




**COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY**  
**MINERALS PROGRAM INSPECTION REPORT**  
**PHONE: (303) 866-3567**

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Cedar Point	<b>MINE/PROSPECTING ID#:</b> M-1994-108	<b>MINERAL:</b> Sand and gravel	<b>COUNTY:</b> Montezuma
<b>INSPECTION TYPE:</b> Surety-Related Inspection	<b>INSPECTOR(S):</b> Wallace H. Erickson	<b>INSP. DATE:</b> October 10, 2014	<b>INSP. TIME:</b> 13:00
<b>OPERATOR:</b> Noland Inc	<b>OPERATOR REPRESENTATIVE:</b> Rick Noland	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> Complete Bond	<b>BOND AMOUNT:</b> \$163,029.00	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Cloudy	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> December 12, 2014	

**GENERAL INSPECTION TOPICS**

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS-----Y	(FN) FINANCIAL WARRANTY-----Y	(RD) ROADS-----Y
(HB) HYDROLOGIC BALANCE-----Y	(BG) BACKFILL & GRADING-----Y	(EX) EXPLOSIVES-----NA
(PW) PROCESSING WASTE/TAILING-----Y	(SF) PROCESSING FACILITIES-----Y	(TS) TOPSOIL-----Y
(MP) GENL MINE PLAN COMPLIANCE-----Y	(FW) FISH & WILDLIFE-----Y	(RV) REVEGETATION-----Y
(SM) SIGNS AND MARKERS-----Y	(SP) STORM WATER MGT PLAN-----N	(SB) COMPLETE INSP-----Y
(ES) OVERBURDEN/DEV. WASTE-----Y	(SC) EROSION/SEDIMENTATION-----Y	(RS) RECL PLAN/COMP-----Y
(AT) ACID OR TOXIC MATERIALS-----Y	(OD) OFF-SITE DAMAGE-----Y	(ST) STIPULATIONS-----NA

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

### **OBSERVATIONS**

This inspection occurred as part of the Division's routine monitoring program for permitted operations and to evaluate the financial warranty. The Cedar Point Pit is approved for 126 acres affected lands for the extraction and processing of construction materials. Affected lands will be reclaimed to support pastureland post-mining land use. The Division holds \$163,029 financial warranty. This report is accompanied by two images from Google Earth, nine photographs taken by the Division during the inspection, and an updated reclamation cost estimation totaling \$157,333.34.

As shown on the enclosed images from Google Earth and photographs, large scale mining and reclamation activities had recently occurred. Topsoil had been appropriately salvaged and safeguarded. Topsoil and overburden were either windrowed above the advancing highwall or stockpiled at one of three designated locations. The Division observed approximately 3,770 lineal feet of highwall, typically ten feet in height, with slopes ranging from near vertical (0.5H:1V) to partially backfilled (2H:1V). As the mining operation advances the Operator is conducting reclamation for areas where mineable resources have been depleted. Affected lands appeared well maintained; evidence of excessive erosion/sedimentation or infestation by prohibited weed species was not observed. Affected lands were estimated at approximately 65 acres. Of those 65 acres, reclamation appears to have been completed for approximately ten acres.

Based on current site conditions and pursuant to Rule 4.2.1, the Division has reviewed the current cost of reclamation totaling \$157,333.34. Please find enclosed 20 pages of summary, work sheets and drawings utilized by the Division to calculate the current cost of reclamation. Therefore, the existing financial warranty, in the amount of \$163,029, is sufficient to ensure the completion of reclamation and the Division has withdrawn its notice to increase the financial warranty to \$227,658.51, dated July 23, 2014.

