



Interoffice Memorandum

To: M2015-033 File
From: Rob Zuber *RZ*
Date: May 16, 2024
Subject: Reclamation Cost Estimate for TR-03

On May 15, 2024, I sent the attached cost estimate via email to Garrett Varra of Raptor Materials LLC for his review and/or the review of his consultant RESPEC.



COST SUMMARY WORK

Task description: Cost Summary

Parcel 122 - Resource
Site: Development Project

Permit Action:
TR3

Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 5/3/2024 County: Weld Filename: M033-000
User: RDZ

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Dewatering pit - initial pumping	PUMPING	1	583.11	\$72,440
01b	Dewatering pit - during construction	PUMPING	1	148.30	\$18,424
02a	Grade banks of reservoir	DOZER	2	86.20	\$73,324
03a	Haul liner material from stockpile	TRUCK1	1	141.43	\$198,367
03b	Mix material for liner	DOZER	2	18.64	\$16,508
03c	Compact liner material	COMPACT	2	15.53	\$9,202
04a	Haul topsoil to areas for revegetation	TRUCK1	1	103.13	\$144,643
04b	Grade topsoil	DOZER	2	10.93	\$9,298
05a	Seed 45.44 acres	REVEGE	1	45.00	\$108,048
06a	Demo and haul of conveyor, blocks, and truss	DEMOLISH	1	300.00	\$72,222
07a	Mobilization/Demob.	MOBILIZE	1	1.50	\$4,919
<u>SUBTOTALS:</u>				1453.77	\$727,395

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$14,693
Performance bond:	1.05	Total =	\$7,638
Job superintendent:	726.88	Total =	\$47,305
Profit:	10.00	Total =	\$72,740

TOTAL O & P = \$142,376

CONTRACT AMOUNT (direct + O & P) = \$869,771

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	0.00	Total =	\$0
Reclamation management and/or administration:	5.00		\$43,489

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$186,364

TOTAL BOND AMOUNT (direct + indirect) = \$913,759

PUMPING WORK

Task description: Dewatering pit - initial pumping

Parcel 122 - Resource Permit Action:
Site: Development Project TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 5/15/2024 County: Weld Filename: M033-01a
User: RDZ

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	5
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	5
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	5
Labor Unit 1:	Pump operator	1
Horsepower:	95	
Shift Basis:	1 per day	
Weight:	0.70	
	(US Tons)	

Cost Breakdown:

	Utilization %
Ownership Cost/Hour: \$76.40	NA
Operating Cost/Hour: \$19.60	100
Operator Cost/Hour: \$28.23	NA
Total Unit Cost/Hour: \$124.23	
Total Fleet Cost/Hour: \$124.23	

PUMPING QUANTITIES

Initial Pond Volume: 519,000,000.00	Conversion factor: 1.0000
Final Pond Volume: 519,000,000.00 gallons	
Total Pond Inflow Surface Area: 1,000 Sq. ft.	Unit inflow rate in gph/sq. ft.: 0.0879
Total Pond Inflow Volume per Hour: 87.90 gallons	

Source of estimated volume: Exhibit L

PUMPING TIME

Maximum Pump Capacity:	170,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	30	feet
Total Head:	35	feet
CPB Pump Capacity:	163,200	gph/pump
Site Altitude:	4,800	feet
Adjusted Pumping Capacity:	816,000	gph
Initial Unadjusted Pumping Time:	636.03	hours
Inflow during Initial Pumping:	55,907	gallons
Net Unadjusted Pumping Time:	636.10	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	583.11	hours

JOB TIME AND COST

Total job time: 583.11 Hours
Unit cost: \$0.000140 /Gallon Total job cost: \$72,440

PUMPING WORK

Task description: Dewatering pit - during construction

Site: Parcel 122 - Resource Development Project Permit Action: TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 01B State: Colorado Abbreviation: None
Date: 5/15/2024 County: Weld Filename: M033-01b
User: RDZ

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	5
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	5
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	5
Labor Unit 1:	Pump operator	1
Horsepower:	95	
Shift Basis:	1 per day	
Weight:	0.70	
	(US Tons)	

Cost Breakdown:

	Utilization %
Ownership Cost/Hour: \$76.40	NA
Operating Cost/Hour: \$19.60	100
Operator Cost/Hour: \$28.23	NA
Total Unit Cost/Hour: \$124.23	
Total Fleet Cost/Hour: \$124.23	

