



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

October 13, 2023

H. Bruce Humphries
Regulatory Permits Management Inc.
25049 E. Alder Dr.
Aurora, CO 80016
hlhumphries2@comcast.net

Re: Dill Pit, Permit No. M-2009-077, Technical Revision No. 1 (TR-01), Adequacy Review No. 1

Dear Mr. Humphries:

On October 10, 2023, the Division of Reclamation Mining and Safety (Division) received your Technical Revision (TR-01) to revise the approved seed mixture. After reviewing the materials submitted, the Division has the following comments:

- 1) The Division found the proposed seed mixture adequate to complete final reclamation. This affects the revegetation task in the bond calculation. The previous cost to complete this task was calculated to be \$18,316. The new cost after applying the proposed seed mix, is \$16,464. This reduced the total required financial warranty from \$50,521 to \$48,322. Please review the enclosed bond estimate with the updated revegetation task.

The current required financial warranty based on the Division's revised bond estimate is **\$48,322**. Please provide any comments you might have on the enclosed bond estimate, or submit a statement that you have no further comments. If the operator has no further comments, the Technical Revision will be approved, and the operator will have 60 days from the approval date to post the additional required financial warranty.

This completes the Divisions 1st adequacy review of the materials submitted in TR-01. The decision date for TR-01 is set for **November 9, 2023**. If additional time is needed to respond, an extension request must be received by our office prior to the decision date.

If you require additional information, or have questions or concerns, please feel free to contact me by phone at (303) 866-3567, ext. 8147, or by email at joel.renfro@state.co.us.

Sincerely,

Joel Renfro
Environmental Protection Specialist



Encl: Division's bond estimate with updated revegetation task

Cc: Tracy and Ed Grimes
Amy Eschberger, DRMS

COST SUMMARY WORK

Task description: Current disturbance estimation

Site: Dill Pit

Permit Action: 2023 Calculation

Permit/Job#: M2009077

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 7/19/2023

County: Elbert

Filename: M077-000

User: JR2

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade pit slopes from 2.5H:1V to 3H:1V	DOZER	1	2.14	\$914
001b	Grade W pit slopes from 3H:1V to 4H:1V	DOZER	1	6.42	\$2,739
002	Replace 4.5 in topsoil on 14.5 acres	DOZER	1	12.75	\$5,441
003	Rip compacted areas - 8.5 acres	RIPPER	1	13.24	\$5,936
004	Revegetate 14.5 acres	REVEGE	1	7.25	\$16,464
004b	Mulch 4.3 acres (excluding pit floor and W pit wall)	REVEGE	1	2.00	\$4,016
005	Mobilization/Demobilization	MOBILIZE	1	6.30	\$3,750
<u>SUBTOTALS:</u>				50.1	\$39,260

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$793

Performance bond: 1.05

Total = \$412

Job superintendent: 25.05

Total = \$1,630

Profit: 10.00

Total = \$3,926

TOTAL O & P = \$6,761

CONTRACT AMOUNT (direct + O & P) = \$46,021

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$0

Total = \$0

Engineering work and/or contract/bid preparation: 0.00

Total = \$0

Reclamation management and/or administration: 5.00

\$2,301

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$9,062

TOTAL BOND AMOUNT (direct + indirect) = \$48,322

BULLDOZER WORKTask description: Grade pit slopes from 2.5H:1V to 3H:1VSite: Dill Pit Permit Action: 2023 Calculation Permit/Job#: M2009077**PROJECT IDENTIFICATION**

Task #: 001 State: Colorado Abbreviation: None
 Date: 7/19/2023 County: Elbert Filename: M077-001
 User: JR2

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$241.38</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$143.92</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$426.60
 Total Fleet Cost/Hour: **\$426.60**

MATERIAL QUANTITIES

Initial Volume: 1,390
 Swell factor: 1.250
 Loose volume: **1,738 LCY**

Source of estimated volume: 1500 ft L x 20 ft H, cut and fill
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 60 feet
 Unadjusted hourly production: 1,246.9 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
 Average site altitude: 5,700 feet

Material weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**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>1.200</u>	<u>(SLOT)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6507

Adjusted unit production: 811.36 LCY/hr

Adjusted fleet production: **811.36** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.526/LCY

Total job time: **2.14** Hours

Total job cost: **\$914**

BULLDOZER WORKTask description: Grade W pit slopes from 3H:1V to 4H:1VSite: Dill Pit Permit Action: 2023 Calculation Permit/Job#: M2009077**PROJECT IDENTIFICATION**

Task #: 001B State: Colorado Abbreviation: None
 Date: 8/11/2023 County: Elbert Filename: M077-001b
 User: AME

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$241.38</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$143.92</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$426.60
 Total Fleet Cost/Hour: **\$426.60**

MATERIAL QUANTITIES

Initial Volume: 4,167
 Swell factor: 1.250
 Loose volume: **5,209 LCY**

Source of estimated volume: 1500 ft L x 20 ft H, cut and fill
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 60 feet
 Unadjusted hourly production: 1,246.9 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
 Average site altitude: 5,700 feet

Material weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**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>1.200</u>	<u>(SLOT)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6507

Adjusted unit production: 811.36 LCY/hr

Adjusted fleet production: **811.36** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.526/LCY

