




## 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> Bollish Pit #2	<b>MINE/PROSPECTING ID#:</b> M-2007-013	<b>MINERAL:</b> Sand, gravel and boron for construction	<b>COUNTY:</b> Logan
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Jared L. Ebert	<b>INSP. DATE:</b> December 19, 2016	<b>INSP. TIME:</b> 09:30
<b>OPERATOR:</b> McAtee Construction Company	<b>OPERATOR REPRESENTATIVE:</b> Darren Gebhart	<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> \$24,000.00
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> January 3, 2017

**The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.**

**INSPECTION TOPIC:** Signs & Markers

**PROBLEM/POSSIBLE VIOLATION:** Problem: The mine identification sign was not posted at the entrance of the mine site. This is a problem for failure to post a mine identification sign as required by Section 3.1.12(1) of the rule.

**CORRECTIVE ACTIONS:** The operator shall, at the entrance of the mine site, post a sign which shall be clearly visible from the access road with the following: the name of the operator, a statement that a reclamation permit for the operation has been issued by the Colorado Mined Land Reclamation Board; and the permit number. The operator shall submit photo documentation that a proper sign has been posted by the corrective action date.

**CORRECTIVE ACTION DUE DATE:** 2/07/17

## **OBSERVATIONS**

This was a monitoring inspection of the Bollish Pit #2, DRMS permit number M-2007-013, operated by McAtee Construction Company. I, Jared Ebert of the Colorado Division of Reclamation, Mining and Safety (Division or Office) conducted the inspection. Mr. Darren Gebhart with McAtee Construction Company accompanied me during the inspection. The weather was clear and cool at the time of the inspection.

### **Backfilling and Grading:**

The site consists of a pit excavation with the pit daylighting to the northwest. The operator is mining at a near vertical slope. The highwall was measured to be about 840 feet in length and is about 25 feet in height.

### **Financial Warranty:**

The reclamation cost estimate was last calculated in 2007 when the permit was applied for. In accordance with Rule 4.2.1(2), the Division has reviewed the estimated cost to reclaim the site and found that the current bond of \$24,000 is an inadequate amount. The Division calculated the cost to reclaim the affected area of 9 acres to be \$34,446. Attached for the Operator review, is a copy of the reclamation cost summary. **By January 20, 2017, the Division will issue a Surety Increase (SI) revision; please contact the Division prior to January 20, 2017 to discuss any questions regarding the cost estimate. When the SI is issued, the Operator will then have 60 days to submit the additional financial warranty.**

### **Hydrologic Balance:**

Overall, the site appears stable. The sediment generated from the excavation appears to stay within the pit area.

### **Gen. Compliance With Mine Plan:**

The mining operation appears to be in general compliance with the mining plan. The excavation is near the southern boundary of the permit area. A portion of the excavation near the southeast corner of the pit is partially graded. The operator should keep in mind they are required to mine at the required 3:1 slope as they near the 15 foot setback from the permit boundary.

### **Off-site Damage:**

The permit boundary was marked with metal posts and the affected area appears to be within this boundary.

### **Roads:**

The access road to the site was graded and maintained.

### **Signs and Markers:**

The mine identification sign was not posted at the entrance of the site. This issue is cited as a problem at the beginning of this report.

### **Topsoil:**

The topsoil stockpile was stable and vegetated.

## **PHOTOGRAPHS**



Figure 1. From the access road looking northeast.



Figure 2. From the access road looking north.

### GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS----- <u>NA</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>NA</u>	(SF) PROCESSING FACILITIES----- <u>NA</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION---- <u>NA</u>
(SM) SIGNS AND MARKERS----- <u>PB</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(CI) COMPLETE INSP---- <u>NA</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>NA</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>NA</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</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

#### Inspection Contact Address

Darren Gebhart  
McAtee Construction Company  
P.O. Box 1908  
Sterling, CO 80751

Enclosure: 1.) *CIRCES Reclamation Cost Estimate*

CC: Darren Gebhard via e-mail

## COST SUMMARY WORK

Task description: Cost Summary

Site: Bollish Pit #2 Permit Action: Dec. 2016 Inspection Permit/Job#: M2007013

### PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None  
Date: 1/3/2017 County: Logan Filename: M013-000  
User: JLE

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill 840 foot Vertical Highwall	DOZER	2	19.28	\$9,704.00
002	Spread Topsoil	SCRAPER1	1	8.12	\$5,552.00
003	Revegetation of Affected Area	REVEGE	1	4.50	\$6,782.00
004	Mobilization	MOBILIZE	1	2.58	\$5,840.00
<b><u>SUBTOTALS:</u></b>				<b>34.48</b>	<b>\$27,878</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$563.14
Performance bond:	1.05	Total =	\$292.72
Job superintendent:	17.24	Total =	\$1,284.04
Profit:	10.00	Total =	\$2,787.80

TOTAL O & P = \$4,927.70

CONTRACT AMOUNT (direct + O & P) = \$32,805.70

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation:	<u>0.00</u>	Total =	<u>\$0.00</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$1,640.29</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$6,567.99

**TOTAL BOND AMOUNT (direct + indirect) = \$34,445.99**

## BULLDOZER WORK

Task description: Backfill 840 foot Vertical Highwall

Site: Bollish Pit #2

Permit Action: Dec. 2016 Inspection

Permit/Job#: M2007013

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M013-001

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: 3-shank ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$97.48	NA
Operating Cost/Hour:	\$103.60	100
Ripper own. Cost/Hour:	\$10.74	NA
Ripper op. Cost/Hour:	\$0.99	15
Operator Cost/Hour:	\$38.89	NA
Total unit Cost/Hour:	\$251.70	
Total Fleet Cost/Hour:	<b>\$503.40</b>	

### MATERIAL QUANTITIES

Initial Volume: 29,167

Swell factor: 1.180

Loose volume: **34,417** LCY

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

Source of estimated swell  
factor: Cat Handbook

### HOURLY PRODUCTION

Average push distance: 80 feet

Unadjusted hourly  
production: 1,460.1 LCY/hr

Materials consistency  
description: Compacted fill or embankment 0.9

Average push  
gradient: -30 %

Average site altitude: 4,100 feet

Material weight: 4,050 lbs/LCY

Weight description: Sand and clay - Compacted

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.568	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6114

Adjusted unit  
production: 892.71 LCY/hr  
Adjusted fleet  
production: **1785.42** LCY/hr

**JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.282/LCY

Total job time: **19.28** Hours  
Total job cost: **\$9,704**

## SCRAPER TEAM WORK

Task description: Spread Topsoil

Site: Bollish Pit #2

Permit Action: Dec. 2016 Inspection

Permit/Job#: M2007013

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M013-002

User: JLE

Agency or organization name: DRMS

### HOURLY EQUIPMENT

COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 627G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 140M
-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	NA	NA	100	NA
Ownership cost/hour:	\$105.55	NA	NA	NA	\$36.00	NA
Operating cost/hour:	\$146.13	NA	NA	NA	\$40.02	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	\$0.00	NA
Ripper op. cost/hour:	NA	NA	NA	NA	\$0.00	NA
Operator cost/hour:	\$34.24	NA	NA	NA	\$35.83	NA
Unit Subtotals:	\$285.92	NA	NA	NA	\$111.85	NA
Number of Units:	2	0	0	0	1	0
Group Subtotals:	Work:	\$571.84	Support:	\$0.00	Maint:	\$111.85

Total work team cost/hour: **\$683.69**

### MATERIAL QUANTITIES

Initial volume: 7,260

CCY

Swell factor: 1.000

Loose volume: **7,260**

LCY

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

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<b><u>18.85</u></b>	LCY



Cycle Time:

