

Worst Case Costs for Permitting Action PR11 Year 2023

Post PR11 Estimate

Phase Bond Release Area Cost Accounting			Liability	Acres	Cost /Acre	%	Phase Bond Release Acreage	
	Worst Case Bond		\$ 39,216612.00	2836.40	\$15,649.35	100%	Phase 1	4684.5
	Phase I Bond Release		\$ 1,629,831.55	294.70	\$6,259.74	40%	Phase 2	4389.8
	Phase II Bond Release		\$ 897,596.41	432.80	\$2,347.40	15%	Phase 3	3957.0
	Total		TOTAL	\$41,744,040	3563.9			

COST SUMMARY WORK

Task description: PR11 Reclamation Cost Estimate

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 5/31/2022

County: Moffat

Filename: C010-000

User: ZTT

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Ash Disposal Pit Regrade (NW section)	DOZER	2	11.75	\$13,435
001B	Load/Haul Section E1,423,800	TRUCK1	1	40.89	\$274,182
002	Ash Disposal Pit Regrade (Section 1)	DOZER	2	25.26	\$28,894
002B	Ash Disposal Pit Regrade (Section 2)	DOZER	2	32.20	\$36,828
003	Ash Disposal Pit Regrade (Section 3-1)	DOZER	2	2.27	\$2,597
003B	Ash Disposal Pit Regrade (Section 3-2)	DOZER	2	77.54	\$88,683
004	Regrade Johnson Coal Stockpile	DOZER	1	13.37	\$7,646
004A	D/E Pit Regrade (Spoil Side East)	DOZER	8	91.64	\$419,242
005A	D/E Pit Regrade (West)	DOZER	6	117.26	\$402,333
030	Regrade BC Road	DOZER	4	72.55	\$105,020
031	Regrade D-Main Road	DOZER	4	53.06	\$76,816
032	Regrade East and West Ash Roads	DOZER	4	87.61	\$126,826
033	Regrade LOM Roads	DOZER	4	158.24	\$229,073
034	Regrade A Roads (Middle A and North A N pit)	DOZER	4	58.27	\$84,349
035	Regrade N Pit Roads (old LOM, cross-over, ash pit)	DOZER	4	21.12	\$48,295
036	Regrade C Pit Haul Road	DOZER	4	59.52	\$86,171
039	Regrade East A Haul Roads (East A and East ASplit, BridgeRd)	DOZER	4	67.82	\$98,174
040	Regrade I/J Roads (I/J Spoil, I Mid, I West)	DOZER	4	26.16	\$37,892
041	Regrade K Pit Haul Roads (K1 EPRL K3)	DOZER	4	64.71	\$93,678
042	Regrade Mine Access Road	DOZER	4	23.58	\$34,128
044	Regrade No Name Access Roads #2, #4, 5R	DOZER	4	10.79	\$15,616
045	Regrade Potable Water Well Access Road	DOZER	4	1.79	\$2,586
046	Regrade West Pyeatt Access Road (1 and 2)	DOZER	4	7.14	\$10,342
047	Regrade Middle Pyeatt Access Road (1, 2 and 3)	DOZER	4	6.61	\$9,566
048	Regrade East Pyeatt Access Road (1, 2 and 3)	DOZER	4	9.23	\$13,367
049	Regrade Grouse Access Road	DOZER	4	4.57	\$6,619
050	Regrade West Flume Access Road	DOZER	4	2.68	\$3,878
051	Regrade East Flume Access Road	DOZER	4	2.68	\$3,878
052	Regrade Deal Access Road	DOZER	4	2.68	\$3,878
053	Regrade Horse Access Roads (Horse and Horse1)	DOZER	4	6.07	\$8,791
054	Regrade West Horse Access Road	DOZER	4	2.68	\$3,878
055	Regrade Middle Flume Access Roads (1 and 3)	DOZER	4	4.60	\$6,658
056	Regrade Oak Access Roads	DOZER	4	3.39	\$4,912
057	Regrade Sage Access Roads	DOZER	4	4.46	\$6,463
058	Regrade Johnson Access Road	DOZER	4	11.07	\$16,030
063	Rip BC Walk Road	RIPPER	4	2.24	\$3,553
064	Rip D-main Pit Haul Roads	RIPPER	4	8.40	\$13,311

065	Rip West Ash Haulroads (West Ash, West Ash1 and West Ash 2)	RIPPER	4	5.98	\$9,474
066	Rip LOM Haul Roads (F2 and F2-G5)	RIPPER	4	8.76	\$13,879
067	Rip A Pit Haul Roads (Middle A and North A)	RIPPER	4	6.43	\$10,184
068	Rip N Pit Haul Roads	RIPPER	4	5.38	\$8,526
072	Rip East A Haul Roads (East A and East A Split)	RIPPER	4	2.96	\$4,690
074	Rip Access Road (Tasks 042-059)	RIPPER	4	3.11	\$4,926
075	Rip K Pit Haul Roads (KMain, K1, K2 , K3)	RIPPER	4	2.12	\$3,363
077	Rip I/J Roads (I/J Spoil, I Mid, I West)	RIPPER	4	4.55	\$7,214
078	Regrade Coyote Impoundment	DOZER	2	288.69	\$208,963
079	Regrade Middle Pyeatt Impoundments Impoundment (1,2, 3)	DOZER	1	51.73	\$18,721
080	Regrade Far East Buzzard Impoundment	DOZER	1	0.56	\$204
081	Regrade Sage Impoundments (1 and 2)	DOZER	1	18.91	\$6,845
082	Regrade West Horse Impoundment	DOZER	1	3.52	\$1,273
083	Regrade Impoundment H	DOZER	1	7.29	\$2,637
084	Regrade Industrial Waste Pond	DOZER	1	7.47	\$2,703
085	Regrade Deal 1 and 2	DOZER	1	9.83	\$3,835
086	Regrade Deacon 1,2 and Jeffway 1,2 impoundments	DOZER	1	94.72	\$36,962
087	Regrade W. Buzzard #4 Impoundment	DOZER	1	6.00	\$2,343
088	Regrade E. Buzzard #3 Impoundment	DOZER	1	7.04	\$2,747
089	Regrade Diversions	DOZER	1	61.42	\$17,231
090	Replace Topsoil on Ash Pits (ASH1)	SCRAPER1	1	5.20	\$29,208
090A	Replace Topsoil on Ash Pits (ASH2)	SCRAPER1	1	12.78	\$71,735
090B	Replace Topsoil on Ash Pits (A92-4 to Pit)	TRUCK1	1	107.16	\$259,367
091	Replace Topsoil on D/E Pits (Truck/Excavator)	TRUCK1	1	416.57	\$873,326
091A	Replace Topsoil on D/E Pits (D97-1)	SCRAPER1	1	14.75	\$79,262
091B	Replace Topsoil on D/E Pits (D1-07)	SCRAPER1	1	1.99	\$10,706
092	Replace Topsoil at C Pit	SCRAPER1	1	91.03	\$511,131
096	Replace Topsoil at West Panel, BC rd, Shop (Scraper)	SCRAPER1	1	13.22	\$74,249
096A	Replace Topsoil at West Panel, BC rd, Shop (Truck/Excavator)	TRUCK1	1	147.14	\$308,466
097	Replace Topsoil at East Panel Ponds, A road (Scraper)	SCRAPER1	1	20.64	\$115,897
097A	Replace Topsoil at East Panel Ponds, A Rd (Truck/Excavator)	TRUCK1	1	209.29	\$438,768
098	Re-topsoil Johnson Coal Stockpile	SCRAPER1	1	4.14	\$23,254
099	Replace Topsoil at Dragline Walk Road (ASH4)	TRUCK1	1	8.17	\$14,484
099A	Replace Topsoil at Dragline Walk Road (ASH1)	TRUCK1	1	33.14	\$58,752
100	Facilities Area	REVEGE	1	75.00	\$28,037
100A	Seed D Pit Range A-B	REVEGE	1	319.30	\$220,117
101	Roads (including BC road) below 6700'	REVEGE	1	196.00	\$73,382
102	Finish Grading I/J Pit	GRADER	2	21.73	\$13,139
103	Ponds below 6700' (Coyote, Sage, E Buzzard)	REVEGE	1	26.00	\$9,719
104	Johnson Coal Stockpile	REVEGE	1	12.00	\$4,710
105	topsoil piles below 6700'	REVEGE	1	27.00	\$10,131
107	Roads: >6700 ft.-Rangeland with Shrubs	REVEGE	1	54.00	\$37,364
108	Ash pit.-Rangeland with Shrubs	REVEGE	1	115.00	\$79,691
109	Seed D/E Pit Range B	REVEGE	1	15.00	\$10,331
111	Ponds above 6700'(Deal, Deacon, Jeffways, West Horse)	REVEGE	1	19.00	\$12,898
112	topsoil piles above 6700'	REVEGE	1	5.00	\$3,516
113	Shrub Transplants as per operator	NA	1	40.00	\$155,204

120	Seal Land Slide Monitoring Stations	BOREHOLE	1	4.00	\$5,315
121	Plug and Seal Exploration Drill Holes	BOREHOLE	1	80.00	\$25,280
122	Plug and Seal Monitoring Wells	BOREHOLE	1	185.00	\$108,065
128	Reveg for 20 x .3 acres drillholes	REVEGE	1	6.00	\$4,136
129	Regrade .3acres x 20 drill pads	DOZER	1	60.58	\$16,996
130	Demolish structures, remove materials and debris	DEMOLISH	1	100.00	\$788,371
131	Culvert Removal and Disposal	DEMOLISH	1	60.00	\$127,840
132	Mobilize and Demobilize from Hayden, CO	MOBILIZE	1	5.34	\$75,650
133	Drill and Blast L Pit 1,776,482 BCY	NA	3	407.00	\$640,555
134	Drill and Blast Ash Pit 106,474 BCY	NA	3	37.75	\$43,232
135	Drill and Blast J Pit 513,911 BCY	NA	3	142.00	\$193,985
136	Place holder	NA	0	0.00	\$0
L01	Regrade L Pit X-sec:407,200	DOZER	4	38.19	\$87,365
L02	Regrade L Pit X-sec:406,700	DOZER	4	96.29	\$220,258
L03	Regrade L Pit X-sec:406,200	DOZER	4	54.48	\$124,607
L04	Regrade L Pit X-sec:405700	DOZER	4	71.33	\$163,163
L05	Regrade L Pit X-sec:405,200	DOZER	4	386.09	\$883,157
L06	Regrade L Pit X-sec:404,700	DOZER	4	428.34	\$979,780
L07	Regrade L Pit X-sec:404,200	DOZER	4	269.44	\$616,327
L08	Regrade L Pit X-sec:403,700	DOZER	4	58.40	\$133,596
L09	Regrade L Pit X-sec:403,200	DOZER	4	61.03	\$139,605
L10	Regrade L Pit X-sec:402,700	DOZER	4	178.08	\$407,352
L11	Regrade L Pit X-sec:402,200	DOZER	4	339.20	\$775,880
L12	Regrade L Pit X-sec:401,700	DOZER	4	88.07	\$201,461
L13	Regrade L Pit X-sec:401,200	DOZER	4	62.00	\$141,825
L14	Regrade L Pit X-secs:400,700 and 400,200	DOZER	4	47.12	\$107,774
L15	Regrade L Pit (Truck/Excavator)	TRUCK1	1	459.83	\$1,495,471
L16	Seed L Pit: Rangeland with Shrubs	REVEGE	1	804.00	\$554,187
L17	Regrade L Pit North Haul road.6.5 ac X 9 ft th.	DOZER	2	32.35	\$36,981
L18	Replace Topsoil on L Pit (Scraper)	SCRAPER1	1	166.47	\$934,752
L19	Replace Topsoil on L Pit (Truck/Excavator)	TRUCK1	1	708.38	\$1,714,488
LN20	Site Maintenance; Rill and Gully Repair and Pond Cleaning	SITEMAINT ENANCE	1	600.00	\$240,462
N01	Regrade N Pit	DOZER	2	1,071.15	\$1,225,074
N02	Backfill and Grading N Pit	TRUCK1	1	604.84	\$2,246,168
N02a	Backfill and Grading I Pit	TRUCK1	1	156.39	\$508,620
N02b	Backfill and Grading J Pit	DOZER	2	450.41	\$515,134
N03	Backfill and Grading C Pit	TRUCK1	1	1,914.22	\$6,225,540
N13	Replace Topsoil on C Pit	SCRAPER1	1	90.64	\$508,981
N14	Replace Topsoil on N Pit (Scraper)	SCRAPER1	1	169.86	\$953,793
N14a	Replace Topsoil on N Pit (Truck/Excavator)	TRUCK1	1	147.82	\$305,805
N15	Replace Topsoil in I Pit	SCRAPER1	1	13.46	\$75,606
N16	Replace Topsoil on J Pit (Truck/Excavator)	TRUCK1	1	103.22	\$213,547
N16a	Replace Topsoil in J Pit (Scraper)	SCRAPER1	1	3.87	\$21,726
N17	Replace Topsoil on I/J Pit	TRUCK1	1	54.31	\$94,773
N18	Seed N PitRangeland w/o shrubs (<6700 ft.)	REVEGE	1	44.00	\$16,486
N18a	Seed N Pit: >6700 ft.-Rangeland with Shrubs	REVEGE	1	244.00	\$168,483
N19	Seed J Pit without shrubs (Range C)	REVEGE	1	66.00	\$24,598
N20	Seed I Pit without Shrubs	REVEGE	1	35.00	\$13,140
N21	Seed I/J Pits no shrubs (Range C)	REVEGE	1	31.00	\$11,502
N22	Seed C Pit No Shrubs	REVEGE	1	189.00	\$70,241
RNY BR	Reclaimed Not Yet Bond Released	NA	1	1,057.00	\$900,575

<u>SUBTOTALS:</u>	16285.57	\$32,408,860
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INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$654,659
Performance bond:	1.05	Total =	\$340,293
Job superintendent:	540.76	Total =	\$40,627
Profit:	10.00	Total =	\$3,240,886
		TOTAL O & P =	\$4,276,465
		CONTRACT AMOUNT (direct + O & P) =	\$36,685,325

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$0	Total =	\$0
Engineering work and/or contract/bid preparation:	4.25	Total =	\$1,559,126
Reclamation management and/or administration:	2.65		\$972,161

CONTINGENCY:	0.00	Total =	\$0
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TOTAL INDIRECT COST =	\$6,807,753
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TOTAL BOND AMOUNT (direct + indirect) =	\$39,216,613
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BULLDOZER WORKTask description: Ash Disposal Pit Regrade (NW section)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MineralFilename: C81015User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: \$1,143.70**MATERIAL QUANTITIES**Initial Volume: 43,722Swell factor: 1.000Loose volume: 43,722 LCYSource of estimated volume: Permit Appendix A, Table A.4.1 and A-2.8Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 2,036.8 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: -30 %Average site altitude: 6,800 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9137

Adjusted unit production: 1,861.02 LCY/hr

Adjusted fleet production: **3722.04** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.307/LCY

Total job time: **11.75** Hours

Total job cost: **\$13,435**

TRUCK/LOADER TEAM WORKTask description: **Load/Haul Section E1,423,800**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 001BState: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C010-001BUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	NA
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 14,000 Gal.

