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

October 9, 2024

Jason Burkey
Oldcastle SW Group, Inc. dba United Companies of Mesa County
2273 River Road
Grand Junction, CO 81502

RE: 15 Road Gravel Pit, Permit No. M-2002-11, Reclamation Cost Estimate

Dear Mr. Burkey:

This reclamation cost update was in response to the site inspection conducted on September 24, 2024. It is Division policy to periodically update its costs to ensure that the Financial Warranty adequately, reflects the actual current cost of fulfilling the requirements of the approved reclamation plan.

The bond was last reviewed in 2021 and with the last surety increase in 2014. Below is a table summarizing input values that have been updated based on site conditions. This table does not account for price changes resulting from inflation or other RS Means cost changes. Bond calculations are based on a combination of field observations and worst case scenario based on the approved reclamation plan.

General Assumptions:

- TR—5 in 2014 provides Exhibit L – Worst Case Scenario Bonding
- Lake 2 released
- Lake 1 mostly reclaimed but wetlands benches not installed. Need TR or have to drain and backfill/reveg to meet current Rec Plan
- Lake 3 Slopes nearly vertical, grade everything to 3H: 1V and Decompact flat areas prior to reveg.
- Lake 3 partially mined out assumed 2H: 1V. Drain then grade out slopes and reveg. Decompact adjacent stockpile area.
- Utility line will bisect Lake 3 and 3

Potential Revisions/ Updates:

- Request that you update Exhibit L to reflect current conditions.
- Utilization of manure and fertilizer. Are both necessary, have you done soil testing to indicate a need? Potentially omit unless needed. Also manure is super expensive, cheaper soil amendments are available.

- Lake 1 does not match the approved reclamation plan but appears reclaimed. Do a TR to make as built match site conditions.
- Wetlands are broadcast seed but mulch applications. If you can mulch, you can also drill seed. If too soft to drill seed it can't be crimp in straw. Revise to make methods match.
- Maps indicate where the main overburden pile is adjacent to Lake 1 but its unclear where the other various overburden piles are located. Similarly where are the various stockpiles of topsoil located. Will help more accurately calculate haul distances.
- User provided bonding cost need updated for inflation:
    - Truck scale - $ 4000.
    - Office building with foundation - $7000
    - Storage building - $300
    - Fuel Storage: $ 1000.

Summary of inputs used in attached reclamation cost estimate.

Task	**Form Used**	**Description**
01a	Pumping	Drain lake prior to grading – Lake 1 9'D x 29.1 ac = 11535123 CF (Exhibit L-1) 30,000 sq. ft. inflow (20'H x 1500LF adjacent to river)
01b	Truck	Transport Overburden and Placement for wetland shelf – Lake 1 11.51 ac x 9 ft = 167,125 CY (Exhibit L-1)
01c	Ripper	Rip Compacted Areas – Lake 1 Estimated 5 ac around lake
01d	Truck	Transport Topsoil and Placement – Lake 1 11.51 ac @ 8" = 12,380 CY wetlands 8.4 ac @ 8" = 9,035 CY around lake 21,415 CY topsoil (Exhibit L-1)
01e	Reveg	Reveg Wetland – Lake 1 11.51 ac
01f	Reveg	Reveg Dry Rangeland – Lake 1 8.4 ac
		Lake 2 released – No tasks

03a	Pumping	Drain lake prior to grading - Lake 3 12'D x 27ac = 324 ac/ft (actual site conditions) 24,000 sq. ft. inflow (20'H x 1200LF adjacent to river)
03b	Dozer	Establish 3H: 1V Slopes – Lake 3 4,325 LF of 1H: 1V @25'H cut/fill = 16,019 CY
03b2	Truck	Transport backfill volume for grading 675 LF of 1H: 1V @25'H backfill = 10,000 CY
03c	Ripper	Rip compacted areas – Lake 3 Scale area ~10ac
03d	Truck	Transport Topsoil and Placement – Lake 3 ~5,000 LF x50'W = 5.74 ac wetlands, @ 8"= 6,174 CY (actual site conditions) 10 ac @ 8" = 10,775 CY Scale area (actual site conditions) 16,949 CY
03e	Reveg	Reveg Wetland – Lake 3 5.74 ac
03f	Reveg	Reveg Dry Rangeland – Lake 3 10ac ac
04a	Pumping	Drain lake prior to grading - Lake 4 12'D x 25ac = 300 ac/ft (actual site conditions) 30,000 sq. ft. inflow (20'H x 1500LF adjacent to river)
04b	Dozer	Establish 3H: 1V Slopes – Lake 4 5,007LF of 2H: 1V @20'H cut/fill =9,272 CY (Exhibit L-2)
04c	Ripper	Rip compacted areas – Lake 4 Stockpile area ~15 ac
04d	Truck	Transport Topsoil and Placement – Lake 4 ~5,007 LF x 50'W = 5.75 ac wetlands, @8"= 6,181 CY (Exhibit L-2) 15 ac @ 8" = 16,113 CY Stockpile area (actual site conditions) Total 22,294 CY

