

November 19, 2015

Peter Babin  
CalX Minerals, LLC  
5501 Lakeshore Drive  
Littleton, CO 80123-1544



**COLORADO**

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215  
Denver, CO 80203

***RE: Mid-Continent LST, Permit No. M-1982-121, Reclamation Costs Update and Notice of Surety Increase (SI-2)***

Dear Mr. Babin:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed).

Division calculations estimate the cost to reclaim the above referenced site to be \$172,376.00 rounded down from \$172,376.09. This is an increase of \$49,583 over the \$122,793 required surety held by the Division. It is noted that the Division currently holds an actual surety of \$123,000. This estimate is based on conditions observed during the October 26, 2015 inspection. ***Therefore, pursuant to Section 34-32.5-117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter.*** The additional amount needs to be accepted prior to **Monday, January 18, 2016**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

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, or have questions or concerns, please feel free to contact me. Amy Yeldell at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203. Direct contact can be made by phone at 970-254-8511 or via email at amy.yeldell@state.co.us

Sincerely,

**Amy Yeldell**

Environmental Protection Specialist  
Department of Natural Resources  
Division of Reclamation, Mining and Safety  
Phone: (970) 254-8511



Ec:

Russ Means, Senior EPS / Field Office Supervisor, Grand Junction DRMS  
Pauline Adams, Colorado River Valley Field Office BLM

Enc: Financial Warranty Cost Estimate

## COST SUMMARY WORK

Task description: 2015 Recalculate bond incorporating TR-4 changes

Site: Mid-Continent LST

Permit Action: TR-4 Recalc

Permit/Job#: M1982121

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 10/7/2015

County: Garfield

Filename: M121-001

User: ACY

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demolition/removal of onsite facilities and structures	DEMOLISH	1	40.00	\$51,336.52
<b>Production Benches</b>					
02a	Place loose material against highwall/grade benches	EXCAVATE	1	27.89	\$2,906.00
02b	Placement of topsoil on benches	EXCAVATE	1	7.72	\$805.00
<b>Process bench</b>					
03a	Placement of backfill against process bench highwall	LOADER	2	45.90	\$13,268.00
03b	Finish grading of process bench highwall	DOZER	2	26.12	\$10,912.00
03c	Transport topsoil to processing bench.	LOADER	2	4.99	\$1,443.00
03d	Distribute topsoil over processing bench	DOZER	2	0.69	\$289.00
<b>Mill Bench</b>					
04a	Transport backfill material to disturbed slope.	LOADER	2	59.45	\$17,186.00
04b	Grade disturbed slope to 2H:1V	DOZER	2	43.15	\$18,030.00
04c	Transport topsoil to mill pad	LOADER	2	2.17	\$630.00
04d	Spread topsoil over mill pad area	DOZER	2	1.00	\$418.00
05a	Rip upper and lower access roads	RIPPER	2	1.46	\$653.00
06a	Revegetate disturbed areas	REVEGE	1	20.00	\$21,089.00
07a	Initial mobilization of reclamation equipment/crew	MOBILIZE	1	2.53	\$4,038.00
07b	Secondary mobilization of reclamation equipment/crew	MOBILIZE	1	0.26	\$30.00
<b><u>SUBTOTALS:</u></b>				<b>283.33</b>	<b>\$143,034</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02  
 Performance bond: 1.05  
 Job superintendent: 141.67  
 Profit: 10.00

Total = \$2,889.29

Total = \$1,501.86

Total = \$10,647.54

Total = \$14,303.40

TOTAL O & P = \$29,342.09

CONTRACT AMOUNT (direct + O & P) = \$172,376.09

## LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation:	<u>8.00</u>	Total =	<u>\$13,790.09</u>
Reclamation management and/or administration:	<u>5.81</u>		<u>\$10,015.05</u>

CONTINGENCY:	<u>0.00</u>	Total =	<u>\$0.00</u>
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TOTAL INDIRECT COST =	<u>\$53,147.23</u>
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<b>TOTAL BOND AMOUNT (direct + indirect) =</b>	<b><u>\$196,181.23</u></b>
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## DEMOLITION WORK

Task description: Demolition/removal of onsite facilities and structures

Site: Mid-Continent LST

Permit Action: TR-4 Recalc

Permit/Job#: M1982121

### PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 10/26/2015

County: Garfield

Filename: M121-01a

User: ACY

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 102.20 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Mill facility	30'h x 50'w x 125'l	Plant (3S) demo./on-site disposal in excavated pit - Max. 200 ft. push	187,500.00	CF	\$0.25	\$46,500.00
Conveyor	40'	Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	40.00	LF	\$44.42	\$1,776.80
Silo (2)	30'h x 10'd (2)	Loading and 5 mile haul, salvage allowed - Steel frame structures	174.50	CY	\$9.48	\$1,654.26
Scales (2)	30'l x 12'w	Loading and 5 mile haul, salvage allowed - Steel frame structures	13.33	CY	\$9.48	\$126.37
Scale House	10' x 10'	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	1,000.00	CF	\$0.17	\$174.00

