



**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.

MINE NAME: Cedar Point	MINE/PROSPECTING ID#: M-1994-108	MINERAL: Sand and gravel	COUNTY: Montezuma
INSPECTION TYPE: Surety-Related Inspection	INSPECTOR(S): Wallace H. Erickson	INSP. DATE: October 10, 2014	INSP. TIME: 13:00
OPERATOR: Noland Inc	OPERATOR REPRESENTATIVE: Rick Noland	TYPE OF OPERATION: 112c - Construction Regular Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Complete Bond	BOND AMOUNT: \$163,029.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Cloudy	INSPECTOR'S SIGNATURE: <i>Wallace H. Erickson</i>	SIGNATURE DATE: 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----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>Y</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING----- <u>Y</u>	(SF) PROCESSING FACILITIES----- <u>Y</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE----- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION----- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN----- <u>N</u>	(SB) COMPLETE INSP----- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>	(SC) EROSION/SEDIMENTATION----- <u>Y</u>	(RS) RECL PLAN/COMP----- <u>Y</u>
(AT) ACID OR TOXIC MATERIALS----- <u>Y</u>	(OD) OFF-SITE DAMAGE----- <u>Y</u>	(ST) STIPULATIONS----- <u>NA</u>

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.

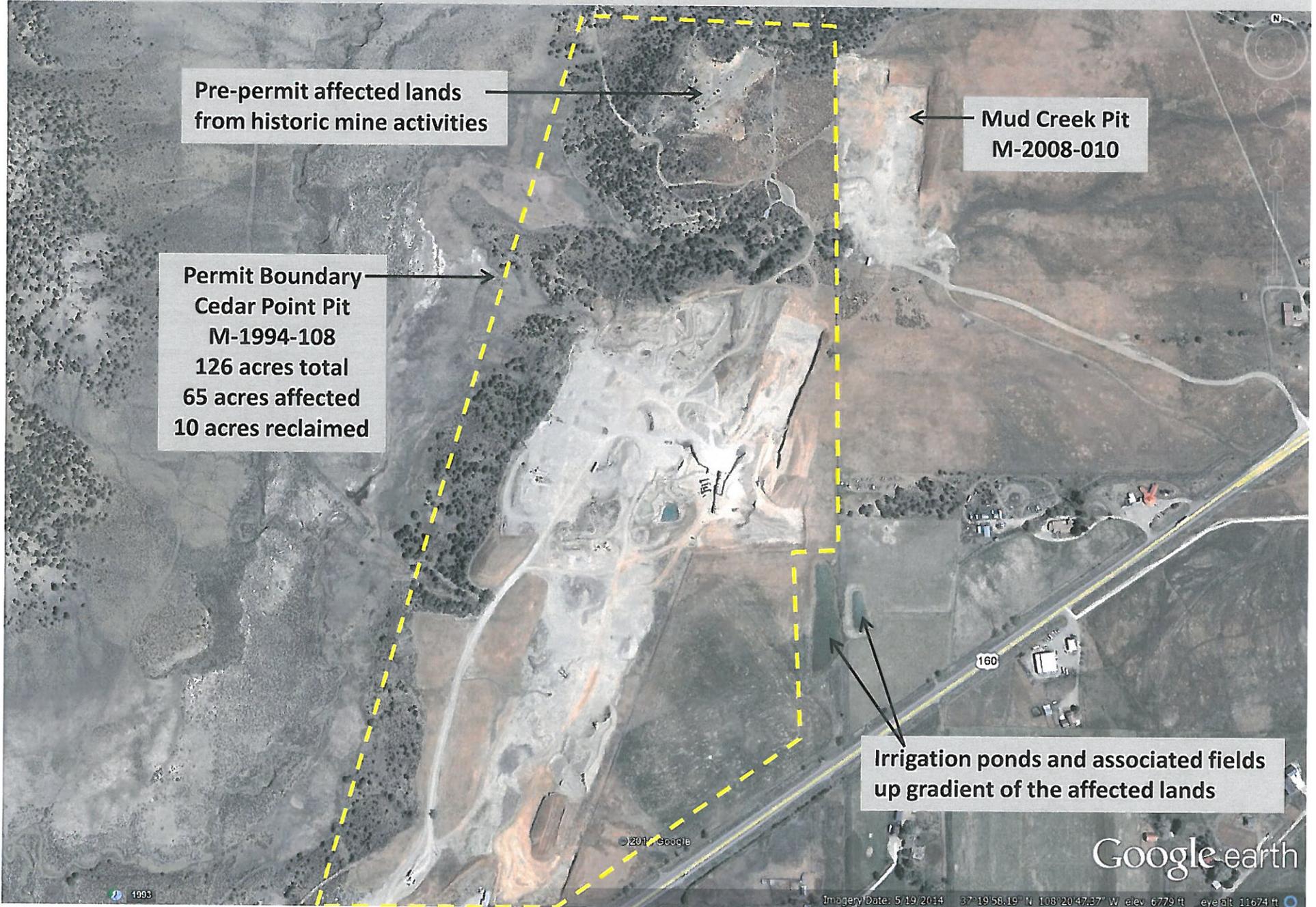
Inspection Contact Address

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

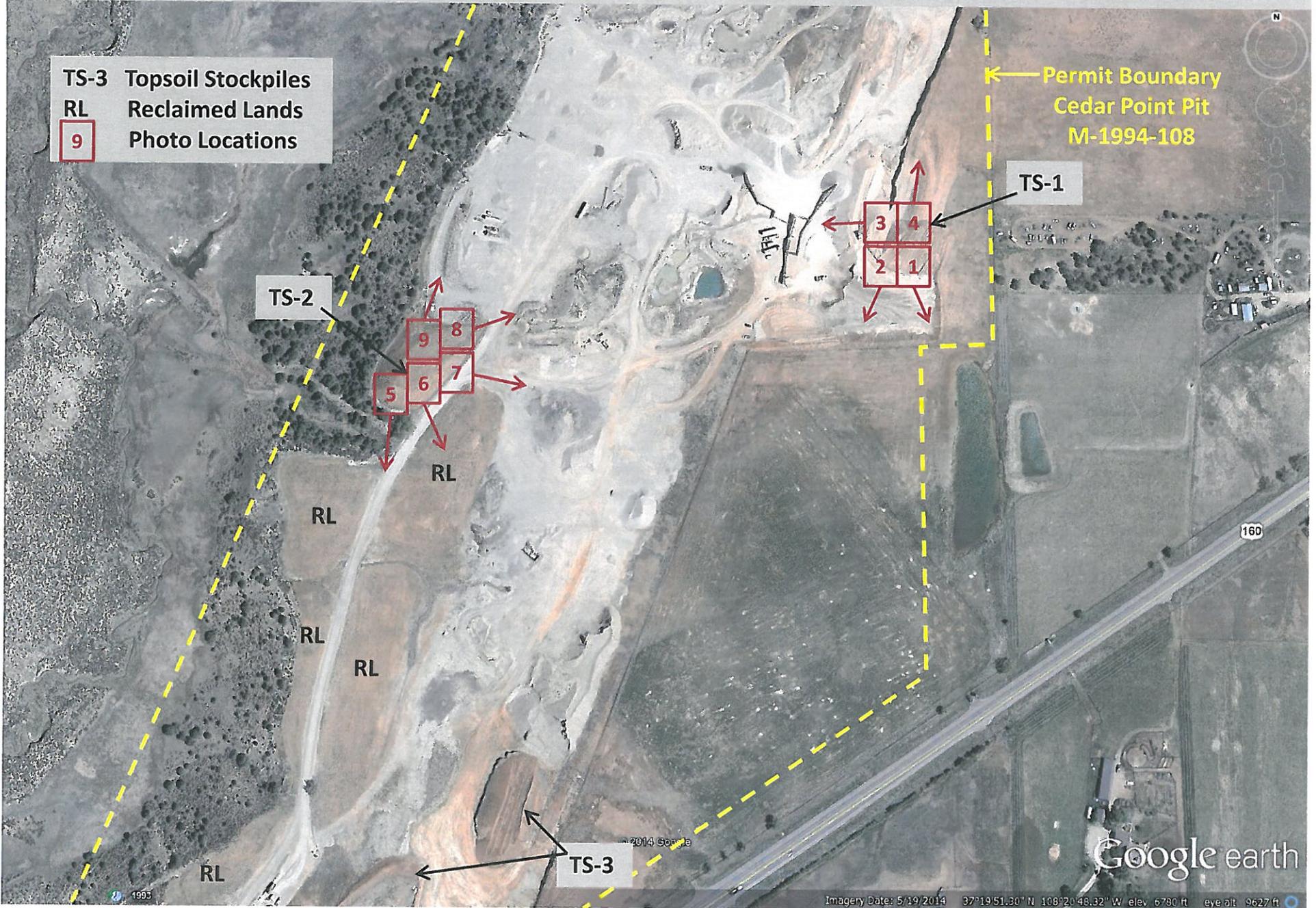
Enclosure: 1) Two images from Google Earth, imagery date May 19, 2014
 2) Nine photographs taken during the inspection
 3) Reclamation cost estimation, dated December 11, 2014, totaling \$157,333.34

ec 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).