04e	Reveg	Reveg Wetland – Lake 4 5.75 ac
04f	Reveg	Reveg Dry Rangeland – Lake 4 15 ac
05a	Demo	Structure Removal
10a	Mob	Initial Mobilization
10b	Mob	Secondary Mobilization

Per policy I wanted to send this out for review. The last Exhibit L – Reclamation Cost Estimate TR-5 was submitted din 2014. A revised Exhibit L will aid in the accuracy of this estimate. Please look it over and let me know if there are errors or concerns. As noted you may also wish to revise your reclamation plan. If no response is received by **Monday, December 9, 2024** then I'll issue a surety increase. This will be a total required bond amount of $ **5,494,936**, which is an increase of $4,640,158 over the $584,778 currently held.

Please feel free to contact me with any further questions. Amy Yeldell at the Division of Reclamation, Mining and Safety, Rm 215, 1001 E 62nd Ave, Denver CO 80216. Direct contact can be made by phone at 970-210-1272 or via email at amy.yeldell@ state.co.us

Sincerely,

Amy Yeldell

Amy Yeldell
Environmental Protection Specialist

Ec:
Travis Marshall, Senior EPS, Grand Junction DRMS

COST SUMMARY WORK

Task description: **Post inspection update**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: ACY State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-ACY
User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Lake 1 - Drain for grading banks	PUMPING	1	608.85	$32,787
01b	Lake 1 - Transport Overburden for Backfilling & Placement	TRUCK1	1	280.57	$417,810
01c	Lake 1 - Rip Compacted Areas	RIPPER	2	4.28	$2,959
01d	Lake 1 - Transport Topsoil & Placement	TRUCK1	1	35.95	$53,530
01e	Lake 1 - Revegetate Wetland Areas	REVEGE	1	14.00	$730,398
01f	Lake 1 - Revegetate Dry Rangeland	REVEGE	1	13.00	$529,649
03a	Lake 3 - Drain lake for grading banks	PUMPING	1	399.17	$21,496
03b	Lake 3 - Establishing 3H: 1V highwalls	DOZER	1	46.85	$15,135
03b2	Lake 3 - Transport Overburden for Backfilling & Placement	TRUCK1	1	19.05	$28,375
03c	Lake 3 - Rip Compacted Areas	RIPPER	2	8.56	$5,918
03d	Lake 3 - Transport Topsoil & Placement	TRUCK1	1	32.29	$48,093
03e	Lake 3 - Revegetate Wetland Areas	REVEGE	1	7.00	$364,247
03f	Lake 3 - Revegetate Dry Rangeland	REVEGE	1	16.00	$630,534
04a	Lake 4 - Drain for grading banks	PUMPING	1	371.16	$19,987
04b	Lake 4 - Establishing 3H: 1V highwalls	DOZER	1	25.05	$8,092
04c	Lake 4 - Rip Compacted Areas	RIPPER	2	12.84	$8,878
04d	Lake 4 - Transport Topsoil & Placement	TRUCK1	1	42.48	$63,259
04e	Lake 4 - Revegetate Wetland Areas	REVEGE	1	7.00	$364,882
04f	Lake 4 - Revegetate Dry Rangeland	REVEGE	1	23.00	$945,801
05a	Structure Removal	DEMOLISH	1	8.00	$4,143
10a	Initial Mobilization	MOBILIZE	1	2.90	$8,462
10b	Secondary Mobilization	MOBILIZE	1	2.90	$1,611
		SUBTOTALS:		**1980.9**	**$4,306,046**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$86,982
Performance bond:	1.05	Total =	$45,213
Job superintendent:	300.00	Total =	$23,781
Profit:	10.00	Total =	$430,605
		TOTAL O & P =	$586,581
		CONTRACT AMOUNT (direct + O & P) =	$4,892,627

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	4.25	Total =	$207,937
Reclamation management and/or administration:	5.41		$264,691
CONTINGENCY:	3.00	Total =	$129,181
		TOTAL INDIRECT COST =	$1,188,890
		TOTAL BOND AMOUNT (direct + indirect) =	**$5,494,936**

PUMPING WORK

Task description: **Lake 1 - Drain for grading banks**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-01a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 6 in.	2
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	2
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	4
Labor Unit 1:	Pump operator	1

Horsepower: 60
Shift Basis: 1 per day
Weight: 0.45
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$18.06	NA
Operating Cost/Hour:	$7.56	100
Operator Cost/Hour:	$28.23	NA
Total Unit Cost/Hour:	$53.85	

Total Fleet Cost/Hour: $53.85

PUMPING QUANTITIES

Initial Pond Volume: 11,535,123.00
Final Pond Volume: **86,288,487.60** gallons
Total Pond Inflow Surface Area: 30,000 Sq. ft.
Total Pond Inflow Volume per Hour: 5,274.00 gallons

