



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 2nd 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.

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
<u>SUBTOTALS:</u>				110.1	\$70,565

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02	Total =	<u>\$1,425.41</u>
Performance bond: 1.05	Total =	<u>\$740.93</u>
Job superintendent: 50.00	Total =	<u>\$3,652.50</u>
Profit: 10.00	Total =	<u>\$7,056.50</u>
TOTAL O & P =		<u>\$12,875.34</u>
CONTRACT AMOUNT (direct + O & P) =		<u>\$83,440.34</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>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 = <u>\$0.00</u>

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

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

Job Condition Correction Factors

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

		<u>Scraper Bowl (volume) Basis:</u>	
Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u> LCY
Material description:	<u>Top Soil</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>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u> LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes

Maneuver and Spread Time: 0.70 Minutes

Job 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 5.0

Haul 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 minutes

Return 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 minutes

Total Scraper team cycle time: 2.32 minutes

Adjusted for job conditions: 622.50 LCY/Hour

Selected Number of Scrapers: 1 Scraper(s)

Adjusted single scraper team (unit) hourly production: 622.50 LCY/Hour

Adjusted multiple scraper team (fleet) hourly production: 622.50 LCY/Hour

Unadjusted 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 Hours

Unit cost: \$0.716 /LCY

Total job cost: \$18,924

REVEGETATION WORKTask description: Revegetate 26.95 acres to rangeland

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

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
			Total Fertilizer Materials Cost/Acre	\$79.42

Application

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

TILLING

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

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

Totals Seed Mix	17.76	153.31	\$263.32
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Application

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

MULCHING and MISCELLANEOUS

Materials

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

Application

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

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: <u>26.95</u>	Cost /Acre: <u>\$1,445.90</u>
Estimated Failure Rate: <u>25%</u>	Cost /Acre*: <u>\$495.32</u>
*Selected Replanting Work Items: <u>SEEDING</u>	
Initial Job Cost: <u>\$38,967.01</u>	
Reseeding Job Cost: <u>\$3,337.22</u>	
Total Job Cost: <u>\$42,304</u>	
Job Hours: <u>26.00</u>	

EQUIPMENT MOBILIZATION/DEMobilIZATIONTask description: Mobilization/Demobilization

Permit Action: 11c app bond
 Site: Diehl Borrow Pit 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: DRMSEQUIPMENT 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:

<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 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:

<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>
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: FORT COLLINS
 Total one-way travel distance: 20.00 miles
 Average Travel Speed: 60.00 mph

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

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time: 3.73 Hours

Total job cost: \$2,492