#### **Inspection Contact Address**

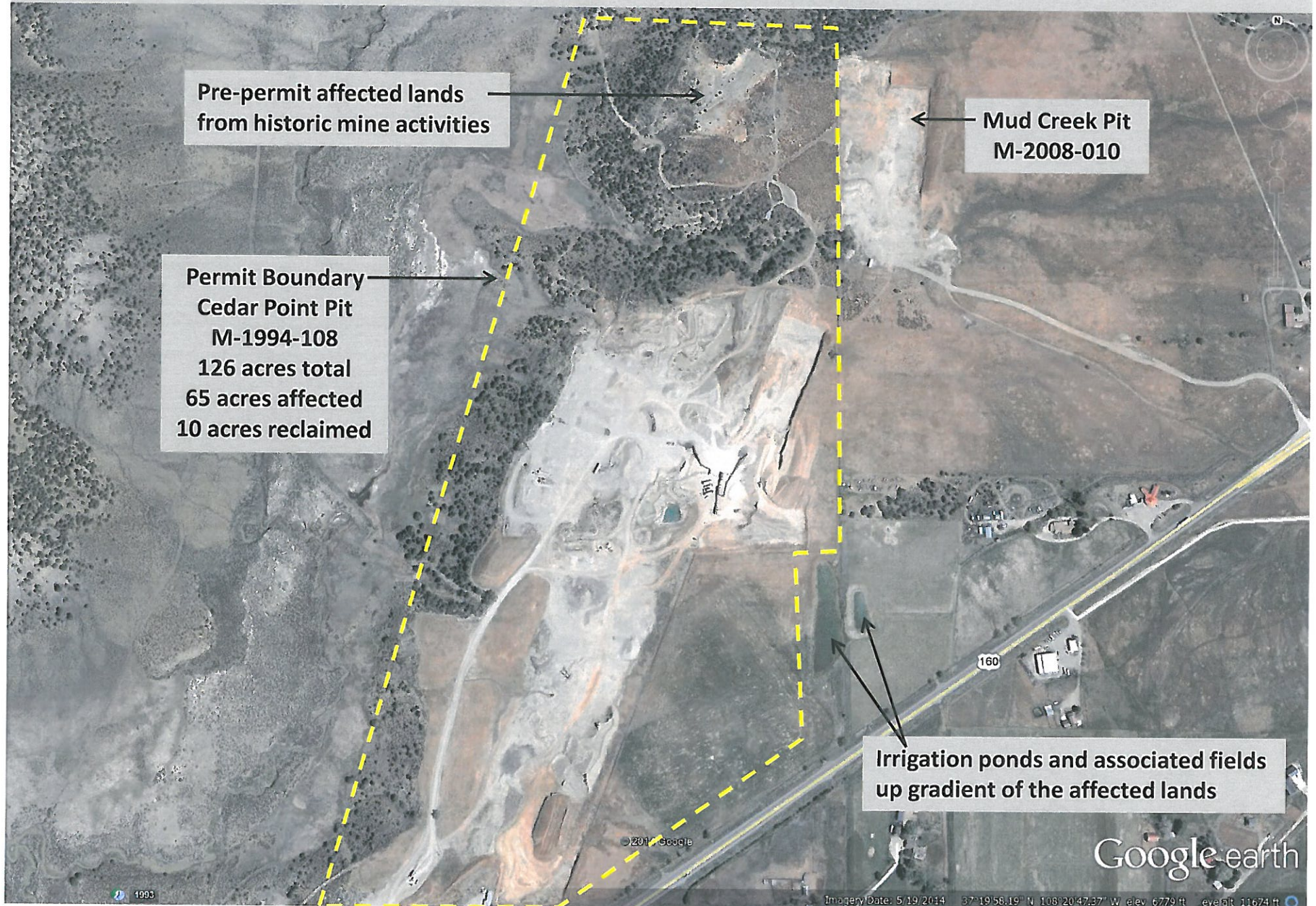
Rick Noland  
Noland Inc  
P.O. Box 23  
Mancos, CO 81328

Enclosure:   1)     Two images from Google Earth, imagery date May 19, 2014  
                  2)     Nine photographs taken during the inspection  
                  3)     Reclamation cost estimation, dated December 11, 2014, totaling \$157,333.34

cc w/enclosures:   Rick Noland, Noland Inc.  
                          Russ Means, DRMS GJFO