Conversion factor: 7.4805
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: 9'D x 29.1 ac = 11535123 CF (Exhibit L-1)

PUMPING TIME

Maximum Pump Capacity:	130,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	25	feet
Total Head:	30	feet
CPB Pump Capacity:	123,300	gph/pump
Site Altitude:	4,470	feet

Adjusted Pumping Capacity:	246,600	gph
Initial Unadjusted Pumping Time:	349.91	hours
Inflow during Initial Pumping:	1,845,440	gallons
Net Unadjusted Pumping Time:	357.40	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	327.63	hours

JOB TIME AND COST

Total job time: **327.63** Hours

Unit cost: $0.000200 /Gallon Total job cost: **$17,643**

TRUCK/LOADER TEAM WORK

Task description: **Lake 1 - Transport Overburden for Backfilling & Placement**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 01B State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-01b
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	$108.25	$69.00	$173.32	$173.32	NA	NA
Operating cost/hour:	$79.54	$60.57	$16.46	$109.71	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$14.53	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	$1.59	$0.00	NA	NA
Operator cost/hour:	$24.82	$56.84	$40.04	$40.04	NA	NA
Unit Subtotals:	$212.61	$186.41	$231.40	$323.07	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	$611.63	Support:	$877.54	Maint:	$0.00

Total work team cost/hour: **$1,489.17**

MATERIAL QUANTITIES

Initial volume: 167,125 CCY Swell factor: 1.000
Loose volume: **167,125** LCY

Source of estimated volume: 11.51 ac x 9 ft = 167,125 CY (Exhibit L-1)
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: 2,700 Pounds/LCY
Description: Sand and clay - Loose
Rated Payload: 87,000 Pounds
Payload Capacity: 32.22 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4470 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	1123	1.324

Haul Time: **1.324** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	2155	0.773

Return Time: **0.773** minutes
Total Truck Cycle Time: **5.267** minutes

Loading Tool unit Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production 358.84 LCY/Hour Adjusted for job efficiency: 297.84 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.67 LCY/Hour
Adjusted single truck/loader team production: 595.67 LCY/Hour
Adjusted multiple truck/loader team production: **595.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **280.57** Hours

Unit cost: $2.500 /LCY Total job cost: **$417,810**

BULLDOZER RIPPING WORK

Task description: **Lake 1 - Rip Compacted Areas**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 01C State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-01c
User: ACY

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:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper Ownership Cost/Hour:	$14.53	NA
Ripper Operating Cost/Hour:	$7.95	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$345.55	

Total Fleet Cost/Hour: **$691.09**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 5.00 acres Rip Depth (ft): 2.00 Volume: 16,133 BCY or CCY

Source of estimated quantity: Staff estimates adjacent areas 5 ac

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:	100.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.703	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.703 Acres/hr

Site Altitude:	4,470	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: **1.17** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **4.28** Hours

Unit cost: $591.852 Per acre Total job cost: **$2,959**

TRUCK/LOADER TEAM WORK

Task description: **Lake 1 - Transport Topsoil & Placement**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 01D State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-01d
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	$108.25	$69.00	$173.32	$173.32	NA	NA
Operating cost/hour:	$79.54	$60.57	$16.46	$109.71	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$14.53	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	$1.59	$0.00	NA	NA
Operator cost/hour:	$24.82	$56.84	$40.04	$40.04	NA	NA
Unit Subtotals:	$212.61	$186.41	$231.40	$323.07	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	$611.63	Support:	$877.54	Maint:	$0.00

Total work team cost/hour: **$1,489.17**

MATERIAL QUANTITIES

Initial volume: 21,412 CCY Swell factor: 1.000
Loose volume: **21,412** LCY

Source of estimated volume: 11.51 around 8.4 ac @ 8”D
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: 2,700 Pounds/LCY
Description: Sand and clay - Loose
Rated Payload: 87,000 Pounds
Payload Capacity: 32.22 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4470 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	1123	1.324

Haul Time: **1.324** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	2155	0.773

Return Time: **0.773** minutes
Total Truck Cycle Time: **5.267** minutes

Loading Tool unit Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production 358.84 LCY/Hour Adjusted for job efficiency: 297.84 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.67 LCY/Hour
Adjusted single truck/loader team production: 595.67 LCY/Hour
Adjusted multiple truck/loader team production: **595.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **35.95** Hours

Unit cost: $2.500 /LCY Total job cost: **$53,530**

REVEGETATION WORK

Task description: **CTaskDescription**

Site: **CSite** Permit Action: CJobAction Permit/Job#: CPermitID

PROJECT IDENTIFICATION

Task #: 01E State: CState Abbreviation: CAbbreviation
Date: 10/9/2024 County: CCounty Filename: CFilename
User: ACY

