



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

August 7, 2017

Jay Wagner
Wagner Construction Inc.
1850 E. 1st Street
Craig, CO 81625

RE: Wagner Rock Pit, Permit No. M-1999-018, Reclamation Costs Update and Notice of Surety Increase Associated with 112(c) Conversion Application, CN-1

Dear Mr. Wagner:

As part of the permitting process for the 112(c) Conversion Application (CN-1) for the above listed site, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed). ***This Surety Increase is part of CN-1 which is a Board Ordered permitting action, Therefore the new Required Amount must be received within 30 days of the signed Board Order.*** Please review the enclosed figures and submit the required Financial Warranty as soon as possible.

Staff calculations estimate the cost to reclaim the above referenced site to be \$48,307.00. This is an increase of \$12,966.00 over the \$35,341.00 currently held by the Division. This estimate is based on the changes to the Mining and Reclamation Plans that were made as part of CN-1.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, have questions or concerns, please contact me at the DRMS Grand Junction Field Office, by phone at (970)-243-6368 or by email at lucas.west@state.co.us.

Sincerely,

Lucas West

Environmental Protection Specialist
Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203
Phone: (970) 243-6368



Cc: Russ Means, Senior Environmental Protection Specialist

Enc: Financial Warranty Cost Estimate



COST SUMMARY WORK

Task description: Updated based on CN-1

Site: Wagner Rock

Permit Action: CN-1

Permit/Job#: M1999018

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 6/6/2017

County: Moffat

Filename: M018-000

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demolition of scale house	DEMOLISH	1	8.00	\$1,262.13
02a	Grade highwalls mid mining vertical to 2:1, 400 lft max	DOZER	1	52.20	\$11,989.00
03a	General Ag-Transport topsoil to slopes	TRUCK1	1	9.77	\$3,375.00
03b	General Ag-Topsoil application of slopes	DOZER	1	2.05	\$503.00
04c	General Ag-Rip flat stockpile areas	RIPPER	1	6.29	\$1,557.00
05a	General Ag-reveg all flat and sloped areas	REVEGE	1	16.00	\$8,152.00
06a	Hay Storage-grade gravel areas	DOZER	1	12.46	\$2,862.00
07a	Equipment Storage-grade gravel areas	DOZER	1	4.67	\$1,073.00
08a	Initial Mobilization	MOBILIZE	1	2.57	\$4,342.00
09a	Secondary Mobilization	MOBILIZE	1	2.57	\$769.00
<u>SUBTOTALS:</u>				116.58	\$35,884

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 67.85
Profit: 10.00

Total = \$724.86

Total = \$376.78

Total = \$4,956.44

Total = \$3,588.40

TOTAL O & P = \$9,646.48

CONTRACT AMOUNT (direct + O & P) = \$45,530.48

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 500.00

Total = 500.00

Engineering work and/or contract/bid preparation: 0.00

Total = \$0.00

Reclamation management and/or administration: 5.00

\$2,276.52

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$12,423.00

TOTAL BOND AMOUNT (direct + indirect) = \$48,307.00

DEMOLITION WORK

Task description: Demolition of scale house

Site: Wagner Rock

Permit Action: CN-1

Permit/Job#: M1999018

PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 6/12/2017

County: Moffat

Filename: M018-01a

User: ACY

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale house	8x10x20	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	1,600.00	CY	\$0.83	\$1,321.60

Job Hours: 8.00

Subtotal
(unadjusted): \$1,321.60

Total Cost
(adjusted for location): \$1,262.13

BULLDOZER WORKTask description: **Grade highwalls mid mining vertical to 2:1, 400 lft max**Site: **Wagner Rock**Permit Action: **CN-1**Permit/Job#: **M1999018****PROJECT IDENTIFICATION**Task #: **02A**State: **Colorado**Abbreviation: **None**Date: **6/12/2017**County: **Moffat**Filename: **M018-02a**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.85	NA