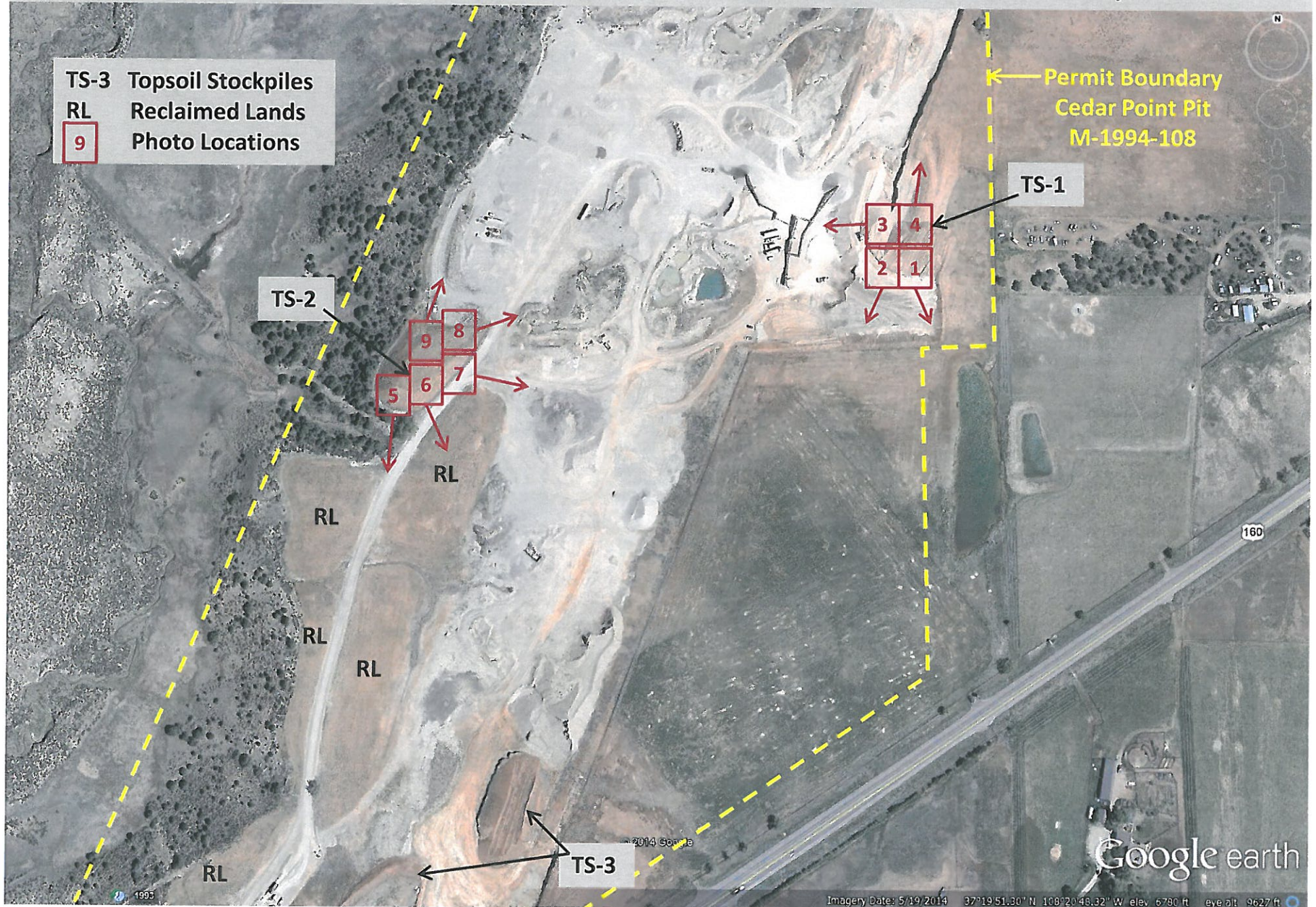


Google Earth Image 1, imagery date May 19, 2014, showing the approximate location of the permit boundary and configuration of the affected lands for the Cedar Point Pit, Permit No. M-1994-108.





Google Earth Image 2, imagery date May 19, 2014, showing portions of the affected lands for the Cedar Point Pit, Permit No. M-1994-108, and the locations of photographs taken by the Division during the October 10, 2014 inspection.





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 1

**View southeast, taken from TS-1, showing the proximity of affected lands to irrigation ponds and irrigated fields located up gradient from the affected lands. Topsoil had been stockpiled at various locations and available for short push distances during final reclamation.**





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 2

**View south, taken from TS-1, showing the proximity of affected lands to irrigation ponds and irrigated fields located up gradient from the affected lands. Topsoil had been stockpiled at various locations and available for short push distances during final reclamation.**





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 3

**View west, taken from TS-1, showing portions of the pit area  
containing substantial stockpiles of mined and processed materials.**





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 4

**View north, taken from TS-1, showing the northern extent of affected lands. Topsoil had been stockpiled at various locations and available for short push distances during final reclamation. Affected lands for the Mud Creek Pit, Permit No. M-2008-010 are shown in the background.**

Topsoil stockpiled above highwall

Topsoil Stockpile No. 1 (TS-1)





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 5

View south, taken from TS-2, showing portions of the reclaimed lands (RL) located along the west side of the pit area, and portions of Topsoil Stockpile No. 3 (TS-3). Reclaimed lands were estimated at approximately ten acres.





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 6

View southeast, taken from TS-2, showing southern portions of the pit area, Topsoil Stockpile No. 3 (TS-3) and reclaimed lands (RL). Reclaimed lands were estimated at approximately ten acres.





