



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

October 1, 2024

Kevin Anderson  
Connell Resources, Inc.  
7785 Highland Meadows Pkwy. Ste 100  
Fort Collins, CO 80528

**Re: Timnath Connell Pit - File No. M-1999-050**  
**Connell Resources, Inc.**  
**Amendment (AM-1)**  
**Amendment Application**

Dear Kevin Anderson:

On October 1, 2024 the Division of Reclamation, Mining and Safety concluded its review of the Amendment application submitted to the Division on April 30, 2024, addressing the following:

Change the final post-mining land use from Developed Water Resources to Residential, Industrial/Commercial, and Developed Water Resources.

The decision reached by the Division is: awaiting warranty.

The terms of Amendment No. 1 approved by the Division are hereby incorporated into Permit No. M-1999-050. All other conditions and requirements of Permit No. M-1999-050 remain in full force and effect.

The revised liability amount exceeds the financial warranty currently held (see below), please submit additional bond or a rider to your existing bond that equals or exceeds the Revised Liability. The revision will not be final until the bond is approved by the Division.

Bond Held:	\$532,504.72
Prior Liability:	\$532,504.72
Change in Liability:	\$947,437.28
Revised Liability:	\$1,479,942.00
Prior Permit Acreage:	151.30
Change in Permit Acreage:	0.00
Revised Permit Acreage:	151.30
Prior Affected Acreage:	151.30



Change in Affected Acreage:	0.00
Revised Affected Acreage:	151.30

If you have any questions, please contact me by telephone at (720) 812-2002, or by email at [Joel.renfro@state.co.us](mailto:Joel.renfro@state.co.us).

Sincerely,

A handwritten signature in blue ink, appearing to read "Joel Renfro".

Joel Renfro  
Environmental Protection Specialist

cc: Bill Schenderlein

M-GR-04

## COST SUMMARY WORK

Task description: AM-1 Cost Estimate

Site: Timmath Connell Pit

Permit Action: AM-1

Permit/Job#: M1999050

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 9/17/2024

County: Larimer

Filename: M050-000

User: JR2

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Demolition	DEMOLISH	1	10.00	\$5,352
002	Phase 1 - Backfill and Grade	SCRAPER1	1	228.50	\$567,311
003	Phase 1 - Liner Construction	NA	1	100.00	\$81,000
004	Phase 1 - Cover Clay Liner	SCRAPER1	1	37.05	\$91,996
005	Phase 1 - Finish Backfill	SCRAPER1	1	6.52	\$16,185
006	Phase 1 - Revegetation of Affected Area	REVEGE	1	42.00	\$17,788
006a	Phase 1 - Reseed Reclamation areas	REVEGE	1	27.65	\$20,845
007	Phase 2 - Reseed Reclamation Area	REVEGE	1	15.00	\$11,346
008	Phase 3 - Backfill and Grade	SCRAPER1	1	117.34	\$291,322
009	Phase 3 - Finish Backfill	SCRAPER1	1	8.23	\$20,444
010	Phase 3 - Revegetation	REVEGE	1	14.00	\$5,929
011	Phase 3 - Reseed	REVEGE	1	3.00	\$2,111
012	Scarify Access and Haul Roads	RIPPER	1	3.89	\$1,346
013	Revegetation of Roads	REVEGE	1	3.50	\$1,482
014	Mob/Demob	MOBILIZE	1	5.12	\$13,515
<b><u>SUBTOTALS:</u></b>				<b>621.8</b>	<b>\$1,147,972</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$23,189

Performance bond: 1.05

Total = \$12,054

Job superintendent: 310.90

Total = \$24,645

Profit: 10.00

Total = \$114,797

TOTAL O & P = \$174,685

CONTRACT AMOUNT (direct + O & P) = \$1,322,657

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$56,213

Reclamation management and/or administration: 5.00

\$66,133

CONTINGENCY: 3.00

Total = \$34,439

TOTAL INDIRECT COST = \$331,970

**TOTAL BOND AMOUNT (direct + indirect) = \$1,479,942**

## DEMOLITION WORK

Task description: Demolition

Site: Timnath Connell Pit

Permit Action: AM-1

Permit/Job#: M1999050

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 9/25/2024

County: Larimer

Filename: M050-001

User: JR2

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 89.20 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Cassion Removal	2', 18" diameter	USER PROVIDED ITEM	12.00	Ea	\$500.00	\$6,000.00

