

April 24, 2020

Miranda Kawcak
Peabody Sage Creek Mining, LLC
29515 Routt County Road #27
Oak Creek, CO 80467

**RE: Sage Creek Mine; C-2009-087: Permit Renewal No. 2 (RN2)
Adequacy Review**

Dear Ms. Kawcak:

The Colorado Division of Reclamation, Mining, and Safety (Division) has reviewed the above referenced permit renewal (RN2), to renew the permit for another five year permit term in accordance with Rule 2.01.5. Please find below the adequacy review issues that will need to be addressed prior to the Division's approval of the revision. The Division is required to issue its proposed decision for this renewal by 6/24/2020. Please provide responses with adequate time for the Division to review items prior to the decision date.

Please address the following items:

2.03.4 Identification of Interests

1. Please review ownership and control information provided in Section 2.03.4(3) of the permit and provide any necessary updates. Please update any ownership and controls information that may have changed during the process of this renewal.
2. Please review Surface Ownership Map. If any updates have occurred, please provide the information required by Rule 2.03.4(6)(a) for these entities/persons. Please insure that any entity/person that is listed in this section of the permit has their property correctly depicted and labeled on the associated map.
3. Please review the Identification of Other Licenses and Permits listed in 2.03.10 of the PAP and update the list with any new licenses/permits obtained and update the status of any pending licenses or permits.
4. In accordance with Rule 2.03.12, please revise Exhibit 2.03.12-E1 by submitting a copy of the newspaper publication and affidavit of publication required by Rule 2.07.3(2) no later than four weeks after the last day of the publication.

2.03.5 Compliance Information

5. Please update section 2.03.5(3) of the application to add or delete any information about violations received more than three years ago.

2.03.10 Other Licenses and Permits



6. Please review section 2.03.10 of the permit and revise the section if necessary to document any new permits obtained or renewal/issuances of permits currently held.

2.05.6(3)(a)(i), (iii), and (iv) – Protection of the Hydrologic Balance

7. Please review Annual Hydrology Reports and updated the probable hydrologic consequences for the site, including selenium data not previously included into the permit.

3.03.2; Determination of the Bond Amount

8. The Division has updated the reclamation cost estimate for the site. The reclamation cost estimate enclosed with this letter takes into account all approved revisions to date. Please provide the Division any comments or additions that should be included into this estimate.

If you have any questions feel free to contact me at
Sincerely,



Tabetha Lynch
Environmental Protection Specialist

Enclosures:

1. *Reclamation Cost Estimate for the Peabody Sage Creek Mine RN2*

COST SUMMARY WORKTask description: **RN2**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **000**State: **Colorado**Abbreviation: **None**Date: **3/12/2020**County: **Routt**Filename: **C087-000**User: **TNL**Agency or organization name: **DRMS****TASK LIST (DIRECT COSTS)**

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Haul Backfill Mat. from Coal Handling Fac. to Portal	TRUCK1	2	243.07	\$388,684
002	Haul Backfill Material from Utility Pad Area to Portal Face-	TRUCK1	3	102.12	\$222,823
003	Haul Backfill Material from South Facilities to Portal Face-	TRUCK1	2	182.31	\$349,354
004	Remove Coal Stockpile Footprint	TRUCK1	1	63.46	\$114,210
010	Regrade Cut Material Over 6.93 ROM Coal Area	DOZER	1	46.54	\$11,066
011	Regrade Cut Material Over covered Storage Pad Area	DOZER	1	6.94	\$1,650
012	Regrade Drill Pads COV11, CCU31, CCU47, CCU58, CCU67, CCU84,	DOZER	1	7.78	\$1,914
013	Regrade Drill Pads CCU087 and Septic Drainfield	DOZER	1	1.94	\$479
020	Remove Gravel from North Facilities Parking Area	TRUCK1	1	4.99	\$7,610
021	Remove Gravel from Main North Facilities Area	TRUCK1	1	11.51	\$17,561
022	Remove Gravel from North Facilities Electrical Shop Area	TRUCK1	1	3.07	\$4,682
023	Remove Gravel from North Office Parking Area	TRUCK1	1	0.58	\$878
024	Remove Gravel from South Powder Magazine Pad	TRUCK1	1	0.49	\$755
030	Rip North Facilities Parking Area	RIPPER	1	3.24	\$1,123
031	Rip North Facilities Area	RIPPER	1	7.48	\$2,592
032	Rip North Electrical Shop Facilities Area	RIPPER	1	1.99	\$691
033	Rip North Office Parking Area	RIPPER	1	0.37	\$130
034	Rip South Powder Magazine Pad	RIPPER	1	0.32	\$114
035	Rip South Covered Storage Area	RIPPER	1	3.74	\$1,296
040	Rip Haulroad A/A1 Reduction	RIPPER	1	8.85	\$3,067
041	Rip Haulroad B Reduction	RIPPER	1	5.98	\$2,074
042	Rip Haulroad D	RIPPER	1	2.61	\$907
045	Regrade Haulroad A/A1 Reduction	DOZER	2	32.94	\$22,814
046	Regrade Haulroad B Reduction	DOZER	2	22.27	\$15,423
047	Regrade Haulroad D	DOZER	2	9.93	\$6,875
050	Regrade Upper Sump	DOZER	1	10.36	\$3,475
051	Regrade Lower Sump	DOZER	1	7.40	\$2,482
052	Regrade Area Ditches	GRADER	1	1.03	\$159
053	Backfill and Regrade Microwave Tower Pad (MR22)	DOZER	1	0.16	\$26
054	Replace Topsoil on Microwave Tower Pad	DOZER	1	0.08	\$12
060	Replace Topsoil on Coal Handling Facilities Area	SCRAPER1	1	30.32	\$37,608
061	Replace Topsoil on Portal Face-Up Area	SCRAPER1	1	46.56	\$57,757

062	Replace Topsoil on South Utility Pads	SCRAPER1	1	17.86	\$22,151
063	Replace Topsoil on South Facilities Storage Areas	SCRAPER1	1	37.67	\$46,731
064	Replace Topsoil on Haulroad A/A-1 Reduction	SCRAPER1	1	24.94	\$35,065
065	Replace Topsoil on Haulroad B Reduction	SCRAPER1	1	15.32	\$21,542
066	Replace Topsoil on Haulroad D Location	SCRAPER1	1	6.35	\$8,923
068	Replace Topsoil on COV11, CCU31, CCU47, CCU58, CCU67, CCU84,	DOZER	1	6.64	\$2,229
069	Replace Topsoil on Upper Sump	DOZER	1	6.64	\$2,229
070	Replace Topsoil on Lower Sump	DOZER	1	4.74	\$1,592
080	Seal Mine Shafts and Portals	MINESEAL	1	32.00	\$44,225
090	Drillhole/Monitoring Well Sealing	BOREHOLE	1	233.00	\$111,654
100	Reseed North Facilities Areas	REVEGE	1	7.20	\$10,841
101	Reseed South Facilities Areas	REVEGE	1	38.40	\$51,032
102	Reseed Reclaimed Roads	REVEGE	1	7.10	\$10,100
103	Reseed Drill Pads and Geotechnical Hole Locations	REVEGE	1	3.00	\$963
104	Seed Remaining BRB-2 and BRB-3 Area	REVEGE	1	68.01	\$61,454
106	Seed Phase II Released BRB4	REVEGE	1	231.20	\$208,912
110	Demolish and Remove North Facilities and Materials	DEMOLISH	1	134.00	\$239,591
111	Demolish and Remove South Facilities and Structures	DEMOLISH	1	190.00	\$342,215
120	Mobilize/Demobilize Equipment from Hayden	MOBILIZE	1	3.33	\$37,288
125	Site Maintenance During Liability Period	SITEMAINT ENANCE	1	400.00	\$59,516
126	Weed Management Over Liability Period	REVEGE	1	0.00	\$9,950
127	Water Monitoring During Liability Period	SITEMAINT ENANCE	1	60.00	\$55,844
128	Clean Sediment from Upper and Lower Sumps	TRUCK1	1	59.72	\$30,984
<u>SUBTOTALS:</u>				2457.55	\$2,695,322

INDIRECT COSTS**OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$54,446
Performance bond:	1.05	Total =	\$28,301
Job superintendent:	1,228.78	Total =	\$85,265
Profit:	10.00	Total =	\$269,532
		TOTAL O & P =	\$437,543
		CONTRACT AMOUNT (direct + O & P) =	\$3,132,865

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.61	Total =	\$144,425
Reclamation management and/or administration:	3.58		\$112,157
		CONTINGENCY:	0.00
		Total =	\$0

TOTAL INDIRECT COST = \$694,625

TOTAL BOND AMOUNT (direct + indirect) = \$3,389,947

TRUCK/LOADER TEAM WORKTask description: **Haul Backfill Mat. from Coal Handling Fac. to Portal**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 001User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	100	NA	NA	25
Ownership cost/hour:	\$80.59	\$91.83	\$140.61	NA	NA	\$68.95
Operating cost/hour:	\$66.37	\$90.74	\$135.35	NA	NA	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	NA	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	NA	\$0.00
Operator cost/hour:	\$32.93	\$40.65	\$41.24	NA	NA	\$21.09
Unit Subtotals:	\$179.89	\$223.22	\$317.20	NA	NA	\$115.88
Number of Units:	4	2	1	0	0	1
Group Subtotals:	Work: \$1,166.00		Support: \$317.20		Maint: \$115.88	

Total work team cost/hour: **\$1,599.08****MATERIAL QUANTITIES**Initial volume: 291,017

CCY

Swell factor: 1.125Loose volume: **327,394**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,650

Pounds/LCY

Description: Decomposed rock - 25% Rock, 75% EarthRated Payload: 82,000

Pounds

Payload Capacity: 30.94 LCY

Truck Bed (volume) Basis:

Struck Volume: 21.60 LCY
 Heaped Volume: 31.70 LCY
 Average Volume: 26.65 LCY
 Adjusted Volume: 30.94 LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>0.825</u>	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	<u>7.590</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
 Truck: 4 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.515	minutes
Net Load Time per Truck:		1.645	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.645</u>	Minutes	Adjusted for site altitude:	<u>1.645</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	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	950.00	-5.00	3.00	-2.00	3893	0.294

Haul Time: **0.294** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	950.00	5.00	3.00	8.00	2120	0.572

Return Time: **0.572** minutes

Total Truck Cycle Time: **4.111** minutes

Loading Tool unit

Production 811.40 LCY/Hour

Adjusted for job efficiency: 673.46 LCY/Hour

Truck Unit Production

443.10 LCY/Hour

Adjusted for job efficiency: 367.78 LCY/Hour

Optimal No. of Trucks: 2 Truck(s)

Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 735.55 LCY/Hour

Adjusted single truck/loader team production: 673.46 LCY/Hour

Adjusted multiple truck/loader team production: **1,346.93** LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s)

