



**COLORADO**  
Division of Reclamation,  
Mining and Safety  
Department of Natural Resources

April 14, 2020

Cameron Mang  
SEMA Construction, Inc.  
7353 S Eagle St  
Centennial, CO 80112

**Re: Diehl Borrow Pit, Permit No. M-2018-054, Technical Revision No. 1 (TR-01), Adequacy Review No. 2**

Mr. Mang:

On April 9, 2020, the Division of Reclamation, Mining and Safety (Division) received your response to the Division's preliminary adequacy review sent on April 6, 2020 regarding Technical Revision No. 1 (TR-01).

After reviewing the materials submitted, the Division has identified the following adequacy item that must be addressed before an approval of TR-01 can be issued:

- 1) Your response states that final reclamation of the two access roads will include gravel removal, replacement of topsoil, and revegetation of these areas. The current financial warranty includes costs for retopsoiling and revegetating the areas disturbed by the roads, but does not include costs for removing gravel (see attached bond estimate). Therefore, please provide an updated reclamation bond estimate that includes costs for gravel removal from the two access roads once mining is complete.

This completes the Division's 2<sup>nd</sup> adequacy review of the materials submitted for TR-01. The decision date for TR-01 is currently set for **April 29, 2020**. If additional time is needed to address the adequacy item(s), an extension request must be received by our office prior to the decision date.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).

Sincerely,

Amy Eschberger  
Environmental Protection Specialist

Encl: Division's reclamation bond estimate

CC: Michael Cunningham, DRMS



## COST SUMMARY WORK

Task description: Cost Summary

Site: Diehl Borrow Pit Permit Action: 111c app bond estimate

Permit/Job#: M2018054

### PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None  
Date: 10/29/2018 County: Larimer Filename: M054-000  
User: AME

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Rip pit floor, stockpiling areas, and haul roads	RIPPER	1	37.94	\$6,845.00
002	Replace 6 inches topsoil on 26.95 acres	SCRAPER1	1	42.43	\$18,924.00
003	Revegetate 26.95 acres to rangeland	REVEGE	1	26.00	\$42,304.00
004	Mobilization/Demobilization	MOBILIZE	1	3.73	\$2,492.00
<b><u>SUBTOTALS:</u></b>				<b>110.1</b>	<b>\$70,565</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$1,425.41
Performance bond:	1.05	Total =	\$740.93
Job superintendent:	50.00	Total =	\$3,652.50
Profit:	10.00	Total =	\$7,056.50

TOTAL O & P = \$12,875.34

CONTRACT AMOUNT (direct + O & P) = \$83,440.34

#### 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>0.00</u>	Total =	<u>\$0.00</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$4,172.02</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$17,547.36

**TOTAL BOND AMOUNT (direct + indirect) = \$88,112.36**

## BULLDOZER RIPPING WORK

Task description: Rip pit floor, stockpiling areas, and haul roads

Site: Diehl Borrow Pit Permit Action: 111c app bond estimate Permit/Job#: M2018054

### PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None  
Date: 10/29/2018 County: Larimer Filename: M054-001  
User: AME

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D7R DS Series II LGP Horsepower: 240  
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$66.14	NA
Operating Cost/Hour:	\$63.91	100
Ripper Ownership Cost/Hour:	\$6.02	NA
Ripper Operating Cost/Hour:	\$4.12	100
Operator Cost/Hour:	\$40.23	NA
Total Unit Cost/Hour:	\$180.41	
Total Fleet Cost/Hour:	<b>\$180.41</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 24.00 acres Rip Depth (ft): 2.00 Volume: 77,440 BCY or CCY

Source of estimated quantity: Permit application

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth:	<u>2.45</u>	mph
Average Ripping Width:	<u>6.50</u>	degrees
Average Ripping Length:	<u>650.00</u>	feet
Average Dozer Speed:	<u>88.00</u>	feet
Average Maneuver Time:	<u>0.25</u>	feet
Production per unit area:	<u>0.762</u>	acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.762</u>	Acres/hr
Site Altitude:	<u>5,550</u>	feet
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Adjusted Hourly Unit Production: 0.63 Acres/hr  
Adjusted Hourly Fleet Production: 0.63 Acres/hr

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 37.94 Hours

Unit cost: \$285.219 Per acre Total job cost: \$6,845

**SCRAPER TEAM WORK**Task description: **Replace 6 inches topsoil on 26.95 acres**

Site: **Diehl Borrow Pit** Permit Action: 111c app bond estimate Permit/Job#: M2018054

**PROJECT IDENTIFICATION**

Task #: 002 State: Colorado Abbreviation: None  
 Date: 10/29/2018 County: Larimer Filename: M054-002  
 User: AME