Scraper Loading Time: 0.90 Minutes

Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4100 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, 1" tire penetration 4.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	4.00	4.00	2665	0.33

Haul Time: 0.33 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	4.00	4.00	2849	0.27

Return Time: 0.27 minutes

Total Scraper team cycle time: 2.10 minutes

Adjusted for job conditions: 894.03 LCY/Hour

Selected Number of Scrapers: 2 Scraper(s)

Adjusted single scraper team (unit) hourly production: 894.03 LCY/Hour

Adjusted multiple scraper team (fleet) hourly production: 894.03 LCY/Hour

Unadjusted unit production/hour: 1,077.14 LCY/Hour

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

**JOB TIME AND COST**

Fleet size: 1 Team(s)

Total job time: 8.12 Hours

Unit cost: \$0.765 /LCY

Total job cost: \$5,552

## REVEGETATION WORK

Task description: Revegetation of Affected Area

Site: Bollich Pit #2

Permit Action: Dec. 2016 Inspection

Permit/Job#: M2007013

### PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M013-003

User: JLE

Agency or organization name: DRMS

### FERTILIZING

#### **Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, 43.56 tons/ac. (MEANS 32 91 13.23 4400)	0.07	acre	\$3,944.60	\$276.12
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$276.12</b>

#### **Application**

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	\$60.55
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$60.55</b>

### TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$88.76
<b>Total Tilling Cost/Acre</b>	<b>\$88.76</b>

### SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Switchgrass - Blackwell	0.20	1.79	\$1.08
Prairie Clover, Purple - Kaneb	0.20	1.37	\$6.62
Little Bluestem - Pastura	0.70	4.18	\$11.09
Sideoats Grama - Vaughn	1.10	3.61	\$12.39
Western Wheatgrass - Arriba	1.60	4.04	\$5.90
Needlegrass, Green - Lodorm	0.80	3.32	\$4.32
<b>Totals Seed Mix</b>	<b>4.60</b>	<b>18.31</b>	<b>\$41.40</b>

#### **Application**

Description	Cost /Acre
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Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

### **MULCHING and MISCELLANEOUS**

#### **Materials**

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

#### **Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	9	Cost /Acre:	\$698.83
Estimated Failure Rate:	20%	Cost /Acre*:	\$273.40
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	<b>\$6,289.47</b>
Reseeding Job Cost:	<b>\$492.12</b>
Total Job Cost:	<b>\$6,782</b>
Job Hours:	<b>4.50</b>

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization**

Site: **Bollish Pit #2**

Permit Action: Dec. 2016 Inspection

Permit/Job#: M2007013

### PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 1/3/2017

County: Logan

Filename: M013-004

User: JLE

Agency or organization name: DRMS

### EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day

Cost Data Source: CRG Data

Truck 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 - 9SU	60.01	\$97.48	\$125.45	2	\$445.86	\$250.90	\$500.00
Cat 627G w/push-pull	43.48	\$105.55	\$117.55	2	\$446.20	\$235.10	\$500.00
CAT 140M	16.68	\$36.00	\$88.67	1	\$124.67	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$30.65	\$88.67	1	\$119.32	\$88.67	\$250.00

Subtotals: **\$1,136.05** **\$663.34** **\$1,500.00**

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$33.81	1	\$33.81	\$33.81
Fuel Tanker, 4x2, 170 HP	\$56.19	1	\$56.19	\$56.19
Lube Truck, 4x2, 170 HP	\$61.93	1	\$61.93	\$61.93

Subtotals: **\$151.93** **\$151.93**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: STERLING

Total one-way travel distance: 8.00 miles

Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost \* \$5,795.56

\* two round trips with haul rig:

Total Roadable Mob/Demob Cost \*\* \$44.20

\*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.15	0.15
Return Time (Hours):	0.15	0.15
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.29	0.29

**JOB TIME AND COST**

Total job time: 2.58 Hours

Total job cost: \$5,840