Total job time: **243.07** Hours

Unit cost: \$1.187 /LCY

Total job cost: **\$388,684**

TRUCK/LOADER TEAM WORKTask description: **Haul Backfill Material from Utility Pad Area to Portal Face-**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**

Task #: 002 State: Colorado Abbreviation: None
 Date: 3/25/2020 County: Routt Filename: 002
 User: TNL

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

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	100	NA	NA	25
Ownership cost/hour:	\$80.59	\$91.83	\$140.61	NA	NA	\$68.95
Operating cost/hour:	\$66.37	\$90.74	\$135.35	NA	NA	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	NA	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	NA	\$0.00
Operator cost/hour:	\$32.93	\$40.65	\$41.24	NA	NA	\$21.09
Unit Subtotals:	\$179.89	\$223.22	\$317.20	NA	NA	\$115.88
Number of Units:	6	3	1	0	0	1
Group Subtotals:	Work: \$1,749.00		Support: \$317.20		Maint: \$115.88	

Total work team cost/hour: **\$2,182.08****MATERIAL QUANTITIES**

Initial volume: 183,389 CCY Swell factor: 1.125
 Loose volume: **206,313** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
 Source of estimated swell factor: Cat Handbook
 Material Purchase Cost: \$0.00
 Total Cost: \$0.00

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

Material weight: 2,650 Pounds/LCY
 Description: Decomposed rock - 25% Rock, 75% Earth

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>30.94</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>30.94</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>0.825</u>	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	<u>7.590</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 4 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.515	minutes
Net Load Time per Truck:		1.645	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.645</u>	Minutes	Adjusted for site altitude:	<u>1.645</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2754	0.632

Haul Time: **0.632** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	4074	0.466

Return Time: **0.466** minutes

Total Truck Cycle Time: **4.343** minutes

Loading Tool unit

Production 811.40 LCY/Hour Adjusted for job efficiency: 673.46 LCY/Hour

Truck Unit Production 419.43 LCY/Hour Adjusted for job efficiency: 348.13 LCY/Hour

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

Adjusted hourly truck team production: 696.26 LCY/Hour

Adjusted single truck/loader team production: 673.46 LCY/Hour

Adjusted multiple truck/loader team production: **2,020.39** LCY/Hour

JOB TIME AND COST

Fleet size: 3 Team(s) Total job time: **102.12** Hours

Unit cost: \$1.080 /LCY Total job cost: **\$222,823**

TRUCK/LOADER TEAM WORKTask description: **Haul Backfill Material from South Facilities to Portal Face-**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 003User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	100	100	NA	25
Ownership cost/hour:	\$80.59	\$91.83	\$140.61	\$140.61	NA	\$68.95
Operating cost/hour:	\$66.37	\$90.74	\$135.35	\$135.35	NA	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	NA	\$0.00
Operator cost/hour:	\$32.93	\$40.65	\$41.24	\$41.24	NA	\$21.09
Unit Subtotals:	\$179.89	\$223.22	\$317.20	\$317.20	NA	\$115.88
Number of Units:	4	2	1	1	0	1
Group Subtotals:	Work: \$1,166.00		Support: \$634.40		Maint: \$115.88	

Total work team cost/hour: **\$1,916.28****MATERIAL QUANTITIES**Initial volume: 192,960

CCY

Swell factor: 1.125Loose volume: **217,080**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,650 Pounds/LCYDescription: Decomposed rock - 25% Rock, 75% Earth

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>30.94</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>30.94</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>0.825</u>	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	<u>7.590</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 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 4 passes
Truck:

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.515	minutes
Net Load Time per Truck:		1.645	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.645</u>	Minutes	Adjusted for site altitude:	<u>1.645</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0
Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1250.00	-1.00	3.00	2.00	3843	1.131

Haul Time: 1.131 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1250.00	1.00	3.00	4.00	3891	0.703

Return Time: 0.703 minutes

Total Truck Cycle Time: 5.079 minutes

Loading Tool unit

Production	<u>811.40</u>	LCY/Hour	Adjusted for job efficiency:	<u>673.46</u>	LCY/Hour
Truck Unit Production	<u>358.65</u>	LCY/Hour	Adjusted for job efficiency:	<u>297.68</u>	LCY/Hour

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

Adjusted hourly truck team production:	<u>595.36</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>595.36</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>1,190.73</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 2 Team(s) Total job time: 182.31 Hours

Unit cost: \$1.609 /LCY Total job cost: \$349,354

TRUCK/LOADER TEAM WORKTask description: **Remove Coal Stockpile Footprint**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 004User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	100	100	25	25
Ownership cost/hour:	\$80.59	\$91.83	\$140.61	\$140.61	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	\$135.35	\$135.35	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	\$41.24	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	\$317.20	\$317.20	\$106.66	\$115.88
Number of Units:	4	1	1	1	1	1
Group Subtotals:	Work: \$942.78		Support: \$634.40		Maint: \$222.54	

Total work team cost/hour: **\$1,799.72****MATERIAL QUANTITIES**Initial volume: 48,400

CCY

Swell factor: 1.000Loose volume: **48,400**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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: Coal - Bituminous, Raw

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>51.25</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 25.53 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>0.925</u>	Loose material - 1/8" to 3/8" (90 - 95%) 0.925
Adjusted Capacity:	<u>8.510</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.100	minutes
Adjusted Loader Cycle Time:		0.475	minutes
Net Load Time per Truck:		1.050	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	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	365.00	-2.60	3.00	0.40	4254	0.622
2	525.00	-8.69	3.00	-5.69	1693	0.437
3	1760.00	-6.25	3.00	-3.25	3053	0.642
4	900.00	-5.30	3.00	-2.30	3893	0.286

Haul Time: **1.987** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	5.30	3.00	8.30	2120	0.555
2	1760.00	6.25	3.00	9.25	2000	0.878
3	525.00	8.69	3.00	11.69	1477	0.321
4	365.00	2.60	3.00	5.60	2851	0.277

Return Time: **2.031** minutes

Total Truck Cycle Time: **6.668** minutes

Loading Tool unit
Production 928.36 LCY/Hour Adjusted for job efficiency: 770.54 LCY/Hour
Truck Unit Production
229.72 LCY/Hour Adjusted for job efficiency: 190.67 LCY/Hour
Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)
Adjusted hourly truck team production: 762.68 LCY/Hour
Adjusted single truck/loader team production: 762.68 LCY/Hour
Adjusted multiple truck/loader team production: **762.68** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **63.46** Hours

Unit cost: \$2.360 /LCY Total job cost: **\$114,210**

BULLDOZER WORKTask description: **Regrade Cut Material Over 6.93 ROM Coal Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2 Permit/Job#: C2009087 **PROJECT IDENTIFICATION**Task #: 010 State: Colorado Abbreviation: None Date: 3/25/2020 County: Routt Filename: 010 User: TNL 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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$237.79 Total Fleet Cost/Hour: **\$237.79** **MATERIAL QUANTITIES**Initial Volume: 16,770 Swell factor: 1.125 Loose volume: **18,866** LCY Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook **HOURLY PRODUCTION**Average push distance: 100 feet

Unadjusted hourly

production: 852.6 LCY/hr Materials consistency description: Partly consolidated stockpile 1.1 Average push
gradient: 0 % Average site altitude: 6,800 feet Material weight: 2,650 lbs/LCY Weight description: Decomposed rock - 25% Rock, 75% Earth

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:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4755

Adjusted unit
production: 405.41 LCY/hr

Adjusted fleet
production: **405.41** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.587/LCY

Total job time: **46.54** Hours

Total job cost: **\$11,066**

BULLDOZER WORKTask description: **Regrade Cut Material Over covered Storage Pad Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 011State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 011User: TNLAgency 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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$237.79	
Total Fleet Cost/Hour:	\$237.79	

MATERIAL QUANTITIESInitial Volume: 2,500Swell factor: 1.125Loose volume: **2,813 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly
production: 852.6 LCY/hrMaterials consistency
description: Partly consolidated stockpile 1.1Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth

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:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4755

Adjusted unit
production: 405.41 LCY/hr

Adjusted fleet
production: **405.41** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.587/LCY

Total job time: **6.94** Hours

Total job cost: **\$1,650**

BULLDOZER WORKTask description: Regrade Drill Pads COV11, CCU31, CCU47, CCU58, CCU67, CCU84,Site: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 012State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 012User: TNLAgency 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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$246.17Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: 3,388Swell factor: 1.250Loose volume: **4,235 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feet

Unadjusted hourly

production: 1,400.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth

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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3890

Adjusted unit
production: 544.60 LCY/hr

Adjusted fleet
production: **544.6** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.452/LCY

Total job time: **7.78** Hours

Total job cost: **\$1,914**

BULLDOZER WORKTask description: **Regrade Drill Pads CCU087 and Septic Drainfield**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 013State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 013User: TNLAgency 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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$246.17Total Fleet Cost/Hour: **\$246.17****MATERIAL QUANTITIES**Initial Volume: 847Swell factor: 1.250Loose volume: **1,059 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feet

Unadjusted hourly

production: 1,400.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth

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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3890

Adjusted unit
production: 544.60 LCY/hr

Adjusted fleet
production: **544.6** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.452/LCY

Total job time: **1.94** Hours

Total job cost: **\$479**

TRUCK/LOADER TEAM WORKTask description: **Remove Gravel from North Facilities Parking Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 020State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 020User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	NA	NA	25	25
Ownership cost/hour:	\$80.59	\$91.83	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	NA	NA	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	NA	NA	\$106.66	\$115.88
Number of Units:	6	1	0	0	1	1
Group Subtotals:	Work: \$1,302.56		Support: \$0.00		Maint: \$222.54	

Total work team cost/hour: **\$1,525.10****MATERIAL QUANTITIES**Initial volume: 4,195

CCY

Swell factor: 1.090Loose volume: **4,573**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - Dry

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>34.17</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>10.120</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 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 3 passes
Truck:

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.100	minutes
Adjusted Loader Cycle Time:		0.475	minutes
Net Load Time per Truck:		1.050	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Very hard, smooth, asphalt or concrete, no tirepenetration 1.2

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4223	3.212

Haul Time: 3.212 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4254	2.754

Return Time: 2.754 minutesTotal Truck Cycle Time: 8.616 minutes

Loading Tool unit

Production	<u>1,104.00</u>	LCY/Hour	Adjusted for job efficiency:	<u>916.32</u>	LCY/Hour
Truck Unit Production	<u>211.42</u>	LCY/Hour	Adjusted for job efficiency:	<u>175.48</u>	LCY/Hour

Optimal No. of Trucks:	<u>5</u>	Truck(s)	Selected Number of Trucks:	<u>6</u>	Truck(s)
------------------------	----------	----------	----------------------------	----------	----------

Adjusted hourly truck team production:	<u>1,052.87</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>916.32</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>916.32</u>	LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 4.99 HoursUnit cost: \$1.664 /LCY Total job cost: \$7,610