Job Hours: 10.00

Subtotal  
(unadjusted): \$6,000.00

Total Cost  
(adjusted for  
location): \$5,352.00

**SCRAPER TEAM WORK**Task description: **Phase 1 - Backfill and Grade**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **002**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-002**User: **JR2**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 631G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	50	50
Ownership cost/hour:	\$442.19	\$173.32	NA	\$173.32	\$179.39	\$17.11
Operating cost/hour:	\$252.89	\$109.71	NA	\$109.71	\$59.82	\$18.40
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	\$40.04	\$56.70	\$0.00
Unit Subtotals:	\$752.60	\$323.07	NA	\$323.07	\$295.91	\$35.51
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work: \$1,828.27		Support: \$323.07		Maint: \$295.91	\$331.42

Total work team cost/hour: **\$2,482.76****MATERIAL QUANTITIES**Initial volume: **214,896**

CCY

Swell factor: **1.125**Loose volume: **241,758**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY

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

Site Altitude: 4830 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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.92

Haul Time: 0.92 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: 0.31 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 529.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 637.36 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 228.50 HoursUnit cost: \$2.347 /LCYTotal job cost: \$567,311

**SCRAPER TEAM WORK**Task description: **Phase 1 - Cover Clay Liner**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **004**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-004**User: **JR2**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 631G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	50	50
Ownership cost/hour:	\$442.19	\$173.32	NA	\$173.32	\$179.39	\$17.11
Operating cost/hour:	\$252.89	\$109.71	NA	\$109.71	\$59.82	\$18.40
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	\$40.04	\$56.70	\$0.00
Unit Subtotals:	\$752.60	\$323.07	NA	\$323.07	\$295.91	\$35.51
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,828.27	Support:	\$323.07	Maint:	\$331.42

Total work team cost/hour: **\$2,482.76****MATERIAL QUANTITIES**Initial volume: **34,848**

CCY

Swell factor: **1.125**Loose volume: **39,204**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY



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

Site Altitude: 4830 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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.92

Haul Time: 0.92 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: 0.31 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 529.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 637.36 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 37.05 HoursUnit cost: \$2.347 /LCYTotal job cost: \$91,996

**SCRAPER TEAM WORK**Task description: **Phase 1 - Finish Backfill**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **005**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-005**User: **JR2**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 631G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	50	50
Ownership cost/hour:	\$442.19	\$173.32	NA	\$173.32	\$179.39	\$17.11
Operating cost/hour:	\$252.89	\$109.71	NA	\$109.71	\$59.82	\$18.40
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	\$40.04	\$56.70	\$0.00
Unit Subtotals:	\$752.60	\$323.07	NA	\$323.07	\$295.91	\$35.51
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,828.27	Support:	\$323.07	Maint:	\$331.42

Total work team cost/hour: **\$2,482.76****MATERIAL QUANTITIES**Initial volume: **6,131**

CCY

Swell factor: **1.125**Loose volume: **6,897**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY

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

Site Altitude: 4830 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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.92

Haul Time: 0.92 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: 0.31 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 529.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 637.36 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 6.52 HoursUnit cost: \$2.347 /LCYTotal job cost: \$16,185

**REVEGETATION WORK**Task description: **Phase 1 - Revegetation of Affected Area**Site: **Timnath Connell Pit**Permit Action: AM-1Permit/Job#: M1999050**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 9/25/2024County: LarimerFilename: M050-006User: JR2Agency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
<b>Total Tilling Cost/Acre</b>	<b>\$456.41</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	1.00	16.32	\$21.33
Intermediate Wheatgrass - Rush	5.00	10.67	\$23.66
Triticale	1.25	0.72	\$3.13
<b>Totals Seed Mix</b>	<b>7.25</b>	<b>27.71</b>	<b>\$48.11</b>

**Application**

Description	Cost /Acre
-------------	------------

Drill Seeding (DRMS Survey Cost)	\$236.64
<b>Total Seed Application Cost/Acre</b>	<b>\$236.64</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: 24  
 Estimated Failure Rate: 0%  
 \*Selected Replanting Work Items: SEEDING

Cost /Acre: \$741.16  
 Cost /Acre\*: \$284.75

Initial Job Cost: **\$17,787.84**  
 Reseeding Job Cost: **\$0.00**  
 Total Job Cost: **\$17,788**  
 Job Hours: **42.00**

**REVEGETATION WORK**Task description: **Phase 2 - Reseed Reclamation Area**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **007**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-007**User: **JR2**Agency or organization name: **DRMS****FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
<b>Total Tilling Cost/Acre</b>	<b>\$456.41</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	1.00	16.32	\$21.33
Intermediate Wheatgrass - Rush	5.00	10.67	\$23.66
Triticale	1.25	0.72	\$3.13
<b>Totals Seed Mix</b>	<b>7.25</b>	<b>27.71</b>	<b>\$48.11</b>

**Application**

Description	Cost /Acre
-------------	------------

Drill Seeding (DRMS Survey Cost)	\$236.64
<b>Total Seed Application Cost/Acre</b>	<b>\$236.64</b>

