

COST SUMMARY WORK

Task description: 2022-08-19 Initial Estimate

Site: Base Products Gravel Pit 2

Permit Action: 2022-08-19 Initial Estimate

Permit/Job#: M2022025

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 8/19/2022 County: Montrose Filename: M025-000
User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Remove office trailer and scale	DEMOLISH	1	10.00	\$1,000
02a	Place highwall backfill	LOADER	2	166.82	\$48,527
03a	Shape HW slope	DOZER	1	13.70	\$3,614
04a	Haul topsoil to disturbed area	LOADER	2	104.23	\$30,322
05a	Grade topsoil	DOZER	1	74.43	\$19,633
06a	Revegetate disturbed area	REVEGE	1	70.00	\$55,116
07a	Mobilize Reclamation Crew/Equipment	MOBILIZE	1	2.57	\$4,221
<u>SUBTOTALS:</u>				441.75	\$162,433

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$3,281
Performance bond:	1.05	Total =	\$1,706
Job superintendent:	0.00	Total =	\$0
Profit:	10.00	Total =	\$16,243

TOTAL O & P = \$21,230

CONTRACT AMOUNT (direct + O & P) = \$183,663

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$500</u>	Total =	<u>\$500</u>
Engineering work and/or contract/bid preparation:	<u>0.00</u>	Total =	<u>\$0</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$9,183</u>

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$30,913

TOTAL BOND AMOUNT (direct + indirect) = \$193,346

DEMOLITION WORK

Task description: Remove office trailer and scale

Site: Base Products Gravel Pit 2 Permit Action: 2022-08-19 Initial Estimate Permit/Job#: M2022025

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 8/19/2022 County: Montrose Filename: M025-01a
User: DMC
Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 100.00 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Office trailer and scale	1	USER PROVIDED ITEM	1.00	1	\$1,000.00	\$1,000.00

Job Hours: 10.00 Subtotal (unadjusted): \$1,000.00 Total Cost (adjusted for location): \$1,000.00

WHEEL LOADER – LOAD AND CARRY WORKTask description: Place highwall backfill

Site: Base Products Gravel Pit 2 Permit Action: 2022-08-19 Initial Estimate Permit/Job#: M2022025

PROJECT IDENTIFICATION

Task #: 02A State: Colorado Abbreviation: None
 Date: 8/19/2022 County: Montrose Filename: M025-02a
 User: DMC

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

Basic Machine: CAT 972H Horsepower: 287
 Attachment 1: ROPS Cab Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$53.96	NA
Operating Cost/Hour:	\$50.78	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$145.45	
Total Fleet Cost/Hour:	\$290.89	

MATERIAL QUANTITIES

Initial volume: 45,370 CCY Swell factor: 1.125
 Loose volume: 51,041 LCY

Source of estimated volume: 500 l.f. x 70' height - from 2H to 3H:1V
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 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:	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:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.020	minutes
Adjusted Basic Cycle Time:		0.545	minutes

Rolling Resistance – Road Conditions

Haul: Very hard, smooth, asphalt or concrete, no tire penetration 1.2
 Return: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	1000	0.00	1.20	1.20	0.7092	(Cat HB)
Return Route:	1000	0.00	3.00	3.00	0.7510	(Cat HB)

Total Travel Time: 1.4603 minutes
Total Cycle Time: 2.0053 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: 6.16 LCY

Job Condition Correction Factors

Site Altitude: 5000 feet

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

Unadjusted Hourly Unit Production: 184.31 LCY/Hour
Adjusted Hourly Unit Production: 152.98 LCY/Hour
Adjusted Hourly Fleet Production: 305.96 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 166.82 Hours
Unit cost: \$0.951 /LCY Total job cost: \$48,527

BULLDOZER WORKTask description: Shape HW slopeSite: Base Products Gravel Pit 2Permit Action: 2022-08-19 Initial EstimatePermit/Job#: M2022025**PROJECT IDENTIFICATION**Task #: 03A
Date: 8/19/2022
User: DMCState: Colorado
County: MontroseAbbreviation: None
Filename: M025-03aAgency 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>\$124.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$97.63</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$263.78</u>	
Total Fleet Cost/Hour:	<u>\$263.78</u>	

MATERIAL QUANTITIESInitial Volume: 4,194
Swell factor: 1.000
Loose volume: 4,194 LCYSource of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feet
Unadjusted hourly production: 852.6 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 15 %
Average site altitude: 5,000 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packedJob Condition Correction FactorSource

Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(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:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3590

Adjusted unit
production: 306.08 LCY/hr
Adjusted fleet
production: **306.08** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.862/LCY

Total job time: **13.70** Hours
Total job cost: **\$3,614**

WHEEL LOADER – LOAD AND CARRY WORKTask description: Haul topsoil to disturbed area

Site: Base Products Gravel Pit 2 Permit Action: 2022-08-19 Initial Estimate Permit/Job#: M2022025

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
 Date: 8/19/2022 County: Montrose Filename: M025-04a
 User: DMC

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

Basic Machine: CAT 972H Horsepower: 287
 Attachment 1: ROPS Cab Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$53.96	NA
Operating Cost/Hour:	\$50.78	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$145.45	
Total Fleet Cost/Hour:	\$290.89	