TRUCK/LOADER TEAM WORKTask description: **Remove Gravel from Main North Facilities Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 021State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 021User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	NA	NA	25	25
Ownership cost/hour:	\$80.59	\$91.83	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	NA	NA	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	NA	NA	\$106.66	\$115.88
Number of Units:	6	1	0	0	1	1
Group Subtotals:	Work: \$1,302.56		Support: \$0.00		Maint: \$222.54	

Total work team cost/hour: **\$1,525.10****MATERIAL QUANTITIES**Initial volume: 9,680

CCY

Swell factor: 1.090Loose volume: **10,551**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - Dry

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>34.17</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>10.120</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.100	minutes
Adjusted Loader Cycle Time:		0.475	minutes
Net Load Time per Truck:		1.050	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Very hard, smooth, asphalt or concrete, no tire penetration 1.2
Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4223	3.212

Haul Time: 3.212 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4254	2.754

Return Time: 2.754 minutes

Total Truck Cycle Time: 8.616 minutes

Loading Tool unit

Production	<u>1,104.00</u>	LCY/Hour	Adjusted for job efficiency:	<u>916.32</u>	LCY/Hour
Truck Unit Production	<u>211.42</u>	LCY/Hour	Adjusted for job efficiency:	<u>175.48</u>	LCY/Hour

Optimal No. of Trucks: 5 Truck(s) Selected Number of Trucks: 6 Truck(s)

Adjusted hourly truck team production:	<u>1,052.87</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>916.32</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>916.32</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 11.51 Hours

Unit cost: \$1.664 /LCY Total job cost: \$17,561

TRUCK/LOADER TEAM WORKTask description: **Remove Gravel from North Facilities Electrical Shop Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 022State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 022User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	NA	NA	25	25
Ownership cost/hour:	\$80.59	\$91.83	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	NA	NA	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	NA	NA	\$106.66	\$115.88
Number of Units:	6	1	0	0	1	1
Group Subtotals:	Work: \$1,302.56		Support: \$0.00		Maint: \$222.54	

Total work team cost/hour: **\$1,525.10****MATERIAL QUANTITIES**Initial volume: 2,581

CCY

Swell factor: 1.090Loose volume: **2,813**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - Dry

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>34.17</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>10.120</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.100	minutes
Adjusted Loader Cycle Time:		0.475	minutes
Net Load Time per Truck:		1.050	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:
penetration 1.2

Road Condition: Very hard, smooth, asphalt or concrete, no tire

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4223	3.212

Haul Time: 3.212 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4254	2.754

Return Time: 2.754 minutes

Total Truck Cycle Time: 8.616 minutes

Loading Tool unit

Production 1,104.00 LCY/Hour

Adjusted for job efficiency: 916.32 LCY/Hour

Truck Unit Production

211.42 LCY/Hour

Adjusted for job efficiency: 175.48 LCY/Hour

Optimal No. of Trucks: 5 Truck(s)

Selected Number of Trucks: 6 Truck(s)

Adjusted hourly truck team production: 1,052.87 LCY/Hour

Adjusted single truck/loader team production: 916.32 LCY/Hour

Adjusted multiple truck/loader team production: 916.32 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: 3.07 Hours

Unit cost: \$1.664 /LCY

Total job cost: \$4,682

TRUCK/LOADER TEAM WORKTask description: **Remove Gravel from North Office Parking Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 023State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 023User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	NA	NA	25	25
Ownership cost/hour:	\$80.59	\$91.83	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	NA	NA	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	NA	NA	\$106.66	\$115.88
Number of Units:	6	1	0	0	1	1
Group Subtotals:	Work: \$1,302.56		Support: \$0.00		Maint: \$222.54	

Total work team cost/hour: **\$1,525.10****MATERIAL QUANTITIES**Initial volume: 484

CCY

Swell factor: 1.090Loose volume: **528**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - Dry

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>34.17</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>10.120</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 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 3 passes
Truck:

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.100	minutes
Adjusted Loader Cycle Time:		0.475	minutes
Net Load Time per Truck:		1.050	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:

Road Condition: Very hard, smooth, asphalt or concrete, no tire

penetration 1.2

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4223	3.212

Haul Time: 3.212 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4254	2.754

Return Time: 2.754 minutes

Total Truck Cycle Time: 8.616 minutes

Loading Tool unit

Production 1,104.00 LCY/Hour

Adjusted for job efficiency: 916.32 LCY/Hour

Truck Unit Production

211.42 LCY/Hour

Adjusted for job efficiency: 175.48 LCY/Hour

Optimal No. of Trucks: 5 Truck(s)

Selected Number of Trucks: 6 Truck(s)

Adjusted hourly truck team production: 1,052.87 LCY/Hour

Adjusted single truck/loader team production: 916.32 LCY/Hour

Adjusted multiple truck/loader team production: 916.32 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: 0.58 Hours

Unit cost: \$1.664 /LCY

Total job cost: \$878

TRUCK/LOADER TEAM WORKTask description: **Remove Gravel from South Powder Magazine Pad**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 024State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 024User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 770D
-Loader:	CAT 988H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	95	NA	NA	25	25
Ownership cost/hour:	\$80.59	\$91.83	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$66.37	\$90.74	NA	NA	\$14.04	\$25.83
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$179.89	\$223.22	NA	NA	\$106.66	\$115.88
Number of Units:	6	1	0	0	1	1
Group Subtotals:	Work: \$1,302.56		Support: \$0.00		Maint: \$222.54	

Total work team cost/hour: **\$1,525.10****MATERIAL QUANTITIES**Initial volume: 416

CCY

Swell factor: 1.090Loose volume: **453**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - Dry

Rated Payload:	<u>82,000</u>	Pounds
Payload Capacity:	<u>34.17</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>21.60</u>	LCY
Heaped Volume:	<u>31.70</u>	LCY
Average Volume:	<u>26.65</u>	LCY
Adjusted Volume:	<u>31.70</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.36 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>9.200</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) <u>1.100</u>
Adjusted Capacity:	<u>10.120</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

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

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.575 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		<u>-0.100</u>	minutes
Adjusted Loader Cycle Time:		<u>0.475</u>	minutes
Net Load Time per Truck:		<u>1.050</u>	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.050</u>	Minutes	Adjusted for site altitude:	<u>1.050</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:Road Condition: Very hard, smooth, asphalt or concrete, no tirepenetration 1.2

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4223	3.212

Haul Time: 3.212 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10560.00	0.00	1.20	1.20	4254	2.754

Return Time: 2.754 minutesTotal Truck Cycle Time: 8.616 minutes

Loading Tool unit

Production 1,104.00 LCY/HourAdjusted for job efficiency: 916.32 LCY/Hour

Truck Unit Production

211.42 LCY/HourAdjusted for job efficiency: 175.48 LCY/HourOptimal No. of Trucks: 5 Truck(s)Selected Number of Trucks: 6 Truck(s)Adjusted hourly truck team production: 1,052.87 LCY/HourAdjusted single truck/loader team production: 916.32 LCY/HourAdjusted multiple truck/loader team production: 916.32 LCY/Hour**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 0.49 HoursUnit cost: \$1.664 /LCYTotal job cost: \$755

BULLDOZER RIPPING WORKTask description: **Rip North Facilities Parking Area**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **030**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **030**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**Seismic: **NA**Bank Volume: **NA**BCY **NA**Area: **2.60** acresRip Depth (ft): **1.50**Volume: **6,292**

BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth:	1.50	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	250.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.966	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.966** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.80** Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: **1** Grader(s)Total job time: **3.24** Hours

Unit cost:	\$431.992	Per acre	Total job cost:	\$1,123
------------	-----------	----------	-----------------	---------

BULLDOZER RIPPING WORKTask description: **Rip North Facilities Area**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 031State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 031User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Ripper Attachment: 3-Shank RipperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**Seismic: NABank Volume: NABCY NAArea: 6.00 acresRip Depth (ft): 1.50Volume: 14,520

BCY or CCY

Source of estimated quantity: Map 2.05.3 M1B**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth:	<u>1.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>250.00</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>0.966</u>	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: 0.966 Acres/hrSite Altitude: 6,800 feetAltitude Adj: 1.00 (CAT HB)Job Efficiency: 0.83 (1 shift/day)Net Correction: 0.83 multiplierAdjusted Hourly Unit Production: 0.80 Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: 1 Grader(s)Total job time: **7.48** Hours

Unit cost:	\$431.992	Per acre	Total job cost:	\$2,592
------------	-----------	----------	-----------------	---------

BULLDOZER RIPPING WORKTask description: **Rip North Electrical Shop Facilities Area**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **032**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **032**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**Seismic: **NA**Bank Volume: **NA**BCY **NA**Area: **1.60** acresRip Depth (ft): **1.50**Volume: **3,872**

BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth:	1.50	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	250.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.966	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.966** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.80** Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: **1**

Grader(s)

Total job time: **2.00**

Hours

Unit cost:	\$431.992	Per acre		Total job cost:	\$691
------------	-----------	----------	--	-----------------	-------

BULLDOZER RIPPING WORKTask description: Rip North Office Parking AreaSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 033State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 033User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Ripper Attachment: 3-Shank RipperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**Seismic: NABank Volume: NABCY NAArea: 0.30 acresRip Depth (ft): 1.50Volume: 726

BCY or CCY

Source of estimated quantity: Map 2.05.3 M1B**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth:	<u>1.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>250.00</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>0.966</u>	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: 0.966 Acres/hrSite Altitude: 6,800 feetAltitude Adj: 1.00 (CAT HB)Job Efficiency: 0.83 (1 shift/day)Net Correction: 0.83 multiplierAdjusted Hourly Unit Production: 0.80 Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: 1 Grader(s)Total job time: 0.37 Hours

Unit cost:	<u> \$431.992 </u>	Per acre	Total job cost:	<u> \$130 </u>
------------	--------------------------------------	----------	-----------------	---

BULLDOZER RIPPING WORKTask description: **Rip South Powder Magazine Pad**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **034**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **034**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**

Seismic: **NA** Bank Volume: **NA** BCY **NA**
 Area: **0.25** acres Rip Depth (ft): **1.50** Volume: **605** BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth: **1.50** feet/pass
 Average Ripping Width: **8.67** feet/pass
 Average Ripping Length: **150.00** feet/pass
 Average Dozer Speed: **88.00** feet/minute
 Average Maneuver Time: **0.25** minutes/pass
 Production per unit area: **0.916** acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.916** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.76** Acres/hrAdjusted Hourly Fleet Production: **0.76** Acres/hr**JOB TIME AND COST**Fleet size: **1** Grader(s) Total job time: **0.33** Hours

Unit cost:	<u>\$455.286</u>	Per acre	Total job cost:	<u>\$114</u>
------------	------------------	----------	-----------------	---------------------

BULLDOZER RIPPING WORKTask description: **Rip South Covered Storage Area**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **035**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **035**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**Seismic: **NA**Bank Volume: **NA**BCY **NA**Area: **3.00** acresRip Depth (ft): **1.50**Volume: **7,260**

BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth:	1.50	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	250.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.966	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.966** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.80** Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: **1** Grader(s)Total job time: **3.74** Hours