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$492.78	\$492.78
<b>Total Mulch Materials Cost/Acre</b>				<b>\$492.78</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
<b>Total Mulch Application Cost/Acre</b>	<b>\$85.37</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: 8.6                      Cost /Acre: \$1,319.31  
 Estimated Failure Rate: 0%                      Cost /Acre\*: \$284.75  
 \*Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$11,346.07**  
 Reseeding Job Cost: **\$0.00**  
 Total Job Cost: **\$11,346**  
 Job Hours: **15.00**

**SCRAPER TEAM WORK**Task description: **Phase 3 - Backfill and Grade**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **008**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-008**User: **JR2**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 631G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	50	50
Ownership cost/hour:	\$442.19	\$173.32	NA	\$173.32	\$179.39	\$17.11
Operating cost/hour:	\$252.89	\$109.71	NA	\$109.71	\$59.82	\$18.40
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	\$40.04	\$56.70	\$0.00
Unit Subtotals:	\$752.60	\$323.07	NA	\$323.07	\$295.91	\$35.51
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,828.27	Support:	\$323.07	Maint:	\$331.42

Total work team cost/hour: **\$2,482.76****MATERIAL QUANTITIES**Initial volume: **110,352**

CCY

Swell factor: **1.125**Loose volume: **124,146**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY



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

Site Altitude: 4830 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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.92

Haul Time: 0.92 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: 0.31 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 529.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 637.36 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 117.34 HoursUnit cost: \$2.347 /LCYTotal job cost: \$291,322

**SCRAPER TEAM WORK**Task description: **Phase 3 - Finish Backfill**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **009**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-009**User: **JR2**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 631G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	50	50
Ownership cost/hour:	\$442.19	\$173.32	NA	\$173.32	\$179.39	\$17.11
Operating cost/hour:	\$252.89	\$109.71	NA	\$109.71	\$59.82	\$18.40
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	\$40.04	NA	\$40.04	\$56.70	\$0.00
Unit Subtotals:	\$752.60	\$323.07	NA	\$323.07	\$295.91	\$35.51
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,828.27	Support:	\$323.07	Maint:	\$331.42

Total work team cost/hour: **\$2,482.76****MATERIAL QUANTITIES**Initial volume: **7,744**

CCY

Swell factor: **1.125**Loose volume: **8,712**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<b>2,650 lbs/LCY</b>	Struck Volume:	<b>24.00</b>	LCY
Material description:	<b>Decomposed rock - 25% Rock, 75% Earth</b>	Heaped Volume:	<b>34.00</b>	LCY
Rated Payload:	<b>81,600 pounds</b>	Average Volume:	<b>29.00</b>	LCY
Payload Capacity:	<b>30.79 LCY</b>	Adjusted Capacity:	<b>29.00</b>	LCY

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

Site Altitude: 4830 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: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.92

Haul Time: 0.92 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: 0.31 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 529.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,058.02 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,058.02 LCY/HourUnadjusted unit production/hour: 637.36 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 8.23 HoursUnit cost: \$2.347 /LCYTotal job cost: \$20,444

**REVEGETATION WORK**Task description: **Phase 3 - Revegetation**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **010**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-010**User: **JR2**Agency or organization name: **DRMS****FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
<b>Total Tilling Cost/Acre</b>	<b>\$456.41</b>

**SEEDING**

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

**Application**

Description	Cost /Acre

	\$
<b>Total Seed Application Cost/Acre</b>	<b>\$</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: 8  
 Estimated Failure Rate: 0%  
 \*Selected Replanting Work Items: SEEDING

Cost /Acre: \$741.16  
 Cost /Acre\*: \$284.75

Initial Job Cost: **\$5,929.28**  
 Reseeding Job Cost: **\$0.00**  
 Total Job Cost: **\$5,929**  
 Job Hours: **14.00**

**REVEGETATION WORK**Task description: **Phase 3 - Reseed**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **011**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-011**User: **JR2**Agency or organization name: **DRMS****FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
<b>Total Tilling Cost/Acre</b>	<b>\$456.41</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	1.00	16.32	\$21.33
Intermediate Wheatgrass - Rush	5.00	10.67	\$23.66
Triticale	1.25	0.72	\$3.13
<b>Totals Seed Mix</b>	<b>7.25</b>	<b>27.71</b>	<b>\$48.11</b>

**Application**

Description	Cost /Acre
-------------	------------

Drill Seeding (DRMS Survey Cost)	\$236.64
<b>Total Seed Application Cost/Acre</b>	<b>\$236.64</b>