Agency or organization name: CAgencyName

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	$77.10
Tractor towed spreader (MEANS 32 01 90.13 0120)	$43.12
Total Fertilizer Application Cost/Acre	**$120.23**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	$29.08
Orchardgrass - Potomac	0.50	6.20	$2.19
Elk Sedge	0.10	0.23	$50.41
Slender Wheatgrass - Native	3.00	10.95	$21.19
Western Wheatgrass - Arriba	0.10	0.25	$0.90
Sweetvetch, Utah or Northern	0.50	0.23	$44.76
Red Top	1.00	114.55	$10.47
Reedgrass, Canadian (or Blue Joint)	0.20	20.57	$82.51
Reedgrass, Northern - Native	0.50	51.42	$79.91

Saltgrass, Inland	1.00	13.86	$49.84
Snowberry, Western	1.00	1.72	$74.63
Sumac, Skunkbrush	0.40	0.19	$18.05
Timothy, Alpine - Native	1.00	29.84	$39.18
Basin Wildrye - Trailhead	1.50	6.10	$19.52
Greasewood, Black	1.00	140.45	$39.07
Totals Seed Mix	12.80	435.59	**$561.72**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$272.56
Total Seed Application Cost/Acre	**$272.56**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.13	$4.13
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$496.91**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$85.37
Power mulcher (MEANS 32 91 13.16 0350)	$157.25
Weed spray, truck, aquatic area, annuals [DMG]	$31.79
Total Mulch Application Cost/Acre	**$274.42**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
Cottonwood, Plains	22	Container, 2 gallon (MEANS)	$43.99	$2.40	$967.78
Totals Nursery Stock Cost / Acre					**$967.78**

JOB TIME AND COST

No. of Acres:	11.51	Cost /Acre:	$63,054.04
Estimated Failure Rate:	15%	Cost /Acre*:	$2,691.00
*Selected Replanting Work Items:	TILLING,SEEDING,NURSERY,MULCHING		

Initial Job Cost:	**$725,752.00**
Reseeding Job Cost:	**$4,646.01**
Total Job Cost:	**$730,398**
Job Hours:	**14.00**

REVEGETATION WORK

Task description: **Lake 1 - Revegetate Dry Rangeland**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 01F State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-01f
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	$77.10
Tractor towed spreader (MEANS 32 01 90.13 0120)	$43.12
Total Fertilizer Application Cost/Acre	**$120.23**

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
Total Tilling Cost/Acre	**$456.41**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	2.50	298.44	$32.52
Sandberg Bluegrass - VNS	2.00	42.47	$28.89
Galleta	2.50	9.13	$138.59
Globemallow, Scarlet (or copper)	0.50	5.66	$92.78
Winter Fat	0.25	0.64	$11.68
Yarrow, Western	0.50	30.40	$24.12
Kochia, Forage (Prostrate)	0.25	35.11	$5.20

Totals Seed Mix	8.50	421.84	**$333.79**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$236.64
Total Seed Application Cost/Acre	**$236.64**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.13	$4.13
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$496.91**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$85.37
Power mulcher (MEANS 32 91 13.16 0350)	$157.25
Weed spray, truck, non-aquatic areas, ann. [DMG]	$27.19
Total Mulch Application Cost/Acre	**$269.82**

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: 8.4 Cost /Acre: $62,156.61
Estimated Failure Rate: 50% Cost /Acre*: $1,793.57
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$522,115.52**
Reseeding Job Cost: **$7,532.99**
Total Job Cost: **$529,649**
Job Hours: **13.00**

PUMPING WORK

Task description: **Lake 3 - Drain lake for grading banks**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03A State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 6 in.	2
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	2
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	4
Labor Unit 1:	Pump operator	1

Horsepower: 60
Shift Basis: 1 per day
Weight: 0.45
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$18.06	NA
Operating Cost/Hour:	$7.56	100
Operator Cost/Hour:	$28.23	NA
Total Unit Cost/Hour:	$53.85	

Total Fleet Cost/Hour: $53.85

PUMPING QUANTITIES

Initial Pond Volume: 324.00
Final Pond Volume: **105,575,587.92** gallons
Total Pond Inflow Surface Area: 24,000 Sq. ft.
Total Pond Inflow Volume per Hour: 4,219.20 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: 12'D x 27ac = 324 ac/ft

PUMPING TIME

Maximum Pump Capacity:	130,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	25	feet
Total Head:	30	feet
CPB Pump Capacity:	123,300	gph/pump
Site Altitude:	4,470	feet

Adjusted Pumping Capacity:	246,600	gph
Initial Unadjusted Pumping Time:	428.12	hours
Inflow during Initial Pumping:	1,806,344	gallons
Net Unadjusted Pumping Time:	435.45	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	399.18	hours

JOB TIME AND COST

Total job time: **399.18** Hours

Unit cost: $0.000200 /Gallon Total job cost: **$21,496**

BULLDOZER WORK

Task description: **Lake 3 - Establishing 3H: 1V highwalls**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03B State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03b
User: ACY