Unit cost:	<u> \$431.992 </u>	Per acre	Total job cost:	<u> \$1,296 </u>
------------	--------------------------------------	----------	-----------------	---

BULLDOZER RIPPING WORKTask description: **Rip Haulroad A/A1 Reduction**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 040State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 040User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Ripper Attachment: 3-Shank RipperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: Area**Alternate Methods:**Seismic: NABank Volume: NABCY NAArea: 7.10 acresRip Depth (ft): 1.50Volume: 17,182

BCY or CCY

Source of estimated quantity: Map 2.05.3 M1B and A**HOURLY PRODUCTION****Seismic:**Seismic Velocity: NA feet/second**Area:**

Average Ripping Depth:	<u>1.50</u>	feet/pass
Average Ripping Width:	<u>8.67</u>	feet/pass
Average Ripping Length:	<u>250.00</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>0.966</u>	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: 0.966 Acres/hrSite Altitude: 6,800 feetAltitude Adj: 1.00 (CAT HB)Job Efficiency: 0.83 (1 shift/day)Net Correction: 0.83 multiplierAdjusted Hourly Unit Production: 0.80 Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: 1 Grader(s)Total job time: **8.86** Hours

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> Unit cost: \$431.992 Per acre </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> Total job cost: \$3,067 </div>
--	--

BULLDOZER RIPPING WORKTask description: **Rip Haulroad B Reduction**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **041**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **041**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**Seismic: **NA**Bank Volume: **NA**BCY **NA**Area: **4.80** acresRip Depth (ft): **1.50**Volume: **11,616**

BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B and A****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth:	1.50	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	250.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.966	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.966** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.80** Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: **1** Grader(s)Total job time: **5.99** Hours

Unit cost: \$431.992 Per acre

Total job cost: **\$2,074**

BULLDOZER RIPPING WORKTask description: **Rip Haulroad D**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **042**State: **Colorado**Abbreviation: **None**Date: **3/25/2020**County: **Routt**Filename: **042**User: **TNL**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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper Ownership Cost/Hour:	\$18.34	NA
Ripper Operating Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$346.33	

MATERIAL QUANTITIESSelected estimating method: **Area****Alternate Methods:**Seismic: **NA**Bank Volume: **NA**BCY **NA**Area: **2.10** acresRip Depth (ft): **1.50**Volume: **5,082**

BCY or CCY

Source of estimated quantity: **Map 2.05.3 M1B and A****HOURLY PRODUCTION****Seismic:**Seismic Velocity: **NA** feet/second**Area:**

Average Ripping Depth:	1.50	feet/pass
Average Ripping Width:	8.67	feet/pass
Average Ripping Length:	250.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.966	acres/hour

Job Condition Correction FactorsUnadjusted Hourly Unit Production: **0.966** Acres/hrSite Altitude: **6,800** feetAltitude Adj: **1.00** (CAT HB)Job Efficiency: **0.83** (1 shift/day)Net Correction: **0.83** multiplierAdjusted Hourly Unit Production: **0.80** Acres/hrAdjusted Hourly Fleet Production: **0.80** Acres/hr**JOB TIME AND COST**Fleet size: **1** Grader(s)Total job time: **2.62** Hours

Unit cost:	<u> \$431.992 </u>	Per acre	Total job cost:	<u> \$907 </u>
------------	--------------------------------------	----------	-----------------	---

BULLDOZER WORKTask description: **Regrade Haulroad A/A1 Reduction**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 045State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 045User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$346.33Total Fleet Cost/Hour: **\$692.66****MATERIAL QUANTITIES**Initial Volume: 17,182Swell factor: 1.000Loose volume: **17,182 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 250 feet

Unadjusted hourly

production: 754.3 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3458

Adjusted unit
production: 260.84 LCY/hr

Adjusted fleet
production: **521.68 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.328/LCY

Total job time: **32.94 Hours**

Total job cost: **\$22,814**

BULLDOZER WORKTask description: **Regrade Haulroad B Reduction**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 046State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 046User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$692.66	

MATERIAL QUANTITIESInitial Volume: 11,616Swell factor: 1.000Loose volume: **11,616** LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 250 feetUnadjusted hourly
production: 754.3 LCY/hrMaterials consistency
description: Rock, well ripped or blasted 0.8Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3458

Adjusted unit
production: 260.84 LCY/hr

Adjusted fleet
production: **521.68 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.328/LCY

Total job time: **22.27 Hours**

Total job cost: **\$15,423**

BULLDOZER WORKTask description: **Regrade Haulroad D**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 047State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 047User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$346.33	
Total Fleet Cost/Hour:	\$692.66	

MATERIAL QUANTITIESInitial Volume: 5,178Swell factor: 1.000Loose volume: **5,178 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 250 feet

Unadjusted hourly

production: 754.3 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3458

Adjusted unit
production: 260.84 LCY/hr

Adjusted fleet
production: **521.68 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.328/LCY

Total job time: **9.93 Hours**

Total job cost: **\$6,875**

BULLDOZER WORKTask description: **Regrade Upper Sump**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 050State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 050User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$335.53	
Total Fleet Cost/Hour:	\$335.53	

MATERIAL QUANTITIESInitial Volume: 3,388Swell factor: 1.125Loose volume: **3,812 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly
production: 946.0 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3890

Adjusted unit
production: 367.99 LCY/hr

Adjusted fleet
production: **367.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.912/LCY

Total job time: **10.36** Hours

Total job cost: **\$3,475**

BULLDOZER WORKTask description: **Regrade Lower Sump**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 051State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 051User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$335.53	
Total Fleet Cost/Hour:	\$335.53	

MATERIAL QUANTITIESInitial Volume: 2,420Swell factor: 1.125Loose volume: **2,723 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly
production: 946.0 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3890

Adjusted unit
production: 367.99 LCY/hr

Adjusted fleet
production: **367.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.912/LCY

Total job time: **7.40** Hours

Total job cost: **\$2,482**

MOTOR GRADER WORKTask description: **Regrade Area Ditches**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 052State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 052User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 14MHorsepower: 259Ripper Attachment: Multi-Shank RipperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$64.10	NA
Operating Cost/Hour:	\$56.17	100
Ripper Ownership Cost/Hour:	\$4.44	NA
Ripper Operating Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$153.22	
Total Fleet Cost/Hour:	\$153.22	

MATERIAL QUANTITIESTotal Area to be graded or ripped: 2.00 acresSource of estimated acreage: PAP Table 2.05.3-E2-6**HOURLY PRODUCTION**

Average Grader Speed:	<u>1.75</u>	mph
Selected Application:	<u>Ditch building/cleaning (0-3 mph) - 1.75</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>12.10</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.10</u>	feet
Unadjusted Hourly Unit Production:	<u>2.1424</u>	acres/hour

Job Condition Correction FactorsSite Altitude: 6800 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.9282 acres/HourAdjusted Hourly Fleet Production: **1.9282** acres/Hour**JOB TIME AND COST**Fleet size: 1

Grader(s)

Total job time: **1.04** Hours

Unit cost: \$79.46 per acre

Total job cost: **\$159**

BULLDOZER WORKTask description: **Backfill and Regrade Microwave Tower Pad (MR22)**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 053State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 053User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D6T LGPHorsepower: 200Blade Type: StraightAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$59.16	NA
Operating Cost/Hour:	\$50.06	100
Ripper own. Cost/Hour:	\$6.80	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$157.26	
Total Fleet Cost/Hour:	\$157.26	

MATERIAL QUANTITIESInitial Volume: 24Swell factor: 1.125Loose volume: 27 LCYSource of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feet

Unadjusted hourly

production: 444.6 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,500 feetMaterial weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	0.800	(POOR)
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:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3735

Adjusted unit
production: 166.06 LCY/hr

Adjusted fleet
production: **166.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.947/LCY

Total job time: **0.16** Hours

Total job cost: **\$26**

BULLDOZER WORKTask description: **Replace Topsoil on Microwave Tower Pad**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 054State: ColoradoAbbreviation: NoneDate: 3/25/2020County: RouttFilename: 054User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D6T LGPHorsepower: 200Blade Type: StraightAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$59.16	NA
Operating Cost/Hour:	\$50.06	100
Ripper own. Cost/Hour:	\$6.80	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$157.26	
Total Fleet Cost/Hour:	\$157.26	

MATERIAL QUANTITIESInitial Volume: 16Swell factor: 1.000Loose volume: **16 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly
production: 444.6 LCY/hrMaterials consistency
description: Partly consolidated stockpile 1.1Average push
gradient: 0 %Average site altitude: 6,500 feetMaterial weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	0.800	(POOR)
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: 0.4744

Adjusted unit
production: 210.92 LCY/hr

Adjusted fleet
production: **210.92** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.746/LCY

Total job time: **0.08** Hours
Total job cost: **\$12**

SCRAPER TEAM WORKTask description: Replace Topsoil on Coal Handling Facilities AreaSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 060State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 060User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	NA	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	NA	\$106.66	\$115.88
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$0.00	Maint:	\$222.54

Total work team cost/hour: \$1,240.42**MATERIAL QUANTITIES**Initial volume: 18,230

CCY

Swell factor: 1.125Loose volume: 20,509

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	300.00	-10.00	4.00	-6.00	2192	0.20
2	2550.00	-2.10	4.00	1.90	2939	0.91
3	450.00	-2.20	4.00	1.80	2939	0.15

Haul Time: 1.26 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	2.20	4.00	6.20	2638	0.35
2	2550.00	2.10	4.00	6.10	2638	0.97
3	300.00	10.00	4.00	14.00	1073	0.09

Return Time: 1.41 minutes

Total Scraper team cycle time: 4.27 minutes
 Adjusted for job conditions: 676.44 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 676.44 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 676.44 LCY/Hour

Unadjusted unit production/hour: 814.99 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 30.32 HoursUnit cost: \$1.834 /LCY Total job cost: \$37,608

SCRAPER TEAM WORKTask description: Replace Topsoil on Portal Face-Up AreaSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 061State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 061User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	NA	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	NA	\$106.66	\$115.88
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$0.00	Maint:	\$222.54

Total work team cost/hour: \$1,240.42**MATERIAL QUANTITIES**Initial volume: 25,490

CCY

Swell factor: 1.125Loose volume: 28,676

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	300.00	-10.00	4.00	-6.00	2192	0.20
2	2550.00	-2.10	4.00	1.90	2939	0.91
3	750.00	-5.30	4.00	-1.30	2972	0.32

Haul Time: 1.43 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	5.30	4.00	9.30	1711	0.51
2	2550.00	2.10	4.00	6.10	2638	1.06
3	300.00	10.00	4.00	14.00	1073	0.09

Return Time: 1.66 minutes

Total Scraper team cycle time: 4.69 minutes
 Adjusted for job conditions: 615.86 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 615.86 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 615.86 LCY/Hour

Unadjusted unit production/hour: 742.00 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 46.56 HoursUnit cost: \$2.014 /LCY Total job cost: \$57,757

