

Job Hours: 40.00

Total Cost: \$1,500.21

HYDRAULIC EXCAVATOR WORK

Task description: Recontour vent access roads

Site: Topaz Mine Permit Action: AM-1 Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 3/16/2012 County: San Miguel Filename: M055-006
User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 320D L 9'-6" Stick Horsepower: 148
Attachment 1: ROPS Cab Weight (MT): 21.55
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

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

MATERIAL QUANTITIES

Initial volume: 1,110 CCY Swell factor: 1.165
Loose volume: 1,293 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

Rated Capacity: 1.54 LCY (heaped) Bucket Size Class: Medium
Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850
Adjusted Capacity: 1.31 LCY

Job Condition Correction Factors

Site Altitude: 7000 feet

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

Unadjusted Hourly Unit Production:	<u>276.55</u>	LCY/Hour
Adjusted Hourly Unit Production:	<u>206.58</u>	LCY/Hour
Adjusted Hourly Fleet Production:	<u>206.58</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 6.26 Hours

Unit cost: \$0.528 /LCY Total job cost: \$682.00

BULLDOZER RIPPING WORK

Task description: Rip compaction on vent pad areas

Site: Topaz Mine Permit Action: AM-1 Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 007 State: Colorado Abbreviation: None
Date: 3/15/2012 County: San Miguel Filename: M055-007
User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405
Ripper Attachment: 1-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$81.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$140.68</u>	<u>100</u>
Ripper Operating Cost/Hour:	<u>\$9.64</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.49</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$270.66</u>	
Total Fleet Cost/Hour:	<u>\$270.66</u>	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 1.50 acres Rip Depth (ft): 1.00 Volume: 2,420 BCY or CCY

Source of estimated quantity: Permit maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 4.05 mph
Average Ripping Width: 6.08 degrees
Average Ripping Length: 100.00 feet
Average Dozer Speed: 88.00 feet
Average Maneuver Time: 0.25 feet
Production per unit area: 0.604 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.604 Acres/hr
Site Altitude: 7,000 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier
Adjusted Hourly Unit Production: 0.50 Acres/hr
Adjusted Hourly Fleet Production: 0.50 Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 2.99 Hours
Unit cost: \$539.829 Per acre Total job cost: \$810.00

BULLDOZER WORKTask description: Grade vent pad areasSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 008State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-008User: 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:	\$7.17	100
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$266.52Total Fleet Cost/Hour: \$266.52**MATERIAL QUANTITIES**Initial Volume: 4,356Swell factor: 1.125Loose volume: 4,901 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,110.5 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 7,000 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3782

Adjusted unit production: 798.19 LCY/hr
Adjusted fleet production: **798.19 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.334/LCY

Total job time: 6.14 Hours
Total job cost: **\$1,636.33**

REVEGETATION WORKTask description: Revegetate vent pad areasSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 009State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-009User: 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
Blue Grama - Native	0.96	15.67	\$9.72
Indian Ricegrass - Native	7.42	24.02	\$48.97
Sand Dropseed	0.14	16.71	\$0.96
Bottlebrush Squirreltail	4.08	17.98	\$99.27
Galleta	4.94	18.03	\$121.87
Muttongrass	0.20	4.13	\$7.20
Sagebrush, Mountain or Big	0.20	10.56	\$6.60
Saltbush, Four Wing	0.50	0.69	\$5.25
Winter Fat	0.50	1.27	\$16.00

Totals Seed Mix	18.94	109.07	\$315.84
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Application

Description	Cost /Acre
Broadcast seeding [DMG]	\$255.76
Total Seed Application Cost/Acre	\$255.76

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:	1.5	Cost /Acre:	\$809.15
Estimated Failure Rate:	30%	Cost /Acre*:	\$809.15
*Selected Replanting Work Items:	TILLING,SEEDING		
Initial Job Cost:	\$1,213.73		
Reseeding Job Cost:	\$364.12		
Total Job Cost:	\$1,577.84		
Job Hours:	4.00		

BULLDOZER RIPPING WORK

Task description: Rip compaction on vent roads

Site: Topaz Mine Permit Action: AM-1 Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 010 State: Colorado Abbreviation: None
Date: 3/15/2012 County: San Miguel Filename: M055-010
User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405
Ripper Attachment: 1-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$81.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$140.68</u>	<u>100</u>
Ripper Operating Cost/Hour:	<u>\$9.64</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.49</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$270.66</u>	
Total Fleet Cost/Hour:	<u>\$270.66</u>	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 2.75 acres Rip Depth (ft): 1.00 Volume: 4,437 BCY or CCY