Total unit Cost/Hour: **\$229.67**Total Fleet Cost/Hour: **\$229.67****MATERIAL QUANTITIES**Initial Volume: **12,667**Swell factor: **1.245**Loose volume: **15,770 LCY**Source of estimated volume: **400'L 60'D near vertical to 2:1 slope cut & fill**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly production: **1,243.2 LCY/hr**Materials consistency description: **Rock, avg. ripped or blasted 0.7**Average push gradient: **0 %**Average site altitude: **6,490 feet**Material weight: **3,300 lbs/LCY**Weight description: **Basalt****Job Condition Correction Factor****Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	0.700	(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:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2430

Adjusted unit production: 302.10 LCY/hr

Adjusted fleet production: **302.1** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.760/LCY

Total job time: **52.20** Hours

Total job cost: **\$11,989**

TRUCK/LOADER TEAM WORKTask description: General Ag-Transport topsoil to slopesSite: Wagner Rock PitPermit Action: CN-1Permit/Job#: M1999018**PROJECT IDENTIFICATION**Task #: 03AState: ColoradoAbbreviation: NoneDate: 6/12/2017County: MoffatFilename: M018-03aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 725
-Loader:	CAT 962H
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	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$54.66	\$26.88	NA	NA	NA	NA
Operating cost/hour:	\$38.75	\$29.70	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:	\$30.37	\$41.20	NA	NA	NA	NA
Unit Subtotals:	\$123.78	\$97.78	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work: \$345.34		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: \$345.34**MATERIAL QUANTITIES**Initial volume: 3,710

CCY

Swell factor: 1.215Loose volume: 4,508

LCY

Source of estimated volume: 6" topsoil over 400' slope maxSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 1,600

Pounds/LCY

Description: Top SoilRated Payload: 52,000

Pounds

Payload Capacity: 32.50 LCY

Truck Bed (volume) Basis:

Struck Volume: 14.50 LCY
 Heaped Volume: 18.70 LCY
 Average Volume: 16.60 LCY
 Adjusted Volume: 18.70 LCY

Final Truck Volume Based on Number of Loader Passes: 18.06 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>4.300</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.050</u>	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	<u>4.515</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 6490 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): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		-0.050	minutes
Adjusted Loader Cycle Time:		0.450	minutes
Net Load Time per Truck:		1.450	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>1.450</u>	Minutes	Adjusted for site altitude:	<u>1.450</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:
penetration 5.0

Road Condition: Rutted dirt, little maintenance, no water, 2" tire

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	0.00	5.00	5.00	1457	0.425

Haul Time: **0.425** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	0.00	5.00	5.00	2449	0.318

Return Time: **0.318** minutesTotal Truck Cycle Time: **3.593** minutes

Loading Tool unit
 Production 555.69 LCY/Hour Adjusted for job efficiency: 461.22 LCY/Hour
 Truck Unit Production
301.59 LCY/Hour Adjusted for job efficiency: 250.32 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)
 Adjusted hourly truck team production: 500.63 LCY/Hour
 Adjusted single truck/loader team production: 461.22 LCY/Hour
 Adjusted multiple truck/loader team production: **461.22** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **9.77** HoursUnit cost: \$0.749 /LCY Total job cost: **\$3,375**

BULLDOZER WORKTask description: **General Ag-Topsoil application of slopes**Site: **Wagner Rock**Permit Action: **CN-1**Permit/Job#: **M1999018****PROJECT IDENTIFICATION**Task #: **03B**State: **Colorado**Abbreviation: **None**Date: **6/12/2017**County: **Moffat**Filename: **M018-03b**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own. Cost/Hour:	\$10.94	NA
Ripper op. Cost/Hour:	\$5.12	75
Operator Cost/Hour:	\$41.85	NA