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:

		Utilization %
Ownership Cost/Hour:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $323.07
Total Fleet Cost/Hour: **$323.07**

MATERIAL QUANTITIES

Initial Volume: 16,019
Swell factor: 1.180
Loose volume: **18,902** LCY

Source of estimated volume: 4,325 LF of 1H: 1V @25'H cut/fill
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 4,400 feet

Material weight: 2,600 lbs/LCY

Weight description: Clay and gravel - Wet

Job Condition Correction Factor		Source
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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3967

Adjusted unit production: 403.48 LCY/hr
Adjusted fleet production: **403.48** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.801/LCY

Total job time: **46.85** Hours
Total job cost: **$15,135**

TRUCK/LOADER TEAM WORK

Task description: **Lake 3 - Transport Overburden for Backfilling & Placement**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03B2 State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03b2
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	$108.25	$69.00	$173.32	$173.32	NA	NA
Operating cost/hour:	$79.54	$60.57	$16.46	$109.71	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$14.53	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	$1.59	$0.00	NA	NA
Operator cost/hour:	$24.82	$56.84	$40.04	$40.04	NA	NA
Unit Subtotals:	$212.61	$186.41	$231.40	$323.07	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	$611.63	Support:	$877.54	Maint:	$0.00

Total work team cost/hour: **$1,489.17**

MATERIAL QUANTITIES

Initial volume: 10,000 CCY Swell factor: 1.135
Loose volume: **11,350** LCY

Source of estimated volume: 675 LF of 1H: 1V @25'H backfill = 10,000 CY
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: 2,700 Pounds/LCY
Description: Sand and clay - Loose
Rated Payload: 87,000 Pounds
Payload Capacity: 32.22 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4470 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	1123	1.324

Haul Time: **1.324** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	2155	0.773

Return Time: **0.773** minutes
Total Truck Cycle Time: **5.267** minutes

Loading Tool unit Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production 358.84 LCY/Hour Adjusted for job efficiency: 297.84 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.67 LCY/Hour
Adjusted single truck/loader team production: 595.67 LCY/Hour
Adjusted multiple truck/loader team production: **595.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **19.05** Hours

Unit cost: $2.500 /LCY Total job cost: **$28,375**

BULLDOZER RIPPING WORK

Task description: **Lake 3 - Rip Compacted Areas**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03C State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03c
User: ACY

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:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper Ownership Cost/Hour:	$14.53	NA
Ripper Operating Cost/Hour:	$7.95	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$345.55	

Total Fleet Cost/Hour: **$691.09**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 10.00 acres Rip Depth (ft): 2.00 Volume: 32,267 BCY or CCY

Source of estimated quantity: Staff estimates adjacent areas 10 ac

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:	100.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.703	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.703 Acres/hr

Site Altitude:	4,470	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: **1.17** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **8.56** Hours

Unit cost: $591.852 Per acre Total job cost: **$5,918**

TRUCK/LOADER TEAM WORK

Task description: **Lake 3 - Transport Topsoil & Placement**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03D State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03d
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	$108.25	$69.00	$173.32	$173.32	NA	NA
Operating cost/hour:	$79.54	$60.57	$16.46	$109.71	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$14.53	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	$1.59	$0.00	NA	NA
Operator cost/hour:	$24.82	$56.84	$40.04	$40.04	NA	NA
Unit Subtotals:	$212.61	$186.41	$231.40	$323.07	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	$611.63	Support:	$877.54	Maint:	$0.00

Total work team cost/hour: **$1,489.17**

MATERIAL QUANTITIES

Initial volume: 16,949 CCY Swell factor: 1.135
Loose volume: **19,237** LCY

Source of estimated volume: Staff estimates
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: 2,700 Pounds/LCY
Description: Sand and clay - Loose
Rated Payload: 87,000 Pounds
Payload Capacity: 32.22 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4470 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	1123	1.324

Haul Time: **1.324** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	2155	0.773

Return Time: **0.773** minutes
Total Truck Cycle Time: **5.267** minutes

Loading Tool unit Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production 358.84 LCY/Hour Adjusted for job efficiency: 297.84 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.67 LCY/Hour
Adjusted single truck/loader team production: 595.67 LCY/Hour
Adjusted multiple truck/loader team production: **595.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **32.29** Hours

Unit cost: $2.500 /LCY Total job cost: **$48,093**

REVEGETATION WORK

Task description: **Lake 3 - Revegetate Wetland Areas**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03E State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03e
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	$77.10
Tractor towed spreader (MEANS 32 01 90.13 0120)	$43.12
Total Fertilizer Application Cost/Acre	**$120.23**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	$29.08
Orchardgrass - Potomac	0.50	6.20	$2.19
Elk Sedge	0.10	0.23	$50.41
Slender Wheatgrass - Native	3.00	10.95	$21.19
Western Wheatgrass - Arriba	0.10	0.25	$0.90
Sweetvetch, Utah or Northern	0.50	0.23	$44.76
Red Top	1.00	114.55	$10.47
Reedgrass, Canadian (or Blue Joint)	0.20	20.57	$82.51
Reedgrass, Northern - Native	0.50	51.42	$79.91