Source of estimated quantity: Permit maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>4.05</u>	<u>mph</u>
Average Ripping Width:	<u>6.08</u>	<u>degrees</u>
Average Ripping Length:	<u>500.00</u>	<u>feet</u>
Average Dozer Speed:	<u>88.00</u>	<u>feet</u>
Average Maneuver Time:	<u>0.25</u>	<u>feet</u>
Production per unit area:	<u>0.706</u>	<u>acres/hour</u>

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.706</u>	<u>Acres/hr</u>
Site Altitude:	<u>7,000</u>	<u>feet</u>
Altitude Adj:	<u>1.00</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.83</u>	<u>(1 shift/day)</u>
Net Correction:	<u>0.83</u>	<u>multiplier</u>
Adjusted Hourly Unit Production:	<u>0.59</u>	<u>Acres/hr</u>
Adjusted Hourly Fleet Production:	<u>0.59</u>	<u>Acres/hr</u>

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 4.69 Hours

Unit cost: \$461.952 Per acre Total job cost: \$1,270.00

BULLDOZER WORKTask description: Grade vent access roadsSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 011State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-011User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 2,218Swell factor: 1.125Loose volume: 2,495 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 70 feetUnadjusted hourly production: 1,633.5 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 7,000 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3782

Adjusted unit production: 617.79 LCY/hr

Adjusted fleet production: 617.79 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.420/LCY

Total job time: 4.04 Hours

Total job cost: \$1,047.53

REVEGETATION WORKTask description: Revegetate vent access roadsSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 012State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-012User: 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
Blue Grama - Native	0.96	15.67	\$9.72
Indian Ricegrass - Native	7.42	24.02	\$48.97
Sand Dropseed	0.14	16.71	\$0.96
Bottlebrush Squirreltail	4.08	17.98	\$99.27
Galleta	4.94	18.03	\$121.87
Muttongrass	0.20	4.13	\$7.20
Sagebrush, Mountain or Big	0.20	10.56	\$6.60
Saltbush, Four Wing	0.50	0.69	\$5.25
Winter Fat	0.50	1.27	\$16.00

Totals Seed Mix	18.94	109.07	\$315.84
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Application

Description	Cost /Acre
Broadcast seeding [DMG]	\$255.76
Total Seed Application Cost/Acre	\$255.76

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:	2.75	Cost /Acre:	\$809.15
Estimated Failure Rate:	30%	Cost /Acre*:	\$809.15
*Selected Replanting Work Items:	TILLING,SEEDING		
Initial Job Cost:	\$2,225.16		
Reseeding Job Cost:	\$667.55		
Total Job Cost:	\$2,892.71		
Job Hours:	8.00		

BULLDOZER WORKTask description: Grade dump slopes, push up to 2:1Site: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 013State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-013User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 7,000Swell factor: 1.215Loose volume: 8,505 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: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 5,800 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:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2728

Adjusted unit production: 248.38 LCY/hr
Adjusted fleet production: **248.38 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.044/LCY

Total job time: **34.24 Hours**
Total job cost: **\$8,880.75**

BULLDOZER WORKTask description: Grade dump pad, push against cut faceSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 014State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-014User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 6,000Swell factor: 1.215Loose volume: 7,290 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: Consolidated stockpile 1.0Average push gradient: 5 %Average site altitude: 5,800 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:	1.000	(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: 0.2743

Adjusted unit production: 249.75 LCY/hr

Adjusted fleet production: 249.75 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.038/LCY

Total job time: 29.19 Hours
Total job cost: \$7,570.31

BULLDOZER RIPPING WORK

Task description: Rip compaction on waste dump pad and access road

Site: Topaz Mine Permit Action: AM-1 Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 015 State: Colorado Abbreviation: None
Date: 3/15/2012 County: San Miguel Filename: M055-015
User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405
Ripper Attachment: 1-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$81.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$140.68</u>	<u>100</u>
Ripper Operating Cost/Hour:	<u>\$9.64</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.49</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$270.66</u>	
Total Fleet Cost/Hour:	<u>\$270.66</u>	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 6.60 acres Rip Depth (ft): 1.00 Volume: 10,648 BCY or CCY