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 7

**View east, taken from TS-2, showing portions of the middle pit area and reclaimed lands (RL).**





Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 8

**View northeast, taken from TS-2, showing portions of the northern pit area, containing Topsoil Stockpile No. 1 (TS-1), various stockpiles of mined and processed materials, and reclaimed lands (RL).**



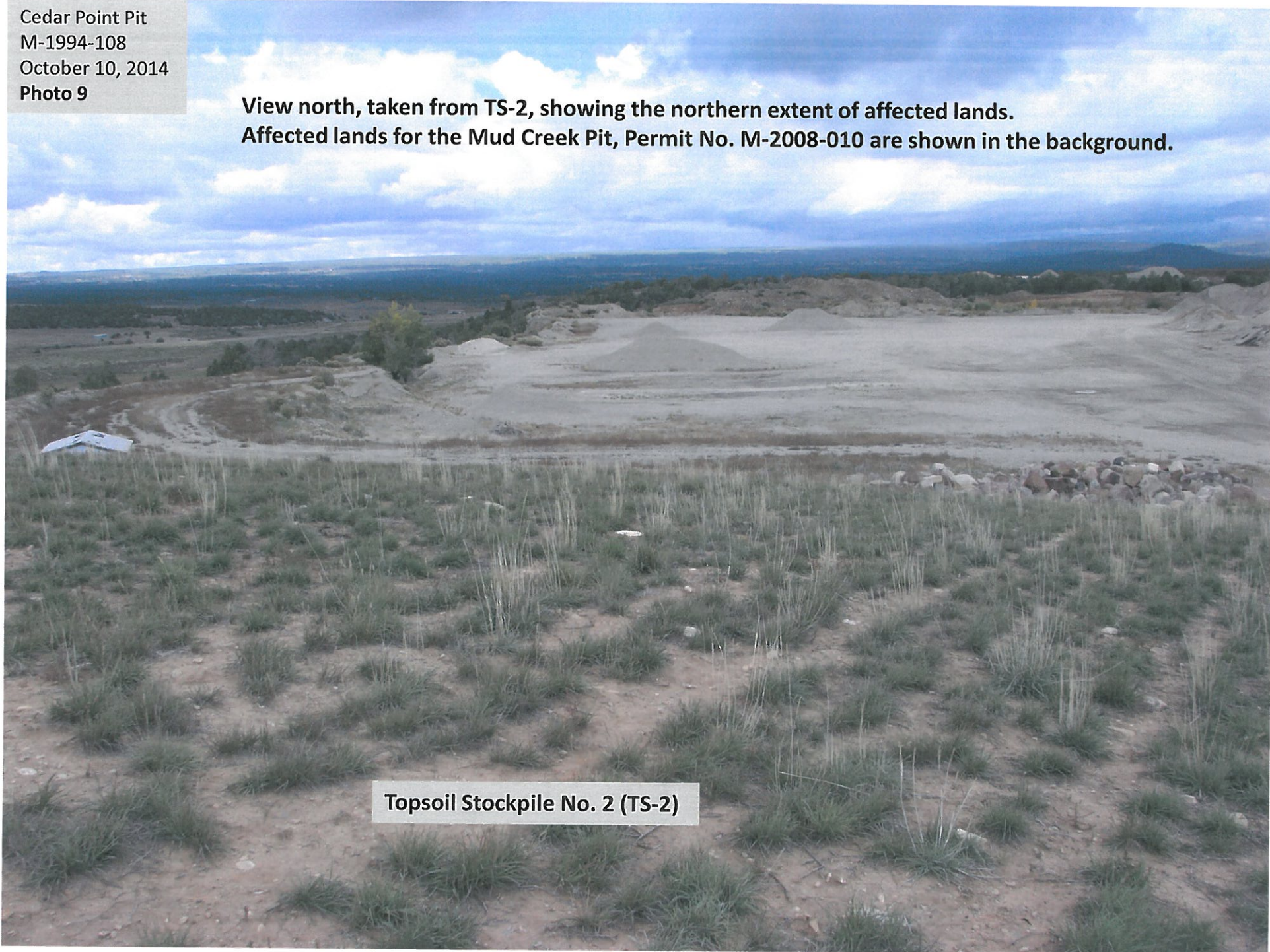
**Topsoil Stockpile No. 2 (TS-2)**



Cedar Point Pit  
M-1994-108  
October 10, 2014  
Photo 9

**View north, taken from TS-2, showing the northern extent of affected lands.  
Affected lands for the Mud Creek Pit, Permit No. M-2008-010 are shown in the background.**

**Topsoil Stockpile No. 2 (TS-2)**





## COST SUMMARY WORK

Task description: Summary of reclamation tasks and costs

Site: Cedar Point

Permit Action: Bond review

Permit/Job#: M1994108

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 12/11/2014

County: Montezuma

Filename: M108-000

User: WHE

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Demolish and remove mine related structures	DEMOLISH	1	0.00	\$1,017.55
002	Highwall reduction from 0.5H:1V to 3H:1V	DOZER	1	2.94	\$771.00
003	Highwall reduction from 2H:1V to 3H:1V	DOZER	1	0.90	\$235.00
004	Rip and grade 53 acres pit floor area	DOZER	2	59.77	\$32,416.00
005	Topsoil replacement for 3H:1V slopes	DOZER	1	3.84	\$1,007.00
006	Topsoil replacement for 50 acres of pit floor	SCRAPER1	1	38.33	\$44,331.00
007	Revegetate 50 acres pit floor area	REVEGE	1	40.00	\$23,042.00
008	Revegetate 5 acres of 3H:1V slope areas	REVEGE	1	8.00	\$6,856.00
009	Haul reclamation equipment to and from job site	MOBILIZE	1	3.60	\$8,507.00
<b><u>SUBTOTALS:</u></b>				<b>157.38</b>	<b>\$118,183</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02%