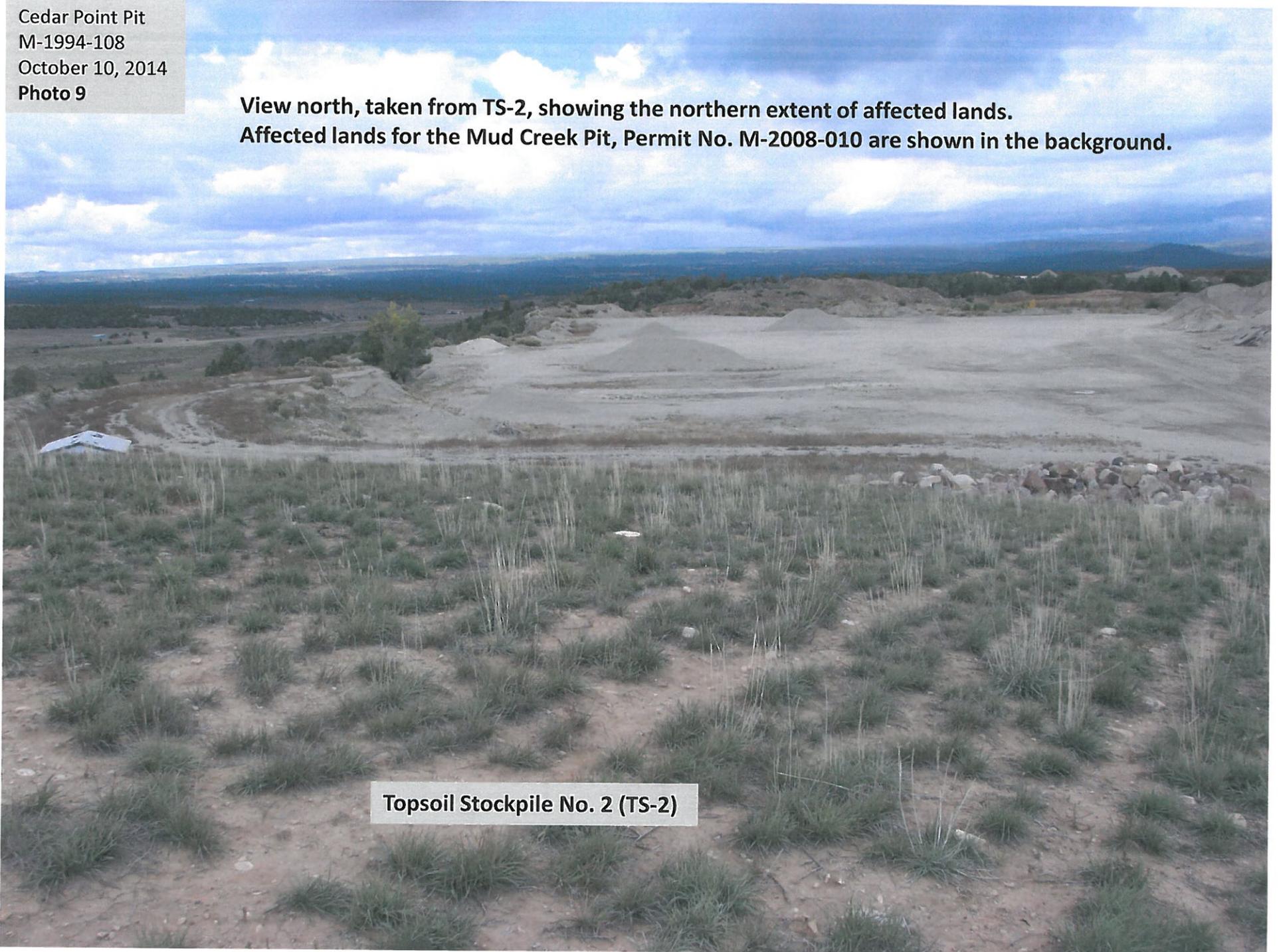


Topsoil Stockpile No. 2 (TS-2)