Total unit Cost/Hour: **\$245.72**Total Fleet Cost/Hour: **\$245.72****MATERIAL QUANTITIES**Initial Volume: **3,710**Swell factor: **1.000**Loose volume: **3,710 LCY**Source of estimated volume: **4.6 Acres of total slope, 6" deep= 3710 cy**Source of estimated swell
factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly
production: **2,110.5 LCY/hr**Materials consistency description: **Loose stockpile 1.2**Average push
gradient: **0 %**Average site altitude: **6,490 feet**Material weight: **1,600 lbs/LCY**Weight description: **Top Soil****Job Condition Correction Factor****Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit
production: 1,813.55 LCY/hr
Adjusted fleet
production: **1813.55** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.135/LCY

Total job time: **2.05** Hours
Total job cost: **\$503**

BULLDOZER RIPPING WORK

Task description: General Ag-Rip flat stockpile areas

Site: Wagner Rock

Permit Action: CN-1

Permit/Job#: M1999018

PROJECT IDENTIFICATION

Task #: 04C

State: Colorado

Abbreviation: None

Date: 6/12/2017

County: Moffat

Filename: M018-04c

User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper Ownership Cost/Hour:	\$10.94	NA
Ripper Operating Cost/Hour:	\$6.82	100
Operator Cost/Hour:	\$41.85	NA
Total Unit Cost/Hour:	\$247.43	
Total Fleet Cost/Hour:	\$247.43	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 3.98 acres

Rip Depth (ft): 2.00

Volume: 12,842

BCY or CCY

Source of estimated quantity: Rec plan

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>2.63</u>	mph
Average Ripping Width:	<u>7.67</u>	degrees
Average Ripping Length:	<u>100.00</u>	feet
Average Dozer Speed:	<u>88.00</u>	feet
Average Maneuver Time:	<u>0.25</u>	feet
Production per unit area:	<u>0.762</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.762 Acres/hr

Site Altitude: 6,490 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.63 Acres/hr

Adjusted Hourly Fleet Production: **0.63** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: **6.29** Hours

Unit cost: \$391.194 Per acre

Total job cost: **\$1,557**

REVEGETATION WORKTask description: General Ag- reveg all flat and sloped areasSite: Wagner RockPermit Action: CN-1Permit/Job#: M1999018**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 6/12/2017County: MoffatFilename: M018-05aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	200.00	pound	\$0.34	\$68.00
			Total Fertilizer Materials Cost/Acre	\$68.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$144.62
Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	0.19	0.62	\$1.47
Prairie Clover, Purple - Kaneb	0.06	0.41	\$3.39
Sandberg Bluegrass - VNS	0.20	4.25	\$1.61
Lupine, Silver	0.56	0.33	\$39.19
Thickspike Wheatgrass - Critana	0.57	2.02	\$3.27
Muttongrass	0.03	0.62	\$1.04
Western Wheatgrass - Arriba	2.40	6.06	\$19.39
Rabbitbrush, Rubber	0.03	0.45	\$1.93
Sweetvetch, Utah or Northern	0.22	0.10	\$16.50
Needle and Thread	0.27	0.71	\$11.21
Sagebrush, Mountain or Big	0.10	5.28	\$1.98

Prairie Junegrass	0.04	2.13	\$1.21
Flax, Lewis Blue	0.06	0.40	\$0.99
Serviceberry, Utah	0.02	0.04	\$1.35
Penstemon, Palmer	0.03	0.66	\$1.64
Totals Seed Mix	4.78	24.06	\$106.16

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.74	\$2.74
Total Mulch Materials Cost/Acre				\$2.74

Application

Description	Cost /Acre
Weed spray, truck, non-aquatic area, nox. [DMG]	\$71.50
Total Mulch Application Cost/Acre	\$71.50

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres: 8.58 Cost /Acre: \$731.31
 Estimated Failure Rate: 35% Cost /Acre*: \$625.02
 *Selected Replanting Work Items: FERTILIZING,SEEDING,MULCHING

Initial Job Cost: **\$6,274.64**
 Reseeding Job Cost: **\$1,876.94**
 Total Job Cost: **\$8,152**
 Job Hours: **16.00**