Total = \$2,387.30

Performance bond: 1.05%

Total = \$1,240.92

Job superintendent: 78.69 hrs

Total = \$5,914.34

Profit: 10.00%

Total = \$11,818.30

TOTAL O & P = \$21,360.86

CONTRACT AMOUNT (direct + O & P) = \$139,543.86

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 500.00

Total = 500.00

Engineering work and/or contract/bid preparation: 7.39%

Total = \$10,312.29

Reclamation management and/or administration: 5.00%

\$6,977.19

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$39,150.34

TOTAL BOND AMOUNT (direct + indirect) = \$157,333.34



## DEMOLITION WORK

Task description: Demolish and remove mine related structures

Site: Cedar Point

Permit Action: Bond review

Permit/Job#: M1994108

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 12/11/2014

County: Montezuma

Filename: M108-001

User: WHE

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 89.00 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Truck scales	2 x (12'L x 2'W x 2'H)	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	24.00	LF	\$20.98	\$503.52
Scale house	10'L x 8'W x 8'H	Push demolished materials/rubble/debris into pit - Max. 100 ft. push	640.00	CY	\$0.49	\$313.60
Fuel tanks	1 fuel tank	Hauling only, per mile, 12-18 CY truck - 30 mph average speed	200.00	MI	\$0.52	\$104.20
scrap & misc. debris	10' x 10' x 3'	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	300.00	CY	\$0.74	\$222.00

Job Hours: 0.00

Subtotal  
(unadjusted): \$1,143.32

Total Cost  
(adjusted for location): \$1,017.55



**BULLDOZER WORK**Task description: Highwall reduction from 0.5H:1V to 3H:1VSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-002User: WHEAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9UHorsepower: 405Blade Type: UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$81.10	NA
Operating Cost/Hour:	\$143.16	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$262.26Total Fleet Cost/Hour: \$262.26**MATERIAL QUANTITIES**Initial Volume: 2,533Swell factor: 1.124Loose volume: 2,846 LCYSource of estimated volume: See attached "Drawing 1"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,222.9 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -10 %Average site altitude: 6,770 feetMaterial weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**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:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4354

Adjusted unit production: 967.85 LCY/hr  
Adjusted fleet production: 967.85 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$0.271/LCY