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
<u>SUBTOTALS:</u>				157.38	\$118,183

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02%	Total =	<u>\$2,387.30</u>
Performance bond: 1.05%	Total =	<u>\$1,240.92</u>
Job superintendent: 78.69 hrs	Total =	<u>\$5,914.34</u>
Profit: 10.00%	Total =	<u>\$11,818.30</u>
	TOTAL O & P =	<u>\$21,360.86</u>
	CONTRACT AMOUNT (direct + O & P) =	<u>\$139,543.86</u>

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): <u>500.00</u>	Total =	<u>500.00</u>
Engineering work and/or contract/bid preparation: <u>7.39%</u>	Total =	<u>\$10,312.29</u>
Reclamation management and/or administration: <u>5.00%</u>		<u>\$6,977.19</u>

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 WORKTask description: Highwall reduction from 0.5H:1V to 3H:1VSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 002State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-002User: 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: 2,533Swell factor: 1.124Loose volume: 2,846 LCYSource of estimated volume: See attached "Drawing 1"Source of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage 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 - 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:	1.225	(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

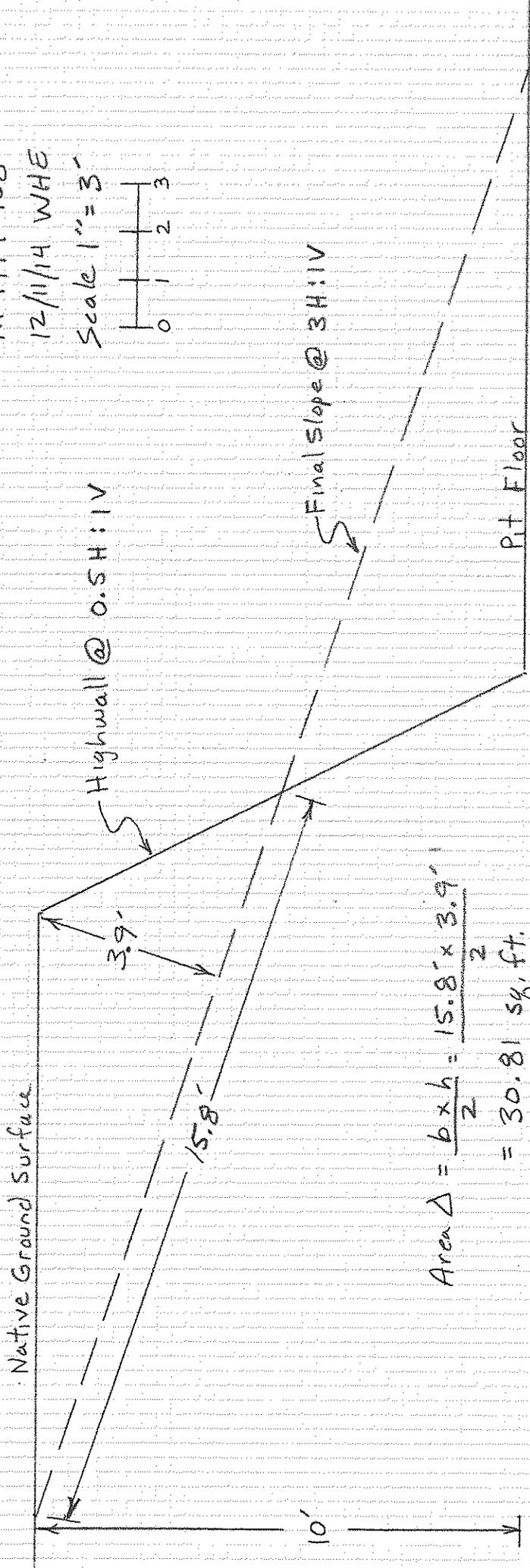
Fleet size: 1 Dozer(s)
Unit cost: \$0.271/LCY

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'



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

Length of highwall = 2220'