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

	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	25	25	50
Ownership cost/hour:	\$179.05	\$23.07	NA	\$153.67	\$163.86	\$105.66
Operating cost/hour:	\$247.93	\$930.15	NA	\$41.74	\$27.47	\$76.75
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$34.42	\$37.32	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$461.40	\$990.54	NA	\$236.71	\$219.88	\$182.41
Number of Units:	11	1	0	1	1	1
Group Subtotals:	Work: \$6,065.94		Support: \$236.71		Maint: \$402.29	

Total work team cost/hour: **\$6,704.94****MATERIAL QUANTITIES**Initial volume: 128,454

CCY

Swell factor: 1.000Loose volume: **128,454**

LCY

Source of estimated volume: Table A-4.1ASource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 3,300 Pounds/LCYDescription: Decomposed rock - 75% Rock, 25% EarthRated Payload: 492,200 PoundsPayload Capacity: 149.15 LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	149.15	LCY

Final Truck Volume Based on Number of Loader Passes: 145.78 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	48.593	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: ABOVE AVERAGE
 Selected Value within this Basic Rating: AVERAGE

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.498	minutes
Net Load Time per Truck:		1.494	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	1.494	Minutes	Adjusted for site altitude:	1.494	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	11428.00	10.00	3.00	13.00	620	18.513

Haul Time: **18.513** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	11428.00	-10.00	3.00	-7.00	3450	3.415

Return Time: **3.415** minutesTotal Truck Cycle Time: **25.422** minutes

Loading Tool unit

Production	<u>3,812.84</u>	LCY/Hour	Adjusted for job efficiency:	<u>3,164.66</u>	LCY/Hour
Truck Unit Production	<u>344.06</u>	LCY/Hour	Adjusted for job efficiency:	<u>285.57</u>	LCY/Hour

Optimal No. of Trucks:	<u>11</u>	Truck(s)	Selected Number of Trucks:	<u>11</u>	Truck(s)
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Adjusted hourly truck team production:	<u>3,141.25</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>3,141.25</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>3,141.25</u>	LCY/Hour

JOB TIME AND COST

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>40.89</u>	Hours
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Unit cost:	<u>\$2.134</u>	/LCY	Total job cost:	<u>\$274,182</u>
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BULLDOZER WORKTask description: Ash Disposal Pit Regrade (Section 1)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MineralFilename: C010-002User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: \$1,143.70**MATERIAL QUANTITIES**Initial Volume: 24,907Swell factor: 1.000Loose volume: 24,907 LCYSource of estimated volume: Permit Appendix A, Table A.4.1 and A-2.8Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 420 feetUnadjusted hourly production: 774.7 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: -5 %Average site altitude: 6,800 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6363

Adjusted unit production: 492.94 LCY/hr

Adjusted fleet production: **985.88** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.160/LCY

Total job time: **25.26** Hours

Total job cost: **\$28,894**

BULLDOZER WORKTask description: Ash Disposal Pit Regrade (Section 2)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 002BState: ColoradoAbbreviation: NoneDate: 11/22/2022County: MineralFilename: C010-002BUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: \$1,143.70**MATERIAL QUANTITIES**Initial Volume: 35,685Swell factor: 1.000Loose volume: 35,685 LCYSource of estimated volume: Permit Appendix A, Table A.4.1 and A-2.8Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 410 feetUnadjusted hourly production: 792.6 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: -10 %Average site altitude: 6,800 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6991

Adjusted unit production: 554.11 LCY/hr

Adjusted fleet production: **1108.22** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.032/LCY

Total job time: **32.20** Hours

Total job cost: **\$36,828**

BULLDOZER WORKTask description: Ash Disposal Pit Regrade (Section 3-1)Site: Trapper Mine Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 003 State: Colorado Abbreviation: None
 Date: 11/22/2022 County: Mineral Filename: C010-003
 User: ZTT

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

Basic Machine: Cat D11T - 11U
 Horsepower: 850
 Blade Type: Universal
 Attachment: NA
 Shift Basis: 3 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$257.09</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$273.21</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>\$41.55</u>	<u>NA</u>

Total unit Cost/Hour: \$571.85
 Total Fleet Cost/Hour: \$1,143.70

MATERIAL QUANTITIES

Initial Volume: 7,833
 Swell factor: 1.000
 Loose volume: 7,833 LCY

Source of estimated volume: Permit Appendix A, Table A.4.1 and A-2.8
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 120 feet
 Unadjusted hourly production: 2,467.4 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -10 %
 Average site altitude: 6,800 feet

Material weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<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>1.200</u>	<u>(S-BY-S)</u>
Visibility:	<u>0.800</u>	<u>(POOR)</u>

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6991

Adjusted unit production: 1,724.96 LCY/hr

Adjusted fleet production: **3449.92** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.332/LCY

Total job time: **2.27** Hours

Total job cost: **\$2,597**

BULLDOZER WORKTask description: Ash Disposal Pit Regrade (Section 3-2)Site: Trapper Mine Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 003B State: Colorado Abbreviation: None
 Date: 11/22/2022 County: Mineral Filename: C010-003B
 User: ZTT

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

Basic Machine: Cat D11T - 11U
 Horsepower: 850
 Blade Type: Universal
 Attachment: NA
 Shift Basis: 3 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$257.09</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$273.21</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>\$41.55</u>	<u>NA</u>

Total unit Cost/Hour: \$571.85
 Total Fleet Cost/Hour: \$1,143.70

MATERIAL QUANTITIES

Initial Volume: 64,667
 Swell factor: 1.000
 Loose volume: 64,667 LCY

Source of estimated volume: Permit Appendix A, Table A.4.1 and A-2.8
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 635 feet
 Unadjusted hourly production: 512.4 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -20 %
 Average site altitude: 6,800 feet

Material weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<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>1.200</u>	<u>(S-BY-S)</u>
Visibility:	<u>0.800</u>	<u>(POOR)</u>

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8138

Adjusted unit production: 416.99 LCY/hr

Adjusted fleet production: **833.98** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.371/LCY

Total job time: **77.54** Hours

Total job cost: **\$88,683**

BULLDOZER WORKTask description: **Regrade Johnson Coal Stockpile**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **004**State: **Colorado**Abbreviation: **None**Date: **11/22/2022**County: **Moffat**Filename: **C010-004**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$571.85****MATERIAL QUANTITIES**Initial Volume: **26,112**Swell factor: **1.000**Loose volume: **26,112 LCY**Source of estimated volume: **Permit Appendix A, Table A-4.7**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **75 feet**Unadjusted hourly production: **3,584.2 LCY/hr**Materials consistency description: **Partly consolidated stockpile 1.1**Average push gradient: **0 %**Average site altitude: **7,000 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5449

Adjusted unit production: 1,953.03 LCY/hr

Adjusted fleet production: **1953.03** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.293/LCY

Total job time: **13.37** Hours

Total job cost: **\$7,646**

BULLDOZER WORKTask description: D/E Pit Regrade (Spoil Side East)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 004AState: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C81015User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: \$4,574.82**MATERIAL QUANTITIES**Initial Volume: 528,550Swell factor: 1.000Loose volume: 528,550 LCYSource of estimated volume: Permit Appendix A, Table 1.4-2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 335 feetUnadjusted hourly production: 956.8 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: -20 %Average site altitude: 7,000 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 720.95 LCY/hr

Adjusted fleet production: **5767.6** LCY/hr

JOB TIME AND COST

Fleet size: 8 Dozer(s)

Unit cost: \$0.793/LCY

Total job time: **91.64** Hours

Total job cost: **\$419,242**

BULLDOZER WORKTask description: D/E Pit Regrade (West)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 005AState: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C81015User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: \$3,431.11**MATERIAL QUANTITIES**Initial Volume: 507,233Swell factor: 1.000Loose volume: 507,233 LCYSource of estimated volume: Permit Appendix A, Table 1.4-2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 335 feetUnadjusted hourly production: 956.8 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: -20 %Average site altitude: 7,000 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 720.95 LCY/hr

Adjusted fleet production: **4325.7** LCY/hr

JOB TIME AND COST

Fleet size: 6 Dozer(s)

Unit cost: \$0.793/LCY

Total job time: **117.26** Hours

Total job cost: **\$402,333**

BULLDOZER WORKTask description: **Regrade BC Road**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **030**State: **Colorado**Abbreviation: **None**Date: **11/22/2022**County: **Moffat**Filename: **C010-030**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$361.91**Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: **166,237**Swell factor: **1.250**Loose volume: **207,796 LCY**Source of estimated volume: **Appendix A, Table A-6.1**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **72.55** Hours

Total job cost: **\$105,020**

BULLDOZER WORKTask description: **Regrade D-Main Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **031** State: **Colorado** Abbreviation: **None**
 Date: **11/22/2022** County: **Moffat** Filename: **C81010**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **121,593**
 Swell factor: **1.250**
 Loose volume: **151,991 LCY**

Source of estimated volume: **Appendix A, Table A-6.1**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **53.06** Hours

Total job cost: **\$76,816**

BULLDOZER WORKTask description: **Regrade East and West Ash Roads**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **032**State: **Colorado**Abbreviation: **None**Date: **11/22/2022**County: **Moffat**Filename: **C81010**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$361.91**Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: **200,753**Swell factor: **1.250**Loose volume: **250,941 LCY**Source of estimated volume: **Appendix A, Table A-6.1**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **87.61** Hours

Total job cost: **\$126,826**

BULLDOZER WORKTask description: **Regrade LOM Roads**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **033** State: **Colorado** Abbreviation: **None**
 Date: **11/22/2022** County: **Moffat** Filename: **C010-033**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **362,600**
 Swell factor: **1.250**
 Loose volume: **453,250 LCY**

Source of estimated volume: **Appendix A, Table A-6.1**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **158.24** Hours

Total job cost: **\$229,073**

BULLDOZER WORKTask description: Regrade A Roads (Middle A and North A N pit)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 034State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C81010User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$361.91Total Fleet Cost/Hour: \$1,447.65**MATERIAL QUANTITIES**Initial Volume: 133,517Swell factor: 1.250Loose volume: 166,896 LCYSource of estimated volume: Appendix A, Table A-6.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **58.27** Hours

Total job cost: **\$84,349**

BULLDOZER WORKTask description: Regrade N Pit Roads (old LOM, cross-over, ash pit)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 035State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C010-035User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$571.60Total Fleet Cost/Hour: \$2,286.41**MATERIAL QUANTITIES**Initial Volume: 105,283Swell factor: 1.150Loose volume: 121,075 LCYSource of estimated volume: Table A-6.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 3,441.4 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4164

Adjusted unit production: 1,433.00 LCY/hr

Adjusted fleet production: **5732** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.399/LCY

Total job time: **21.12** Hours

Total job cost: **\$48,295**

BULLDOZER WORKTask description: **Regrade C Pit Haul Road**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **036**State: **Colorado**Abbreviation: **None**Date: **11/22/2022**County: **Moffat**Filename: **C010-036**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: **136,400**Swell factor: **1.250**Loose volume: **170,500 LCY**Source of estimated volume: **Appendix A, Table a-6.1**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **59.52** Hours

Total job cost: **\$86,171**

BULLDOZER WORKTask description: Regrade East A Haul Roads (East A and East ASplit, BridgeRd)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 039State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C010-039User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$361.91Total Fleet Cost/Hour: \$1,447.65**MATERIAL QUANTITIES**Initial Volume: 155,400Swell factor: 1.250Loose volume: 194,250 LCYSource of estimated volume: Appendix A, Table A-6.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **67.82** Hours

Total job cost: **\$98,174**

BULLDOZER WORKTask description: **Regrade I/J Roads (I/J Spoil, I Mid, I West)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 040State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C010-040User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	25
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$362.16Total Fleet Cost/Hour: **\$1,448.65****MATERIAL QUANTITIES**Initial Volume: 111,117Swell factor: 1.250Loose volume: **138,896 LCY**Source of estimated volume: Permit Appendix A, Tables A-2.3, A.6.1Source of estimated swell factor: Operator, Appendix A
Table A-6.1**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: -5 %Average site altitude: 6,725 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	1.000	(EXCL.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)

Visibility:	1.000	(AVG.)
Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6546

Adjusted unit production: 1,327.53 LCY/hr

Adjusted fleet production: **5310.12** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.273/LCY

Total job time: **26.16** Hours

Total job cost: **\$37,892**

BULLDOZER WORKTask description: **Regrade K Pit Haul Roads (K1 EPRL K3)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 041State: ColoradoAbbreviation: NoneDate: 11/22/2022County: MoffatFilename: C010-041User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: 148,283Swell factor: 1.250Loose volume: **185,354 LCY**Source of estimated volume: Appendix A, Table A-6.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **64.71** Hours

Total job cost: **\$93,678**

BULLDOZER WORKTask description: **Regrade Mine Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **042** State: **Colorado** Abbreviation: **None**
 Date: **11/22/2022** County: **Moffat** Filename: **C010-042**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **54,022**
 Swell factor: **1.250**
 Loose volume: **67,528 LCY**

Source of estimated volume: **Appendix A, Table a-6.1**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **23.58** Hours

Total job cost: **\$34,128**

BULLDOZER WORKTask description: **Regrade No Name Access Roads #2, #4, 5R**Site: **Trapper Mine** Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 044 State: Colorado Abbreviation: None
 Date: 11/23/2022 County: Moffat Filename: C81010
 User: ZTT

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

Basic Machine: Cat D10T - 10SU
 Horsepower: 574
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$153.67</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$166.94</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: \$361.91
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: 24,719
 Swell factor: 1.250
 Loose volume: **30,899 LCY**

Source of estimated volume: Appendix A, Table A- 6.2
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 80 feet
 Unadjusted hourly production: 2,028.0 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 10 %
 Average site altitude: 6,400 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>1.000</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **10.79** Hours

Total job cost: **\$15,616**

BULLDOZER WORKTask description: **Regrade Potable Water Well Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **045** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-045**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **4,093**
 Swell factor: **1.250**
 Loose volume: **5,116 LCY**

Source of estimated volume: **Appendix A, Table 1.4-5**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **1.79** Hours

Total job cost: **\$2,586**

BULLDOZER WORKTask description: **Regrade West Pyeatt Access Road (1 and 2)**Site: **Trapper Mine** Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 046 State: Colorado Abbreviation: None
 Date: 11/23/2022 County: Moffat Filename: C010-046
 User: ZTT

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

Basic Machine: Cat D10T - 10SU
 Horsepower: 574
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$153.67</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$166.94</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: \$361.91
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: 16,370
 Swell factor: 1.250
 Loose volume: **20,463 LCY**

Source of estimated volume: Appendix A, Table A-6.2
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 80 feet
 Unadjusted hourly production: 2,028.0 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 10 %
 Average site altitude: 6,400 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>1.000</u>	<u>(CAT HB)</u>
Dozing method: <u>1.000</u>	<u>(GEN.)</u>
Visibility: <u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **7.14** Hours

Total job cost: **\$10,342**

BULLDOZER WORKTask description: **Regrade Middle Pyeatt Access Road (1, 2 and 3)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 047State: ColoradoAbbreviation: NoneDate: 11/23/2022County: MoffatFilename: C010-047User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: 15,142Swell factor: 1.250Loose volume: **18,928 LCY**Source of estimated volume: Appendix A, Table A-6.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **6.61** Hours