Total job time: 2.94 Hours  
Total job cost: \$771



# Drawing 1

Highwall Reduction from 0.5H:1V to 3H:1V  
Balanced Cut & Fill

Band Review

Cedar Point Pit

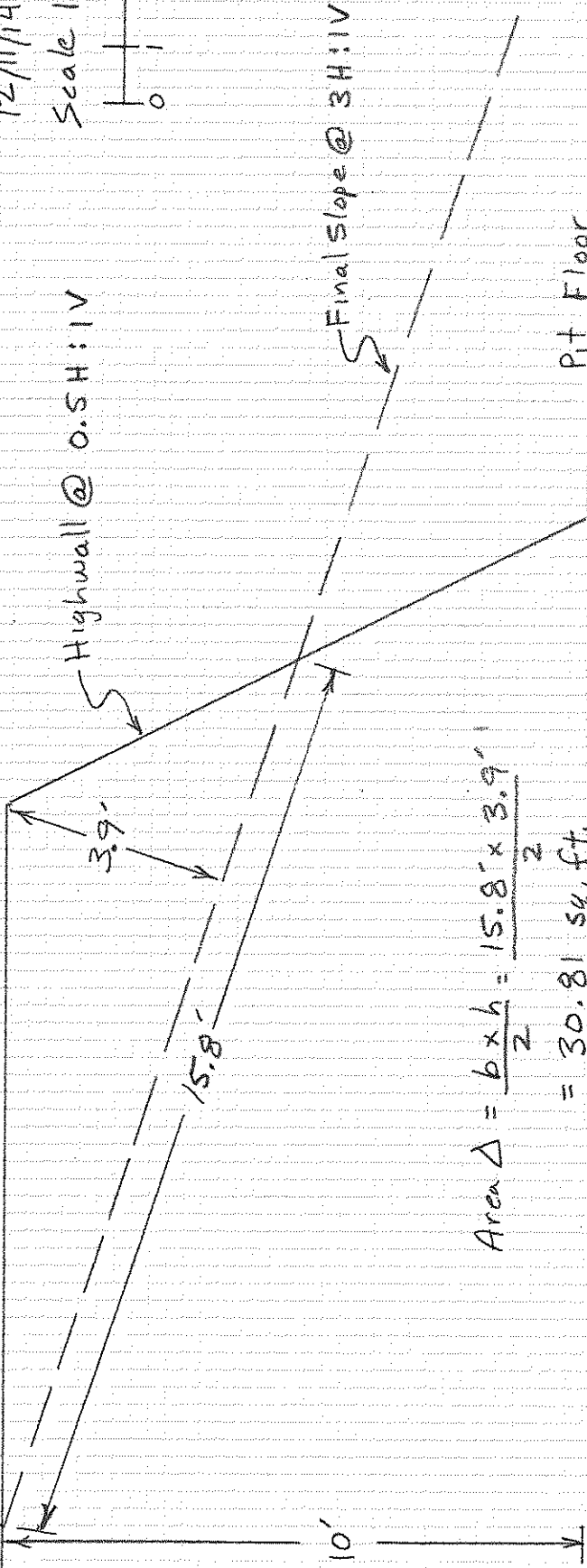
M-1994-108

12/11/14 WHE

Scale 1" = 3'



Native Ground Surface



$$\text{Area } \Delta = \frac{b \times h}{2} = \frac{15.8' \times 3.9'}{2} = 30.81 \text{ sq. ft.}$$

$$\text{Length of highwall} = 2220'$$

$$\text{Material Quantity} = 2220' \times 30.81 \text{ sq. ft.}$$

$$= 68,398.2 \text{ cu. ft.}$$

$$= 2,533.3 \text{ cy}$$

$$\text{Area of Slope} = 2220' \times 31.6' \text{ w}$$

$$= 70,152 \text{ sq. ft.}$$

$$= 1.6 \text{ acres}$$



**BULLDOZER WORK**Task description: Highwall reduction from 2H:1V to 3H:1VSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-003User: WHEAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9UHorsepower: 405Blade Type: UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$81.10	NA
Operating Cost/Hour:	\$143.16	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$262.26Total Fleet Cost/Hour: \$262.26**MATERIAL QUANTITIES**Initial Volume: 771Swell factor: 1.124Loose volume: 866 LCYSource of estimated volume: See attached "Drawing 2"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,222.9 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -10 %Average site altitude: 6,770 feetMaterial weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**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:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4354

Adjusted unit production: 967.85 LCY/hr  
Adjusted fleet production: 967.85 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$0.271/LCY

Total job time: 0.90 Hours  
Total job cost: \$235



# Highwall Reduction from 2H:1V to 3H:1V

Balanced Cut & Fill

Drawing 2

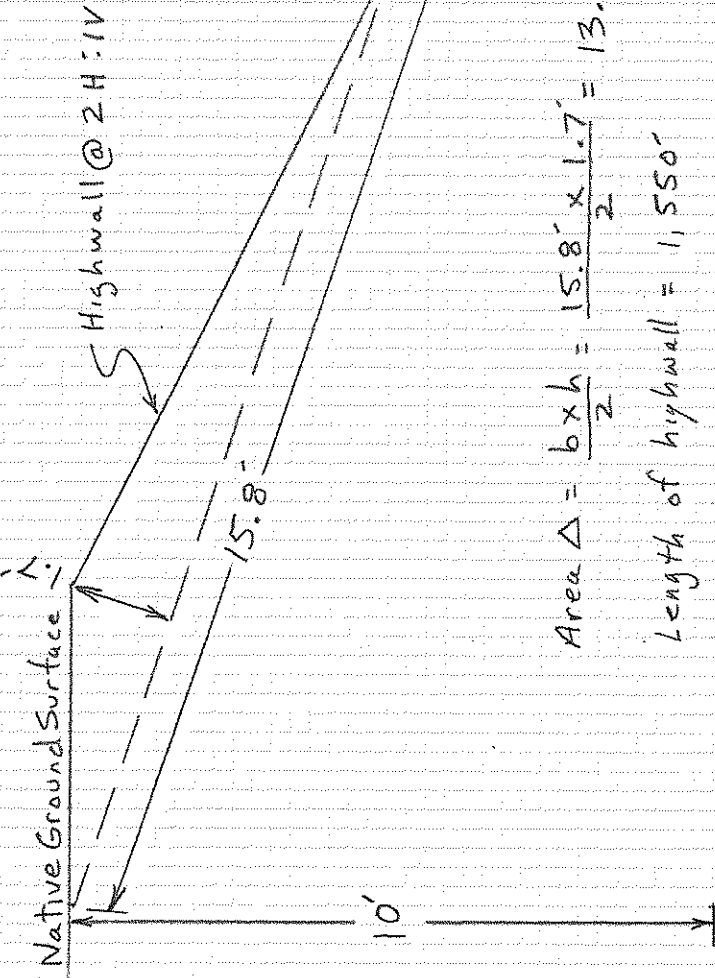
Bond Review

Cedar Point P, t

M-1994-108

12/11/14 WH5

Scale 1" = 3'