Material Quantity = 2220' x 30.81 sq. ft.
= 68,398.2 cu. ft.
= 2,533.3 cy

Area of Slope = 2220' L x 31.6' W
= 70,152 sq. ft.
= 1.6 acres

BULLDOZER WORKTask description: Highwall reduction from 2H:1V to 3H:1VSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 003State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-003User: 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: 771Swell factor: 1.124Loose volume: 866 LCYSource of estimated volume: See attached "Drawing 2"Source of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage 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 - 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:	1.225	(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

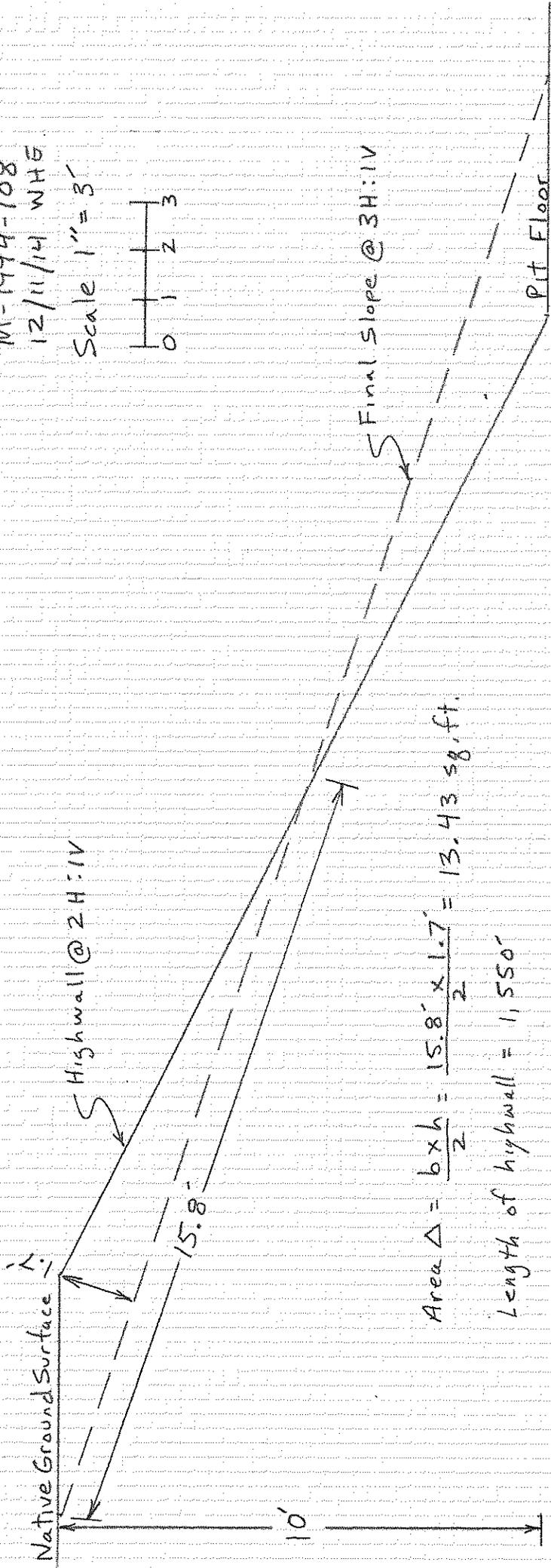
Fleet size: 1 Dozer(s)
Unit cost: \$0.271/LCY

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 Pit
M-1994-108
12/11/14 WH5
Scale 1" = 3'



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

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

$$\begin{aligned} \text{Material Quantity} &= 1550' \times 13.43 \text{ sq. ft.} \\ &= 20,816.5 \text{ cu. ft.} \\ &= 770.98 \text{ cy} \end{aligned}$$

$$\begin{aligned} \text{Area of Slope} &= 1550' \times 31.6' \text{ W} \\ &= 48,980 \text{ sq. ft.} \\ &= 1.12 \text{ acres} \end{aligned}$$

BULLDOZER WORK

Task description: Rip and grade 53 acres pit floor area

Site: Cedar Point Permit Action: Bond review Permit/Job#: M1994108

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
 Date: 12/11/2014 County: Montezuma Filename: M108-004
 User: WHE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9U
 Horsepower: 405
 Blade Type: Universal
 Attachment: 3-shank ripper
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