PUMPING QUANTITIES

Initial Pond Volume: 132,000,000.00	Conversion factor: 1.0000
Final Pond Volume: 132,000,000.00 gallons	
Total Pond Inflow Surface Area: 1,000 Sq. ft.	Unit inflow rate in gph/sq. ft.: 0.0879
Total Pond Inflow Volume per Hour: 87.90 gallons	

Source of estimated volume: Exhibit L

PUMPING TIME

Maximum Pump Capacity:	170,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	30	feet
Total Head:	35	feet
CPB Pump Capacity:	163,200	gph/pump
Site Altitude:	4,800	feet
Adjusted Pumping Capacity:	816,000	gph
Initial Unadjusted Pumping Time:	161.76	hours
Inflow during Initial Pumping:	14,219	gallons
Net Unadjusted Pumping Time:	161.78	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	148.31	hours

JOB TIME AND COST

Total job time: **148.31** Hours
Unit cost: \$0.000140 /Gallon Total job cost: **\$18,424**

BULLDOZER WORKTask description: Grade banks of reservoir

Site: Parcel 122 - Resource Development Project Permit Action: TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 02A State: Colorado Abbreviation: None
 Date: 5/3/2024 County: Weld Filename: M033-02a
 User: RDZ

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>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$425.34
 Total Fleet Cost/Hour: \$850.67

MATERIAL QUANTITIES

Initial Volume: 136,000
 Swell factor: 1.000
 Loose volume: 136,000 LCY

Source of estimated volume: L = 9,357'. D = 30'. Half of x-section must be moved.
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
 Unadjusted hourly production: 1,400.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
 Average site altitude: 4,800 feet

Material weight: 2,550 lbs/LCYWeight description: Earth - Dry packed

<u>Job Condition Correction Factor</u>	<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>1.000</u>	<u>(GEN.)</u>

Visibility:	1.000	(AVG.)
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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5635

Adjusted unit production: 788.90 LCY/hr

Adjusted fleet production: **1577.8** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
 Unit cost: \$0.539/LCY

Total job time: **86.20** Hours
 Total job cost: **\$73,324**

TRUCK/LOADER TEAM WORKTask description: Haul liner material from stockpileSite: Parcel 122 - Resource
Development ProjectPermit Action: TR3Permit/Job#: M2015033**PROJECT IDENTIFICATION**

Task #: 03A State: Colorado Abbreviation: None
 Date: 5/15/2024 County: Weld Filename: M033-03a
 User: RDZ

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

	Equipment Description
Truck Loader Team -Truck:	Generic 12-18 cy, 6x4
-Loader:	CAT 966H high lift
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	NA	100
Ownership cost/hour:	\$26.39	\$65.69	\$241.38	\$241.38	NA	\$16.65
Operating cost/hour:	\$64.76	\$48.09	\$143.92	\$143.92	NA	\$37.60
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	NA	\$0.00
Unit Subtotals:	\$115.97	\$149.75	\$425.34	\$425.34	NA	\$54.25
Number of Units:	3	1	1	1	0	1
Group Subtotals:	Work: \$497.66		Support: \$850.68		Maint: \$54.25	

Total work team cost/hour: \$1,402.59**MATERIAL QUANTITIES**

Initial volume: 60,700 CCY Swell factor: 1.115
 Loose volume: 67,681 LCY

Source of estimated volume: Exhibit L
 Source of estimated swell factor: Cat Handbook
 Material Purchase Cost: \$0.00
 Total Cost: \$0.00

HOURLY PRODUCTION**Truck Capacity:****Truck Payload (weight) Basis:**

Material weight: 2,500 Pounds/LCY
 Description: Clay - Dry
 Rated Payload: 50,300 Pounds

Payload Capacity: 20.12 LCY**Truck Bed (volume) Basis:**

Struck Volume: 12.00 LCY
 Heaped Volume: 18.00 LCY
 Average Volume: 15.00 LCY
 Adjusted Volume: 18.00 LCY

Final Truck Volume Based on Number of Loader Passes: 15.38 LCY**Loading Tool Capacity**Bucket Size Class: NA

Rated Capacity: 5.000 LCY (heaped)
 Bucket Fill Factor: 1.025 Bank Clay; Earth (100%-105%) 1.025
 Adjusted Capacity: 5.125 LCY

Job Condition Corrections:Site Altitude (ft.): 4800 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)

Net Correction: 0.830 0.830**Loading Tool Cycle Time:** Number of Loading Tool Passes Required to Fill Truck: 3 passes**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.000	minutes
Adjusted Loader Cycle Time:		0.500	minutes
Net Load Time per Truck:		1.100	minutes