Total job time: **6.42** Hours

Total job cost: **\$2,739**

BULLDOZER WORKTask description: Replace 4.5 in topsoil on 14.5 acresSite: Dill Pit Permit Action: 2023 Calculation Permit/Job#: M2009077**PROJECT IDENTIFICATION**

Task #: 002 State: Colorado Abbreviation: None
 Date: 9/28/2023 County: Elbert Filename: M077-002
 User: JR2

Agency or organization name: DRMS**HOURLY EQUIPMENT COST**

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$241.38</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$143.92</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$426.60
 Total Fleet Cost/Hour: **\$426.60**

MATERIAL QUANTITIES

Initial Volume: 8,773
 Swell factor: 1.215
 Loose volume: **10,659 LCY**

Source of estimated volume: 14.5 ac x 4.5 in depth
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 150 feet
 Unadjusted hourly production: 634.3 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -5 %
 Average site altitude: 5,700 feet

Material weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>1.000</u>	<u>(EXCL.)</u>
Material consistency:	<u>1.000</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.100</u>	<u>(50% SL)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.3175

Adjusted unit production: 835.69 LCY/hr

Adjusted fleet production: **835.69** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.510/LCY

Total job time: **12.75** Hours

Total job cost: **\$5,441**

BULLDOZER RIPPING WORK

Task description: Rip compacted areas - 8.5 acres

Site: Dill Pit Permit Action: 2023 Calculation Permit/Job#: M2009077

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 8/7/2023 County: Elbert Filename: M077-003
User: JR2

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$241.38	NA
Operating Cost/Hour:	\$143.92	100
Ripper Ownership Cost/Hour:	\$14.11	NA
Ripper Operating Cost/Hour:	\$7.45	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$448.16	
Total Fleet Cost/Hour:	\$448.16	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 8.50 acres Rip Depth (ft): 1.50 Volume: 20,570 BCY or CCY

Source of estimated quantity: Pit floor and internal haul roads

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 feet/pass
Average Ripping Width: 7.08 feet/pass
Average Ripping Length: 200.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.773 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.773 Acres/hr
Site Altitude: 5,700 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.64 Acres/hr
Adjusted Hourly Fleet Production: **0.64** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **13.25** Hours

Unit cost: \$698.391 Per acre Total job cost: **\$5,936**

REVEGETATION WORKTask description: Revegetate 14.5 acresSite: Dill PitPermit Action: 2023 CalculationPermit/Job#: M2009077**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 7/19/2023County: ElbertFilename: M077-004User: JR2Agency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
0-20-20, 4-8-12, 10-10-10	40.00	pound	\$0.62	\$24.80
			Total Fertilizer Materials Cost/Acre	\$24.80

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$41.82
Total Fertilizer Application Cost/Acre	\$41.82

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$100.40
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$439.20

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	2.00	32.64	\$27.45
Little Bluestem - Cimarron	2.00	11.94	\$24.97
Prairie Clover, Purple - Kanab	0.25	1.71	\$14.13
Sideoats Grama - El Reno	2.00	6.57	\$16.75
Sand Bluestem - Woodward	1.00	2.59	\$21.17
Prairie Sandreed - Goshen	2.00	12.53	\$20.70
Totals Seed Mix	9.25	67.98	\$125.16

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]	\$183.16
Total Mulch Application Cost/Acre	\$183.16

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:	14.5	Cost /Acre:	\$1,046.14
Estimated Failure Rate:	25%	Cost /Acre*:	\$357.16
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$15,169.03		
Reseeding Job Cost:	\$1,294.71		
Total Job Cost:	\$16,464		
Job Hours:	7.25		

REVEGETATION WORKTask description: Mulch 4.3 acres (excluding pit floor and W pit wall)Site: Dill PitPermit Action: 2023 CalculationPermit/Job#: M2009077**PROJECT IDENTIFICATION**Task #: 004BState: ColoradoAbbreviation: NoneDate: 8/11/2023County: ElbertFilename: M077-004bUser: AMEAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
Total Mulch Materials Cost/Acre				\$859.57

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Total Mulch Application Cost/Acre	\$74.46

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:	4.3	Cost /Acre:	\$934.03
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	\$4,016.33
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$4,016
Job Hours:	2.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Mobilization/DemobilizationSite: Dill PitPermit Action: 2023 CalculationPermit/Job#: M2009077**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 7/19/2023County: ElbertFilename: M077-005User: JR2Agency 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:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$20.26	\$36.04	\$47.05
Operating Cost/Hour:	\$39.51	\$76.08	\$82.85
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$82.29	\$158.17	\$175.95

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
Drill/Broadcast Seeder with Tractor	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00
Cat D8T - 8SU	53.08	\$255.49	\$175.95	1	\$431.44	\$175.95	\$250.00
Subtotals:					\$520.46	\$258.24	\$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, 4x2, 1/2 T.	\$14.82	1	\$14.82	\$14.82
Subtotals:			\$14.82	\$14.82

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>COLORADO SPRINGS</u>	
Total one-way travel distance:	<u>70.00</u>	miles
Average Travel Speed:	<u>65.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$3,718.12</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$31.92</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.08</u>	<u>1.08</u>
Return Time (Hours):	<u>1.08</u>	<u>1.08</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>3.15</u>	<u>2.15</u>

JOB TIME AND COST

Total job time: 6.31 Hours

Total job cost: \$3,750