SCRAPER TEAM WORKTask description: Replace Topsoil on South Utility PadsSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 062State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 062User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	NA	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	NA	\$106.66	\$115.88
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$0.00	Maint:	\$222.54

Total work team cost/hour: \$1,240.42**MATERIAL QUANTITIES**Initial volume: 15,810

CCY

Swell factor: 1.125Loose volume: 17,786

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	750.00	-6.67	4.00	-2.67	2972	0.32
2	1050.00	0.00	4.00	4.00	2394	0.15

Haul Time: 0.47 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1050.00	0.00	4.00	4.00	2910	0.52
2	750.00	6.67	4.00	10.67	1434	0.31

Return Time: 0.83 minutes

Total Scraper team cycle time: 2.90 minutes
 Adjusted for job conditions: 996.00 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 996.00 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 996.00 LCY/Hour

Unadjusted unit production/hour: 1,200.00 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 17.86 Hours
 Unit cost: \$1.245 /LCY Total job cost: \$22,151

SCRAPER TEAM WORKTask description: Replace Topsoil on South Facilities Storage AreasSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 063State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 063User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	NA	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	NA	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	NA	\$106.66	\$115.88
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$0.00	Maint:	\$222.54

Total work team cost/hour: \$1,240.42**MATERIAL QUANTITIES**Initial volume: 22,759

CCY

Swell factor: 1.125Loose volume: 25,604

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	500.00	-6.67	4.00	-2.67	2972	0.23
2	2500.00	-2.00	4.00	2.00	2939	0.85
3	1000.00	0.00	4.00	4.00	2394	0.13

Haul Time: 1.21 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	4.00	4.00	2910	0.51
2	2500.00	2.00	4.00	6.00	2638	0.75
3	500.00	6.67	4.00	10.67	1434	0.18

Return Time: 1.44 minutes

Total Scraper team cycle time: 4.25 minutes
 Adjusted for job conditions: 679.62 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 679.62 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 679.62 LCY/Hour

Unadjusted unit production/hour: 818.82 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: 37.67 HoursUnit cost: \$1.825 /LCY Total job cost: \$46,731

SCRAPER TEAM WORKTask description: **Replace Topsoil on Haulroad A/A-1 Reduction**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 064State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 064User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	25	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	\$103.86	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	\$20.57	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	\$165.67	\$106.66	\$115.88
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$165.67	Maint:	\$222.54

Total work team cost/hour: **\$1,406.09****MATERIAL QUANTITIES**Initial volume: 11,454

CCY

Swell factor: 1.125Loose volume: **12,886**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	3728.00	2.00	4.00	6.00	1477	2.60

Haul Time: 2.60 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3728.00	-2.00	4.00	2.00	2960	1.39

Return Time: 1.39 minutes

Total Scraper team cycle time: 5.59 minutes
 Adjusted for job conditions: 516.71 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 516.71 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 516.71 LCY/Hour

Unadjusted unit production/hour: 622.54 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 24.94 Hours
 Unit cost: \$2.721 /LCY Total job cost: \$35,065

SCRAPER TEAM WORKTask description: Replace Topsoil on Haulroad B ReductionSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 065State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 065User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	25	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	\$103.86	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	\$20.57	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	\$165.67	\$106.66	\$115.88
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$165.67	Maint:	\$222.54

Total work team cost/hour: \$1,406.09**MATERIAL QUANTITIES**Initial volume: 7,743

CCY

Swell factor: 1.125Loose volume: 8,711

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	3753.00	-3.60	4.00	0.40	2965	1.45

Haul Time: 1.45 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3753.00	3.60	4.00	7.60	1931	2.03

Return Time: 2.03 minutes

Total Scraper team cycle time: 5.08 minutes
 Adjusted for job conditions: 568.58 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 568.58 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 568.58 LCY/Hour

Unadjusted unit production/hour: 685.04 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 15.32 Hours
 Unit cost: \$2.473 /LCY Total job cost: \$21,542

SCRAPER TEAM WORKTask description: **Replace Topsoil on Haulroad D Location**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 066State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 066User: TNLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	25	25	25
Ownership cost/hour:	\$174.06	\$103.86	NA	\$103.86	\$64.10	\$68.95
Operating cost/hour:	\$190.35	\$82.26	NA	\$20.57	\$14.04	\$25.83
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.86	\$41.24	NA	\$41.24	\$28.52	\$21.09
Unit Subtotals:	\$395.26	\$227.36	NA	\$165.67	\$106.66	\$115.88
Number of Units:	2	1	0	1	1	1
Group Subtotals:	Work:	\$1,017.88	Support:	\$165.67	Maint:	\$222.54

Total work team cost/hour: **\$1,406.09****MATERIAL QUANTITIES**Initial volume: 3,452

CCY

Swell factor: 1.125Loose volume: **3,884**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource 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 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6800 feet

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

Travel Time:Road Condition: 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	3560.00	-2.90	4.00	1.10	2952	1.41

Haul Time: 1.41 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3560.00	2.90	4.00	6.90	2240	1.71

Return Time: 1.71 minutes

Total Scraper team cycle time: 4.72 minutes
 Adjusted for job conditions: 611.95 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 611.95 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 611.95 LCY/Hour

Unadjusted unit production/hour: 737.29 LCY/Hour
 Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 6.35 Hours
 Unit cost: \$2.298 /LCY Total job cost: \$8,923

BULLDOZER WORKTask description: **Replace Topsoil on COV11, CCU31, CCU47, CCU58, CCU67, CCU84,**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 068State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 068User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$335.53Total Fleet Cost/Hour: **\$335.53****MATERIAL QUANTITIES**Initial Volume: 2,258Swell factor: 1.125Loose volume: **2,540 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feet

Unadjusted hourly

production: 946.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

<u>Job Condition</u>	<u>Correction Factor</u>	<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: 382.47 LCY/hr

Adjusted fleet
production: **382.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.877/LCY

Total job time: **6.64** Hours

Total job cost: **\$2,229**

BULLDOZER WORKTask description: **Replace Topsoil on Upper Sump**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 069State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 069User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$335.53	
Total Fleet Cost/Hour:	\$335.53	

MATERIAL QUANTITIESInitial Volume: 2,258Swell factor: 1.125Loose volume: **2,540 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly
production: 946.0 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial 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: 382.47 LCY/hr

Adjusted fleet
production: **382.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.877/LCY

Total job time: **6.64** Hours
Total job cost: **\$2,229**

BULLDOZER WORKTask description: **Replace Topsoil on Lower Sump**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 070State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: C087-070User: TNLAgency 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:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$335.53	
Total Fleet Cost/Hour:	\$335.53	

MATERIAL QUANTITIESInitial Volume: 1,613Swell factor: 1.125Loose volume: **1,815 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 200 feetUnadjusted hourly
production: 946.0 LCY/hrMaterials consistency
description: Compacted fill or embankment 0.9Average push
gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

<u>Job Condition</u>	<u>Correction Factor</u>	<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: 382.47 LCY/hr

Adjusted fleet
production: **382.47** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.877/LCY

Total job time: **4.74** Hours

Total job cost: **\$1,592**

SAFEGUARDING UNDERGROUND OPENINGSTask description: **Seal Mine Shafts and Portals**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**

Task 080

State: Colorado

Abbreviation: None

#:

Date: 3/27/2020County: RouttFilename: 080User: TNLAgency or organization name: DRMS**UNIT COSTS**

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Mine Portal Openings	20'X11' (4)	Adit closure - bulkhead seal (per opening)	4.00	EA	\$4,730.00	\$18,920.00
Backfill Portal Openings	20'X11' (4)	Adit closure - backfilling (per opening)	4.00	EA	\$2,105.30	\$8,421.20
Seal Portal Dewatering Well	3'X90'	Shaft closure - backfilling, by hand	30.00	CY	\$15.00	\$450.00
Portal Dewatering Well Bottom Plug	3'X90'	Shaft closure - monolithic plug (per opening)	1.00	EA	\$16,434.00	\$16,434.00

Job Hours: 32.00**Total Cost:** \$44,225.20

BOREHOLE SEALING WORKTask description: **Drillhole/Monitoring Well Sealing**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**

Task 090

State: Colorado

Abbreviation: None

#:

Date: 3/27/2020County: RouttFilename: 090User: TNLAgency or organization name: DRMS**UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Seal Overburden Wells	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	5033	220.00	bag	\$13.40	\$2,948.00
Seal Coal Wells	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	3723	162.00	bag	\$13.40	\$2,170.80
Seal Underburden Wells	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	3973	173.00	bag	\$13.40	\$2,318.20
Seal Exploration Wells	Portland cement grout (Bag, material cost only...94 lb. bag)	6"	8600	375.00	bag	\$13.40	\$5,025.00
Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	6"	23'	23.00	LF	\$3.26	\$74.98
Borehole Plug	PVC plug - 6 in. diameter borehole	6"	NA	23.00	EA	\$58.97	\$1,356.22
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	23.00	EA	\$32.00	\$736.00
Seal Misc Borehole/Well	Portland cement grout (Bag, material cost only...94 lb. bag)	12"	1000	175.00	bag	\$13.40	\$2,345.00
Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	12"	4'	4.00	LF	\$3.26	\$13.04
Borehole Plug	PVC plug - 12 in. diameter borehole	12"	NA	4.00	EA	\$151.61	\$606.45
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	4.00	EA	\$32.00	\$128.00
Drill Rig and Labor	SCHRAMM T450WS	NA	NA	233.00	EA	\$353.14	\$82,281.62

Water Truck	Water Tanker, 2,500 Gal.	NA	NA	233.00	EA	\$48.11	\$11,209.63
Seal Alluvial/Spoil Wells	Bentonite seal - 6 in. (labor, equip, materials)	6"	222.2	7.00	LF	\$5.99	\$41.95
Seal and Abandon 14" Water Pump Borehole (MR20)	Portland cement grout (Bag, material cost only...94 lb. bag)	14"	45	6.00	bag	\$13.40	\$80.40
Seal and Abandon 5.625" pump control hole	Portland cement grout (Bag, material cost only...94 lb. bag)	5.625"	45	2.00	bag	\$13.40	\$26.80
Bottom Plug (MR20)	PVC plug - 12 in. diameter borehole	14"	NA	1.00	EA	\$151.61	\$151.61
Bottom Plug (MR20)	PVC plug - 6 in. diameter borehole	5.625"	NA	1.00	EA	\$58.97	\$58.97
Borehole Marker (MR20)	Borehole location/identification marker (EA, material cost only)	NA	NA	2.00	EA	\$32.00	\$64.00
Cut Casings (MR20)	Exposed casing removal - Calculate Circumference in Linear Feet	14 & 5.625"	NA	5.28	LF	\$3.26	\$17.21

Job Hours: 233.00Total Cost: \$111,654.00

REVEGETATION WORKTask description: **Reseed North Facilities Areas**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 100State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 100User: TNLAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Composted manure DRMS Survey	500.00	pound	\$0.02	\$11.35
			Total Fertilizer Materials Cost/Acre	\$11.35