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$492.78	\$492.78
<b>Total Mulch Materials Cost/Acre</b>				<b>\$492.78</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
<b>Total Mulch Application Cost/Acre</b>	<b>\$85.37</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: 1.6                      Cost /Acre: \$1,319.31  
 Estimated Failure Rate: 0%                      Cost /Acre\*: \$284.75  
 \*Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$2,110.90**  
 Reseeding Job Cost: **\$0.00**  
 Total Job Cost: **\$2,111**  
 Job Hours: **3.00**

## BULLDOZER RIPPING WORK

Task description: Scarify Access and Haul Roads

Site: Timnath Connell Pit Permit Action: AM-1 Permit/Job#: M1999050

### PROJECT IDENTIFICATION

Task #: 012 State: Colorado Abbreviation: None  
Date: 9/25/2024 County: Larimer Filename: M050-012  
User: JR2

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

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

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$173.32	NA
Operating Cost/Hour:	\$109.71	100
Ripper Ownership Cost/Hour:	\$13.69	NA
Ripper Operating Cost/Hour:	\$9.24	100
Operator Cost/Hour:	\$40.04	NA
Total Unit Cost/Hour:	\$346.00	
Total Fleet Cost/Hour:	<b>\$346.00</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 2.00 acres Rip Depth (ft): 2.00 Volume: 6,453 BCY or CCY

Source of estimated quantity: Operator Estimate

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 3.71 feet/pass  
Average Ripping Width: 5.56 feet/pass  
Average Ripping Length: 250.00 feet/pass  
Average Dozer Speed: 88.00 feet/minute  
Average Maneuver Time: 0.25 minutes/pass  
Production per unit area: 0.619 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.619 Acres/hr  
Site Altitude: 4,830 feet  
Altitude Adj: 1.00 (CAT HB)  
Job Efficiency: 0.83 (1 shift/day)  
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.51 Acres/hr  
Adjusted Hourly Fleet Production: **0.51** Acres/hr

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **3.89** Hours

Unit cost: \$672.986 Per acre Total job cost: **\$1,346**



**REVEGETATION WORK**Task description: **Revegetation of Roads**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **013**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-013**User: **JR2**Agency or organization name: **DRMS****FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
<b>Total Tilling Cost/Acre</b>	<b>\$456.41</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	1.00	16.32	\$21.33
Intermediate Wheatgrass - Rush	5.00	10.67	\$23.66
Triticale	1.25	0.72	\$3.13
<b>Totals Seed Mix</b>	<b>7.25</b>	<b>27.71</b>	<b>\$48.11</b>

**Application**

Description	Cost /Acre
-------------	------------

Drill Seeding (DRMS Survey Cost)	\$236.64
<b>Total Seed Application Cost/Acre</b>	<b>\$236.64</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: 2  
 Estimated Failure Rate: 0%  
 \*Selected Replanting Work Items: SEEDING

Cost /Acre: \$741.16  
 Cost /Acre\*: \$284.75

Initial Job Cost: **\$1,482.32**  
 Reseeding Job Cost: **\$0.00**  
 Total Job Cost: **\$1,482**  
 Job Hours: **3.50**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mob/Demob**Site: **Timnath Connell Pit**Permit Action: **AM-1**Permit/Job#: **M1999050****PROJECT IDENTIFICATION**Task #: **014**State: **Colorado**Abbreviation: **None**Date: **9/25/2024**County: **Larimer**Filename: **M050-014**User: **JR2**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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

**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	\$41.02	\$59.44	1	\$100.46	\$59.44	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$27.21	\$59.44	1	\$86.65	\$59.44	\$250.00
Cat D8T - 8SU	53.08	\$187.85	\$125.64	2	\$626.98	\$251.28	\$250.00
CAT 16M	28.73	\$179.39	\$122.78	1	\$302.17	\$122.78	\$250.00
Cat 631G	52.50	\$442.19	\$125.64	2	\$1,135.66	\$251.28	\$250.00

Subtotals: **\$2,251.92** **\$744.22** **\$1,250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 3,500 Gal.	\$53.90	1	\$53.90	\$53.90
Light Duty Pickup, 4x4, 1 T. Crew	\$24.60	1	\$24.60	\$24.60

Subtotals: **\$78.50** **\$78.50**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: FORT COLLINS  
 Total one-way travel distance: 9.00 miles  
 Average Travel Speed: 50.00 mph

Total Non-Roadable Mob/Demob Cost \* \$13,487.06  
 \*\* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$28.26  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.18	0.18
Return Time (Hours):	0.18	0.18
Loading Time (Hours):	1.10	NA
Unloading Time (Hours):	1.10	NA
Subtotals:	2.56	0.36

**JOB TIME AND COST**

Total job time: 5.12 Hours

Total job cost: \$13,515