Total job cost: **\$9,566**

BULLDOZER WORKTask description: **Regrade East Pyeatt Access Road (1, 2 and 3)**Site: **Trapper Mine** Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 048 State: Colorado Abbreviation: None
 Date: 11/23/2022 County: Moffat Filename: C10-048
 User: ZTT

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

Basic Machine: Cat D10T - 10SU
 Horsepower: 574
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$153.67</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$166.94</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: \$361.91
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: 21,159
 Swell factor: 1.250
 Loose volume: **26,449 LCY**

Source of estimated volume: Appendix A, Table 1.4-5
 Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 80 feet
 Unadjusted hourly production: 2,028.0 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 10 %
 Average site altitude: 6,400 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>1.000</u>	<u>(CAT HB)</u>
Dozing method: <u>1.000</u>	<u>(GEN.)</u>
Visibility: <u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **9.23** Hours

Total job cost: **\$13,367**

BULLDOZER WORKTask description: **Regrade Grouse Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **049** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-049**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **10,477**
 Swell factor: **1.250**
 Loose volume: **13,096 LCY**

Source of estimated volume: **Appendix A, Table 1.4-5**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **4.57** Hours

Total job cost: **\$6,619**

BULLDOZER WORKTask description: **Regrade West Flume Access Road**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **050**State: **Colorado**Abbreviation: **None**Date: **11/23/2022**County: **Moffat**Filename: **C010-050**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: **6,139**Swell factor: **1.250**Loose volume: **7,674 LCY**Source of estimated volume: **Appendix A, Table A-6.2**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **2.68** Hours

Total job cost: **\$3,878**

BULLDOZER WORKTask description: **Regrade East Flume Access Road**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **051**State: **Colorado**Abbreviation: **None**Date: **11/23/2022**County: **Moffat**Filename: **C010-051**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: **6,139**Swell factor: **1.250**Loose volume: **7,674 LCY**Source of estimated volume: **Appendix A, Table A-6.2**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **2.68** Hours

Total job cost: **\$3,878**

BULLDOZER WORKTask description: **Regrade Deal Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **052** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-052**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **6,139**
 Swell factor: **1.250**
 Loose volume: **7,674 LCY**

Source of estimated volume: **Appendix A, Table A-6.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **2.68** Hours

Total job cost: **\$3,878**

BULLDOZER WORKTask description: **Regrade Horse Access Roads (Horse and Horse1)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 053State: ColoradoAbbreviation: NoneDate: 11/23/2022County: MoffatFilename: C010-053User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: 13,915Swell factor: 1.250Loose volume: **17,394 LCY**Source of estimated volume: Appendix A, Table A-6.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **6.07** Hours

Total job cost: **\$8,791**

BULLDOZER WORKTask description: **Regrade West Horse Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **054** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-054**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **6,139**
 Swell factor: **1.250**
 Loose volume: **7,674 LCY**

Source of estimated volume: **Appendix A, Table A-6.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **2.68** Hours

Total job cost: **\$3,878**

BULLDOZER WORKTask description: **Regrade Middle Flume Access Roads (1 and 3)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 055State: ColoradoAbbreviation: NoneDate: 11/23/2022County: MoffatFilename: C010-055User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$1,447.65****MATERIAL QUANTITIES**Initial Volume: 10,539Swell factor: 1.250Loose volume: **13,174 LCY**Source of estimated volume: Appendix A, Table A-6.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 80 feetUnadjusted hourly production: 2,028.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **4.60** Hours

Total job cost: **\$6,658**

BULLDOZER WORKTask description: **Regrade Oak Access Roads**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **056** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-056**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **7,776**
 Swell factor: **1.250**
 Loose volume: **9,720 LCY**

Source of estimated volume: **Appendix A, Table A-6.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **3.39** Hours

Total job cost: **\$4,912**

BULLDOZER WORKTask description: **Regrade Sage Access Roads**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **057** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-057**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **10,231**
 Swell factor: **1.250**
 Loose volume: **12,789 LCY**

Source of estimated volume: **Appendix A, Table A-6.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **4.46** Hours

Total job cost: **\$6,463**

BULLDOZER WORKTask description: **Regrade Johnson Access Road**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **058** State: **Colorado** Abbreviation: **None**
 Date: **11/23/2022** County: **Moffat** Filename: **C010-058**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$1,447.65**

MATERIAL QUANTITIES

Initial Volume: **25,374**
 Swell factor: **1.250**
 Loose volume: **31,718 LCY**

Source of estimated volume: **Appendix A, Table A-6.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **80 feet**
 Unadjusted hourly production: **2,028.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 716.09 LCY/hr

Adjusted fleet production: **2864.36** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.505/LCY

Total job time: **11.07** Hours

Total job cost: **\$16,030**

BULLDOZER RIPPING WORK

Task description: Rip BC Walk Road

Site: Trapper Mine Permit Action: PR11 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 063 State: Colorado Abbreviation: None
Date: 11/23/2022 County: Moffat Filename: C010-063
User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU Horsepower: 574
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 7.50 acres Rip Depth (ft): 2.50 Volume: 30,250 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.50 feet/pass
Average Ripping Width: 8.67 feet/pass
Average Ripping Length: 500.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 1.007 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr
Site Altitude: 6,400 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr
Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 2.24 Hours

Unit cost: \$473.684 Per acre Total job cost: \$3,553

BULLDOZER RIPPING WORK

Task description: Rip D-main Pit Haul Roads

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 064

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-064

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 28.10 acres

Rip Depth (ft): 2.50

Volume: 113,337 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr

Site Altitude: 6,400 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 8.41 Hours

Unit cost: \$473.684 Per acre Total job cost: \$13,311

BULLDOZER RIPPING WORK

Task description: Rip West Ash Haulroads (West Ash, West Ash1 and West Ash 2)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 065

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-065

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 20.00 acres Rip Depth (ft): 2.50 Volume: 80,667 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr

Site Altitude: 6,400 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 5.98 Hours

Unit cost: \$473.684 Per acre Total job cost: \$9,474

BULLDOZER RIPPING WORK

Task description: Rip LOM Haul Roads (F2 and F2-G5)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 066

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-066

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 29.30 acres Rip Depth (ft): 2.50 Volume: 118,177 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr

Site Altitude: 6,400 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 8.77 Hours

Unit cost: \$473.684 Per acre Total job cost: \$13,879

BULLDOZER RIPPING WORK

Task description: Rip A Pit Haul Roads (Middle A and North A)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 067

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-067

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 574

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 21.50 acres Rip Depth (ft): 2.50 Volume: 86,717 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.50 feet/pass
Average Ripping Width: 8.67 feet/pass
Average Ripping Length: 500.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 1.007 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr
Site Altitude: 6,400 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 6.43 Hours

Unit cost: \$473.684 Per acre Total job cost: \$10,184

BULLDOZER RIPPING WORK

Task description: Rip N Pit Haul Roads

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 068

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-068

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	

Total Fleet Cost/Hour: \$1,583.05

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 18.00 acres

Rip Depth (ft): 2.50

Volume: 72,600

BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr

Site Altitude: 6,400 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 5.39 Hours

Unit cost: \$473.684 Per acre Total job cost: \$8,526

BULLDOZER RIPPING WORK

Task description: Rip East A Haul Roads (East A and East A Split)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 072

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-072

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 574

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 9.90 acres Rip Depth (ft): 2.50 Volume: 39,930 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.50 feet/pass
Average Ripping Width: 8.67 feet/pass
Average Ripping Length: 500.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 1.007 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr
Site Altitude: 6,400 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 2.96 Hours

Unit cost: \$473.684 Per acre Total job cost: \$4,690

BULLDOZER RIPPING WORK

Task description: Rip Access Road (Tasks 042-059)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 074

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-074

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 10.40 acres Rip Depth (ft): 2.50 Volume: 41,947 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>1.007</u>	Acres/hr
Site Altitude:	<u>6,400</u>	feet
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 3.11 Hours

Unit cost: \$473.684 Per acre Total job cost: \$4,926

BULLDOZER RIPPING WORK

Task description: Rip K Pit Haul Roads (KMain, K1, K2 , K3)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 075

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-075

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 7.10 acres Rip Depth (ft): 2.50 Volume: 28,637 BCY or CCY

Source of estimated quantity: Appendix A Table 1.4-5

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 1.007 Acres/hr

Site Altitude: 6,400 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: **3.34** Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: **2.12** Hours

Unit cost: \$473.684 Per acre Total job cost: **\$3,363**

BULLDOZER RIPPING WORK

Task description: Rip I/J Roads (I/J Spoil, I Mid, I West)

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 077

State: Colorado

Abbreviation: None

Date: 11/23/2022

County: Moffat

Filename: C010-077

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU

Horsepower: 574

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$22.74	NA
Ripper Operating Cost/Hour:	\$11.11	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$395.76	
Total Fleet Cost/Hour:	\$1,583.05	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 15.23 acres Rip Depth (ft): 2.50 Volume: 61,428 BCY or CCY

Source of estimated quantity: Appendix A Table 6.2

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>500.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>1.007</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>1.007</u>	Acres/hr
Site Altitude:	<u>6,400</u>	feet
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.83</u>	multiplier

Adjusted Hourly Unit Production: 0.84 Acres/hr

Adjusted Hourly Fleet Production: 3.34 Acres/hr

JOB TIME AND COST

Fleet size: 4 Grader(s) Total job time: 4.56 Hours

Unit cost: \$473.684 Per acre Total job cost: \$7,214

BULLDOZER WORKTask description: **Regrade Coyote Impoundment**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **078** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-078**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$723.82**

MATERIAL QUANTITIES

Initial Volume: **83,750**
 Swell factor: **1.000**
 Loose volume: **83,750 LCY**

Source of estimated volume: **Appendix A Table A-7.2**
 Source of estimated swell factor: **Operator Estimate**

HOURLY PRODUCTION

Average push distance: **500 feet**
 Unadjusted hourly production: **410.8 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 145.05 LCY/hr

Adjusted fleet production: **290.1** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$2.495/LCY

Total job time: **288.69** Hours

Total job cost: **\$208,963**

BULLDOZER WORKTask description: **Regrade Middle Pyeatt Impoundments Impoundment (1,2,3)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 079State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-079User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$361.91****MATERIAL QUANTITIES**Initial Volume: 15,381Swell factor: 1.000Loose volume: **15,381 LCY**Source of estimated volume: Appendix A Table A-7.2Source of estimated swell factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 225 feetUnadjusted hourly production: 842.1 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 297.35 LCY/hr

Adjusted fleet production: **297.35** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.217/LCY

Total job time: **51.73** Hours

Total job cost: **\$18,721**

BULLDOZER WORKTask description: **Regrade Far East Buzzard Impoundment**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 080State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-080User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: \$361.91Total Fleet Cost/Hour: **\$361.91****MATERIAL QUANTITIES**Initial Volume: 342Swell factor: 1.000Loose volume: **342 LCY**Source of estimated volume: Appendix A Table A-7.2Source of estimated swell factor: Operator Estimate**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,718.9 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 606.94 LCY/hr

Adjusted fleet production: **606.94** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.596/LCY

Total job time: **0.56** Hours

Total job cost: **\$204**

BULLDOZER WORKTask description: **Regrade Sage Impoundments (1 and 2)**Site: **Trapper Mine** Permit Action: PR11 Permit/Job#: C1981010**PROJECT IDENTIFICATION**

Task #: 081 State: Colorado Abbreviation: None
 Date: 11/28/2022 County: Moffat Filename: C010-081
 User: ZTT

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

Basic Machine: Cat D10T - 10SU
 Horsepower: 574
 Blade Type: Semi-Universal
 Attachment: NA
 Shift Basis: 1 per day
 Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$153.67</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$166.94</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: \$361.91
 Total Fleet Cost/Hour: **\$361.91**

MATERIAL QUANTITIES

Initial Volume: 8,302
 Swell factor: 1.000
 Loose volume: **8,302 LCY**

Source of estimated volume: Appendix A Table 1.4-6
 Source of estimated swell factor: Operator Estimate

HOURLY PRODUCTION

Average push distance: 150 feet
 Unadjusted hourly production: 1,243.2 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 10 %
 Average site altitude: 6,400 feet

Material weight: 2,550 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.000</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 438.97 LCY/hr

Adjusted fleet production: **438.97** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.824/LCY

Total job time: **18.91** Hours

Total job cost: **\$6,845**

BULLDOZER WORKTask description: **Regrade West Horse Impoundment**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **082** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-082**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$361.91**

MATERIAL QUANTITIES

Initial Volume: **3,315**
 Swell factor: **1.000**
 Loose volume: **3,315 LCY**

Source of estimated volume: **Appendix A Table A-7.2**
 Source of estimated swell factor: **Operator Estimate**

HOURLY PRODUCTION

Average push distance: **55 feet**
 Unadjusted hourly production: **2,670.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 942.78 LCY/hr

Adjusted fleet production: **942.78** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.384/LCY

Total job time: **3.52** Hours

Total job cost: **\$1,273**

BULLDOZER WORKTask description: **Regrade Impoundment H**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **083** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-083**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$361.91**

MATERIAL QUANTITIES

Initial Volume: **3,198**
 Swell factor: **1.000**
 Loose volume: **3,198 LCY**

Source of estimated volume: **Appendix A Table A-7.2**
 Source of estimated swell factor: **Operator Estimate**

HOURLY PRODUCTION

Average push distance: **150 feet**
 Unadjusted hourly production: **1,243.2 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 438.97 LCY/hr

Adjusted fleet production: **438.97** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.824/LCY

Total job time: **7.29** Hours

Total job cost: **\$2,637**

BULLDOZER WORKTask description: **Regrade Industrial Waste Pond**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **084** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-084**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **NA**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	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: **\$361.91**
 Total Fleet Cost/Hour: **\$361.91**

MATERIAL QUANTITIES

Initial Volume: **3,279**
 Swell factor: **1.000**
 Loose volume: **3,279 LCY**

Source of estimated volume: **Appendix A TableA-7.2**
 Source of estimated swell factor: **Operator Estimate**

HOURLY PRODUCTION

Average push distance: **150 feet**
 Unadjusted hourly production: **1,243.2 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **10 %**
 Average site altitude: **6,400 feet**

Material weight: **2,550 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 438.97 LCY/hr

Adjusted fleet production: **438.97** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.824/LCY

Total job time: **7.47** Hours

Total job cost: **\$2,703**

BULLDOZER WORKTask description: **Regrade Deal 1 and 2**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **085** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-085**
 User: **ZTT**

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

Basic Machine: **Cat D10T - 10SU**
 Horsepower: **574**
 Blade Type: **Semi-Universal**
 Attachment: **3-shank ripper**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$22.74	NA
Ripper op. Cost/Hour:	\$5.56	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$390.21**
 Total Fleet Cost/Hour: **\$390.21**

MATERIAL QUANTITIES

Initial Volume: **9,555**
 Swell factor: **1.000**
 Loose volume: **9,555 LCY**

Source of estimated volume: **A-7.2**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **50 feet**
 Unadjusted hourly production: **2,748.7 LCY/hr**

Materials consistency description: **Compacted fill or embankment 0.9**

Average push gradient: **0 %**
 Average site altitude: **7,500 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3537

Adjusted unit production: 972.22 LCY/hr

Adjusted fleet production: **972.22** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.401/LCY