$$\text{Area } \Delta = \frac{b \times h}{2} = \frac{15.8' \times 1.7}{2} = 13.43 \text{ sq. ft.}$$

$$\text{Length of highwall} = 1,550'$$

$$\text{Material Quantity} = 1550' \times 13.43 \text{ sq. ft.}$$

$$= 20,816.5 \text{ cu. ft.}$$

$$= 770.98 \text{ cy}$$

$$\text{Area of Slope} = 1550' \times 31.6' \text{ W}$$

$$= 48,980 \text{ sq. ft.}$$

$$= 1.12 \text{ acres}$$



BULLDOZER WORKTask description: Rip and grade 53 acres pit floor areaSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 004State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-004User: WHEAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D9T - 9UHorsepower: 405Blade Type: UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$81.10	NA
Operating Cost/Hour:	\$143.16	100
Ripper op. Cost/Hour:	\$8.91	100
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$271.17Total Fleet Cost/Hour: \$542.33MATERIAL QUANTITIESInitial Volume: 64,130Swell factor: 1.060Loose volume: 67,978 LCYSource of estimated volume: (53ac)(43560sf/ac)(0.75'D) / 27 = 85,506.67 cy 64,130 cySource of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 75 feetUnadjusted hourly production: 1,600.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 6,770 feetMaterial weight: 2,900 lbs/LCYWeight description: Sand and gravel - DryJob 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 568.64 LCY/hr  
Adjusted fleet production: 1137.28 LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.477/LCY

Total job time: 59.77 Hours  
Total job cost: \$32,416



BULLDOZER WORKTask description: Topsoil replacement for 3H:1V slopesSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 005State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-005User: WHEAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D9T - 9UHorsepower: 405Blade Type: UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$81.10	NA
Operating Cost/Hour:	\$143.16	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$262.26Total Fleet Cost/Hour: \$262.26MATERIAL QUANTITIESInitial Volume: 4,033Swell factor: 1.000Loose volume: 4,033 LCYSource of estimated volume: (5ac)(43560sf/ac)(0.50'D) / 27 = ~~6050 cy~~ 4033 cySource of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 75 feetUnadjusted hourly production: 1,600.0 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: -15 %Average site altitude: 6,770 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packedJob 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:	0.800	(FND-RF)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6567

Adjusted unit production: 1,050.72 LCY/hr  
Adjusted fleet production: 1050.72 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)  
Unit cost: \$0.250/LCY

Total job time: 3.84 Hours  
Total job cost: \$1,007



**SCRAPER TEAM WORK**Task description: Topsoil replacement for 50 acres of pit floorSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-006User: WHEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D9T - 9U
-Dump Area:	Cat D9T - 9U
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	NA	50	50	NA	NA
Ownership cost/hour:	\$110.90	NA	\$81.10	\$81.10	NA	NA
Operating cost/hour:	\$243.12	NA	\$71.58	\$71.58	NA	NA
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	NA	NA
Operator cost/hour:	\$33.56	NA	\$38.01	\$38.01	NA	NA
Unit Subtotals:	\$387.59	NA	\$190.68	\$190.68	NA	NA
Number of Units:	2	0	1	1	0	0
Group Subtotals:	Work: \$775.18		Support: \$381.36		Maint:	\$0.00

Total work team cost/hour: \$1,156.54**MATERIAL QUANTITIES**Initial volume: 40,333

CCY

Swell factor: 1.125Loose volume: 45,375

LCY

Source of estimated volume: (50ac)(43560sf/ac)(0.50'D) / 27 = 60,500 cy 40,333 cySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**

Scraper Bowl (volume) Basis:

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>32.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes  
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6770 feet

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

Travel Time:Road Condition: 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	600.00	0.00	5.00	5.00	1867	0.45

Haul Time: 0.45 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	2795	0.39

Return Time: 0.39 minutesTotal Scraper team cycle time: 2.44 minutesAdjusted for job conditions: 1,183.77 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,183.77 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,183.77 LCY/HourUnadjusted unit production/hour: 1,426.23 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 38.33 HoursUnit cost: \$0.977 /LCYTotal job cost: \$44,331