Truck Cycle Time:

Truck Exchange Time: 0.50 Minutes Adjusted for site altitude: 0.500 Minutes
 Truck Load Time: 1.100 Minutes Adjusted for site altitude: 1.100 Minutes
 Truck Maneuver and Dump Time: 0.90 Minutes Adjusted for site altitude: 0.900 Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0Road Condition: Hard, smooth, stabilized, surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1100.00	5.00	2.00	7.00	1568	0.757

Haul Time: **0.757** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1100.00	-5.00	2.00	-3.00	2938	0.444

Return Time: **0.444** minutesTotal Truck Cycle Time: **3.701** minutes

Loading Tool unit
 Production 576.56 LCY/Hour Adjusted for job efficiency: 478.55 LCY/Hour
 Truck Unit Production
249.26 LCY/Hour Adjusted for job efficiency: 206.88 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 620.65 LCY/Hour
 Adjusted single truck/loader team production: 478.55 LCY/Hour
 Adjusted multiple truck/loader team production: **478.55** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **141.43** HoursUnit cost: \$2.931 /LCY Total job cost: **\$198,367**

BULLDOZER WORKTask description: Mix material for liner

Site: Parcel 122 - Resource Development Project Permit Action: TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 03B State: Colorado Abbreviation: None
 Date: 5/15/2024 County: Weld Filename: M033-03b
 User: RDZ

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

Basic Machine: Cat D8T - 8SU
 Horsepower: 310
 Blade Type: Semi-Universal
 Attachment: 1-shank ripper
 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>\$17.40</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$442.74
 Total Fleet Cost/Hour: \$885.47

MATERIAL QUANTITIES

Initial Volume: 30,000
 Swell factor: 1.000
 Loose volume: 30,000 LCY

Source of estimated volume: Assumed half the volume of liner material
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
 Unadjusted hourly production: 1,400.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
 Average site altitude: 4,800 feet

Material weight: 2,500 lbs/LCYWeight description: Clay - Dry

<u>Job Condition Correction Factor</u>		<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>1.000</u>	<u>(GEN.)</u>

Visibility:	1.000	(AVG.)
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:	0.920	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5747

Adjusted unit production: 804.58 LCY/hr

Adjusted fleet production: **1609.16** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.550/LCY

Total job time: **18.64** Hours

Total job cost: **\$16,508**

COMPACTION WORK

Task description: Compact liner material

Site: Parcel 122 - Resource Development Project Permit Action: TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 03C State: Colorado Abbreviation: None
Date: 5/15/2024 County: Weld Filename: M033-03c
User: RDZ

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 815F Horsepower: 240
Compactor Type: Soil - tamping foot Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

Ownership Cost/Hour:	<u>\$147.57</u>	Utilization %	<u>NA</u>
Operating Cost/Hour:	<u>\$117.19</u>		<u>100</u>
Operator Cost/Hour:	<u>\$31.50</u>		<u>NA</u>
Total Unit Cost/Hour:	<u>\$296.26</u>		
Total Fleet Cost/Hour:	<u>\$592.53</u>		

MATERIAL QUANTITIES

Loose volume: 60,700 LCY Shrinkage factor: 0.900
Compacted volume: 54,630 CCY
Source of estimated volume: Exhibit L
Source of estimated shrinkage factor: Cat Handbook

HOURLY PRODUCTION

Unadjusted hourly production = $(W \times S \times L \times C) / P$

Compacted width per pass (W): 6.50 feet
Average Compactor Speed (S): 8.00 mph
Compacted thickness of each lift (L): 10.00 inches
Conversion Constant (C): 16.3 (5,280ft./12in./27cu.ft.)
Required number of machine passes (P): 4 passes
Unadjusted Hourly Unit Production: 2,119.00 CCY/hour

Job Condition Correction Factors

Site Altitude: 4,800 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.83</u>	(CAT HB)
Net Correction:	<u>0.8300</u>	(1 shift/day)
		multiplier

Adjusted Hourly Unit Production: 1,758.77 CCY/Hour
Adjusted Hourly Fleet Production: 3,517.54 CCY/Hour

JOB TIME AND COST

Fleet size: 2 Compactor(s) Total job time: 15.53 Hours
Unit cost: \$0.168 per CCY Total job cost: \$9,202