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	\$64.47
Total Fertilizer Application Cost/Acre	\$64.47

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.50	0.62	\$35.10
Beardless Wheatgrass - Whitmar	0.50	1.63	\$5.86
Big Bluegrass - Sherman	0.10	2.07	\$0.85
Bitterbrush, Antelope	1.00	0.31	\$19.50
Aster, Engelman's	0.10	0.48	\$19.40
Mountain Brome - Bromar	1.00	1.61	\$3.80
Great Basin Wildrye - Magnar	1.00	4.06	\$11.55
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Rocky Mountain Fescue	0.10	1.61	\$0.73
Slender Wheatgrass - Native	1.00	3.65	\$4.63
Coneflower, Prairie	1.00	27.18	\$33.00

Streambank Wheatgrass - Sodar	0.50	1.63	\$2.85
Thickspike Wheatgrass - Critana	0.50	1.77	\$3.44
Western Wheatgrass - Native	1.00	2.53	\$6.00
Needlegrass, Green - Lodorm	1.00	4.16	\$11.78
Sagebrush, Mountain or Big	0.25	13.20	\$4.94
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Wyoming Big	0.25	14.78	\$5.81
Snowberry, Mountain	0.50	0.86	\$25.25
Penstemon, Palmer	0.10	2.21	\$5.45
Penstemon, Rocky Mountain	0.25	3.92	\$7.38
Yarrow, White	0.10	6.36	\$4.00
Totals Seed Mix	11.35	98.42	\$219.80

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:	14.35	Cost /Acre:	\$629.55
Estimated Failure Rate:	20%	Cost /Acre*:	\$629.55
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING		

Initial Job Cost:	\$9,034.04
Reseeding Job Cost:	\$1,806.81
Total Job Cost:	\$10,841

Job Hours: 7.20**REVEGETATION WORK**Task description: Reseed South Facilities AreasSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 101State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 101User: TNLAgency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.50	0.62	\$35.10
Beardless Wheatgrass - Whitmar	0.50	1.63	\$5.86
Big Bluegrass - Sherman	0.10	2.07	\$0.85
Bitterbrush, Antelope	1.00	0.31	\$19.50
Aster, Engelman's	0.10	0.48	\$19.40
Mountain Brome - Bromar	1.00	1.61	\$3.80
Great Basin Wildrye - Magnar	1.00	4.06	\$11.55
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26

Rocky Mountain Fescue	0.10	1.61	\$0.73
Slender Wheatgrass - Native	1.00	3.65	\$4.63
Coneflower, Prairie	1.00	27.18	\$33.00
Streambank Wheatgrass - Sodar	0.50	1.63	\$2.85
Thickspike Wheatgrass - Critana	0.50	1.77	\$3.44
Western Wheatgrass - Native	1.00	2.53	\$6.00
Needlegrass, Green - Lodorm	1.00	4.16	\$11.78
Sagebrush, Mountain or Big	0.25	13.20	\$4.94
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Wyoming Big	0.25	14.78	\$5.81
Snowberry, Mountain	0.50	0.86	\$25.25
Penstemon, Palmer	0.10	2.21	\$5.45
Penstemon, Rocky Mountain	0.25	3.92	\$7.38
Yarrow, White	0.10	6.36	\$4.00
Totals Seed Mix	11.35	98.42	\$219.80

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:	76.8	Cost /Acre:	\$553.73
Estimated Failure Rate:	20%	Cost /Acre*:	\$553.73
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	\$42,526.46
Reseeding Job Cost:	\$8,505.29
Total Job Cost:	\$51,032
Job Hours:	38.40

REVEGETATION WORKTask description: **Reseed Reclaimed Roads**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 102State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 102User: TNLAgency 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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.50	0.62	\$35.10
Beardless Wheatgrass - Whitmar	0.50	1.63	\$5.86
Big Bluegrass - Sherman	0.10	2.07	\$0.85
Bitterbrush, Antelope	1.00	0.31	\$19.50
Aster, Engelman's	0.10	0.48	\$19.40
Mountain Brome - Bromar	1.00	1.61	\$3.80
Great Basin Wildrye - Magnar	1.00	4.06	\$11.55
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Rocky Mountain Fescue	0.10	1.61	\$0.73
Slender Wheatgrass - Native	1.00	3.65	\$4.63

Coneflower, Prairie	1.00	27.18	\$33.00
Streambank Wheatgrass - Sodar	0.50	1.63	\$2.85
Thickspike Wheatgrass - Critana	0.50	1.77	\$3.44
Western Wheatgrass - Native	1.00	2.53	\$6.00
Needlegrass, Green - Lodorm	1.00	4.16	\$11.78
Sagebrush, Mountain or Big	0.25	13.20	\$4.94
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Wyoming Big	0.25	14.78	\$5.81
Snowberry, Mountain	0.50	0.86	\$25.25
Penstemon, Palmer	0.10	2.21	\$5.45
Penstemon, Rocky Mountain	0.25	3.92	\$7.38
Yarrow, White	0.10	6.36	\$4.00
Totals Seed Mix	11.35	98.42	\$219.80

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:	15.2	Cost /Acre:	\$553.73
Estimated Failure Rate:	20%	Cost /Acre*:	\$553.73
*Selected Replanting Work Items:		TILLING,SEEDING	

Initial Job Cost: **\$8,416.70**

Reseeding Job Cost: **\$1,683.34**

Total Job Cost:	\$10,100
Job Hours:	7.10

REVEGETATION WORKTask description: Seed Remaining BRB-2 and BRB-3 AreaSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**

Task #: 104 State: Colorado Abbreviation: None
 Date: 3/27/2020 County: Routt Filename: 104
 User: TNL

Agency 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	0.50	0.62	\$35.10
Beardless Wheatgrass - Whitmar	0.50	1.63	\$5.86
Big Bluegrass - Sherman	0.10	2.07	\$0.85
Bitterbrush, Antelope	1.00	0.31	\$19.50
Aster, Engelman's	0.10	0.48	\$19.40
Mountain Brome - Bromar	1.00	1.61	\$3.80
Great Basin Wildrye - Magnar	1.00	4.06	\$11.55
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Rocky Mountain Fescue	0.10	1.61	\$0.73

Slender Wheatgrass - Native	1.00	3.65	\$4.63
Coneflower, Prairie	1.00	27.18	\$33.00
Streambank Wheatgrass - Sodar	0.50	1.63	\$2.85
Thickspike Wheatgrass - Critana	0.50	1.77	\$3.44
Western Wheatgrass - Native	1.00	2.53	\$6.00
Needlegrass, Green - Lodorm	1.00	4.16	\$11.78
Sagebrush, Mountain or Big	0.25	13.20	\$4.94
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Wyoming Big	0.25	14.78	\$5.81
Snowberry, Mountain	0.50	0.86	\$25.25
Penstemon, Palmer	0.10	2.21	\$5.45
Penstemon, Rocky Mountain	0.25	3.92	\$7.38
Yarrow, White	0.10	6.36	\$4.00
Totals Seed Mix	11.35	98.42	\$219.80

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:	136.02	Cost /Acre:	\$451.80
Estimated Failure Rate:	0%	Cost /Acre*:	\$451.80
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$61,453.84**

Reseeding Job Cost:	\$0.00
Total Job Cost:	\$61,454
Job Hours:	68.01

REVEGETATION WORKTask description: Seed Phase II Released BRB4Site: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 106State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 106User: TNLAgency 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	0.50	0.62	\$35.10
Beardless Wheatgrass - Whitmar	0.50	1.63	\$5.86
Big Bluegrass - Sherman	0.10	2.07	\$0.85
Bitterbrush, Antelope	1.00	0.31	\$19.50
Aster, Engelman's	0.10	0.48	\$19.40
Mountain Brome - Bromar	1.00	1.61	\$3.80
Great Basin Wildrye - Magnar	1.00	4.06	\$11.55
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Rocky Mountain Fescue	0.10	1.61	\$0.73

Slender Wheatgrass - Native	1.00	3.65	\$4.63
Coneflower, Prairie	1.00	27.18	\$33.00
Streambank Wheatgrass - Sodar	0.50	1.63	\$2.85
Thickspike Wheatgrass - Critana	0.50	1.77	\$3.44
Western Wheatgrass - Native	1.00	2.53	\$6.00
Needlegrass, Green - Lodorm	1.00	4.16	\$11.78
Sagebrush, Mountain or Big	0.25	13.20	\$4.94
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Wyoming Big	0.25	14.78	\$5.81
Snowberry, Mountain	0.50	0.86	\$25.25
Penstemon, Palmer	0.10	2.21	\$5.45
Penstemon, Rocky Mountain	0.25	3.92	\$7.38
Yarrow, White	0.10	6.36	\$4.00
Totals Seed Mix	11.35	98.42	\$219.80

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:	462.4	Cost /Acre:	\$451.80
Estimated Failure Rate:	0%	Cost /Acre*:	\$451.80
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost: **\$208,912.32**

Reseeding Job Cost: **\$0.00**

Total Job Cost:	\$208,912
Job Hours:	231.20

DEMOLITION WORKTask description: **Demolish and Remove North Facilities and Materials**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 110
Date: 3/27/2020
User: TNLState: Colorado
County: RouttAbbreviation: None
Filename: 110Agency or organization name: DRMS**UNIT COSTS****Location adjustment: 98.20 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Security Building	12'X40'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	4,800.00	CF	\$0.19	\$902.40
Bathhouse	42'X40'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	16,800.00	CF	\$0.19	\$3,158.40
Bathhouse Floor	42'X40'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,680.00	SF	\$0.60	\$1,005.98
Bathhouse Footers	84'X76'	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft. - Max. 10,000 ft. haul	160.00	LF	\$5.39	\$862.24
Temporary Bathhouse	24'X70'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	16,800.00	CF	\$0.19	\$3,158.40
Temporary Bathhouse Floor	24'X70'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	1,680.00	SF	\$0.60	\$1,005.98
Diesel Tank Removal	20,000g	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	2.00	EA	\$1,050.00	\$2,100.00
Diesel Tank Sludge Removal	5% of 20,000g	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
Diesel Tank Dry Ice	20,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	300.00	LB	\$1.95	\$585.00
Unleaded Fuel Tank Removal	2,000g	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
Unleaded Fuel Tank Sludge Removal	5% of 2,000g	Remove sludge, water, and rem. product from	1.00	EA	\$227.50	\$227.50

		tank - 3,000 to 5,000 gal.				
Unleaded Fuel Tank Dry Ice	2,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	30.00	LB	\$1.95	\$58.50
Used Oil Tank Removal	2,000g(3)	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	3.00	EA	\$760.00	\$2,280.00
Used Oil Tank Sludge Removal	5% of 2,000g	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	3.00	EA	\$227.50	\$682.50
Unleaded Fuel Tank Dry Ice	2,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	90.00	LB	\$1.95	\$175.50
Mag Cholide Tank Removal	2,500g	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
North Facilities Tank Pads	120 CY	Slab on grade, concrete, demolition only - Mesh reinforcing	120.00	CY	\$120.50	\$14,460.00
North Facilities Septic Tank	1,000G	Comprehensive storage tank removal, non-leaking - 3,000 to 5,000 gal. tank	1.00	EA	\$3,445.30	\$3,445.30
North Facilities Dosing Tank	1,000G	Comprehensive storage tank removal, non-leaking - 3,000 to 5,000 gal. tank	1.00	EA	\$3,445.30	\$3,445.30
Vehicle Maintenance Shop	140'X80'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	224,000.00	CF	\$0.22	\$48,160.00
Vehicle Maintenance Shop Floor	140'X80'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	11,200.00	SF	\$0.90	\$10,059.84
Parts Building	110'X70'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	154,000.00	CF	\$0.22	\$33,110.00
Parts Building Floor	110'X70'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	7,700.00	SF	\$0.90	\$6,916.14
Electrical Parts Building	30'X22'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	6,600.00	CF	\$0.19	\$1,240.80
Electrical Parts Building Floor	30'X22'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	660.00	SF	\$0.90	\$592.81
Lean-To Building	100'X12'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,200.00	CF	\$0.19	\$225.60