REVEGETATION WORKTask description: Revegetate 50 acres pit floor areaSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 007State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-007User: WHEAgency or organization name: DRMSFERTILIZINGMaterials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.33	\$65.40
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$65.40</b>

Application

Description	Cost /Acre
Truck whirlwind spreader (MEANS 32 01 90.13 0140)	\$22.22
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$22.22</b>

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$98.01
<b>Total Tilling Cost/Acre</b>	<b>\$98.01</b>

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Orchardgrass - Paiute	1.00	12.40	\$2.16
Alfalfa - Ladak (inoculated)	2.00	9.64	\$6.24
Smooth Brome - Manchar	3.25	10.82	\$6.40
Tall Fescue - Fawn E.F.	2.00	10.42	\$2.32
<b>Totals Seed Mix</b>	<b>8.25</b>	<b>43.28</b>	<b>\$17.12</b>

Application

Description	Cost /Acre
Drill seeding (DRMS Cost Data)	\$88.20

Total Seed Application Cost/Acre	\$88.20
----------------------------------	---------

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - Curtail @ 4.0 pt/ac	1.00	ACRE	\$16.24	\$16.24
Total Mulch Materials Cost/Acre				\$16.24

**Application**

Description	Cost /Acre
Weed spray, truck, aquatic area, nox. [DMG]	\$61.49
Total Mulch Application Cost/Acre	\$61.49

**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:	50	Cost /Acre:	\$368.68
Estimated Failure Rate:	25%	Cost /Acre*:	\$368.68
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	\$18,434.00
Reseeding Job Cost:	\$4,608.50
Total Job Cost:	\$23,042
Job Hours:	40.00



**REVEGETATION WORK**Task description: Revegetate 5 acres of 3H:1V slope areasSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108**PROJECT IDENTIFICATION**Task #: 008State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-008User: WHEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.33	\$65.40
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$65.40</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$52.71
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$52.71</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$98.01
<b>Total Tilling Cost/Acre</b>	<b>\$98.01</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Crested Wheatgrass - Hy-Crest	2.50	11.48	\$5.98
Alfalfa - Ladak (inoculated)	2.00	9.64	\$6.24
Russian Wildrye - Vinal	2.00	8.03	\$7.42
Pubescent Wheatgrass - Luna	5.70	11.78	\$12.77
<b>Totals Seed Mix</b>	<b>12.20</b>	<b>40.93</b>	<b>\$32.40</b>

**Application**

Description	Cost /Acre
Drill seeding (DRMS Cost Data)	\$88.20

<b>Total Seed Application Cost/Acre</b>	<b>\$88.20</b>
---	----------------

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - Curtail @ 4.0 pt/ac	1.00	ACRE	\$16.24	\$16.24
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$265.00	\$530.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$546.24</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$65.89
Power mulcher (MEANS 32 91 13.16 0250)	\$86.68
Weed spray, truck, aquatic area, nox. [DMG]	\$61.49
<b>Total Mulch Application Cost/Acre</b>	<b>\$214.06</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres: 5 Cost/Acre: \$1,097.02  
 Estimated Failure Rate: 25% Cost/Acre\*: \$1,097.02  
 \*Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING,MU  
LCHING

Initial Job Cost: \$5,485.10  
 Reseeding Job Cost: \$1,371.28  
 Total Job Cost: \$6,856  
 Job Hours: 8.00



**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: Haul reclamation equipment to and from job siteSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108**PROJECT IDENTIFICATION**Task #: 009State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-009User: WHEAgency 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 - 9U	66.78	\$81.10	\$125.45	2	\$413.09	\$250.90	\$500.00
Cat 637G w/push-pull	59.59	\$110.90	\$125.45	2	\$472.70	\$250.90	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$39.59	\$88.67	2	\$256.51	\$177.34	\$500.00
Power Mulcher (Reinco M90)	6.00	\$7.03	\$88.67	2	\$191.40	\$177.34	\$500.00

Subtotals: **\$1,333.70** **\$856.48** **\$2,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 4x2, 30K GVW	\$32.72	1	\$32.72	\$32.72
Light Duty Pickup, 4x4, 3/4 T.	\$76.24	1	\$76.24	\$76.24

Subtotals: **\$108.96** **\$108.96**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>CORTEZ</u>	
Total one-way travel distance:	<u>18.00</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$8,419.54</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$87.17</u>
'** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.40</u>	<u>0.40</u>
Return Time (Hours):	<u>0.40</u>	<u>0.40</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.80</u>	<u>0.80</u>

**JOB TIME AND COST**

Total job time:	<u>3.60</u>	Hours
-----------------	-------------	-------

Total job cost:	<u>\$8,507</u>
-----------------	----------------