

STATE OF
COLORADO

Reilley - DNR, Robin <robin.reilley@state.co.us>

Deer Trail Pit Inspection Report

1 message

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Thu, Jan 18, 2024 at 1:44 PM

To: Richard Stokes <richard.stokes72@ymail.com>, Robin Reilley - DNR <robin.reilley@state.co.us>

Mr Stokes,

Please find DRMS's 6 December 2023 Inspection report for the Deer Trail Pit attached. Also attached is an updated reclamation cost estimate. The \$294,815 estimate for reclamation requires an increase in surety of \$262,113 as explained in the inspection report.

I'm available to answer any questions or concerns that you have.

Robin Reilley, M.S. GISP
Environmental Protection Specialist II



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

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2 attachments

Inspection_DeerTrail_18Jan.pdf

2080K

CostEstimate_18Jan.pdf

275K

COST SUMMARY WORK

Task description: Cost Summary

Site: Deer Trail Pit

Permit Action: 2023 Inspection

Permit/Job#: M1988090

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 1/18/2024

County: Arapahoe

Filename: 000

User: RAR

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Re-grade highwall to 3H:1V	DOZER	1	3.14	\$1,470
002	Backfill pit wall along road to 3H:1V	DOZER	2	9.96	\$9,330
003	Import topsoil	SITEMAINT ENANCE	1	0.00	\$177,470
004	Site revegetation	REVEGE	1	6.00	\$33,826
005	Mobilization and demobilization	MOBILIZE	1	1.50	\$3,034
006	Spread 17,747 cubic yards of topsoil	DOZER	2	13.46	\$12,610
<u>SUBTOTALS:</u>				34.06	\$237,740

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 16.00
Profit: 10.00

Total = \$4,802

Total = \$2,496

Total = \$1,041

Total = \$23,774

TOTAL O & P = \$32,114

CONTRACT AMOUNT (direct + O & P) = \$269,854

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$0
Engineering work and/or contract/bid preparation: 4.25
Reclamation management and/or administration: 5.00

Total = \$0

Total = \$11,469

\$13,493

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$57,075

TOTAL BOND AMOUNT (direct + indirect) = \$294,815

BULLDOZER WORKTask description: Re-grade highwall to 3H:1VSite: Deer Trail PitPermit Action: 2023 InspectionPermit/Job#: M1988090PROJECT IDENTIFICATIONTask #: 001State: ColoradoAbbreviation: NoneDate: 12/18/2023County: ArapahoeFilename: 1988095User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$238.76	NA
Operating Cost/Hour:	\$162.29	100
Ripper own. Cost/Hour:	\$18.32	NA
Ripper op. Cost/Hour:	\$8.98	100
Operator Cost/Hour:	\$40.04	NA
Total unit Cost/Hour:	\$468.39	
Total Fleet Cost/Hour:	\$468.39	

MATERIAL QUANTITIESInitial Volume: 5,078Swell factor: 1.230Loose volume: **6,246** LCYSource of estimated volume: Regrade highwall 1300 feet average height 15 feetSource of estimated swell
factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 50 feetUnadjusted hourly
production: 2,110.5 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: -30 %Average site altitude: 5,300 feetMaterial weight: 2,100 lbs/LCY

Weight description: Earth - LoamJob Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9429

Adjusted unit
production: 1,989.99 LCY/hr

Adjusted fleet
production: **1989.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.235/LCY

Total job time: **3.14** Hours

Total job cost: **\$1,470**

BULLDOZER WORKTask description: Backfill pit wall along road to 3H:1VSite: Deer Trail PitPermit Action: 2023 InspectionPermit/Job#: M1988090PROJECT IDENTIFICATIONTask #: 002State: ColoradoAbbreviation: NoneDate: 1/11/2024County: ArapahoeFilename: 1988095User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$238.76	NA
Operating Cost/Hour:	\$162.29	100
Ripper own. Cost/Hour:	\$18.32	NA
Ripper op. Cost/Hour:	\$8.98	100
Operator Cost/Hour:	\$40.04	NA
Total unit Cost/Hour:	\$468.39	
Total Fleet Cost/Hour:	\$936.77	

MATERIAL QUANTITIESInitial Volume: 4,375Swell factor: 1.230Loose volume: **5,381** LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 50 feetUnadjusted hourly
production: 2,110.5 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: 30 %Average site altitude: 5,300 feetMaterial weight: 2,100 lbs/LCY