Total job time: **9.83** Hours

Total job cost: **\$3,835**

BULLDOZER WORKTask description: **Regrade Deacon 1,2 and Jeffway 1,2 impoundments**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 086State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-086User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$22.74	NA
Ripper op. Cost/Hour:	\$5.56	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$390.21Total Fleet Cost/Hour: **\$390.21****MATERIAL QUANTITIES**Initial Volume: 92,093Swell factor: 1.000Loose volume: **92,093 LCY**Source of estimated volume: A-7.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,748.7 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 7,500 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3537

Adjusted unit production: 972.22 LCY/hr

Adjusted fleet production: **972.22** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.401/LCY

Total job time: **94.72** Hours

Total job cost: **\$36,962**

BULLDOZER WORKTask description: **Regrade W. Buzzard #4 Impoundment**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **087**State: **Colorado**Abbreviation: **None**Date: **11/28/2022**County: **Moffat**Filename: **C010-087**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$22.74	NA
Ripper op. Cost/Hour:	\$5.56	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$390.21**Total Fleet Cost/Hour: **\$390.21****MATERIAL QUANTITIES**Initial Volume: **4,923**Swell factor: **1.000**Loose volume: **4,923 LCY**Source of estimated volume: **A-7.2**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **80 feet**Unadjusted hourly production: **2,028.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **7,500 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4043

Adjusted unit production: 819.92 LCY/hr

Adjusted fleet production: **819.92 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.476/LCY

Total job time: **6.00 Hours**

Total job cost: **\$2,343**

BULLDOZER WORKTask description: **Regrade E. Buzzard #3 Impoundment**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **088**State: **Colorado**Abbreviation: **None**Date: **11/28/2022**County: **Moffat**Filename: **C010-088**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$153.67	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$22.74	NA
Ripper op. Cost/Hour:	\$5.56	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$390.21**Total Fleet Cost/Hour: **\$390.21****MATERIAL QUANTITIES**Initial Volume: **6,414**Swell factor: **1.000**Loose volume: **6,414 LCY**Source of estimated volume: **A-7.2**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **70 feet**Unadjusted hourly production: **2,253.9 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **7,500 feet**Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4043

Adjusted unit production: 911.25 LCY/hr

Adjusted fleet production: **911.25** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.428/LCY

Total job time: **7.04** Hours

Total job cost: **\$2,747**

BULLDOZER WORKTask description: **Regrade Diversions**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **089** State: **Colorado** Abbreviation: **None**
 Date: **11/28/2022** County: **Moffat** Filename: **C010-89**
 User: **ZTT**

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

Basic Machine: **Cat D8T - 8SU**
 Horsepower: **310**
 Blade Type: **Semi-Universal**
 Attachment: **3-shank ripper**
 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:	\$13.10	NA
Ripper op. Cost/Hour:	\$3.65	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$280.53**
 Total Fleet Cost/Hour: **\$280.53**

MATERIAL QUANTITIES

Initial Volume: **33,374**
 Swell factor: **1.000**
 Loose volume: **33,374 LCY**

Source of estimated volume: **A-8.2**
 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: **0 %**
 Average site altitude: **7,500 feet**

Material weight: **2,550 lbs/LCY**Weight description: **Earth - Dry packed****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3881

Adjusted unit production: 543.34 LCY/hr

Adjusted fleet production: **543.34** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.516/LCY

Total job time: **61.42** Hours

Total job cost: **\$17,231**

SCRAPER TEAM WORKTask description: **Replace Topsoil on Ash Pits (ASH1)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 090State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-090User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 11,254

CCY

Swell factor: 1.000Loose volume: **11,254**

LCY

Source of estimated volume: Appendix A, Table A-9.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1978.00	10.00	4.00	14.00	657	3.02

Haul Time: 3.02 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1978.00	-10.00	4.00	-6.00	2972	0.72

Return Time: 0.72 minutesTotal Scraper team cycle time: 5.34 minutesAdjusted for job conditions: 540.90 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 2,163.60 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,163.60 LCY/HourUnadjusted unit production/hour: 651.69 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 5.20 HoursUnit cost: \$2.595 /LCYTotal job cost: \$29,208

SCRAPER TEAM WORKTask description: **Replace Topsoil on Ash Pits (ASH2)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 090AState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-090AUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 60,000

CCY

Swell factor: 1.000Loose volume: **60,000**

LCY

Source of estimated volume: Appendix A, Table A-10.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	711.00	-12.00	4.00	-8.00	1628	0.56

Haul Time: 0.56 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	711.00	-12.00	4.00	-8.00	2972	0.30

Return Time: 0.30 minutesTotal Scraper team cycle time: 2.46 minutesAdjusted for job conditions: 1,174.15 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 4,696.59 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 4,696.59 LCY/HourUnadjusted unit production/hour: 1,414.63 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 12.78 HoursUnit cost: \$1.196 /LCYTotal job cost: \$71,735

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on Ash Pits (A92-4 to Pit)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 090BState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-090BUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	4	1	1	1	1	1
Group Subtotals:	Work: \$1,677.06		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$2,420.29****MATERIAL QUANTITIES**Initial volume: 115,215

CCY

Swell factor: 1.000Loose volume: **115,215**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5147.00	10.00	3.00	13.00	620	8.345

Haul Time: **8.345** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5147.00	-10.00	3.00	-7.00	3450	1.538

Return Time: **1.538** minutesTotal Truck Cycle Time: **14.399** minutes

Loading Tool unit

Production	<u>1,406.18</u>	LCY/Hour	Adjusted for job efficiency:	<u>1,167.13</u>	LCY/Hour
Truck Unit Production	<u>323.83</u>	LCY/Hour	Adjusted for job efficiency:	<u>268.78</u>	LCY/Hour

Optimal No. of Trucks:	<u>4</u>	Truck(s)	Selected Number of Trucks:	<u>4</u>	Truck(s)
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Adjusted hourly truck team production:	<u>1,075.13</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>1,075.13</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>1,075.13</u>	LCY/Hour

JOB TIME AND COST

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>107.16</u>	Hours
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Unit cost:	<u>\$2.251</u>	/LCY	Total job cost:	<u>\$259,367</u>
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TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on D/E Pits (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 091State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-091User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,353.22		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$2,096.45****MATERIAL QUANTITIES**Initial volume: 470,723

CCY

Swell factor: 1.000Loose volume: **470,723**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4788.00	-8.60	3.00	-5.60	1870	2.695

Haul Time: **2.695** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4788.00	8.60	3.00	11.60	1628	3.064

Return Time: **3.064** minutesTotal Truck Cycle Time: **10.275** minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/Hour
Truck Unit Production 453.81 LCY/Hour Adjusted for job efficiency: 376.66 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 1,129.99 LCY/Hour
Adjusted single truck/loader team production: 1,129.99 LCY/Hour
Adjusted multiple truck/loader team production: **1,129.99** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **416.57** Hours

Unit cost: \$1.855 /LCY Total job cost: **\$873,326**

SCRAPER TEAM WORKTask description: **Replace Topsoil on D/E Pits (D97-1)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 091AState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-91AUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	OBSOLETE - Cat D10T - 10U
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$10.00	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$5.00	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$595.92	NA	\$278.44	\$56.30	\$247.35	\$22.47
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	\$4,767.36	Support:	\$334.74	Maint:	\$269.82

Total work team cost/hour: **\$5,371.92****MATERIAL QUANTITIES**Initial volume: 62,216

CCY

Swell factor: 1.000Loose volume: **62,216**

LCY

Source of estimated volume: Appendix A, Table 1.4-9Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1496.00	0.00	4.00	4.00	2394	0.79

Haul Time: 0.79 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-3.00	4.00	1.00	2963	0.35

Return Time: 0.35 minutesTotal Scraper team cycle time: 2.74 minutesAdjusted for job conditions: 1,054.16 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 4,216.64 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 4,216.64 LCY/HourUnadjusted unit production/hour: 1,270.07 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 14.75 HoursUnit cost: \$1.274 /LCYTotal job cost: \$79,262

SCRAPER TEAM WORKTask description: **Replace Topsoil on D/E Pits (D1-07)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 091BState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-091BUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	OBSOLETE - Cat D10T - 10U
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$10.00	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$5.00	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$595.92	NA	\$278.44	\$56.30	\$247.35	\$22.47
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$334.74		Maint:	\$269.82

Total work team cost/hour: **\$5,371.92****MATERIAL QUANTITIES**Initial volume: 7,476

CCY

Swell factor: 1.000Loose volume: **7,476**

LCY

Source of estimated volume: Appendix A, Table 1.4-9Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY
 Material description: Top Soil
 Rated Payload: 81,600 pounds
 Payload Capacity: 51.00 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1221.00	3.00	4.00	7.00	1362	0.95

Haul Time: 0.95 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1221.00	-3.00	4.00	1.00	2963	0.53

Return Time: 0.53 minutesTotal Scraper team cycle time: 3.08 minutesAdjusted for job conditions: 937.79 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 3,751.17 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 3,751.17 LCY/HourUnadjusted unit production/hour: 1,129.87 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 1.99 HoursUnit cost: \$1.432 /LCYTotal job cost: \$10,706

SCRAPER TEAM WORKTask description: **Replace Topsoil at C Pit**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 092State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-092User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 304,836

CCY

Swell factor: 1.000Loose volume: **304,836**

LCY

Source of estimated volume: Appendix A, Table A-10.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-4.50	4.00	-0.50	2972	0.72

Haul Time: 0.72 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	4.50	4.00	8.50	1931	1.13

Return Time: 1.13 minutesTotal Scraper team cycle time: 3.45 minutesAdjusted for job conditions: 837.22 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 3,348.87 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 3,348.87 LCY/HourUnadjusted unit production/hour: 1,008.70 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 91.03 HoursUnit cost: \$1.677 /LCYTotal job cost: \$511,131

SCRAPER TEAM WORKTask description: **Replace Topsoil at West Panel, BC rd, Shop (Scraper)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 096State: ColoradoAbbreviation: NoneDate: 12/9/2022County: MoffatFilename: C010-096User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	\$4,767.36	Support:	\$556.88	Maint:	\$290.95

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 66,713

CCY

Swell factor: 1.000Loose volume: **66,713**

LCY

Source of estimated volume: A-9.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	498.00	1.00	4.00	5.00	1867	0.37

Haul Time: 0.37 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	498.00	-1.00	4.00	3.00	2949	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.29 minutesAdjusted for job conditions: 1,261.31 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 5,045.24 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 5,045.24 LCY/HourUnadjusted unit production/hour: 1,519.65 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 13.22 HoursUnit cost: \$1.113 /LCYTotal job cost: \$74,249

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil at West Panel, BC rd, Shop (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 096AState: ColoradoAbbreviation: NoneDate: 12/9/2022County: MoffatFilename: C010-096AUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,353.22		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$2,096.45****MATERIAL QUANTITIES**Initial volume: 171,625

CCY

Swell factor: 1.000Loose volume: **171,625**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7375.00	-1.00	3.00	2.00	3328	2.961

Haul Time: **2.961** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7375.00	1.00	3.00	4.00	3411	2.477

Return Time: **2.477** minutesTotal Truck Cycle Time: **9.954** minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/HourTruck Unit Production 468.44 LCY/Hour Adjusted for job efficiency: 388.81 LCY/HourOptimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 1,166.43 LCY/Hour
Adjusted single truck/loader team production: 1,166.43 LCY/Hour
Adjusted multiple truck/loader team production: **1,166.43** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **147.14** HoursUnit cost: \$1.797 /LCY Total job cost: **\$308,466**

SCRAPER TEAM WORKTask description: **Replace Topsoil at East Panel Ponds, A road (Scraper)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 097State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-097User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 114,647

CCY

Swell factor: 1.000Loose volume: **114,647**

LCY

Source of estimated volume: Appendix A, Table 1.4-9Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	390.00	-5.50	3.00	-2.50	2972	0.18

Haul Time: 0.18 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	390.00	5.50	3.00	8.50	1931	0.30

Return Time: 0.30 minutesTotal Scraper team cycle time: 2.08 minutesAdjusted for job conditions: 1,388.65 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 5,554.62 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 5,554.62 LCY/HourUnadjusted unit production/hour: 1,673.08 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 20.64 HoursUnit cost: \$1.011 /LCYTotal job cost: \$115,897

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil at East Panel Ponds, A Rd (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 097AState: ColoradoAbbreviation: NoneDate: 1/30/2023County: MoffatFilename: C010-097AUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,353.22		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$2,096.45****MATERIAL QUANTITIES**Initial volume: 244,270

CCY

Swell factor: 1.000Loose volume: **244,270**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4345.00	-1.00	3.00	2.00	3328	2.050

Haul Time: 2.050 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7375.00	1.00	3.00	4.00	3411	2.477

Return Time: 2.477 minutesTotal Truck Cycle Time: 9.043 minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/Hour
Truck Unit Production 515.64 LCY/Hour Adjusted for job efficiency: 427.98 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 1,283.93 LCY/Hour
Adjusted single truck/loader team production: 1,167.13 LCY/Hour
Adjusted multiple truck/loader team production: 1,167.13 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 209.29 HoursUnit cost: \$1.796 /LCY Total job cost: \$438,768

SCRAPER TEAM WORKTask description: **Re-topsoil Johnson Coal Stockpile**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 098State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-098User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	\$4,767.36	Support:	\$556.88	Maint:	\$290.95

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 20,360

CCY

Swell factor: 1.000Loose volume: **20,360**

LCY

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

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	625.00	3.20	3.00	6.20	1477	0.48

Haul Time: 0.48 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	625.00	-3.20	3.00	-0.20	2972	0.27

Return Time: 0.27 minutesTotal Scraper team cycle time: 2.35 minutesAdjusted for job conditions: 1,229.11 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 4,916.43 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 4,916.43 LCY/HourUnadjusted unit production/hour: 1,480.85 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 4.14 HoursUnit cost: \$1.142 /LCYTotal job cost: \$23,254

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil at Dragline Walk Road (ASH4)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 099State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-099User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

		Equipment Description
Truck Loader Team -Truck:		Cat 777F
-Loader:		Cat 385C L 18'-1" Stick
Support Equipment -Load Area:		Cat D10T - 10SU
-Dump Area:		Cat D10T - 10SU
Road Maintenance -Motor Grader:		CAT 16M
-Water Truck:		Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$1,029.38		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$1,772.61****MATERIAL QUANTITIES**Initial volume: 8,695

CCY

Swell factor: 1.000Loose volume: **8,695**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2288.00	2.80	3.00	5.80	1266	1.932

Haul Time: 1.932 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2288.00	-2.80	3.00	0.20	3503	0.826

Return Time: 0.826 minutesTotal Truck Cycle Time: 7.274 minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/Hour
Truck Unit Production 641.04 LCY/Hour Adjusted for job efficiency: 532.06 LCY/Hour

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

Adjusted hourly truck team production: 1,064.12 LCY/Hour
Adjusted single truck/loader team production: 1,064.12 LCY/Hour
Adjusted multiple truck/loader team production: 1,064.12 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 8.17 HoursUnit cost: \$1.666 /LCY Total job cost: \$14,484

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil at Dragline Walk Road (ASH1)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 099AState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-099AUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$1,029.38		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$1,772.61****MATERIAL QUANTITIES**Initial volume: 38,684