MATERIAL QUANTITIES

Initial volume: 31,460 CCY Swell factor: 1.000
 Loose volume: 31,460 LCY

Source of estimated volume: Exhibit L
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 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:	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:	Small target 0.04	0.040	(Cat HB)
Net Cycle Time Adjustment:		0.060	minutes
Adjusted Basic Cycle Time:		0.585	minutes

Rolling Resistance – Road Conditions

Haul: Hard, smooth, stabilized, surfaced, watered, maintained 2.0
 Return: Very hard, smooth, asphalt or concrete, no tire penetration 1.2

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	1000	0.00	2.00	2.00	0.7557	(Cat HB)
Return Route:	1000	0.00	1.20	1.20	0.6922	(Cat HB)

Total Travel Time: 1.4479 minutes
Total Cycle Time: 2.0329 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: 6.16 LCY

Job Condition Correction Factors

Site Altitude: 5000 feet

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

Unadjusted Hourly Unit Production: 181.81 LCY/Hour
Adjusted Hourly Unit Production: 150.90 LCY/Hour
Adjusted Hourly Fleet Production: 301.81 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 104.24 Hours
Unit cost: \$0.964 /LCY Total job cost: \$30,322

BULLDOZER WORKTask description: **Grade topsoil**Site: **Base Products Gravel Pit 2**Permit Action: 2022-08-19 Initial
Estimate

Permit/Job#: M2022025

PROJECT IDENTIFICATIONTask #: 05A
Date: 8/19/2022
User: DMCState: Colorado
County: MontroseAbbreviation: None
Filename: M025-05a

Agency or organization name: DRMS

HOURLY EQUIPMENT COSTBasic 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:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$263.78	
Total Fleet Cost/Hour:	\$263.78	

MATERIAL QUANTITIESInitial Volume: 31,460
Swell factor: 1.000
Loose volume: **31,460 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feet
Unadjusted hourly
production: 491.9 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 5,000 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor**Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit
production: 422.69 LCY/hr
Adjusted fleet
production: **422.69** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.624/LCY

Total job time: **74.43** Hours
Total job cost: **\$19,633**

REVEGETATION WORKTask description: Revegetate disturbed areaSite: Base Products Gravel Pit 2Permit Action: 2022-08-19 Initial EstimatePermit/Job#: M2022025**PROJECT IDENTIFICATION**Task #: 06A
Date: 8/19/2022
User: DMCState: Colorado
County: MontroseAbbreviation: None
Filename: M025-06aAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	50.00	pound	\$0.29	\$14.50
			Total Fertilizer Materials Cost/Acre	\$14.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$39.64
Total Fertilizer Application Cost/Acre	\$39.64

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$407.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	3.00	9.71	\$19.50
Bottlebrush Squirreltail	0.50	2.20	\$8.11
Burnett, Small (or Little) - Delar	2.00	2.53	\$5.00
Galleta	3.00	10.95	\$67.05
Daisy or Sunflower, Maximillians	1.00	5.67	\$56.00
Saltbush, Four Wing	0.50	0.69	\$6.25
Globemallow, Scarlet (or copper)	0.50	5.66	\$67.75
Saltbush, Shadscale	0.50	0.75	\$5.00
Winter Fat	0.50	1.27	\$10.25

Sulphur Flower (or Buckwheat)	2.00	4.13	\$258.00
Rabbitbrush, Douglas	0.50	7.46	\$7.25
Totals Seed Mix	14.00	51.02	\$510.16

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
Total Seed Application Cost/Acre	\$232.00

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Total Mulch Materials Cost/Acre				\$842.72

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Total Mulch Application Cost/Acre	\$214.57

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: 19.5 Cost /Acre: \$2,261.17
 Estimated Failure Rate: 25% Cost /Acre*: \$2,261.17
 *Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING,MU
LCHING

Initial Job Cost: \$44,092.82
 Reseeding Job Cost: \$11,023.20
 Total Job Cost: \$55,116
 Job Hours: 70.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize Reclamation Crew/Equipment**

Site: **Base Products Gravel Pit 2** Permit Action: 2022-08-19 Initial Estimate Permit/Job#: M2022025

PROJECT IDENTIFICATION

Task #: 07A State: Colorado Abbreviation: None
 Date: 8/19/2022 County: Montrose Filename: M025-07a
 User: DMC

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:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

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	\$124.85	\$101.82	1	\$226.67	\$101.82	\$250.00
CAT 972H	28.00	\$53.96	\$101.82	2	\$311.56	\$203.64	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.79	\$68.22	1	\$83.01	\$68.22	\$250.00

Subtotals: **\$695.71** **\$441.90** **\$1,250.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$14.23	1	\$14.23	\$14.23

Subtotals: **\$14.23** **\$14.23**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: MONTROSE
 Total one-way travel distance: 5.00 miles
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost * \$4,216.45
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$4.07
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.14	0.14
Return Time (Hours):	0.14	0.14
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.29	0.29

JOB TIME AND COST

Total job time: 2.57 Hours

Total job cost: \$4,221