TRUCK/LOADER TEAM WORKTask description: **Haul topsoil to areas for revegetation**Site: **Parcel 122 - Resource
Development Project**Permit Action: TR3Permit/Job#: M2015033**PROJECT IDENTIFICATION**

Task #: 04A State: Colorado Abbreviation: None
 Date: 5/3/2024 County: Weld Filename: M033-04a
 User: RDZ

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

	Equipment Description
Truck Loader Team -Truck:	Generic 12-18 cy, 6x4
-Loader:	CAT 966H high lift
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	NA	100
Ownership cost/hour:	\$26.39	\$65.69	\$241.38	\$241.38	NA	\$16.65
Operating cost/hour:	\$64.76	\$48.09	\$143.92	\$143.92	NA	\$37.60
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Operator cost/hour:	\$24.82	\$35.97	\$40.04	\$40.04	NA	\$0.00
Unit Subtotals:	\$115.97	\$149.75	\$425.34	\$425.34	NA	\$54.25
Number of Units:	3	1	1	1	0	1
Group Subtotals:	Work: \$497.66		Support: \$850.68		Maint: \$54.25	

Total work team cost/hour: **\$1,402.59****MATERIAL QUANTITIES**

Initial volume: 36,655 CCY Swell factor: 1.215
 Loose volume: **44,536** LCY

Source of estimated volume: Exhibit L
 Source of estimated swell factor: Cat Handbook
 Material Purchase Cost: \$0.00
 Total Cost: \$0.00

HOURLY PRODUCTION**Truck Capacity:****Truck Payload (weight) Basis:**

Material weight: 1,600 Pounds/LCY
 Description: Top Soil
 Rated Payload: 50,300 Pounds

Payload Capacity: 31.44 LCY**Truck Bed (volume) Basis:**

Struck Volume: 12.00 LCY
 Heaped Volume: 18.00 LCY
 Average Volume: 15.00 LCY
 Adjusted Volume: 18.00 LCY

Final Truck Volume Based on Number of Loader Passes: 13.88 LCY**Loading Tool Capacity**Bucket Size Class: NA

Rated Capacity: 5.000 LCY (heaped)
 Bucket Fill Factor: 0.925 Loose material - 1/8" to 3/8" (90 - 95%) 0.925
 Adjusted Capacity: 4.625 LCY

Job Condition Corrections:Site Altitude (ft.): 4800 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)

Net Correction: 0.830 0.830**Loading Tool Cycle Time:** Number of Loading Tool Passes Required to Fill Truck: 3 passes**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.000	minutes
Adjusted Loader Cycle Time:		0.500	minutes
Net Load Time per Truck:		1.100	minutes

Truck Cycle Time:

Truck Exchange Time: 0.50 Minutes Adjusted for site altitude: 0.500 Minutes
 Truck Load Time: 1.100 Minutes Adjusted for site altitude: 1.100 Minutes
 Truck Maneuver and Dump Time: 0.90 Minutes Adjusted for site altitude: 0.900 Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0Road Condition: Hard, smooth, stabilized, surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	5.00	2.00	7.00	1568	0.438

Haul Time: **0.438** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	-5.00	2.00	-3.00	2938	0.265

Return Time: **0.265** minutesTotal Truck Cycle Time: **3.203** minutes

Loading Tool unit
 Production 520.31 LCY/Hour
 Truck Unit Production
259.91 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s)

Adjusted for job efficiency: 431.86 LCY/Hour
 Adjusted for job efficiency: 215.73 LCY/Hour
 Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 647.18 LCY/Hour
 Adjusted single truck/loader team production: 431.86 LCY/Hour
 Adjusted multiple truck/loader team production: **431.86** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **103.13** HoursUnit cost: \$3.248 /LCY Total job cost: **\$144,643**

BULLDOZER WORKTask description: Grade topsoil

Site: Parcel 122 - Resource Development Project Permit Action: TR3 Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 04B State: Colorado Abbreviation: None
 Date: 5/3/2024 County: Weld Filename: M033-04b
 User: RDZ

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>\$40.04</u>	<u>NA</u>

Total unit Cost/Hour: \$425.34
 Total Fleet Cost/Hour: \$850.67

MATERIAL QUANTITIES

Initial Volume: 36,655
 Swell factor: 1.000
 Loose volume: **36,655** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
 Unadjusted hourly production: 1,400.0 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -5 %
 Average site altitude: 4,800 feet

Material weight: 1,600 lbs/LCYWeight description: Top Soil

<u>Job Condition Correction Factor</u>		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.200</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>

Visibility:	1.000	(AVG.)
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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.1977