CCY

Swell factor: 1.000Loose volume: **38,684**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2130.00	-3.80	3.00	-0.80	3503	0.688

Haul Time: **0.688** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2130.00	3.80	3.00	6.80	2398	1.082

Return Time: **1.082** minutesTotal Truck Cycle Time: **6.286** minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/Hour
Truck Unit Production 741.79 LCY/Hour Adjusted for job efficiency: 615.69 LCY/Hour

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

Adjusted hourly truck team production: 1,231.37 LCY/Hour
Adjusted single truck/loader team production: 1,167.13 LCY/Hour
Adjusted multiple truck/loader team production: **1,167.13** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **33.14** Hours

Unit cost: \$1.519 /LCY Total job cost: **\$58,752**

REVEGETATION WORKTask description: Facilities AreaSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 100State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-100User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>75</u>	Cost /Acre:	<u>\$318.15</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$318.15</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$23,861.25</u>		
Reseeding Job Cost:	<u>\$4,175.72</u>		

Total Job Cost:	\$28,037
Job Hours:	75.00

REVEGETATION WORKTask description: Seed D Pit Range A-BSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 100AState: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-100AUser: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>319.3</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$187,333.31</u>		
Reseeding Job Cost:	<u>\$32,783.33</u>		
Total Job Cost:	<u>\$220,117</u>		
Job Hours:	<u>319.30</u>		

REVEGETATION WORKTask description: Roads (including BC road) below 6700'Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 101State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-101User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 196.3 Cost /Acre: \$318.15
 Estimated Failure Rate: 17.5% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$62,452.85
 Reseeding Job Cost: \$10,929.25

Total Job Cost:	<u>\$73,382</u>
Job Hours:	<u>196.00</u>

MOTOR GRADER WORK

Task description: Finish Grading I/J Pit

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 102

State: Colorado

Abbreviation: None

Date: 11/28/2022

County: Moffat

Filename: C010-102

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 16M

Horsepower: 297

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$163.86	NA
Operating Cost/Hour:	\$109.86	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.56	NA
Total Unit Cost/Hour:	\$302.28	
Total Fleet Cost/Hour:	\$604.56	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 79.94 acres

Source of estimated acreage: Appen. A; Table A-8.2A Finish Grading

HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>13.90</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>11.90</u>	feet
Unadjusted Hourly Unit Production:	<u>2.1636</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 7000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.85</u>	(1sh/d, mod.)
Net Correction:	<u>0.8500</u>	multiplier

Adjusted Hourly Unit Production: 1.8391 acres/Hour

Adjusted Hourly Fleet Production: **3.6782** acres/Hour

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **21.73** Hours

Unit cost: \$164.36 per acre Total job cost: **\$13,139**

REVEGETATION WORKTask description: Ponds below 6700' (Coyote, Sage, E Buzzard)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 103State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-103User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

Application

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	26	Cost /Acre:	\$318.15
Estimated Failure Rate:	17.5%	Cost /Acre*:	\$318.15
*Selected Replanting Work Items:	TILLING,SEEDING		
Initial Job Cost:	\$8,271.90		
Reseeding Job Cost:	\$1,447.58		

Total Job Cost:	\$9,719
Job Hours:	26.00

REVEGETATION WORKTask description: Johnson Coal StockpileSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 104State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-104User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 12.6 Cost /Acre: \$318.15
Estimated Failure Rate: 17.5% Cost /Acre*: \$318.15
*Selected Replanting Work Items: TILLING,SEEDING

Initial Job Cost: \$4,008.69
Reseeding Job Cost: \$701.52

Total Job Cost:	\$4,710
Job Hours:	12.00

REVEGETATION WORKTask description: Topsoil piles below 6700'Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 105State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-105User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 27.1 Cost /Acre: \$318.15
 Estimated Failure Rate: 17.5% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$8,621.87
 Reseeding Job Cost: \$1,508.83

Total Job Cost:	\$10,131
Job Hours:	27.00

REVEGETATION WORKTask description: Roads: >6700 ft.-Rangeland with ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 107State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-107User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>54.2</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$31,799.14</u>		
Reseeding Job Cost:	<u>\$5,564.85</u>		
Total Job Cost:	<u>\$37,364</u>		
Job Hours:	<u>54.00</u>		

REVEGETATION WORKTask description: Ash pit.-Rangeland with ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 108State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-108User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>115.6</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$67,822.52</u>		
Reseeding Job Cost:	<u>\$11,868.94</u>		
Total Job Cost:	<u>\$79,691</u>		
Job Hours:	<u>115.00</u>		

REVEGETATION WORKTask description: Seed D/E Pit Range BSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 109State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-109User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Crested Wheatgrass - Ephraim	25.00	114.78	\$108.13
Crested Wheatgrass - Hy-Crest	25.00	114.78	\$99.38
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Slender Wheatgrass - San Luis	25.00	91.25	\$106.25
Totals Seed Mix	76.23	325.57	\$328.01

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	15.7	Cost /Acre:	\$560.01
Estimated Failure Rate:	17.5%	Cost /Acre*:	\$560.01
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$8,792.16
Reseeding Job Cost:	\$1,538.63
Total Job Cost:	\$10,331
Job Hours:	15.00

REVEGETATION WORKTask description: Ponds above 6700'(Deal, Deacon, Jeffways, West Horse)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 111State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-111User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>18.71</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$10,977.16</u>		
Reseeding Job Cost:	<u>\$1,921.00</u>		
Total Job Cost:	<u>\$12,898</u>		
Job Hours:	<u>19.00</u>		

REVEGETATION WORKTask description: Topsoil piles above 6700'Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 112State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-112User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>5.1</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$2,992.17</u>		
Reseeding Job Cost:	<u>\$523.63</u>		
Total Job Cost:	<u>\$3,516</u>		
Job Hours:	<u>5.00</u>		

BOREHOLE SEALING WORK

Task description: Seal Land Slide Monitoring Stations

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 120

State: Colorado

Abbreviation: None

Date: 2/1/2023

County: Moffat

Filename: C010-120

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Plug and Seal Station 8	Portland cement grout - 6 in. (labor, equip, materials)	6	172	841.00	LF	\$6.32	\$5,315.12

Job Hours: 4.00

Total Cost: \$5,315.00

BOREHOLE SEALING WORK

Task description: Plug and Seal Exploration Drill Holes

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 121

State: Colorado

Abbreviation: None

Date: 2/1/2023

County: Moffat

Filename: C010-121

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Plug and Seal Boreholes	Portland cement grout - 6 in. (labor, equip, materials)	6	4000	4,000.00	LF	\$6.32	\$25,280.00

Job Hours: 80.00

Total Cost: \$25,280.00

BOREHOLE SEALING WORK

Task description: Plug and Seal Monitoring Wells

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 122

State: Colorado

Abbreviation: None

Date: 11/28/2022

County: Moffat

Filename: C010-122

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
81-03A	Portland cement grout - 2 in. (labor, equip, materials)	2	650	650.00	LF	\$5.29	\$3,438.50
COY-A	Portland cement grout - 2 in. (labor, equip, materials)	2	59	59.00	LF	\$5.29	\$312.11
COY-B	Portland cement grout - 2 in. (labor, equip, materials)	2	49	49.00	LF	\$5.29	\$259.21
COY	Portland cement grout - 4 in. (labor, equip, materials)	4	54	54.00	LF	\$5.55	\$299.70
GC1	Portland cement grout - 4 in. (labor, equip, materials)	2.5	180	180.00	LF	\$5.55	\$999.00
GC2	Portland cement grout - 4 in. (labor, equip, materials)	2.5	165	165.00	LF	\$5.55	\$915.75
GC3	Portland cement grout - 4 in. (labor, equip, materials)	2.5	64	64.00	LF	\$5.55	\$355.20
GC3A	Portland cement grout - 2 in. (labor, equip, materials)	2	50	50.00	LF	\$5.29	\$264.50
GC3B	Portland cement grout - 2 in. (labor, equip, materials)	2	67	67.00	LF	\$5.29	\$354.43
GD2	Portland cement grout - 4 in. (labor, equip, materials)	4	210	210.00	LF	\$5.55	\$1,165.50
GD3	Portland cement grout - 4 in. (labor, equip, materials)	4	198	198.00	LF	\$5.55	\$1,098.90
GF1	Portland cement grout - 4 in. (labor, equip, materials)	4	640	640.00	LF	\$5.55	\$3,552.00
GF4	Portland cement grout - 4 in. (labor, equip, materials)	4	270	270.00	LF	\$5.55	\$1,498.50
GF5	Portland cement grout - 6 in. (labor, equip, materials)	4.25	153.5	153.50	LF	\$6.32	\$970.12

GF6	Portland cement grout - 4 in. (labor, equip, materials)	4	200	200.00	LF	\$5.55	\$1,110.00
GF7	Portland cement grout - 6 in. (labor, equip, materials)	4.25	127	127.00	LF	\$6.32	\$802.64
GF8	Portland cement grout - 6 in. (labor, equip, materials)	4.25	220	220.00	LF	\$6.32	\$1,390.40
GP2	Portland cement grout - 4 in. (labor, equip, materials)	4	307	307.00	LF	\$5.55	\$1,703.85
GP3	Portland cement grout - 4 in. (labor, equip, materials)	4	154	154.00	LF	\$5.55	\$854.70
GP3A	Portland cement grout - 2 in. (labor, equip, materials)	2	143	143.00	LF	\$5.29	\$756.47
GP4	Portland cement grout - 4 in. (labor, equip, materials)	4	281	281.00	LF	\$5.55	\$1,559.55
GP5	Portland cement grout - 4 in. (labor, equip, materials)	4	284	284.00	LF	\$5.55	\$1,576.20
GP7	Portland cement grout - 4 in. (labor, equip, materials)	4	99	99.00	LF	\$5.55	\$549.45
GP8	Portland cement grout - 4 in. (labor, equip, materials)	4	198	198.00	LF	\$5.55	\$1,098.90
GP9	Portland cement grout - 4 in. (labor, equip, materials)	4	202	202.00	LF	\$5.55	\$1,121.10
J1	Portland cement grout - 4 in. (labor, equip, materials)	4	30	30.00	LF	\$5.55	\$166.50
P1	Portland cement grout - 4 in. (labor, equip, materials)	4	21	21.00	LF	\$5.55	\$116.55
P2	Portland cement grout - 4 in. (labor, equip, materials)	4	21	21.00	LF	\$5.55	\$116.55
P4	Portland cement grout - 4 in. (labor, equip, materials)	4	80	80.00	LF	\$5.55	\$444.00
P5	Portland cement grout - 4 in. (labor, equip, materials)	4	21	21.00	LF	\$5.55	\$116.55
P6	Portland cement grout - 4 in. (labor, equip, materials)	4	51	51.00	LF	\$5.55	\$283.05
P7	Portland cement grout - 4 in. (labor, equip, materials)	4	37	37.00	LF	\$5.55	\$205.35
P8	Portland cement grout - 4 in. (labor, equip, materials)	4	33	33.00	LF	\$5.55	\$183.15
GMP-1	Portland cement grout - 4	4	200	200.00	LF	\$5.55	\$1,110.00

	in. (labor, equip, materials)						
GD1	Portland cement grout - 6 in. (labor, equip, materials)	6	1132	1,132.00	LF	\$6.32	\$7,154.24
GD1(2)	Portland cement grout - 6 in. (labor, equip, materials)	6	1144	1,144.00	LF	\$6.32	\$7,230.08
GLEV-1	Portland cement grout - 6 in. (labor, equip, materials)	4.25	238	238.00	LF	\$6.32	\$1,504.16
GLEV-2	Portland cement grout - 6 in. (labor, equip, materials)	4.25	27	27.00	LF	\$6.32	\$170.64
GLEV-3	Portland cement grout - 6 in. (labor, equip, materials)	4.25	45	45.00	LF	\$6.32	\$284.40
CY-A	Portland cement grout - 6 in. (labor, equip, materials)	4.25	35	35.00	LF	\$6.32	\$221.20
CY-1	Portland cement grout - 6 in. (labor, equip, materials)	4.25	165	165.00	LF	\$6.32	\$1,042.80
CY-2	Portland cement grout - 6 in. (labor, equip, materials)	4.25	285	285.00	LF	\$6.32	\$1,801.20
CY-3	Portland cement grout - 6 in. (labor, equip, materials)	4.25	430	430.00	LF	\$6.32	\$2,717.60
GX1	Portland cement grout - 6 in. (labor, equip, materials)	4.25	318	318.00	LF	\$6.32	\$2,009.76
GW-23	Portland cement grout - 6 in. (labor, equip, materials)	4.25	280	280.00	LF	\$6.32	\$1,769.60
GW-26	Portland cement grout - 6 in. (labor, equip, materials)	4.25	321	321.00	LF	\$6.32	\$2,028.72
GW-29	Portland cement grout - 6 in. (labor, equip, materials)	4.25	320	320.00	LF	\$6.32	\$2,022.40
GW-30	Portland cement grout - 6 in. (labor, equip, materials)	4.25	320	320.00	LF	\$6.32	\$2,022.40
GW-31	Portland cement grout - 6 in. (labor, equip, materials)	4.25	320	320.00	LF	\$6.32	\$2,022.40
Ks_DW-1A	Portland cement grout - 6 in. (labor, equip, materials)	4.25	188	188.00	LF	\$6.32	\$1,188.16
NP-1	Portland cement grout - 6 in. (labor, equip, materials)	4.25	185	185.00	LF	\$6.32	\$1,169.20
NP-2	Portland cement grout - 6 in. (labor, equip, materials)	4.25	135	135.00	LF	\$6.32	\$853.20
NP-3	Portland cement grout - 6 in. (labor, equip,	4.25	299	299.00	LF	\$6.32	\$1,889.68

	materials)						
East Pyeatt Well #1	Portland cement grout - 6 in. (labor, equip, materials)	5	700	700.00	LF	\$6.32	\$4,424.00
05-LW-17	Portland cement grout - 4 in. (labor, equip, materials)	2.375	816	816.00	LF	\$5.55	\$4,528.80
05-LW-21	Portland cement grout - 4 in. (labor, equip, materials)	2.375	1325.4	1,325.40	LF	\$5.55	\$7,355.97
05-LW-25	Portland cement grout - 4 in. (labor, equip, materials)	2.375	1358	1,358.00	LF	\$5.55	\$7,536.90
05-LW-27	Portland cement grout - 4 in. (labor, equip, materials)	2.375	1594	1,594.00	LF	\$5.55	\$8,846.70
95-LW-09	Portland cement grout - 4 in. (labor, equip, materials)	4	695	995.00	LF	\$5.55	\$5,522.25

Job Hours: 185.00

Total Cost: \$108,065.00

REVEGETATION WORKTask description: Reveg for 20 x .3 acres drillholesSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 128State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-128User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>6</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$3,520.20</u>		
Reseeding Job Cost:	<u>\$616.04</u>		
Total Job Cost:	<u>\$4,136</u>		
Job Hours:	<u>6.00</u>		

BULLDOZER WORKTask description: Regrade .3acres x 20 drill padsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: 129State: ColoradoAbbreviation: NoneDate: 11/28/2022County: MoffatFilename: C010-129User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$13.10	NA
Ripper op. Cost/Hour:	\$3.65	50
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$280.53Total Fleet Cost/Hour: \$280.53**MATERIAL QUANTITIES**Initial Volume: 30,000Swell factor: 1.000Loose volume: 30,000 LCYSource of estimated volume: A-7.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 7,500 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3537