BULLDOZER WORKTask description: Hay Storage-grade gravel areasSite: Wagner RockPermit Action: CN-1Permit/Job#: M1999018**PROJECT IDENTIFICATION**Task #: 06AState: ColoradoAbbreviation: NoneDate: 6/12/2017County: MoffatFilename: M018-06aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	75
Operator Cost/Hour:	\$41.85	NA

Total unit Cost/Hour: \$229.67Total Fleet Cost/Hour: \$229.67**MATERIAL QUANTITIES**Initial Volume: 4,302Swell factor: 1.000Loose volume: 4,302 LCYSource of estimated volume: 8 ac @ 4"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push gradient: 0 %Average site altitude: 6,490 feetMaterial weight: 3,300 lbs/LCYWeight description: BasaltJob Condition Correction FactorSource

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

Net correction: 0.2777

Adjusted unit
production: 345.24 LCY/hr
Adjusted fleet
production: **345.24** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.665/LCY

Total job time: **12.46** Hours
Total job cost: **\$2,862**

BULLDOZER WORKTask description: Equipment Stroage-grade gravel areasSite: Wagner RockPermit Action: CN-1Permit/Job#: M1999018**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 6/12/2017County: MoffatFilename: M018-07aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$100.59	NA
Operating Cost/Hour:	\$87.23	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	75
Operator Cost/Hour:	\$41.85	NA

Total unit Cost/Hour: \$229.67Total Fleet Cost/Hour: \$229.67**MATERIAL QUANTITIES**Initial Volume: 1,613Swell factor: 1.000Loose volume: 1,613 LCYSource of estimated volume: 3 ac @ 4"Source of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly
production: 1,243.2 LCY/hrMaterials consistency description: Rock, well ripped or blasted 0.8Average push
gradient: 0 %Average site altitude: 6,490 feetMaterial weight: 3,300 lbs/LCYWeight description: BasaltJob Condition Correction FactorSource

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

Net correction: 0.2777

Adjusted unit
production: 345.24 LCY/hr
Adjusted fleet
production: **345.24** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.665/LCY

Total job time: **4.67** Hours
Total job cost: **\$1,073**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **Wagner Rock Pit**Permit Action: **CN-1**Permit/Job#: **M1999018****PROJECT IDENTIFICATION**Task #: **08A**State: **Colorado**Abbreviation: **None**Date: **6/12/2017**County: **Moffat**Filename: **M018-08a**User: **ACY**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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 D9T - 9SU	66.13	\$111.53	\$125.45	1	\$236.98	\$125.45	\$250.00
Cat 725	24.54	\$54.66	\$88.67	2	\$286.66	\$177.34	\$500.00
CAT 962H	20.95	\$26.88	\$88.67	1	\$115.55	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00

Subtotals: **\$740.08** **\$480.13** **\$1,250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$47.41	1	\$47.41	\$47.41

Subtotals: **\$47.41** **\$47.41**

EQUIPMENT HAUL DISTANCE and Time

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

Total Non-Roadable Mob/Demob Cost * \$4,328.79
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$13.55
 ** one round trip, no haul rig:

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time: 2.57 Hours

Total job cost: \$4,342

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Secondary MobilizationSite: Wagner Rock PitPermit Action: CN-1Permit/Job#: M1999018**PROJECT IDENTIFICATION**Task #: 09AState: ColoradoAbbreviation: NoneDate: 6/12/2017County: MoffatFilename: M018-09aUser: ACYAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00

Subtotals: **\$100.89** **\$88.67** **\$250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$47.41	1	\$47.41	\$47.41

Subtotals: **\$47.41** **\$47.41**

EQUIPMENT HAUL DISTANCE and Time

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

Total Non-Roadable Mob/Demob Cost * \$755.94
 * two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$13.55
 ** one round trip, no haul rig:

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time: 2.57 Hours

Total job cost: \$769