Weight description: Earth - LoamJob 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:	0.700	(FND-MF)
Push gradient:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1280Adjusted unit
production: 270.14 LCY/hrAdjusted fleet
production: **540.28** LCY/hr**JOB TIME AND COST**Fleet size: 2 Dozer(s)
Unit cost: \$1.734/LCYTotal job time: **9.96** Hours
Total job cost: **\$9,330**

SITE MAINTENANCETask description: Import topsoilSite: Deer Trail Pit Permit Action: 2023 Inspection Permit/Job#: M1988090PROJECT IDENTIFICATION

Task # 003 State: Colorado Abbreviation: None
#: _____
Date: 1/12/2024 County: Arapahoe Filename: M090-003
User: RAR

Agency or organization name: DRMSUNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Import Topsoil	0.00	USER PROVIDED ITEM	17,747.00	10.0	\$10.00	\$177,470.00

Job Hours: 0.00Total Cost: \$177,470.00

REVEGETATION WORKTask description: Site revegetationSite: Deer Trail PitPermit Action: 2023 InspectionPermit/Job#: M1988090**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 12/18/2023County: ArapahoeFilename: 1988095User: RARAgency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$451.62

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	2.50	7.62	\$28.25
Little Bluestem - Native	0.70	4.18	\$9.50
Sand Bluestem - Garden Co.	2.40	6.23	\$58.86
Western Wheatgrass - Native	1.20	3.03	\$7.20
Prairie Sandreed - Goshen	1.10	6.89	\$11.39
Totals Seed Mix	7.90	27.95	\$115.19

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}	1.00	TON	\$429.79	\$429.79
Total Mulch Materials Cost/Acre				\$429.79

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Power mulcher (MEANS 32 91 13.16 0350)	\$147.67
Total Mulch Application Cost/Acre	\$222.13

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:	22	Cost /Acre:	\$1,450.73
Estimated Failure Rate:	25%	Cost /Acre*:	\$347.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$31,916.06
Reseeding Job Cost:	\$1,909.55
Total Job Cost:	\$33,826
Job Hours:	6.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization and demobilization**Site: **Deer Trail Pit**Permit Action: **2023 Inspection**Permit/Job#: **M1988090****PROJECT IDENTIFICATION**Task #: **005**State: **Colorado**Abbreviation: **None**Date: **12/18/2023**County: **Arapahoe**Filename: **1988095**User: **RAR**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:**

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
Cat D9T - 9SU	60.01	\$238.76	\$175.95	1	\$414.71	\$175.95	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.73	\$82.29	2	\$178.04	\$164.58	\$500.00
Power Mulcher (Bowie LD-90)	6.00	\$25.94	\$82.29	1	\$108.23	\$82.29	\$250.00

Subtotals: **\$700.98** **\$422.82** **\$1,000.00****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.	\$44.06	1	\$44.06	\$44.06

Subtotals: **\$44.06** **\$44.06**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: DEER TRAIL
 Total one-way travel distance: 2.10 miles
 Average Travel Speed: 45.00 mph

Total Non-Roadable Mob/Demob Cost * \$3,030.18
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$4.11
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.05	0.05
Return Time (Hours):	0.05	0.05
Loading Time (Hours):	0.33	NA
Unloading Time (Hours):	0.33	NA
Subtotals:	0.75	0.09

JOB TIME AND COST

Total job time: 1.51 Hours

Total job cost: \$3,034

BULLDOZER WORKTask description: Spread 17,747 cubic yards of topsoilSite: Deer Trail PitPermit Action: 2023 InspectionPermit/Job#: M1988090PROJECT IDENTIFICATIONTask #: 006State: ColoradoAbbreviation: NoneDate: 1/18/2024County: ArapahoeFilename: M090-006User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$238.76	NA
Operating Cost/Hour:	\$162.29	100
Ripper own. Cost/Hour:	\$18.32	NA
Ripper op. Cost/Hour:	\$8.98	100
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: \$468.39Total Fleet Cost/Hour: \$936.77MATERIAL QUANTITIESInitial Volume: 17,747Swell factor: 1.230Loose volume: 21,829 LCYSource of estimated volume: Permit: 6 inches over 22 acresSource of estimated swell
factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 100 feetUnadjusted hourly
production: 1,243.2 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: -15 %Average site altitude: 5,300 feetMaterial weight: 2,100 lbs/LCY

Weight description: Earth - LoamJob 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:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6522Adjusted unit
production: 810.82 LCY/hrAdjusted fleet
production: **1621.64** LCY/hr**JOB TIME AND COST**Fleet size: 2 Dozer(s)
Unit cost: \$0.578/LCYTotal job time: **13.46** Hours
Total job cost: **\$12,610**