Adjusted unit production: 495.18 LCY/hr

Adjusted fleet production: **495.18** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.567/LCY

Total job time: **60.58** Hours

Total job cost: **\$16,996**

DEMOLITION WORK

Task description: Demolish structures, remove materials and debris

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 130

State: Colorado

Abbreviation: None

Date: 11/28/2022

County: Moffat

Filename: C010-130

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Main office	31,7548 CF	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	317,548.00	CF	\$0.22	\$70,495.66
Office bldg. floor	15,288 SF	Floor, concrete, demolition only, average reinforcing - 10 in. thick	15,288.00	SF	\$1.86	\$28,435.68
Reinforced concrete floor office bldg.	251 SF	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	251.00	SF	\$2.30	\$576.55
Office footers	804 SF	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft. - Max. 10,000 ft. haul	804.00	LF	\$6.89	\$5,539.56
Remove fencing	700 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	700.00	LF	\$3.08	\$2,156.00
Shop\Warehouse	1,925,700 CF	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,925,700.00	CF	\$0.22	\$427,505.40
Warehouse concrete floor	9,270 SF	Floor, concrete, demolition only, average reinforcing - 12 in. thick	9,270.00	SF	\$2.23	\$20,672.10
Warehouse 4" Concrete floor	7,925 SF	Floor, concrete, demolition only, average reinforcing - 4 in. thick	7,925.00	SF	\$0.74	\$5,864.50
Warehouse Footers	1,822 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft. - Max. 10,000 ft. haul	1,822.00	LF	\$6.89	\$12,553.58
Silver storage trailer	40 X10X10	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,000.00	CF	\$0.22	\$872.00
Ble caterpillar parts trailer	35X10X8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,800.00	CF	\$0.22	\$610.40

Wash/Lube Bay	173,500 CF	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	173,500.00	CF	\$0.22	\$38,517.00
Wash bay concrete floor	9,275 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	9,275.00	SF	\$1.11	\$10,295.25
Wash bay footers	480 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	480.00	LF	\$4.59	\$2,203.20
Shop concrete floor	2,400 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	2,400.00	SF	\$1.11	\$2,664.00
Shop Footers	290 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	290.00	LF	\$4.59	\$1,331.10
Seed Trailer	30X10X8	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,400.00	CF	\$0.22	\$532.80
Pump House	4,840 CF	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,840.00	CF	\$0.22	\$1,074.48
Pump House floor	484 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	484.00	SF	\$1.11	\$537.24
Pump House footers	88 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	88.00	LF	\$4.59	\$403.92
Old cars and equipment at water tanks	120X10X4	Bldg. (SC) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,800.00	CF	\$0.26	\$1,248.00
Light Duty and Electrical Shop	94,500 CF	Bldg. (SC) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	94,500.00	CF	\$0.26	\$24,570.00
Concrete floor	5,250 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	5,250.00	SF	\$1.11	\$5,827.50
Footers	348 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	348.00	LF	\$4.59	\$1,597.32
Break Up and Bury Parking Lot Asphalt	2,448 SY	Pavement, bituminous, demolition only - 4 in. to 6 in. thick	2,448.00	SY	\$8.08	\$19,779.84
Water Tank	80,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	10,667.00	CF	\$0.22	\$2,325.41

Water Tank	80,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	10,667.00	CF	\$0.22	\$2,325.41
Diesel Tank	100,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	13,333.00	CF	\$0.22	\$2,906.59
Diesel Tank	100,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	13,333.00	CF	\$0.22	\$2,906.59
Diesel Tank	20,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,667.00	CF	\$0.22	\$581.41
Diesel Tank	20,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,667.00	CF	\$0.22	\$581.41
Diesel Tank	20,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,667.00	CF	\$0.22	\$581.41
Diesel Tank -- Removed but onsite	20,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,667.00	CF	\$0.22	\$581.41
Diesel Tank -- Removed but onsite	20,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,667.00	CF	\$0.22	\$581.41
Gasoline Tank	15,000 Gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,000.00	CF	\$0.22	\$436.00
Concrete Pads for Storage Tank	6,500 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	6,500.00	SF	\$1.11	\$7,215.00
Fuel Tank Sludge Removal - 8 Tanks	6,300 Gallons	Remove sludge, water, and rem. product from tank - 6,000 to 8,000 gal.	1.00	EA	\$306.00	\$306.00
Disposal of Tank Sludge	26 Tons	Hazardous waste removal - Bulk liquids, large quantities (over 2,500 gal.)	6,300.00	GAL	\$1.88	\$11,844.00
Powerlines	75 330 LF	Utility Poles, Wood 35' - 45' high (each pole)	75.00	EA	\$297.50	\$22,312.50
Tire Shed-Skid Mounted	6,000 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	6,000.00	CF	\$0.22	\$1,308.00
Main Substation	6,000 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	6,000.00	CF	\$0.22	\$1,308.00
Concrete Pads	1,200 SF	Floor, concrete,	1,200.00	SF	\$1.11	\$1,332.00

		demolition only, average reinforcing - 6 in. thick				
4 Portables	4,200 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,200.00	CF	\$0.22	\$915.60
ANFO Silos and Emulsion Tank	10,940 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	10,940.00	CF	\$0.22	\$2,384.92
New 2007 Emulsion tank	15,000 gal	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,600.00	CF	\$0.22	\$348.80
Concrete Pad	1,642 SF	Floor, concrete, demolition only, average reinforcing - 6 in. thick	1,642.00	SF	\$1.11	\$1,822.62
Footers	52 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	52.00	LF	\$4.59	\$238.68
Explosive storage- 2 magazines	2 X 853.3 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,707.00	CF	\$0.22	\$372.13
Explosive Storage Trailer	2,560 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,560.00	CF	\$0.22	\$558.08
2 Large Explosives Magazines	2 X 22.5. 8X6	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,160.00	CF	\$0.22	\$470.88
Tub Pad railroad Track	2 X 312	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	624.00	CF	\$0.22	\$136.03
5 Cargo Containers	5 X 25 and 8x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,000.00	CF	\$0.22	\$1,744.00
Queen Anne Dragline Repair Pad	70'Lx70'wx.067'h	Floor, concrete, demolition only, average reinforcing - 8 in. thick	4,900.00	SF	\$1.48	\$7,252.00
Bury boneyard storage material	84,000 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	84,000.00	CF	\$0.22	\$18,312.00
Waste oil and Anit-Freeze drum disposal	50 used oil, 20 Solvent	Solid pickup - 55 gal. drums	70.00	EA	\$240.00	\$16,800.00
Waterlines and Waste Solvent Lines	Shop to waste oil pad	Pipe, sewer/water - 12 in. diameter pipe	100.00	LF	\$5.05	\$505.00
Transformer Pad	225 SF	Floor, concrete, demolition only, average reinforcing - 4 in. thick	225.00	SF	\$0.74	\$166.50

4 skid mounted substations	4'x10', 8'x20'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	6,400.00	CF	\$0.22	\$1,395.20
East Panel RL Coverall Building	86,400CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	86,400.00	CF	\$0.22	\$18,835.20
East Panel RL Concrete Slabs	4,540 SF	Floor, concrete, demolition only, average reinforcing - 10 in. thick	4,540.00	SF	\$1.86	\$8,444.40
East Panel RL Footings	60 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft. - Max. 10,000 ft. haul	600.00	LF	\$6.89	\$4,134.00
3x50,000 Tanks	20,040 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	20,040.00	CF	\$0.22	\$4,368.72
2x20,000 Tanks	5,348 CF	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	5,348.00	CF	\$0.22	\$1,165.86
MgCl Tank @ H Impoundment	10,000 gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,005.00	CF	\$0.22	\$219.09
Red silo @ used oil storage area	15,000 gallons	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,600.00	CF	\$0.22	\$348.80
Blasters Equipment Building	45X85X22	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	76,021.88	CF	\$0.21	\$15,584.49
-Blasters Equipment Building Foundation	146 CY	Slab on grade, concrete, demolition only - No reinforcing	106.00	CY	\$96.00	\$10,176.00
Radio Tower Skid Mounted	NA	USER PROVIDED ITEM	1.00	EA	\$1,500.00	\$1,500.00

Job Hours: 100.00

Subtotal
(unadjusted): \$863,494.63

Total Cost
(adjusted for location): \$788,370.60

DEMOLITION WORK

Task description: Culvert Removal and Disposal

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 131

State: Colorado

Abbreviation: None

Date: 11/28/2022

County: Moffat

Filename: C010-131

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
A-1	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
A-2	60" Diam	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	240.00	LF	\$23.89	\$5,733.36
ASH-1	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	190.00	LF	\$7.68	\$1,458.82
A-3	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
A-4	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	210.00	LF	\$17.76	\$3,729.81
A-5	2 @ 48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	480.00	LF	\$17.76	\$8,525.28
A-7	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	210.00	LF	\$12.24	\$2,570.82
A9	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	180.00	LF	\$17.76	\$3,196.98
A-10	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
A-11	18" Diam	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	180.00	LF	\$5.90	\$1,062.36
A-12	36"Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	210.00	LF	\$12.24	\$2,570.82
A-14	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	210.00	LF	\$12.24	\$2,570.82
AE-4	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	210.00	LF	\$7.68	\$1,612.38
AE-7	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	300.00	LF	\$7.68	\$2,303.40
AE-10	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter	240.00	LF	\$17.76	\$4,262.64

		pipe				
AE-11	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
BC-1	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	540.00	LF	\$7.68	\$4,146.12
BC-2	60" Diam	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	240.00	LF	\$23.89	\$5,733.36
BC-5	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
BC-6	36"Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	210.00	LF	\$12.24	\$2,570.82
*FEB-1	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
D-9	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	210.00	LF	\$7.68	\$1,612.38
D-10	18" Diam	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	180.00	LF	\$5.90	\$1,062.36
D-12	18" Diam	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	180.00	LF	\$5.90	\$1,062.36
D-15	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	180.00	LF	\$12.24	\$2,203.56
D-16	2 @ 24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	360.00	LF	\$7.68	\$2,764.08
D-17	2 @ 24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	360.00	LF	\$7.68	\$2,764.08
FT-1	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	110.00	LF	\$7.68	\$844.58
EMF-1	2 @ 36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	120.00	LF	\$12.24	\$1,469.04
GRS-1	24"Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
GRS-2	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
RW-1	12" Diam	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	180.00	LF	\$4.34	\$781.74
SA-1	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
SA-7	30" Diam	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	180.00	LF	\$10.15	\$1,827.18
SAH-1	24" Diam	Pipe, corrugated metal	180.00	LF	\$7.68	\$1,382.04

		(CMP) - 24 in. diameter pipe				
AE-8	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	240.00	LF	\$17.76	\$4,262.64
AE-12	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	130.00	LF	\$12.24	\$1,591.46
AX-3	60" Diam	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	240.00	LF	\$23.89	\$5,733.36
AX-4	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	240.00	LF	\$12.24	\$2,938.08
AX-5	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	210.00	LF	\$12.24	\$2,570.82
IH-1	18"Diam	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	180.00	LF	\$5.90	\$1,062.36
IWP-1	6" Diam	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	180.00	LF	\$3.31	\$595.26
Jgag-1	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
JG-2	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
NN-5	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
OH-3	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
OH-5	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
MC-1	15" Diam	Pipe, corrugated metal (CMP) - 15 in. diameter pipe	180.00	LF	\$5.09	\$916.02
MC-3	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	180.00	LF	\$7.68	\$1,382.04
MC-5	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	120.00	LF	\$5.90	\$708.24
A-15	48" Diam	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	223.00	LF	\$17.76	\$3,960.70
AE-13A	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	175.00	LF	\$7.68	\$1,343.65
AE-13B	36" Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	170.00	LF	\$12.24	\$2,081.14
BC-7	36"Diam	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	192.00	LF	\$12.24	\$2,350.46

OH-6	18" Diam	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	78.00	LF	\$5.90	\$460.36
A-13	24" Diam	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	210.00	LF	\$7.68	\$1,612.38

Job Hours: 60.00**Subtotal
(unadjusted):** \$140,022.32**Total Cost
(adjusted for
location):** \$127,840.38

BULLDOZER WORKTask description: **Regrade L Pit X-sec:407,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L01**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L01**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **93,302**Swell factor: **1.000**Loose volume: **93,302 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **400 feet**Unadjusted hourly production: **810.5 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-20 %**Average site altitude: **6,950 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 610.71 LCY/hr

Adjusted fleet production: **2442.84** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.936/LCY

Total job time: **38.19** Hours

Total job cost: **\$87,365**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:406,700**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L02**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **C010-L02**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **222,222**Swell factor: **1.000**Loose volume: **222,222 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **425 feet**Unadjusted hourly production: **765.7 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-20 %**Average site altitude: **7,050 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 576.95 LCY/hr

Adjusted fleet production: **2307.8** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.991/LCY

Total job time: **96.29** Hours

Total job cost: **\$220,258**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:406,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L03**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L03**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **141,481**Swell factor: **1.000**Loose volume: **141,481 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **400 feet**Unadjusted hourly production: **810.5 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-25 %**Average site altitude: **7,050 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.516	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8011

Adjusted unit production: 649.29 LCY/hr

Adjusted fleet production: **2597.16** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.881/LCY

Total job time: **54.48** Hours

Total job cost: **\$124,607**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:405700**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L04**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **C010-L04**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **148,574**Swell factor: **1.000**Loose volume: **148,574 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **500 feet**Unadjusted hourly production: **650.0 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-25 %**Average site altitude: **7,000 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.516	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8011

Adjusted unit production: 520.72 LCY/hr

Adjusted fleet production: **2082.88** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.098/LCY

Total job time: **71.33** Hours

Total job cost: **\$163,163**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:405,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L05**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L05**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **402,666**Swell factor: **1.000**Loose volume: **402,666 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **520 feet**Unadjusted hourly production: **627.8 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **10 %**Average site altitude: **7,150 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4153

Adjusted unit production: 260.73 LCY/hr

Adjusted fleet production: **1042.92** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$2.193/LCY

Total job time: **386.09** Hours

Total job cost: **\$883,157**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:404,700**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L06**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L06**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **718,834**Swell factor: **1.000**Loose volume: **718,834 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **590 feet**Unadjusted hourly production: **556.8 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-20 %**Average site altitude: **7,050 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 419.55 LCY/hr

Adjusted fleet production: **1678.2 LCY/hr**

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.363/LCY

Total job time: **428.34 Hours**

Total job cost: **\$979,780**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:404,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L07**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L07**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **475,815**Swell factor: **1.000**Loose volume: **475,815 LCY**Source of estimated volume: **Table A-4.5**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **560 feet**Unadjusted hourly production: **585.9 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-20 %**Average site altitude: **7,200 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 441.48 LCY/hr

Adjusted fleet production: **1765.92** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.295/LCY

Total job time: **269.44** Hours

Total job cost: **\$616,327**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:403,700**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **L08** State: **Colorado** Abbreviation: **None**
 Date: **11/30/2022** County: **Moffat** Filename: **C010-L08**
 User: **ZTT**