Adjusted unit production: 1,676.78 LCY/hr

Adjusted fleet production: **3353.56** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.254/LCY

Total job time: **10.93** Hours

Total job cost: **\$9,298**

REVEGETATION WORKTask description: Seed 45.44 acresSite: Parcel 122 - Resource
Development ProjectPermit Action: TR3Permit/Job#: M2015033**PROJECT IDENTIFICATION**Task #: 05A
Date: 5/3/2024
User: RDZState: Colorado
County: WeldAbbreviation: None
Filename: M033-05aAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.50	\$99.34
			Total Fertilizer Materials Cost/Acre	\$99.34

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
Alkali Sacaton	0.01	0.39	\$0.28
Switchgrass - Blackwell	0.90	8.04	\$10.35
Blue Grama - Lovington	0.20	3.26	\$3.20
Indian Ricegrass - Native	1.90	6.15	\$12.35
Sand Dropseed	0.01	1.19	\$0.10
Kentucky Bluegrass - Ginger	0.05	2.47	\$0.16
Little Bluestem - Pastura	0.70	4.18	\$9.44
Sideoats Grama - Vaughn	1.80	5.91	\$15.08
Strawberry Clover (coated)	0.10	0.68	\$0.63

Smooth Brome - Manchac	0.10	0.33	\$0.33
Sheep Fescue - Covar	0.40	6.24	\$2.44
Tall Wheatgrass - Jose	1.10	1.99	\$3.71
Totals Seed Mix	7.27	40.84	\$58.06

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
Herbicide - Curtail @ 4.0 pt/ac	1.00	ACRE	\$35.09	\$35.09
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
Total Mulch Materials Cost/Acre				\$894.66

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Weed spray, truck, non-aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$137.18

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: 45.44 Cost /Acre: \$1,902.26
 Estimated Failure Rate: 25% Cost /Acre*: \$1,902.26
 *Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING,MU
LCHING

Initial Job Cost: \$86,438.69
 Reseeding Job Cost: \$21,609.67
 Total Job Cost: \$108,048
 Job Hours: 45.00

DEMOLITION WORK

Task description: Demo and haul of conveyor, blocks, and truss

Parcel 122 - Resource
Site: Development Project

Permit Action:

TR3

Permit/Job#: M2015033

PROJECT IDENTIFICATION

Task #: 06A
Date: 5/3/2024
User: RDZ

State: Colorado
County: Weld

Abbreviation: None
Filename: M033-06a

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
Conveyor and blocks	3,537'x3'x6'. 86 blocks	Conveyor, demolition, off-site disposal in approved landfill, 30 mile haul	73,986.00	CF	\$0.81	\$59,928.66
Truss	125' long, 30'high	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 30 mile haul	37,500.00	CF	\$0.56	\$21,037.50

Job Hours: <u>300.00</u>	Subtotal (unadjusted): <u>\$80,966.16</u>	Total Cost (adjusted for location): <u>\$72,221.81</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization/Demob.**Site: **Parcel 122 - Resource
Development Project**

Permit Action:

TR3

Permit/Job#: M2015033

PROJECT IDENTIFICATIONTask #: 07A
Date: 5/15/2024
User: RDZState: Colorado
County: WeldAbbreviation: None
Filename: M033-07a

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COSTShift basis: 1 per day
Cost 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
Cat D8T - 8SU	47.71	\$241.38	\$158.17	2	\$799.10	\$316.34	\$500.00
CAT 966H high lift	25.80	\$65.69	\$82.29	1	\$147.98	\$82.29	\$250.00
CAT 815F	22.88	\$147.57	\$82.29	2	\$459.72	\$164.58	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00

Subtotals: **\$1,495.82** **\$645.50** **\$1,500.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 12-18 cy, 6x4	\$115.97	3	\$347.91	\$347.91
Water Tanker, 3,500 Gal.	\$54.25	1	\$54.25	\$54.25
Light Duty Pickup, 4x4, 3/4 T.	\$15.83	1	\$15.83	\$15.83

Subtotals: **\$417.99** **\$417.99**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	LOGMONT	
Total one-way travel distance:	15.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost *	\$4,605.99
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$313.49
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.38	0.38
Return Time (Hours):	0.38	0.38
Loading Time (Hours):	0.00	NA
Unloading Time (Hours):	0.00	NA
Subtotals:	0.75	0.75

JOB TIME AND COST

Total job time: 1.50 Hours

Total job cost: \$4,919