Saltgrass, Inland	1.00	13.86	$49.84
Snowberry, Western	1.00	1.72	$74.63
Sumac, Skunkbrush	0.40	0.19	$18.05
Timothy, Alpine - Native	1.00	29.84	$39.18
Basin Wildrye - Trailhead	1.50	6.10	$19.52
Greasewood, Black	1.00	140.45	$39.07
Totals Seed Mix	12.80	435.59	**$561.72**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$272.56
Total Seed Application Cost/Acre	**$272.56**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.13	$4.13
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$496.91**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$85.37
Power mulcher (MEANS 32 91 13.16 0350)	$157.25
Weed spray, truck, aquatic area, annuals [DMG]	$31.79
Total Mulch Application Cost/Acre	**$274.42**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
Cottonwood, Plains	22	Container, 2 gallon (MEANS)	$43.99	$2.40	$967.78
Totals Nursery Stock Cost / Acre					**$967.78**

JOB TIME AND COST

No. of Acres:	5.74	Cost /Acre:	$63,054.04
Estimated Failure Rate:	15%	Cost /Acre*:	$2,691.00
*Selected Replanting Work Items:	TILLING,SEEDING,NURSERY,MULCHING		

Initial Job Cost:	**$361,930.19**
Reseeding Job Cost:	**$2,316.95**
Total Job Cost:	**$364,247**
Job Hours:	**7.00**

REVEGETATION WORK

Task description: **Lake 3 - Revegetate Dry Rangeland**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 03F State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-03f
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	$77.10
Tractor towed spreader (MEANS 32 01 90.13 0120)	$43.12
Total Fertilizer Application Cost/Acre	**$120.23**

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
Total Tilling Cost/Acre	**$456.41**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	2.50	298.44	$32.52
Sandberg Bluegrass - VNS	2.00	42.47	$28.89
Galleta	2.50	9.13	$138.59
Globemallow, Scarlet (or copper)	0.50	5.66	$92.78
Winter Fat	0.25	0.64	$11.68
Yarrow, Western	0.50	30.40	$24.12
Kochia, Forage (Prostrate)	0.25	35.11	$5.20

Totals Seed Mix	8.50	421.84	**$333.79**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$236.64
Total Seed Application Cost/Acre	**$236.64**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.13	$4.13
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$496.91**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$85.37
Power mulcher (MEANS 32 91 13.16 0350)	$157.25
Weed spray, truck, non-aquatic areas, ann. [DMG]	$27.19
Total Mulch Application Cost/Acre	**$269.82**

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: 10 Cost /Acre: $62,156.61
Estimated Failure Rate: 50% Cost /Acre*: $1,793.57
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$621,566.10**
Reseeding Job Cost: **$8,967.85**
Total Job Cost: **$630,534**
Job Hours: **16.00**

PUMPING WORK

Task description: **Lake 4 - Drain for grading banks**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 6 in.	2
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	2
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	4
Labor Unit 1:	Pump operator	1

Horsepower: 60
Shift Basis: 1 per day
Weight: 0.45
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$18.06	NA
Operating Cost/Hour:	$7.56	100
Operator Cost/Hour:	$28.23	NA
Total Unit Cost/Hour:	$53.85	

Total Fleet Cost/Hour: $53.85

PUMPING QUANTITIES

Initial Pond Volume: 300.00
Final Pond Volume: **97,755,174.00** gallons
Total Pond Inflow Surface Area: 30,000 Sq. ft.
Total Pond Inflow Volume per Hour: 5,274.00 gallons

Conversion factor: 325850.5800
Unit inflow rate in gph/sq. ft.: 0.1758

Source of estimated volume: 12'D x 25ac = 300 ac/ft (actual site conditions)

PUMPING TIME

Maximum Pump Capacity:	130,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	25	feet
Total Head:	30	feet
CPB Pump Capacity:	123,300	gph/pump
Site Altitude:	4,470	feet

Adjusted Pumping Capacity:	246,600	gph
Initial Unadjusted Pumping Time:	396.41	hours
Inflow during Initial Pumping:	2,090,676	gallons
Net Unadjusted Pumping Time:	404.89	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	371.16	hours

JOB TIME AND COST

Total job time: **371.16** Hours

Unit cost: $0.000200 /Gallon Total job cost: **$19,987**

BULLDOZER WORK

Task description: **Lake 4 - Establishing 3H: 1V highwalls**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04B State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04b
User: ACY

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:

		Utilization %
Ownership Cost/Hour:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $323.07
Total Fleet Cost/Hour: **$323.07**