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

Basic Machine: **Cat D11T - 11U**
 Horsepower: **850**
 Blade Type: **Universal**
 Attachment: **NA**
 Shift Basis: **3 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**
 Total Fleet Cost/Hour: **\$2,287.41**

MATERIAL QUANTITIES

Initial Volume: **102,185**
 Swell factor: **1.000**
 Loose volume: **102,185 LCY**

Source of estimated volume: **Table A-4.3**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **600 feet**
 Unadjusted hourly production: **546.0 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **-25 %**
 Average site altitude: **7,250 feet**

Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.516	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8011

Adjusted unit production: 437.40 LCY/hr

Adjusted fleet production: **1749.6** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.307/LCY

Total job time: **58.40** Hours

Total job cost: **\$133,596**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:403,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L09**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L09**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **101,945**Swell factor: **1.000**Loose volume: **101,945 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **550 feet**Unadjusted hourly production: **594.6 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-15 %**Average site altitude: **7,250 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7023

Adjusted unit production: 417.59 LCY/hr

Adjusted fleet production: **1670.36 LCY/hr**

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.369/LCY

Total job time: **61.03 Hours**

Total job cost: **\$139,605**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:402,700**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L10**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L10**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **430,259**Swell factor: **1.000**Loose volume: **430,259 LCY**Source of estimated volume: **Table A-4.5**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **405 feet**Unadjusted hourly production: **801.6 LCY/hr**Materials consistency description: **Consolidated stockpile 1.0**Average push gradient: **-20 %**Average site altitude: **7,350 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 604.01 LCY/hr

Adjusted fleet production: **2416.04** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.947/LCY

Total job time: **178.08** Hours

Total job cost: **\$407,352**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:402,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L11**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L11**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **572,536**Swell factor: **1.000**Loose volume: **572,536 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **525 feet**Unadjusted hourly production: **622.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **-20 %**Average site altitude: **7,400 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6782

Adjusted unit production: 421.98 LCY/hr

Adjusted fleet production: **1687.92 LCY/hr**

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.355/LCY

Total job time: **339.20 Hours**

Total job cost: **\$775,880**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:401,700**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L12**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **L12**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **173,389**Swell factor: **1.000**Loose volume: **173,389 LCY**Source of estimated volume: **Table A-4.3**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **450 feet**Unadjusted hourly production: **725.7 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **-20 %**Average site altitude: **7,400 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6782

Adjusted unit production: 492.17 LCY/hr

Adjusted fleet production: **1968.68** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$1.162/LCY

Total job time: **88.07** Hours

Total job cost: **\$201,461**

BULLDOZER WORKTask description: **Regrade L Pit X-sec:401,200**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **L13**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **C010-L13**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D11T - 11U**Horsepower: **850**Blade Type: **Universal**Attachment: **NA**Shift Basis: **3 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: **273,425**Swell factor: **1.000**Loose volume: **273,425 LCY**Source of estimated volume: **Table A-4.5**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **205 feet**Unadjusted hourly production: **1,529.1 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **-25 %**Average site altitude: **7,500 feet**Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.516	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7210

Adjusted unit production: 1,102.48 LCY/hr

Adjusted fleet production: **4409.92** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.519/LCY

Total job time: **62.00** Hours

Total job cost: **\$141,825**

BULLDOZER WORKTask description: **Regrade L Pit X-secs:400,700 and 400,200**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L14State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: L14User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 3 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: \$571.85Total Fleet Cost/Hour: **\$2,287.41****MATERIAL QUANTITIES**Initial Volume: 271,815Swell factor: 1.000Loose volume: **271,815 LCY**Source of estimated volume: Table A-4.3Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 2,036.8 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -30 %Average site altitude: 7,550 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.601	(CAT HB)
Altitude:	0.930	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7081

Adjusted unit production: 1,442.26 LCY/hr

Adjusted fleet production: **5769.04** LCY/hr

JOB TIME AND COST

Fleet size: 4 Dozer(s)

Unit cost: \$0.396/LCY

Total job time: **47.12** Hours

Total job cost: **\$107,774**

TRUCK/LOADER TEAM WORKTask description: **Regrade L Pit (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L15State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-L15User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 14,000 Gal.

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

	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$179.05	\$23.07	\$153.67	\$153.67	\$163.86	\$105.66
Operating cost/hour:	\$247.93	\$930.15	\$41.74	\$41.74	\$27.47	\$76.75
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$461.40	\$990.54	\$238.52	\$236.71	\$219.88	\$182.41
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$2,374.74		Support: \$475.23		Maint: \$402.29	

Total work team cost/hour: **\$3,252.26****MATERIAL QUANTITIES**Initial volume: 1,647,275

CCY

Swell factor: 1.000Loose volume: **1,647,275**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 3,300

Pounds/LCY

Description: Decomposed rock - 75% Rock, 25% EarthRated Payload: 492,200

Pounds

Payload Capacity: 149.15

LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	149.15	LCY

Final Truck Volume Based on Number of Loader Passes: 129.58 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	64.790	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 2 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.498	minutes
Net Load Time per Truck:		0.996	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	0.996	Minutes	Adjusted for site altitude:	0.996	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1841.00	-8.00	3.00	-5.00	1870	1.139

Haul Time: **1.139** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1502.00	8.00	3.00	11.00	1734	1.269

Return Time: **1.269** minutesTotal Truck Cycle Time: **5.404** minutes

Loading Tool unit

Production	<u>4,328.95</u>	LCY/Hour	Adjusted for job efficiency:	<u>3,593.03</u>	LCY/Hour
Truck Unit Production	<u>1,438.71</u>	LCY/Hour	Adjusted for job efficiency:	<u>1,194.13</u>	LCY/Hour

Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u>	Truck(s)
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Adjusted hourly truck team production:	<u>3,582.39</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>3,582.39</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>3,582.39</u>	LCY/Hour

JOB TIME AND COST

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>459.83</u>	Hours
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Unit cost:	<u>\$0.908</u>	/LCY	Total job cost:	<u>\$1,495,471</u>
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REVEGETATION WORKTask description: Seed L Pit: Rangeland with ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L16State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-L16User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>803.9</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$471,648.13</u>		
Reseeding Job Cost:	<u>\$82,538.42</u>		
Total Job Cost:	<u>\$554,187</u>		
Job Hours:	<u>804.00</u>		

BULLDOZER WORKTask description: Regrade L Pit North Haul road.6.5 ac X 9 ft th.Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L17State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-L17User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D11T - 11UHorsepower: 850Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$571.60Total Fleet Cost/Hour: \$1,143.20**MATERIAL QUANTITIES**Initial Volume: 94,772Swell factor: 1.150Loose volume: 108,988 LCYSource of estimated volume: Map M9 sh.3/3Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly production: 3,584.2 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,000 feetMaterial weight: 2,475 lbs/LCYWeight description: User Provided**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4700

Adjusted unit production: 1,684.57 LCY/hr

Adjusted fleet production: **3369.14** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.339/LCY

Total job time: **32.35** Hours

Total job cost: **\$36,981**

SCRAPER TEAM WORKTask description: **Replace Topsoil on L Pit (Scraper)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L18State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-L18User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 470,247

CCY

Swell factor: 1.000Loose volume: **470,247**

LCY

Source of estimated volume: A-9.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>32.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2334.00	4.20	2.00	6.20	1477	1.66

Haul Time: 1.66 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2334.00	-4.20	2.00	-2.20	2972	0.83

Return Time: 0.83 minutesTotal Scraper team cycle time: 4.09 minutesAdjusted for job conditions: 706.21 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 2,824.84 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,824.84 LCY/HourUnadjusted unit production/hour: 850.86 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 166.47 HoursUnit cost: \$1.988 /LCYTotal job cost: \$934,752

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on L Pit (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: L19State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-L19User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$27.68
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$48.12
Number of Units:	4	1	1	1	1	1
Group Subtotals:	Work: \$1,677.06		Support: \$475.23		Maint: \$268.00	

Total work team cost/hour: **\$2,420.29****MATERIAL QUANTITIES**Initial volume: 826,774

CCY

Swell factor: 1.000Loose volume: **826,774**

LCY

Source of estimated volume: TR124 Appendix A Table A-3.1Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	8.635	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 9 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		2.516	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	2.516	Minutes	Adjusted for site altitude:	2.516	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5925.00	4.40	3.00	7.40	1160	5.267

Haul Time: 5.267 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4788.00	8.60	3.00	11.60	1628	3.064

Return Time: 3.064 minutesTotal Truck Cycle Time: 12.847 minutes

Loading Tool unit

Production 1,406.18 LCY/Hour Adjusted for job efficiency: 1,167.13 LCY/HourTruck Unit Production 362.96 LCY/Hour Adjusted for job efficiency: 301.25 LCY/HourOptimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)Adjusted hourly truck team production: 1,205.02 LCY/HourAdjusted single truck/loader team production: 1,167.13 LCY/HourAdjusted multiple truck/loader team production: 1,167.13 LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: 708.38 HoursUnit cost: \$2.074 /LCY Total job cost: \$1,714,488

SITE MAINTENANCE

Task description: Site Maintenance; Rill and Gully Repair and Pond Cleaning

Site: Trapper Mine

Permit Action: PR11

Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: LN20

State: Colorado

Abbreviation: None

Date: 11/30/2022

County: Moffat

Filename: C010-LN20

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Rill/Gully Repair 32hrs/year for 1st 5 years	32.00	Cat D7R DS Series II LGP	160.00	EA	\$213.41	\$34,145.60
Rill/Gully Repair 32hrs/year for 1st 5 years	32.00	Cat 324D L 9'-8" Stick	160.00	EA	\$179.56	\$28,729.60
Rill/Gully Repair 16hrs/year for last 5 years	15.00	Cat D3K XL - 3P	80.00	EA	\$96.39	\$7,711.20
Pond Cleaning 1st Year, 8 Weeks	320.00	Cat 324D L 9'-8" Stick	320.00	EA	\$179.56	\$57,459.20
Pond Cleaning 2nd Year, 3 Weeks	120.00	Cat 324D L 9'-8" Stick	120.00	EA	\$179.56	\$21,547.20
Haul Truck Cleaning 1st Year	320.00	Cat 725	320.00	EA	\$206.52	\$66,086.40
Haul Truck Cleaning 2nd Year	320.00	Cat 725	120.00	EA	\$206.52	\$24,782.40

Job Hours: 600.00

Total Cost: \$240,461.60

BULLDOZER WORKTask description: **Regrade N Pit**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **N01** State: **Colorado** Abbreviation: **None**
 Date: **11/30/2022** County: **Moffat** Filename: **N01**
 User: **ZTT**

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

Basic Machine: **Cat D11T - 11U**
 Horsepower: **850**
 Blade Type: **Universal**
 Attachment: **NA**
 Shift Basis: **3 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**
 Total Fleet Cost/Hour: **\$1,143.70**

MATERIAL QUANTITIES

Initial Volume: **1,364,789**
 Swell factor: **1.000**
 Loose volume: **1,364,789 LCY**

Source of estimated volume: **Table A-4.5**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **325 feet**
 Unadjusted hourly production: **984.2 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **-10 %**
 Average site altitude: **6,700 feet**

Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6473

Adjusted unit production: 637.07 LCY/hr

Adjusted fleet production: **1274.14** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.898/LCY

Total job time: **1,071.15** Hours

Total job cost: **\$1,225,074**

TRUCK/LOADER TEAM WORKTask description: **Backfill and Grading N Pit**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **N02**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **C010-N02**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 14,000 Gal.

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

	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$179.05	\$23.07	\$153.67	\$153.67	\$163.86	\$105.66
Operating cost/hour:	\$247.93	\$930.15	\$41.74	\$41.74	\$27.47	\$76.75
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$461.40	\$990.54	\$238.52	\$236.71	\$219.88	\$182.41
Number of Units:	4	1	1	1	1	1
Group Subtotals:	Work: \$2,836.14		Support: \$475.23		Maint: \$402.29	

Total work team cost/hour: **\$3,713.66****MATERIAL QUANTITIES**Initial volume: **2,519,470**

CCY

Swell factor: **1.000**Loose volume: **2,519,470**

LCY

Source of estimated volume: **TR124 Appendix A Table A-3.1**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: **1**

Pounds/LCY

Description: **User Provided**Rated Payload: **492,200**

Pounds

Payload Capacity: **492,200.00**

LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	192.00	LCY

Final Truck Volume Based on Number of Loader Passes: 194.37 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	64.790	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: ABOVE AVERAGE
 Selected Value within this Basic Rating: AVERAGE

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.498	minutes
Net Load Time per Truck:		1.494	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	1.494	Minutes	Adjusted for site altitude:	1.494	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4737.00	-8.00	3.00	-5.00	1870	2.666

Haul Time: 2.666 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4737.00	8.00	3.00	11.00	1734	3.135

Return Time: 3.135 minutesTotal Truck Cycle Time: 9.295 minutes

Loading Tool unit

Production 5,083.78 LCY/Hour Adjusted for job efficiency: 4,219.54 LCY/Hour
Truck Unit Production 1,254.67 LCY/Hour Adjusted for job efficiency: 1,041.38 LCY/Hour

Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)

Adjusted hourly truck team production: 4,165.52 LCY/Hour
Adjusted single truck/loader team production: 4,165.52 LCY/Hour
Adjusted multiple truck/loader team production: 4,165.52 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 604.84 HoursUnit cost: \$0.892 /LCY Total job cost: \$2,246,168

TRUCK/LOADER TEAM WORKTask description: **Backfill and Grading I Pit**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **N02A**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **N02a**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

Equipment Description	
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 14,000 Gal.