Source of estimated quantity: Permit maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>4.05</u>	<u>mph</u>
Average Ripping Width:	<u>6.08</u>	<u>degrees</u>
Average Ripping Length:	<u>500.00</u>	<u>feet</u>
Average Dozer Speed:	<u>88.00</u>	<u>feet</u>
Average Maneuver Time:	<u>0.25</u>	<u>feet</u>
Production per unit area:	<u>0.706</u>	<u>acres/hour</u>

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.706</u>	<u>Acres/hr</u>
Site Altitude:	<u>7,000</u>	<u>feet</u>
Altitude Adj:	<u>1.00</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.83</u>	<u>(1 shift/day)</u>
Net Correction:	<u>0.83</u>	<u>multiplier</u>
Adjusted Hourly Unit Production:	<u>0.59</u>	<u>Acres/hr</u>
Adjusted Hourly Fleet Production:	<u>0.59</u>	<u>Acres/hr</u>

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 11.26 Hours

Unit cost: \$461.952 Per acre Total job cost: \$3,049.00

BULLDOZER WORKTask description: Contour portal and cut face, shape padSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 016State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-016User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 3,000Swell factor: 1.165Loose volume: 3,495 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: Consolidated stockpile 1.0Average push gradient: 5 %Average site altitude: 5,800 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:	1.000	(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: 0.3120

Adjusted unit production: 455.55 LCY/hr
Adjusted fleet production: **455.55 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.569/LCY

Total job time: 7.67 Hours
Total job cost: **\$1,989.77**

TRUCK/LOADER TEAM WORKTask description: Haul topsoil from stockpile to waste dumpSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 017State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-017User: 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
Support Equipment -Load Area:		NA
-Dump Area:		NA
Road Maintenance -Motor Grader:		NA
-Water Truck:		NA

<u>Cost Breakdown:</u>	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: 3,254

CCY

Swell factor: 1.215Loose volume: 3,954

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: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 35,400

Pounds

Payload Capacity: 22.13

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: 8.19 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	4.095	LCY

Job Condition Corrections:

Site Altitude (ft.): 5800 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: 2 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:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.000	minutes
Adjusted Loader Cycle Time:		0.483	minutes
Net Load Time per Truck:		0.583	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.583	Minutes	Adjusted for site altitude:	0.583	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	500.00	3.00	4.00	7.00	1568	0.351

Haul Time: 0.351 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	-3.00	4.00	1.00	2913	0.197

Return Time: 0.197 minutesTotal Truck Cycle Time: 2.531 minutes

Loading Tool unit Production 453.95 LCY/Hour
 Truck Unit Production 194.19 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s)

Adjusted for job efficiency: 376.78 LCY/Hour
 Adjusted for job efficiency: 161.18 LCY/Hour
 Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 322.36 LCY/Hour
 Adjusted single truck/loader team production: 322.36 LCY/Hour
 Adjusted multiple truck/loader team production: 322.36 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 12.26 HoursUnit cost: \$0.768 /LCYTotal job cost: \$3,037.48

BULLDOZER WORKTask description: Spread topsoil on contoured waste dump padSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 018State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-018User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 3,954Swell factor: 1.000Loose volume: 3,954 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: 0 %Average site altitude: 5,800 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7519

Adjusted unit production: 1,407.56 LCY/hr

Adjusted fleet production: **1407.56 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.184/LCY

Total job time: **2.81 Hours**
Total job cost: **\$728.55**

BOREHOLE SEALING WORK

Task description: Close and seal water quality monitoring wells

Site: Topaz Mine

Permit Action: AM-1

Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 019
Date: 3/16/2012
User: RCO