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

Total unit Cost/Hour: \$271.17
 Total Fleet Cost/Hour: \$542.33

MATERIAL QUANTITIES

Initial Volume: 64,130
 Swell factor: 1.060
 Loose volume: 67,978 LCY

Source of estimated volume: (53ac)(43560sf/ac)(0.75'D) / 27 = 85,506.67 cy 64,130 cy
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
 Unadjusted hourly production: 1,600.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
 Average site altitude: 6,770 feet

Material weight: 2,900 lbs/LCY

Weight description: Sand and gravel - Dry

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>
Job efficiency:	<u>0.830</u>	<u>(1 SHIFT/DAY)</u>

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 WORK

Task description: Topsoil replacement for 3H:1V slopes

Site: Cedar Point

Permit Action: Bond review

Permit/Job#: M1994108

PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 12/11/2014

County: Montezuma

Filename: M108-005

User: WHE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9U

Horsepower: 405

Blade Type: Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data 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: \$262.26

Total Fleet Cost/Hour: \$262.26

MATERIAL QUANTITIES

Initial Volume: 4,033

Swell factor: 1.000

Loose volume: 4,033 LCY

Source of estimated volume: (5ac)(43560sf/ac)(0.50'D) / 27 = ~~6050 cy~~ 4033 cy

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet

Unadjusted hourly production: 1,600.0 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: -15 %

Average site altitude: 6,770 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

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:	0.800	(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 floor

Site: Cedar Point Permit Action: Bond review Permit/Job#: M1994108

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
 Date: 12/11/2014 County: Montezuma Filename: M108-006
 User: WHE

Agency 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: 1.125
 Loose volume: 45,375 LCY

Source of estimated volume: (50ac)(43560sf/ac)(0.50'D) / 27 = 60,500 cy 40333 cy
 Source 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 5.0

Haul 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 minutes

Return 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 minutes

Total Scraper team cycle time: 2.44 minutes

Adjusted for job conditions: 1,183.77 LCY/Hour

Selected Number of Scrapers: 2 Scraper(s)

Adjusted single scraper team (unit) hourly production: 1,183.77 LCY/Hour

Adjusted multiple scraper team (fleet) hourly production: 1,183.77 LCY/Hour

Unadjusted 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 Hours

Unit cost: \$0.977 /LCY

Total 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
			Total Fertilizer Materials Cost/Acre	\$65.40

Application

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

TILLING

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

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
Totals Seed Mix		8.25	\$17.12

Application

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

REVEGETATION WORKTask description: Revegetate 5 acres of 3H:1V slope areasSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 008State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-008User: WHEAgency or organization name: DRMSFERTILIZING**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
			Total Fertilizer Materials Cost/Acre	\$65.40

Application

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

TILLING

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

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
Totals Seed Mix		12.20	\$32.40

Application

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

Total Seed Application Cost/Acre	\$88.20
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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
Total Mulch Materials Cost/Acre				\$546.24

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	
Total Mulch Application Cost/Acre		\$214.06

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:	5	Cost /Acre:	\$1,097.02
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,097.02
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$5,485.10		
Reseeding Job Cost:	\$1,371.28		
Total Job Cost:	\$6,856		
Job Hours:	8.00		

EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: Haul reclamation equipment to and from job siteSite: Cedar PointPermit Action: Bond reviewPermit/Job#: M1994108PROJECT IDENTIFICATIONTask #: 009State: ColoradoAbbreviation: NoneDate: 12/11/2014County: MontezumaFilename: M108-009User: WHEAgency or organization name: DRMSEQUIPMENT TRANSPORT RIG COSTShift 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:

<u>Available Rig Capacities</u>	<u>0-25 Tons</u>	<u>26-50 Tons</u>	<u>51+ Tons</u>
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:

<u>Machine Description</u>	<u>Weight/ Unit (TONS)</u>	<u>Owner ship Cost/hr/ unit</u>	<u>Haul Rig Cost/hr/unit</u>	<u>Fleet Size</u>	<u>Haul Trip Cost/hr/ fleet</u>	<u>Return Trip Cost/hr/ fleet</u>	<u>DOT Permit Cost/ fleet</u>
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:

<u>Machine Description</u>	<u>Total Cost/hr/ unit</u>	<u>Fleet Size</u>	<u>Haul Trip Cost/hr/ fleet</u>	<u>Return Trip Cost/hr/ fleet</u>
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):	0.40	0.40
Return Time (Hours):	0.40	0.40
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.80	0.80

JOB TIME AND COST

Total job time: 3.60 Hours

Total job cost: \$8,507