Office Building	60'X50'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	30,000.00	CF	\$0.19	\$5,640.00
Office Building Floor	60'X50'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	3,000.00	SF	\$0.90	\$2,694.60
Engineering Trailer	55'X10'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	5,500.00	CF	\$0.19	\$1,034.00
Engineering Trailer Floor	55'X10'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	550.00	SF	\$0.90	\$494.01
Welding Shop	90'X56'X15'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	75,600.00	CF	\$0.22	\$16,254.00
Welding Shop Floor	90'X56'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,040.00	SF	\$0.90	\$4,526.93
PM Shop	120'X42'X15'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	75,600.00	CF	\$0.22	\$16,254.00
PM Shop Floor	120'X42'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,040.00	SF	\$0.90	\$4,526.93
Lube Storage Building	44'X18'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	7,920.00	CF	\$0.19	\$1,488.96
Lube Storage Building Floor	44'X18'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	792.00	SF	\$0.90	\$711.37
Wadge Pond 002 Pump Facility	20'X10'X8'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,600.00	CF	\$0.19	\$300.80
Wadge Pond 002 Pump Facility Pad	20'X10'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	200.00	SF	\$1.80	\$359.26
Wadge Pond 002 Pump Facility Precast Blocks	20'X20'	Wall, block, demolition only, 12 in. thick - No reinforcing	400.00	SF	\$0.98	\$392.00
Electrical Substation Pads	12'X30'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	360.00	SF	\$0.90	\$323.35
North Facilities Propane Tanks	1,000g (5)	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	5.00	EA	\$760.00	\$3,800.00

North Facilities Propane Tank Saddles	4'X8'X1'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	160.00	SF	\$3.75	\$600.74
Remove Fencing	20,000LF	Fencing, barbed wire, - 3 strand	20,000.00	LF	\$1.53	\$30,600.00
Remove Fencing	1100LF	Fencing, chain link, including posts and fabric - to 6 ft. high	1,100.00	LF	\$2.68	\$2,948.00
Remove Powerlines	5 Miles	Utility Poles, Wood 35' - 45' high (each pole)	26.00	EA	\$265.00	\$6,890.00
Culvert 52A	30"	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	40.00	LF	\$7.66	\$306.32
Culvert SC-23	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	20.00	LF	\$5.94	\$118.89
Culvert 64A	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	40.00	LF	\$5.94	\$237.78
Culvert 53A	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	40.00	LF	\$3.38	\$135.30
Culvert 54A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert 55A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert 13A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	60.00	LF	\$4.58	\$274.90
Culvert 59A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert 9A	48"	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	80.00	LF	\$13.31	\$1,065.09
Culvert 12A	30"	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	60.00	LF	\$7.66	\$459.49
Culvert A8	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert 31A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	60.00	LF	\$4.58	\$274.90
Pond 002 Valve Building (MR17)	20'X12'X10'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	2,400.00	CF	\$0.20	\$487.20
Pond 002 Valve Building floor (MR17)	20'X12'X6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	240.00	SF	\$0.90	\$215.57
Pond 002 Valve Building Foundation	8'X10"	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	64.00	LF	\$3.59	\$229.93

Job Hours:	134.00	Subtotal		Total Cost	
		(unadjusted):	\$243,983.09	(adjusted for	
				location):	\$239,591.39

DEMOLITION WORKTask description: **Demolish and Remove South Facilities and Structures**Site: **Peabody Sage Creek Mine**Permit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 111State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 111User: TNLAgency or organization name: DRMS**UNIT COSTS****Location adjustment: 98.20 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Million Gallon Water Tank	85'dX24'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	133,600.00	CF	\$0.22	\$28,724.00
Million Gallon Water Tank Pad	85'dX1'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	5,682.00	SF	\$1.80	\$10,206.58
Million Gallon Water Tank Footer	85'd	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	85.00	LF	\$3.59	\$305.38
Remove 20,000g Diesel Tank	20,000	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.00	\$1,050.00
Remove 20,000g Diesel Tank Sludge	5% of 20,000g	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	\$379.00	\$379.00
Dry Ice for Inert Transport 20,000g Diesel Tank	20,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	300.00	LB	\$1.95	\$585.00
Remove 10,000g Diesel Tanks	10,000g(2)	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	2.00	EA	\$1,050.00	\$2,100.00
Remove 10,000g Diesel Tank Sludge	5% of 10,000g(2)	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	2.00	EA	\$379.00	\$758.00
Dry Ice for Inert Transport	10,000g(2)	Insert dry ice (CO2) into tank to	300.00	LB	\$1.95	\$585.00

10,000g Diesel Tanks		produce inert gas - 1.5 lbs./100 gal.				
Remove 5,000g Diesel Tank	5,000g	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
Remove 5,000g Diesel Tank Sludge	5% of 5,000	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
Dry Ice for Inert Transport 5,000g Diesel Tank	5,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	75.00	LB	\$1.95	\$146.25
Remove 2,000g Unleaded Fuel Tank	2,000g	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
Remove 2,000g Unleaded Tank Sludge	5% of 2,000	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
Dry Ice for Inert Transport 2,000g Unleaded Tank	2,000g	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	30.00	LB	\$1.95	\$58.50
Remove 2,000 Oil Tanks	2,000g (6)	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	6.00	EA	\$760.00	\$4,560.00
Remove 2,000g Oil Tank Sludge	5% of 2,000g(6)	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	6.00	EA	\$227.50	\$1,365.00
Dry Ice for Inert Transport 2,000g Oil Tank	2,000g(6)	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	180.00	LB	\$1.95	\$351.00
Remove Mag Chloride Tanks	2,500g(2)	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	2.00	EA	\$760.00	\$1,520.00
Remove Propane Tank	20,000g	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.00	\$1,050.00
Remove Propane Tank Saddles	8'X4'X1'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	64.00	SF	\$3.75	\$240.29
Fuel Storage and Oil Storage Tank Pads	120 CY	Slab on grade, concrete, demolition only - Mesh reinforcing	120.00	CY	\$120.50	\$14,460.00

Portal Entry Fan Housing	30'X30'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	18,000.00	CF	\$0.20	\$3,652.20
Pad Fan Housing	30'X30'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	18,000.00	CF	\$0.20	\$3,652.20
Pad Fan Pad	31'X70'X2'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 50 ft. push	2,170.00	SF	\$1.73	\$3,756.27
Pad Fan Footers	7'X7'X11'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft. - Max. 50 ft. push	92.00	LF	\$10.88	\$1,001.10
Pad Fan Motor	10'X10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	1,000.00	CF	\$0.18	\$178.00
Electrical Substation Pad	160'X160'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	25,600.00	SF	\$1.20	\$30,658.56
Electrical Substation Fencing	600 LF	Fencing, chain link, including posts and fabric - to 6 ft. high	600.00	LF	\$2.68	\$1,608.00
Utility Building	30'X40'X12'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	14,400.00	CF	\$0.19	\$2,707.20
Utility Building Floor	30'X40'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	1,200.00	SF	\$1.20	\$1,437.12
Compressor Building	140'X40'X16'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	89,600.00	CF	\$0.22	\$19,264.00
Compressor Building Floor	140'X40'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	5,600.00	SF	\$1.20	\$6,706.56
Waste Handling and Recycle Area	250'X8'X6"	Demo. and on-site disposal in existing pit, 6 in.	2,000.00	SF	\$2.82	\$5,649.60

		thick - Max. 10,000 ft. haul				
Waste Handling and Recycle Area Pad	100'X150'	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	15,000.00	SF	\$0.90	\$13,473.00
Waste Handling and Recycle Area Roof	50'X150'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	7,500.00	CF	\$0.19	\$1,410.00
Portal Conveyor	100LF	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	100.00	LF	\$17.60	\$1,760.00
Transfer Conveyor	700LF	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	700.00	LF	\$17.60	\$12,320.00
Radial Staker Conveyor	150LF	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	150.00	LF	\$44.51	\$6,676.35
Temporary Conveyor Supports	67 CY	Slab on grade, concrete, demolition only - No reinforcing	67.00	CY	\$88.50	\$5,929.50
Mine Portal Heaters (Bury in Pit)	2 Each	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	10.00	CF	\$0.18	\$1.78
Rock Dust Tanks (2)	1131 SF	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,131.00	CF	\$0.22	\$243.17
Rock Dust Tank Pads (2)	22 CY	Slab on grade, concrete, demolition only - Rod reinforcing	22.00	CY	\$159.50	\$3,509.00
Electrical Metering Station	30'X30'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	900.00	CF	\$0.19	\$169.20
Electrical Metering Station Pad	30'X30'	Demo. and on-site disposal in existing pit, 6 in.	900.00	SF	\$0.90	\$808.38

		thick - Max. 10,000 ft. haul				
Portal Pump Station (Buried in Pit)	36.5'X36'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	10.00	CF	\$0.18	\$1.78
Covered Storage Building	150'X30'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	90,000.00	CF	\$0.22	\$19,350.00
Covered Storage Pylons	2'd	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	160.00	LF	\$3.59	\$574.83
Covered Storage Building	200'X30'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	120,000.00	CF	\$0.22	\$25,800.00
Covered Storage Pylons	2'D	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	180.00	LF	\$3.59	\$646.69
Covered Storage Buildings (2)	200'X50'X20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	400,000.00	CF	\$0.22	\$86,000.00
Covered Storage Pylons	2'D	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	360.00	LF	\$3.59	\$1,293.37
South Facilities Powerlines	9100LF	Utility Poles, Wood 35' - 45' high (each pole)	10.00	EA	\$265.00	\$2,650.00
Powder Magazines (2)	16'X12'X10'(2)	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,840.00	CF	\$0.19	\$721.92
Powder Magazine Fence	450 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	450.00	LF	\$3.12	\$1,404.00
Culvert 15A	54"(2)	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	120.00	LF	\$17.90	\$2,147.86
Culvert SC-20	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	60.00	LF	\$5.94	\$356.66