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

	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$179.05	\$23.07	\$153.67	\$153.67	\$163.86	\$105.66
Operating cost/hour:	\$247.93	\$930.15	\$41.74	\$41.74	\$27.47	\$76.75
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$461.40	\$990.54	\$238.52	\$236.71	\$219.88	\$182.41
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$2,374.74		Support: \$475.23		Maint: \$402.29	

Total work team cost/hour: **\$3,252.26****MATERIAL QUANTITIES**Initial volume: **477,772**

CCY

Swell factor: **1.000**Loose volume: **477,772**

LCY

Source of estimated volume: **Appendix A Tables A-3.1**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: **3,300**

Pounds/LCY

Description: **Decomposed rock - 75% Rock, 25% Earth**Rated Payload: **492,200**

Pounds

Payload Capacity: **149.15**

LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	149.15	LCY

Final Truck Volume Based on Number of Loader Passes: 145.78 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	48.593	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: ABOVE AVERAGE
 Selected Value within this Basic Rating: AVERAGE

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.498	minutes
Net Load Time per Truck:		1.494	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	1.494	Minutes	Adjusted for site altitude:	1.494	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4063.00	-2.00	3.00	1.00	3503	1.751

Haul Time: **1.751** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4063.00	2.00	3.00	5.00	3296	1.884

Return Time: **1.884** minutesTotal Truck Cycle Time: **7.129** minutes

Loading Tool unit

Production 3,812.84 LCY/Hour Adjusted for job efficiency: 3,164.66 LCY/Hour
Truck Unit Production 1,226.91 LCY/Hour Adjusted for job efficiency: 1,018.34 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 3,055.01 LCY/Hour
Adjusted single truck/loader team production: 3,055.01 LCY/Hour
Adjusted multiple truck/loader team production: **3,055.01** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **156.39** HoursUnit cost: \$1.065 /LCY Total job cost: **\$508,620**

BULLDOZER WORKTask description: **Backfill and Grading J Pit**Site: **Trapper Mine** Permit Action: **PR11** Permit/Job#: **C1981010****PROJECT IDENTIFICATION**

Task #: **N02B** State: **Colorado** Abbreviation: **None**
 Date: **11/30/2022** County: **Moffat** Filename: **C010-N02b**
 User: **ZTT**

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

Basic Machine: **Cat D11T - 11U**
 Horsepower: **850**
 Blade Type: **Universal**
 Attachment: **NA**
 Shift Basis: **3 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$257.09	NA
Operating Cost/Hour:	\$273.21	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	10
Operator Cost/Hour:	\$41.55	NA

Total unit Cost/Hour: **\$571.85**
 Total Fleet Cost/Hour: **\$1,143.70**

MATERIAL QUANTITIES

Initial Volume: **668,037**
 Swell factor: **1.000**
 Loose volume: **668,037 LCY**

Source of estimated volume: **Table A-4.5**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **325 feet**
 Unadjusted hourly production: **984.2 LCY/hr**

Materials consistency description: **Consolidated stockpile 1.0**

Average push gradient: **-20 %**
 Average site altitude: **6,700 feet**

Material weight: **2,475 lbs/LCY**Weight description: **User Provided****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(S-BY-S)
Visibility:	0.800	(POOR)

Job efficiency:	0.790	(3 SHIFTS/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.929	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7535

Adjusted unit production: 741.59 LCY/hr

Adjusted fleet production: **1483.18** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.771/LCY

Total job time: **450.41** Hours

Total job cost: **\$515,134**

TRUCK/LOADER TEAM WORKTask description: **Backfill and Grading C Pit**Site: **Trapper Mine**Permit Action: **PR11**Permit/Job#: **C1981010****PROJECT IDENTIFICATION**Task #: **N03**State: **Colorado**Abbreviation: **None**Date: **11/30/2022**County: **Moffat**Filename: **C010-N03**User: **ZTT**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 14,000 Gal.

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

	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$179.05	\$23.07	\$153.67	\$153.67	\$163.86	\$105.66
Operating cost/hour:	\$247.93	\$930.15	\$41.74	\$41.74	\$27.47	\$76.75
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$461.40	\$990.54	\$238.52	\$236.71	\$219.88	\$182.41
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$2,374.74		Support: \$475.23		Maint: \$402.29	

Total work team cost/hour: **\$3,252.26****MATERIAL QUANTITIES**Initial volume: **5,960,837**

CCY

Swell factor: **1.000**Loose volume: **5,960,837**

LCY

Source of estimated volume: **Appendix A Tables A-2A-3.1**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: **3,300**

Pounds/LCY

Description: **Decomposed rock - 75% Rock, 25% Earth**Rated Payload: **492,200**

Pounds

Payload Capacity: **149.15**

LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	149.15	LCY

Final Truck Volume Based on Number of Loader Passes: 145.78 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	48.593	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: ABOVE AVERAGE
 Selected Value within this Basic Rating: AVERAGE

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.498	minutes
Net Load Time per Truck:		1.494	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	1.494	Minutes	Adjusted for site altitude:	1.494	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3945.00	-5.10	3.00	-2.10	3450	1.227

Haul Time: 1.227 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3945.00	5.10	3.00	8.10	2327	2.273

Return Time: 2.273 minutesTotal Truck Cycle Time: 6.994 minutes

Loading Tool unit

Production 3,812.84 LCY/Hour Adjusted for job efficiency: 3,164.66 LCY/HourTruck Unit Production 1,250.59 LCY/Hour Adjusted for job efficiency: 1,037.99 LCY/HourOptimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 3,113.98 LCY/Hour
Adjusted single truck/loader team production: 3,113.98 LCY/Hour
Adjusted multiple truck/loader team production: 3,113.98 LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 1,914.22 HoursUnit cost: \$1.044 /LCY Total job cost: \$6,225,540

SCRAPER TEAM WORKTask description: **Replace Topsoil on C Pit**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N13State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N13User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 304,436

CCY

Swell factor: 1.000Loose volume: **304,436**

LCY

Source of estimated volume: A-10.2Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>32.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-4.50	3.00	-1.50	2972	0.72

Haul Time: 0.72 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	4.50	3.00	7.50	1931	1.12

Return Time: 1.12 minutesTotal Scraper team cycle time: 3.44 minutesAdjusted for job conditions: 839.65 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 3,358.60 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 3,358.60 LCY/HourUnadjusted unit production/hour: 1,011.63 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 90.64 HoursUnit cost: \$1.672 /LCYTotal job cost: \$508,981

SCRAPER TEAM WORKTask description: **Replace Topsoil on N Pit (Scraper)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N14State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: N14User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 329,830

CCY

Swell factor: 1.000Loose volume: **329,830**

LCY

Source of estimated volume: A-9.1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2667.00	8.00	3.00	11.00	786	3.41

Haul Time: 3.41 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2667.00	-8.00	3.00	-5.00	2972	0.94

Return Time: 0.94 minutesTotal Scraper team cycle time: 5.95 minutesAdjusted for job conditions: 485.45 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,941.78 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,941.78 LCY/HourUnadjusted unit production/hour: 584.87 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 169.86 HoursUnit cost: \$2.892 /LCYTotal job cost: \$953,793

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on N Pit (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N14AState: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N14aUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$20.44
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,353.22		Support: \$475.23		Maint: \$240.32	

Total work team cost/hour: **\$2,068.77****MATERIAL QUANTITIES**Initial volume: 135,503

CCY

Swell factor: 1.000Loose volume: **135,503**

LCY

Source of estimated volume: Appendix A Tables A-10.8Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	6.476	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 12 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		3.422	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	3.422	Minutes	Adjusted for site altitude:	3.422	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4114.00	7.00	3.00	10.00	795	5.237

Haul Time: 5.237 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4114.00	-7.00	3.00	-4.00	3450	1.229

Return Time: 1.229 minutesTotal Truck Cycle Time: 11.888 minutes

Loading Tool unit

Production 1,104.43 LCY/Hour Adjusted for job efficiency: 916.68 LCY/HourTruck Unit Production 392.24 LCY/Hour Adjusted for job efficiency: 325.56 LCY/HourOptimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)Adjusted hourly truck team production: 976.67 LCY/HourAdjusted single truck/loader team production: 916.68 LCY/HourAdjusted multiple truck/loader team production: 916.68 LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: 147.82 HoursUnit cost: \$2.257 /LCY Total job cost: \$305,805

SCRAPER TEAM WORKTask description: **Replace Topsoil in I Pit**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N15State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N15User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 56,983

CCY

Swell factor: 1.000Loose volume: **56,983**

LCY

Source of estimated volume: PR10 Tables A-9.1, A-10.4and TALPACS Summary (TMI)Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	958.00	2.70	3.00	5.70	1477	0.70

Haul Time: 0.70 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	958.00	-2.70	3.00	0.30	2965	0.43

Return Time: 0.43 minutesTotal Scraper team cycle time: 2.73 minutesAdjusted for job conditions: 1,058.02 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 4,232.09 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 4,232.09 LCY/HourUnadjusted unit production/hour: 1,274.73 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 13.46 HoursUnit cost: \$1.327 /LCYTotal job cost: \$75,606

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on J Pit (Truck/Excavator)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N16State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N16User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
% Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$20.44
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work: \$1,353.22		Support: \$475.23		Maint: \$240.32	

Total work team cost/hour: **\$2,068.77****MATERIAL QUANTITIES**Initial volume: 94,623

CCY

Swell factor: 1.000Loose volume: **94,623**

LCY

Source of estimated volume: Appendix A Tables A-10.5ASource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	6.476	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 12 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		3.422	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	3.422	Minutes	Adjusted for site altitude:	3.422	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7866.00	-3.30	3.00	-0.30	3503	2.364

Haul Time: **2.364** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7866.00	3.30	3.00	6.30	2853	3.080

Return Time: **3.080** minutesTotal Truck Cycle Time: **10.866** minutes

Loading Tool unit

Production 1,104.43 LCY/Hour Adjusted for job efficiency: 916.68 LCY/Hour
Truck Unit Production 429.13 LCY/Hour Adjusted for job efficiency: 356.18 LCY/Hour

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)

Adjusted hourly truck team production: 1,068.53 LCY/Hour
Adjusted single truck/loader team production: 916.68 LCY/Hour
Adjusted multiple truck/loader team production: **916.68** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **103.22** HoursUnit cost: \$2.257 /LCY Total job cost: **\$213,547**

SCRAPER TEAM WORKTask description: **Replace Topsoil in J Pit (Scraper)**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N16AState: ColoradoAbbreviation: NoneDate: 2/1/2023County: MoffatFilename: C010-N16aUser: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	60
Ownership cost/hour:	\$287.19	NA	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$277.83	NA	\$83.47	\$83.47	\$54.93	\$12.19
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	\$41.30	\$41.30	\$28.56	\$21.12
Unit Subtotals:	\$595.92	NA	\$278.44	\$278.44	\$247.35	\$43.60
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work: \$4,767.36		Support: \$556.88		Maint: \$290.95	

Total work team cost/hour: **\$5,615.19****MATERIAL QUANTITIES**Initial volume: 11,260

CCY

Swell factor: 1.000Loose volume: **11,260**

LCY

Source of estimated volume: PR10 Tables A-9.1, A-10.4and TALPACS Summary (TMI)Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2938.00	-1.50	3.00	1.50	2939	1.18

Haul Time: 1.18 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2938.00	1.50	3.00	4.50	2910	1.19

Return Time: 1.19 minutesTotal Scraper team cycle time: 3.97 minutesAdjusted for job conditions: 727.56 LCY/HourSelected Number of Scrapers: 8 Scraper(s)Adjusted single scraper team (unit) hourly production: 2,910.23 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,910.23 LCY/HourUnadjusted unit production/hour: 876.57 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 3.87 HoursUnit cost: \$1.929 /LCYTotal job cost: \$21,726

TRUCK/LOADER TEAM WORKTask description: **Replace Topsoil on I/J Pit**Site: **Trapper Mine**Permit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N17State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N17User: ZTTAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 777F
-Loader:	Cat 385C L 18'-1" Stick
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

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

	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	50
Ownership cost/hour:	\$156.75	\$195.53	\$153.67	\$153.67	\$163.86	\$10.28
Operating cost/hour:	\$133.38	\$148.85	\$41.74	\$41.74	\$27.47	\$10.16
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$24.69	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$1.81	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$33.71	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$323.84	\$381.70	\$238.52	\$236.71	\$219.88	\$20.44
Number of Units:	2	1	1	1	1	1
Group Subtotals:	Work: \$1,029.38		Support: \$475.23		Maint: \$240.32	

Total work team cost/hour: **\$1,744.93****MATERIAL QUANTITIES**Initial volume: 49,788

CCY

Swell factor: 1.000Loose volume: **49,788**

LCY

Source of estimated volume: Appendix A Tables A-10.6Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 200,000

Pounds

Payload Capacity: 125.00

LCY

Truck Bed (volume) Basis:

Struck Volume:	60.60	LCY
Heaped Volume:	78.80	LCY
Average Volume:	69.70	LCY
Adjusted Volume:	78.80	LCY

Final Truck Volume Based on Number of Loader Passes: 77.72 LCY

Loading Tool Capacity

Bucket Size Class: Large

Rated Capacity:	7.850	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	6.476	LCY

Job Condition Corrections:

Site Altitude (ft.): 6400 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: 12 passes

Excavators and Front Shovels:

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

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): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)
Net Cycle Time Adjustment:		NA	minutes
Adjusted Loader Cycle Time:		0.302	minutes
Net Load Time per Truck:		3.422	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	3.422	Minutes	Adjusted for site altitude:	3.422	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3851.00	-4.00	3.00	-1.00	3503	1.180

Haul Time: **1.180** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3851.00	4.00	3.00	7.00	2398	1.809

Return Time: **1.809** minutesTotal Truck Cycle Time: **8.411** minutes

Loading Tool unit

Production 1,104.43 LCY/Hour Adjusted for job efficiency: 916.68 LCY/HourTruck Unit Production 554.38 LCY/Hour Adjusted for job efficiency: 460.14 LCY/HourOptimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)Adjusted hourly truck team production: 920.27 LCY/HourAdjusted single truck/loader team production: 916.68 LCY/HourAdjusted multiple truck/loader team production: **916.68** LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s) Total job time: **54.31** HoursUnit cost: \$1.904 /LCY Total job cost: **\$94,773**

REVEGETATION WORKTask description: Seed N PitRangeland w/o shrubs (<6700 ft.)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N18State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N18User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 44.1 Cost /Acre: \$318.15
 Estimated Failure Rate: 17.5% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$14,030.42
 Reseeding Job Cost: \$2,455.32

Total Job Cost:	\$16,486
Job Hours:	44.00

REVEGETATION WORKTask description: Seed N Pit: >6700 ft.-Rangeland with ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N18AState: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N18aUser: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00

Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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:	<u>244.4</u>	Cost /Acre:	<u>\$586.70</u>
Estimated Failure Rate:	<u>17.5%</u>	Cost /Acre*:	<u>\$586.70</u>
*Selected Replanting Work Items:	<u>TILLING,SEEDING</u>		
Initial Job Cost:	<u>\$143,389.48</u>		
Reseeding Job Cost:	<u>\$25,093.16</u>		
Total Job Cost:	<u>\$168,483</u>		
Job Hours:	<u>244.00</u>		

REVEGETATION WORKTask description: Seed J Pit without shrubs (Range C)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N19State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N19User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 65.8 Cost /Acre: \$318.15
 Estimated Failure Rate: 17.5% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$20,934.27
 Reseeding Job Cost: \$3,663.50

Total Job Cost:	\$24,598
Job Hours:	66.00

REVEGETATION WORKTask description: Seed I Pit without ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N20State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N20User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 35.3 Cost /Acre: \$318.15
 Estimated Failure Rate: 17% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$11,230.70
 Reseeding Job Cost: \$1,909.22

Total Job Cost:	\$13,140
Job Hours:	35.00

REVEGETATION WORKTask description: Seed I/J Pits no shrubs (Range C)Site: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N21State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N21User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 30.9 Cost /Acre: \$318.15
 Estimated Failure Rate: 17% Cost /Acre*: \$318.15
 *Selected Replanting Work Items: TILLING,SEEDING
 Initial Job Cost: \$9,830.84
 Reseeding Job Cost: \$1,671.24

Total Job Cost:	\$11,502
Job Hours:	31.00

REVEGETATION WORKTask description: Seed C Pit No ShrubsSite: Trapper MinePermit Action: PR11Permit/Job#: C1981010**PROJECT IDENTIFICATION**Task #: N22State: ColoradoAbbreviation: NoneDate: 11/30/2022County: MoffatFilename: C010-N22User: ZTTAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46

Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	5.51	31.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

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: 188.7 Cost /Acre: \$318.15
Estimated Failure Rate: 17% Cost /Acre*: \$318.15
*Selected Replanting Work Items: TILLING,SEEDING

Initial Job Cost: \$60,034.91
Reseeding Job Cost: \$10,205.93

Total Job Cost:	\$70,241
Job Hours:	189.00