Agency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 631G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D7R DS Series II LGP
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	NA	100	NA	NA
Ownership cost/hour:	\$110.85	NA	NA	\$66.14	NA	NA
Operating cost/hour:	\$119.02	NA	NA	\$63.91	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	NA	NA	\$0.00	NA	NA
Operator cost/hour:	\$45.84	NA	NA	\$40.23	NA	NA
Unit Subtotals:	\$275.71	NA	NA	\$170.28	NA	NA
Number of Units:	1	0	0	1	0	0
Group Subtotals:	Work: \$275.71		Support: \$170.28		Maint:	\$0.00

Total work team cost/hour: **\$445.99****MATERIAL QUANTITIES**

Initial volume: 21,740 CCY Swell factor: 1.215  
 Loose volume: 26,414 LCY

Source of estimated volume: Permit application  
 Source of estimated swell factor: Cat Handbook

**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY Struck Volume: 24.00 LCY  
 Material description: Top Soil Heaped Volume: 34.00 LCY  
 Rated Payload: 81,600 pounds Average Volume: 29.00 LCY  
 Payload Capacity: 51.00 LCY Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.70 MinutesJob Condition Correction:

Site Altitude: 5550 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	2.00	5.00	7.00	962	0.45

Haul Time: 0.45 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	-2.00	5.00	3.00	2890	0.37

Return Time: 0.37 minutesTotal Scraper team cycle time: 2.32 minutesAdjusted for job conditions: 622.50 LCY/HourSelected Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 622.50 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 622.50 LCY/HourUnadjusted unit production/hour: 750.00 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 42.43 HoursUnit cost: \$0.716 /LCYTotal job cost: \$18,924

**REVEGETATION WORK**Task description: Revegetate 26.95 acres to rangelandSite: Diehl Borrow Pit Permit Action: 111c app bond estimatePermit/Job#: M2018054**PROJECT IDENTIFICATION**

Task #: 003 State: Colorado Abbreviation: None  
 Date: 10/29/2018 County: Larimer Filename: M054-003  
 User: AME

Agency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	121.00	pound	\$0.34	\$41.14
Triple superphosphate, 0-46-0	87.00	pound	\$0.44	\$38.28
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$79.42</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$34.72
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$34.72</b>

**TILLING**

Description	Cost /Acre
Subsoil scarification, (MEANS 32 91 13.23 3100)	\$191.66
<b>Total Tilling Cost/Acre</b>	<b>\$191.66</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Big Bluestem - Kaw	2.50	7.46	\$29.23
Alkali Sacaton	2.00	78.05	\$58.00
Switchgrass - Nebraska 28	2.50	22.33	\$27.53
Blue Grama - Native	0.75	12.24	\$11.14
Canada Wildrye	2.50	6.60	\$27.10
Prairie Clover, Purple - Kaneb	0.01	0.03	\$0.29
Sand Bluestem - Woodward	2.50	6.49	\$65.28
Western Wheatgrass - Barton	3.00	7.58	\$23.31
Prairie Sandreed - Goshen	2.00	12.53	\$21.46

<b>Totals Seed Mix</b>	17.76	153.31	<b>\$263.32</b>
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**Application**

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

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

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$576.00</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$68.78
<b>Total Mulch Application Cost/Acre</b>	<b>\$68.78</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres: 26.95                      Cost /Acre: \$1,445.90  
 Estimated Failure Rate: 25%                      Cost /Acre\*: \$495.32  
 \*Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$38,967.01**  
 Reseeding Job Cost: **\$3,337.22**  
 Total Job Cost: **\$42,304**  
 Job Hours: **26.00**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization/Demobilization**

Site: **Diehl Borrow Pit** Permit Action: **111c app bond estimate** Permit/Job#: **M2018054**

**PROJECT IDENTIFICATION**

Task #: **004** State: **Colorado** Abbreviation: **None**  
 Date: **10/29/2018** County: **Larimer** Filename: **M054-004**  
 User: **AME**

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 D7R DS Series II LGP	38.49	\$72.16	\$117.55	1	\$189.71	\$117.55	\$250.00
Cat 631G	52.50	\$110.85	\$125.45	1	\$236.30	\$125.45	\$250.00

Subtotals: **\$426.01** **\$243.00** **\$500.00**

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Drill/Broadcast Seeder with Tractor	\$36.08	1	\$36.08	\$36.08

Subtotals: **\$36.08** **\$36.08**



**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>FORT COLLINS</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>60.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,468.43</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$24.05</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.33</u>	<u>0.33</u>
Return Time (Hours):	<u>0.33</u>	<u>0.33</u>
Loading Time (Hours):	<u>0.60</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.60</u>	<u>NA</u>
Subtotals:	<u>1.87</u>	<u>0.67</u>

**JOB TIME AND COST**

Total job time:	<u>3.73</u>	Hours
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Total job cost:	<u>\$2,492</u>
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