State: Colorado
County: San Miguel

Abbreviation: None
Filename: M055-019

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Shallow GW well, cut off casing	Exposed casing removal - 2 to 3.5 in. diameter steel pipe (LF)	2	24	4.00	LF	\$1.30	\$5.20
Shallow GW well, remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00
Shallow GW well, backfill bentonite	Bentonite seal - 2 in. (labor, equip, materials)	2	22	1.00	EA	\$45.32	\$45.32
Shallow GW well, cement seal top	Portland cement grout - 2 in. (labor, equip, materials)	2	2	2.00	LF	\$7.21	\$14.42
Ambient well, remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00
Ambient well, cut off casing	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	4.5	700	4.00	LF	\$5.75	\$23.00
Ambient well, bentonite thru aquifer	Bentonite seal - 4 in. (labor, equip, materials)	4	100	1.00	EA	\$106.87	\$106.87
Ambient well, mech plug	PVC plug - 4 in. diameter borehole	4	1	1.00	EA	\$27.85	\$27.85
Ambient well, cement seal top	Portland cement grout - 4 in. (labor, equip, materials)	4	4	4.00	LF	\$7.65	\$30.61
Monitoring well (west), remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00
Monitoring well (west), cut off casing	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	4.5	700	4.00	LF	\$5.75	\$23.00
Monitoring well (west), bentonite thru aquifer	Bentonite seal - 4 in. (labor, equip, materials)	4	100	1.00	EA	\$106.87	\$106.87
Monitoring well (west), mech plug	PVC plug - 4 in. diameter borehole	4	1	1.00	EA	\$27.85	\$27.85
Monitoring well (west), cement seal top	Portland cement grout - 4 in. (labor, equip, materials)	4	4	4.00	LF	\$7.65	\$30.61
Mon well (south), remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00

Mon well (south), cut off casing	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	4.5	700	4.00	LF	\$5.75	\$23.00
Mon well (south), bentonite thru aquifer	Bentonite seal - 4 in. (lanor, equip, materials)	4	100	1.00	EA	\$106.87	\$106.87
Mon well (south), mech plug	PVC plug - 4 in. diameter borehole	4	1	1.00	EA	\$27.85	\$27.85
Mon well (south), cement seal top	Portland cement grout - 4 in. (labor, equip, materials)	4	4	4.00	LF	\$7.65	\$30.61
Compliance well (west), remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00
Compliance well (west), cut off casing	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	4.5	700	4.00	LF	\$5.75	\$23.00
Compliance well (west), bentonite thru aquifer	Bentonite seal - 4 in. (lanor, equip, materials)	4	100	1.00	EA	\$106.87	\$106.87
Compliance well (west), mech plug	PVC plug - 4 in. diameter borehole	4	1	1.00	EA	\$27.85	\$27.85
Compliance well (west), cement seal top	Portland cement grout - 4 in. (labor, equip, materials)	4	4	4.00	LF	\$7.65	\$30.61
Comp well (east), remove metal cover	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	6	4	4.00	LF	\$5.75	\$23.00
Comp well (east), cut off casing	Exposed casing removal - 4 to 10 in. diameter steel pipe (LF)	4.5	700	4.00	LF	\$5.75	\$23.00
Comp well (east), bentonite thru aquifer	Bentonite seal - 4 in. (lanor, equip, materials)	4	100	1.00	EA	\$106.87	\$106.87
Comp well (east), mech plug	PVC plug - 4 in. diameter borehole	4	1	1.00	EA	\$27.85	\$27.85
Comp well (east), cement seal top	Portland cement grout - 4 in. (labor, equip, materials)	4	4	4.00	LF	\$7.65	\$30.61

Job Hours: 30.00Total Cost: \$1,144.59

BULLDOZER WORKTask description: Grade and contour access roadsSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 020State: ColoradoAbbreviation: NoneDate: 3/15/2012County: San MiguelFilename: M055-020User: 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:	\$0.00	0
Operator Cost/Hour:	\$38.49	NA

Total unit Cost/Hour: \$259.35Total Fleet Cost/Hour: \$259.35**MATERIAL QUANTITIES**Initial Volume: 1,500Swell factor: 1.090Loose volume: 1,635 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: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 5,800 feetMaterial weight: 2,400 lbs/LCYWeight description: Clay and gravel - Dry**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4174

Adjusted unit production: 609.45 LCY/hr

Adjusted fleet production: **609.45 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.426/LCY

Total job time: **2.68 Hours**

Total job cost: **\$695.78**

HYDRAULIC EXCAVATOR WORK

Task description: Recontour upland diversions and runoff catchments

Site: Topaz Mine Permit Action: AM-1 Permit/Job#: M1980055HR

PROJECT IDENTIFICATION

Task #: 021 State: Colorado Abbreviation: None
Date: 3/16/2012 County: San Miguel Filename: M055-021
User: RCO