MATERIAL QUANTITIES

Initial Volume: 9,272
Swell factor: 1.090
Loose volume: **10,106** LCY

Source of estimated volume: 5,007LF of 2H: 1V @20'H cut/fill =9,272 CY (Exhibit L-2)
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: 0 %
Average site altitude: 4,400 feet

Material weight: 2,600 lbs/LCY

Weight description: Clay and gravel - Wet

Job Condition Correction Factor		Source
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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3967

Adjusted unit production: 403.48 LCY/hr
Adjusted fleet production: **403.48** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.801/LCY

Total job time: **25.05** Hours
Total job cost: **$8,092**

BULLDOZER RIPPING WORK

Task description: **Lake 4 - Rip Compacted Areas**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04C State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04c
User: ACY

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:	$173.32	NA
Operating Cost/Hour:	$109.71	100
Ripper Ownership Cost/Hour:	$14.53	NA
Ripper Operating Cost/Hour:	$7.95	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$345.55	

Total Fleet Cost/Hour: **$691.09**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 15.00 acres Rip Depth (ft): 2.00 Volume: 48,400 BCY or CCY

Source of estimated quantity: Staff estimates adjacent areas 15 ac

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:	100.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.703	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.703 Acres/hr

Site Altitude:	4,470	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: **1.17** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **12.85** Hours

Unit cost: $591.852 Per acre Total job cost: **$8,878**

TRUCK/LOADER TEAM WORK

Task description: **Lake 4 - Transport Topsoil & Placement**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04D State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04d
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	15	100	NA	NA
Ownership cost/hour:	$108.25	$69.00	$173.32	$173.32	NA	NA
Operating cost/hour:	$79.54	$60.57	$16.46	$109.71	NA	NA
%Utilization-riper:	NA	0	20	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$14.53	$0.00	NA	NA
Ripper op. cost/hour:	NA	$0.00	$1.59	$0.00	NA	NA
Operator cost/hour:	$24.82	$56.84	$40.04	$40.04	NA	NA
Unit Subtotals:	$212.61	$186.41	$231.40	$323.07	NA	NA
Number of Units:	2	1	1	2	0	0
Group Subtotals:	Work:	$611.63	Support:	$877.54	Maint:	$0.00

Total work team cost/hour: **$1,489.17**

MATERIAL QUANTITIES

Initial volume: 22,294 CCY Swell factor: 1.135
Loose volume: **25,304** LCY

Source of estimated volume: Staff estimates and 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: 2,700 Pounds/LCY
Description: Sand and clay - Loose
Rated Payload: 87,000 Pounds
Payload Capacity: 32.22 LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **31.50** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	**7.875**	LCY

Job Condition Corrections: Site Altitude (ft.): 4470 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: 4 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: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**1.570**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.570	Minutes	Adjusted for site altitude:	1.570	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	1123	1.324

Haul Time: **1.324** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1350.00	0.00	8.00	8.00	2155	0.773

Return Time: **0.773** minutes
Total Truck Cycle Time: **5.267** minutes

Loading Tool unit Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production 358.84 LCY/Hour Adjusted for job efficiency: 297.84 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 595.67 LCY/Hour
Adjusted single truck/loader team production: 595.67 LCY/Hour
Adjusted multiple truck/loader team production: **595.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **42.48** Hours

Unit cost: $2.500 /LCY Total job cost: **$63,259**

REVEGETATION WORK

Task description: **Lake 4 - Revegetate Wetland Areas**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04E State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04e
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	$77.10
Tractor towed spreader (MEANS 32 01 90.13 0120)	$43.12
Total Fertilizer Application Cost/Acre	**$120.23**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$117.61
Total Tilling Cost/Acre	**$117.61**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	1.00	39.03	$29.08
Orchardgrass - Potomac	0.50	6.20	$2.19
Elk Sedge	0.10	0.23	$50.41
Slender Wheatgrass - Native	3.00	10.95	$21.19
Western Wheatgrass - Arriba	0.10	0.25	$0.90
Sweetvetch, Utah or Northern	0.50	0.23	$44.76
Red Top	1.00	114.55	$10.47
Reedgrass, Canadian (or Blue Joint)	0.20	20.57	$82.51
Reedgrass, Northern - Native	0.50	51.42	$79.91

Saltgrass, Inland	1.00	13.86	$49.84
Snowberry, Western	1.00	1.72	$74.63
Sumac, Skunkbrush	0.40	0.19	$18.05
Timothy, Alpine - Native	1.00	29.84	$39.18
Basin Wildrye - Trailhead	1.50	6.10	$19.52
Greasewood, Black	1.00	140.45	$39.07
Totals Seed Mix	12.80	435.59	**$561.72**