Culvert SC-19	54"	Pipe, corrugated metal (CMP) - 60 in. diameter pipe	90.00	LF	\$17.90	\$1,610.89
Culvert SC-17	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	60.00	LF	\$9.23	\$553.84
Culvert SC-9 (Buried in Pit)	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	1.00	LF	\$9.23	\$9.23
Culvert SC-24 (Buried in Pit)	6"	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	1.00	LF	\$2.58	\$2.58
Culvert SC-22	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	60.00	LF	\$9.23	\$553.84
Culvert SC-21	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	40.00	LF	\$5.94	\$237.78
Culvert SC-13	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert SC-18	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	20.00	LF	\$5.94	\$118.89
Culvert SC-25	8"	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	10.00	LF	\$2.58	\$25.75
Culvert SC-16	48"	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	100.00	LF	\$13.31	\$1,331.36
Culvert SC-10	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	240.00	LF	\$9.23	\$2,215.37
Culvert SC-15	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	60.00	LF	\$9.23	\$553.84
Culvert SC-11	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	80.00	LF	\$4.58	\$366.54
Culvert SC-12	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.58	\$183.27
Culvert SC-14	48"(2)	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	160.00	LF	\$13.31	\$2,130.18
Pumphouse Pad (MR20)	6'X'6X1'	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	36.00	SF	\$1.80	\$64.67
Pumphouse Building (MR20)	4'X4'X8'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	128.00	CF	\$0.18	\$23.30
Remove Culvert SC-27	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	25.00	LF	\$5.94	\$148.61

Demolish and Remove Microwave Tower Foundation	8'x8'x8'	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	64.00	SF	\$1.20	\$76.65
Demolish and Remove Microwave Tower	10'x25'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	250.00	CF	\$0.19	\$47.00
Demo temporary tent MR32	30x50	Cat D8T - 8SU	0.50	EA	\$227.36	\$113.68

Job Hours:	190.00	Subtotal	(unadjusted):	\$348,487.84	Total Cost	(adjusted for	location):	\$342,215.06
-------------------	---------------	-----------------	----------------------	---------------------	-------------------	----------------------	-------------------	---------------------

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize/Demobilize Equipment from Hayden**Site: **Peabody Sage Creek Mine**Permit Action: **RN2**Permit/Job#: **C2009087****PROJECT IDENTIFICATION**Task #: **120**State: **Colorado**Abbreviation: **None**Date: **3/27/2020**County: **Routt**Filename: **120**User: **TNL**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D10T - 10SU	84.53	\$140.61	\$141.54	6	\$1,692.90	\$849.24	\$1,500.00
Cat 637G w/push-pull	59.59	\$174.06	\$141.54	4	\$1,262.40	\$566.16	\$1,000.00
CAT 972H	28.00	\$46.54	\$123.81	1	\$170.35	\$123.81	\$250.00
CAT 980H	33.12	\$52.71	\$123.81	2	\$353.04	\$247.62	\$500.00
Cat D9T - 9SU	60.01	\$121.49	\$141.54	2	\$526.06	\$283.08	\$500.00
Cat D8T - 8SU	47.71	\$103.86	\$123.81	1	\$227.67	\$123.81	\$250.00
Cat 772	36.80	\$84.06	\$123.81	1	\$207.87	\$123.81	\$250.00
SCHRAMM T450WS	35.00	\$113.31	\$123.81	1	\$237.12	\$123.81	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Water Tanker, 10,000 Gal.	41.10	\$68.95	\$123.81	1	\$192.76	\$123.81	\$250.00
Cat 324D L 9'-8" Stick	27.33	\$46.78	\$123.81	1	\$170.59	\$123.81	\$250.00
Cat 770D	37.54	\$80.59	\$123.81	8	\$1,635.20	\$990.48	\$2,000.00
CAT 14M	23.57	\$64.10	\$67.39	2	\$262.98	\$134.78	\$500.00

Subtotals: **\$7,024.48** **\$3,881.61** **\$7,750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$97.89	6	\$587.34	\$587.34
Flatbed Truck, 4x2, 15K GVW	\$22.48	1	\$22.48	\$22.48
Fuel Tanker, 6x4, 210 HP	\$42.46	1	\$42.46	\$42.46
Lube Truck, 6x4, 250 HP	\$50.41	1	\$50.41	\$50.41

Subtotals: **\$702.69** **\$702.69**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: HAYDEN

Total one-way travel distance: 10.00 miles

Average Travel Speed: 30.00 mph

Total Non-Roadable Mob/Demob Cost * \$36,819.69

 ** two round trips with haul rig:

Total Roadable Mob/Demob Cost ** \$468.46

 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.33	0.33
Return Time (Hours):	0.33	0.33
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.67	0.67

JOB TIME AND COST

Total job time: 3.33 Hours

Total job cost: \$37,288

SITE MAINTENANCETask description: Site Maintenance During Liability PeriodSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087PROJECT IDENTIFICATIONTask #: 125State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 125User: TNLAgency or organization name: DRMSUNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Rill and Gully Repair	40.00	CAT 14M	400.00	EA	\$148.79	\$59,516.00

Job Hours: 400.00Total Cost: \$59,516.00

REVEGETATION WORKTask description: Weed Managment Over Liability PeriodSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**Task #: 126State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: 126User: TNLAgency 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
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$

Total Seed Application Cost/Acre	\$0.00
---	---------------

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	150.00	ACRE	\$2.74	\$411.00
Total Mulch Materials Cost/Acre				\$411.00

Application

Description	Cost /Acre
Weed spray, hand, aquatic area, nox. [DMG]	\$170.90
Total Mulch Application Cost/Acre	\$170.90

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:	17.1	Cost /Acre:	\$581.90
Estimated Failure Rate:	0%	Cost /Acre*:	\$581.90
*Selected Replanting Work Items:	MULCHING		

Initial Job Cost:	\$9,950.49
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$9,950
Job Hours:	0.00

SITE MAINTENANCETask description: Water Monitoring During Liability PeriodSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087PROJECT IDENTIFICATIONTask #: 127State: ColoradoAbbreviation: NoneDate: 3/27/2020County: RouttFilename: C087-1273:10:17 PMUser: TNLAgency or organization name: DRMSUNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
NPDES Site 003 - Sampling \$/Hr	0.25	USER PROVIDED ITEM	2.50	EA	\$48.60	\$121.50
NPDES Site 004 - Sampling \$/Hr	0.50	USER PROVIDED ITEM	5.00	EA	\$48.60	\$243.00
NPDES Site 002 - Sampling \$/Hr	0.25	USER PROVIDED ITEM	2.50	EA	\$48.60	\$121.50
GW Monitoring Wells (15)	2.00	USER PROVIDED ITEM	300.00	EA	\$57.40	\$17,220.00
Grassy Creek Upstream - Sampling \$/Hr	0.50	USER PROVIDED ITEM	5.00	EA	\$48.60	\$243.00
Grassy Creek Downstream - Sampling \$/Hr	0.50	USER PROVIDED ITEM	5.00	EA	\$48.60	\$243.00
Sampling Containers - 7 Sets	1.00	USER PROVIDED ITEM	7.00	EA	\$36.00	\$252.00
Lab Analysis - for 20 Sites/year	1.00	USER PROVIDED ITEM	200.00	EA	\$187.00	\$37,400.00

Job Hours: 60.00Total Cost: \$55,844.00

TRUCK/LOADER TEAM WORKTask description: Clean Sediment from Upper and Lower SumpsSite: Peabody Sage Creek MinePermit Action: RN2Permit/Job#: C2009087**PROJECT IDENTIFICATION**

Task #: 128 State: Colorado Abbreviation: None
 Date: 3/27/2020 County: Routt Filename: 128
 User: TNL

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

		Equipment Description
Truck Loader Team -Truck:		Generic 10-12 cy, 6x4
-Loader:		CAT 973D
Support Equipment -Load Area:		NA
-Dump Area:		NA
Road Maintenance -Motor Grader:		NA
-Water Truck:		NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Track Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	20	NA	NA	NA	NA
Ownership cost/hour:	\$19.51	\$68.72	NA	NA	NA	NA
Operating cost/hour:	\$46.51	\$13.37	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$0.00	\$40.65	NA	NA	NA	NA
Unit Subtotals:	\$66.02	\$122.73	NA	NA	NA	NA
Number of Units:	6	1	0	0	0	0
Group Subtotals:	Work: \$518.85		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: **\$518.85****MATERIAL QUANTITIES**

Initial volume: 5,485 CCY Swell factor: 1.090
 Loose volume: **5,979** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
 Source of estimated swell factor: Cat Handbook
 Material Purchase Cost: \$0.00
 Total Cost: \$0.00

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

Material weight: 2,600 Pounds/LCY
 Description: Clay and gravel - Wet

Rated Payload:	<u>35,400</u>	Pounds
Payload Capacity:	<u>13.62</u>	LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>10.00</u>	LCY
Heaped Volume:	<u>12.00</u>	LCY
Average Volume:	<u>11.00</u>	LCY
Adjusted Volume:	<u>12.00</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 9.22 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>4.190</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>4.609</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6800 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: NA
 Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: 0.050 Maneuver: 0.200 Dump: 0.055

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.305 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Inconsistent operation 0.04	0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.020	minutes
Adjusted Loader Cycle Time:		0.325	minutes
Net Load Time per Truck:		0.380	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.50</u>	Minutes	Adjusted for site altitude:	<u>0.500</u>	Minutes
Truck Load Time:	<u>0.380</u>	Minutes	Adjusted for site altitude:	<u>0.380</u>	Minutes
Truck Maneuver and Dump Time:	<u>0.90</u>	Minutes	Adjusted for site altitude:	<u>0.900</u>	Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0

Road Condition: Hard, smooth, stabilized, surfaced, watered.

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	36960.00	0.00	2.00	2.00	2868	12.983

Haul Time: **12.983** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	36960.00	0.00	2.00	2.00	2905	12.748

Return Time: **12.748** minutesTotal Truck Cycle Time: **27.511** minutes

Loading Tool unit

Production	<u>628.50</u>	LCY/Hour	Adjusted for job efficiency:	<u>521.66</u>	LCY/Hour
Truck Unit Production	<u>20.10</u>	LCY/Hour	Adjusted for job efficiency:	<u>16.69</u>	LCY/Hour

Optimal No. of Trucks:	<u>31</u>	Truck(s)	Selected Number of Trucks:	<u>6</u>	Truck(s)
------------------------	-----------	----------	----------------------------	----------	----------

Adjusted hourly truck team production:	<u>100.12</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>100.12</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>100.12</u>	LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **59.72** HoursUnit cost: \$5.182 /LCY Total job cost: **\$30,984**