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 320D L 9'-6" Stick Horsepower: 148
Attachment 1: ROPS Cab Weight (MT): 21.55
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

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

MATERIAL QUANTITIES

Initial volume: 250 CCY Swell factor: 1.125
Loose volume: 281 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: BELOW AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.323 minutes

Load Bucket Capacity

Rated Capacity: 1.54 LCY (heaped) Bucket Size Class: Medium
Bucket Fill Factor: 1.000 Rock - Well Blasted (95%-105%) 1.000
Adjusted Capacity: 1.54 LCY

Job Condition Correction Factors

Site Altitude: 5800 feet

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

Unadjusted Hourly Unit Production: 286.07 LCY/Hour
Adjusted Hourly Unit Production: 213.69 LCY/Hour
Adjusted Hourly Fleet Production: 213.69 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 1.32 Hours

Unit cost: \$0.510 /LCY Total job cost: \$143.00

REVEGETATION WORKTask description: Revegetate waste dump, access road, and SWMPsSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 022State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-022User: 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
Blue Grama - Native	0.96	15.67	\$9.72
Indian Ricegrass - Native	7.42	24.02	\$48.97
Sand Dropseed	0.14	16.71	\$0.96
Bottlebrush Squirreltail	4.08	17.98	\$99.27
Galleta	4.94	18.03	\$121.87
Muttongrass	0.20	4.13	\$7.20
Sagebrush, Mountain or Big	0.20	10.56	\$6.60
Saltbush, Four Wing	0.50	0.69	\$5.25
Winter Fat	0.50	1.27	\$16.00

Totals Seed Mix	18.94	109.07	\$315.84
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Application

Description	Cost /Acre
Broadcast seeding [DMG]	\$255.76
Total Seed Application Cost/Acre	\$255.76

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:	8.14	Cost /Acre:	\$809.15
Estimated Failure Rate:	30%	Cost /Acre*:	\$809.15
*Selected Replanting Work Items:	TILLING,SEEDING		
Initial Job Cost:	\$6,586.48		
Reseeding Job Cost:	\$1,975.94		
Total Job Cost:	\$8,562.43		
Job Hours:	20.00		

WHEEL LOADER – LOAD AND CARRY WORKTask description: Grade/shape closed well site surfacesSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 023State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-023User: RCOAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 938HHorsepower: 172Attachment 1: ROPS CabShift Basis: 1 per dayData 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: 36

CCY

Swell factor: 1.125Loose volume: 41

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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:	Inconsistent operation 0.04	0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.040	minutes
Adjusted Basic Cycle Time:		0.523	minutes

Rolling Resistance – Road ConditionsHaul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Return: 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	5.00	4.00	9.00	0.3608	(Cat HB)
Return Route:	300	5.00	4.00	9.00	0.3204	(Cat HB)

Total Travel Time: 0.6813 minutes
 Total Cycle Time: 1.2038 minutes

Load Bucket Capacity

Rated Capacity: 3.90 LCY (heaped)
 Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
 Adjusted Capacity: 4.29 LCY

Job Condition Correction FactorsSite Altitude: 7000 feet

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

Unadjusted Hourly Unit Production: 213.83 LCY/Hour
 Adjusted Hourly Unit Production: 177.48 LCY/Hour
 Adjusted Hourly Fleet Production: 177.48 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 0.23 Hours
 Unit cost: \$0.552 /LCY Total job cost: \$22.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Haul reclamation equipment to and from siteSite: Topaz MinePermit Action: AM-1Permit/Job#: M1980055HR**PROJECT IDENTIFICATION**Task #: 024State: ColoradoAbbreviation: NoneDate: 3/16/2012County: San MiguelFilename: M055-024User: 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	16.34	\$22.07	\$88.67	1	\$110.74	\$88.67	\$250.00

Subtotals: **\$429.68** **\$302.79** **\$750.00****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	2	\$194.34	\$194.34
Drill/Broadcast Seeder with Tractor	\$105.81	1	\$105.81	\$105.81

Subtotals: **\$300.15** **\$300.15**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	NATURITA	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost *	\$4,683.66
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* two round trips with haul rig:

Total Roadable Mob/Demob Cost **	\$600.30
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** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	1.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	4.00	2.00

JOB TIME AND COST

Total job time:	8.00	Hours
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Total job cost:	\$5,283.96
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