Application

Description	**Cost /Acre**
Broadcast seeding [DMG]	$272.56
Total Seed Application Cost/Acre	**$272.56**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$4.13	$4.13
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$496.91**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$85.37
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Weed spray, truck, aquatic area, annuals [DMG]	$31.79
Total Mulch Application Cost/Acre	**$274.42**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
Cottonwood, Plains	22	Container, 2 gallon (MEANS)	$43.99	$2.40	$967.78
Totals Nursery Stock Cost / Acre					**$967.78**

JOB TIME AND COST

No. of Acres:	5.75	Cost /Acre:	$63,054.04
Estimated Failure Rate:	15%	Cost /Acre*:	$2,691.00
*Selected Replanting Work Items:	TILLING,SEEDING,NURSERY,MULCHING		

Initial Job Cost:	**$362,560.73**
Reseeding Job Cost:	**$2,320.99**
Total Job Cost:	**$364,882**
Job Hours:	**7.00**

REVEGETATION WORK

Task description: **Lake 4 - Revegetate Dry Rangeland**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 04F State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-04f
User: ACY

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	20.00	ton	$2,961.16	$59,223.11
Sodium nitrate, 16-0-0	750.00	pound	$1.36	$1,019.70
			Total Fertilizer Materials Cost/Acre	**$60,242.81**

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TILLING

Description	Cost /Acre
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Total Tilling Cost/Acre	**$456.41**

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Winter Fat	0.25	0.64	$11.68
Yarrow, Western	0.50	30.40	$24.12
Kochia, Forage (Prostrate)	0.25	35.11	$5.20

Totals Seed Mix	8.50	421.84	**$333.79**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$236.64
Total Seed Application Cost/Acre	**$236.64**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
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Application

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Power mulcher (MEANS 32 91 13.16 0350)	$157.25
Weed spray, truck, non-aquatic areas, ann. [DMG]	$27.19
Total Mulch Application Cost/Acre	**$269.82**

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: 15 Cost /Acre: $62,156.61
Estimated Failure Rate: 50% Cost /Acre*: $1,793.57
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$932,349.15**
Reseeding Job Cost: **$13,451.78**
Total Job Cost: **$945,801**
Job Hours: **23.00**

DEMOLITION WORK

Task description: **Structure Removal**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 05A State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-05a
User: ACY

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 95.50 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale	24' x 28'	Loading and 2 mile haul, no salvage - Machine loading	25.00	CY	$21.15	$528.75
Office	24' x 28' x 8'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 200 ft. push	5,376.00	CF	$0.26	$1,371.96
Office Foundation	24' x 28' x 6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	672.00	SF	$1.24	$833.08
Scale	24' x 28'	Hauling only, per mile, 12-18 CY truck - 30 mph average speed	30.00	MI	$10.14	$304.24
Storage Building	30' x 60'	USER PROVIDED ITEM	300.00	-	$1.00	$300.00
Fuel Storage	-	USER PROVIDED ITEM	1,000.00	-	$1.00	$1,000.00

Job Hours: 8.00 **Subtotal (unadjusted): $4,338.03** **Total Cost (adjusted for location): $4,142.82**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Initial Mobilization**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 10A State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-10a
User: ACY

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:	$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
Submersible pump - 460v, 6 in.	0.45	$8.79	$59.44	1	$68.23	$59.44	$250.00
Cat D8T - 8SU	53.08	$187.85	$125.64	3	$940.47	$376.92	$250.00
Cat 740	36.49	$108.25	$122.78	1	$231.03	$122.78	$250.00
CAT 980H	33.12	$69.00	$122.78	2	$383.56	$245.56	$500.00
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
Subtotals:					**$1,810.40**	**$923.58**	**$1,750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	$52.83	2	$105.66	$105.66
Flatbed Truck, 6x4, 45K GVW	$110.00	1	$110.00	$110.00
Subtotals:			**$215.66**	**$215.66**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION	
Total one-way travel distance:	12.50	miles
Average Travel Speed:	55.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$8,363.52
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$98.03

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.23	0.23
Return Time (Hours):	0.23	0.23
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.45	0.45

JOB TIME AND COST

Total job time:	**2.91**	Hours
Total job cost:	**$8,462**	

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Secondary Mobilization**

Site: **15 Road Gravel Pit** Permit Action: 2024-09 Permit/Job#: M2002114

PROJECT IDENTIFICATION

Task #: 10B State: Colorado Abbreviation: None
Date: 10/9/2024 County: Mesa Filename: M114-10b
User: ACY

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

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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
Subtotals:					**$187.11**	**$118.88**	**$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, 4x4, 1 T. Crew	$52.83	2	$105.66	$105.66
Flatbed Truck, 6x4, 45K GVW	$110.00	1	$110.00	$110.00
Subtotals:			**$215.66**	**$215.66**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION	
Total one-way travel distance:	12.50	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$1,513.31	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$98.03	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.23	0.23
Return Time (Hours):	0.23	0.23
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.45	0.45

JOB TIME AND COST

Total job time:	**2.91**	Hours
Total job cost:	**$1,611**	