Job Hours: 40.00

Subtotal  
(unadjusted): \$50,231.43

Total Cost  
(adjusted for location): \$51,336.52

## HYDRAULIC EXCAVATOR WORK

Task description: Place loose material against highwall/grade benches

Site: Mid-Continent LST Permit Action: TR-4 Recalc Permit/Job#: M1982121

### PROJECT IDENTIFICATION

Task #: 02A State: Colorado Abbreviation: None  
Date: 10/8/2015 County: Garfield Filename: M121-02a  
User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 320D LRR 9'-6" Horsepower: 148  
Stick  
Attachment 1: ROPS Cab Weight (MT): 21.55  
Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$26.63</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$49.35</u>	<u>100</u>
Operator Cost/Hour:	<u>\$28.17</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$104.15</u>	
Total Fleet Cost/Hour:	<u>\$104.15</u>	

### MATERIAL QUANTITIES

Initial volume: 3,333 CCY Swell factor: 1.000  
Loose volume: 3,333 LCY

Source of estimated volume: Three benches approx. 600'L x 50'H x 50'W (see drawing & F-2)

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: SEVERE  
Secondary Job Condition within Basic Description: SEVERE  
Cycle Time Value: 0.390 minutes

#### Load Bucket Capacity

Rated Capacity: 1.54 LCY (heaped) Bucket Size Class: Medium  
Bucket Fill Factor: 0.675 Blasted rock - poorly blasted (60 - 75%) 0.675  
Adjusted Capacity: 1.04 LCY

#### Job Condition Correction Factors

Site Altitude: 6800 feet

		Source
Altitude Adj:	<u>0.90</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.83</u>	<u>(1 shift/day)</u>
Net Correction:	<u>0.75</u>	<u>multiplier</u>

Unadjusted Hourly Unit Production: 159.92 LCY/Hour  
Adjusted Hourly Unit Production: 119.46 LCY/Hour  
Adjusted Hourly Fleet Production: 119.46 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 27.90 Hours

Unit cost: \$0.872 /LCY Total job cost: \$2,906

## HYDRAULIC EXCAVATOR WORK

Task description: Placement of topsoil on benches

Site: Mid-Continent LST

Permit Action: TR-4 Recalc

Permit/Job#: M1982121

### PROJECT IDENTIFICATION

Task #: 02B

State: Colorado

Abbreviation: None

Date: 10/8/2015

County: Garfield

Filename: M121-02b

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 320D LRR 9'-6"  
Stick

Horsepower: 148

Attachment 1: ROPS Cab

Weight (MT): 21.55

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$26.63	NA
Operating Cost/Hour:	\$49.35	100
Operator Cost/Hour:	\$28.17	NA
Total Unit Cost/Hour:	\$104.15	
Total Fleet Cost/Hour:	\$104.15	

### MATERIAL QUANTITIES

Initial volume: 1,333

CCY

Swell factor: 1.000

Loose volume: 1,333

LCY

Source of estimated volume: Approximate 6" on 3 benches (40' W x 600' L)

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: SEVERE

Secondary Job Condition within Basic Description: SEVERE

Cycle Time Value: 0.390 minutes

#### Load Bucket Capacity

Bucket Size Class: Medium

Rated Capacity: 1.54 LCY (heaped)

Bucket Fill Factor: 0.975 Loose material - uniform aggregates to 1/8" (95-100%) 0.975

Adjusted Capacity: 1.50 LCY

#### Job Condition Correction Factors

Site Altitude: 6800 feet

Altitude Adj:	0.90	Source
Job Efficiency:	0.83	(CAT HB)
Net Correction:	0.75	(1 shift/day)
		multiplier

Unadjusted Hourly Unit Production: 231.00 LCY/Hour

Adjusted Hourly Unit Production: 172.56 LCY/Hour

Adjusted Hourly Fleet Production: 172.56 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 7.73 Hours

Unit cost: \$0.604 /LCY Total job cost: \$805

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: **Placement of backfill against process bench highwall**Site: **Mid-Continent LST**Permit Action: **TR-4 Recalc**Permit/Job#: **M1982121****PROJECT IDENTIFICATION**

Task #: **03A** State: **Colorado** Abbreviation: **None**  
 Date: **10/8/2015** County: **Garfield** Filename: **M121-03a**  
 User: **ACY**

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

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

**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$38.44	NA
Operating Cost/Hour:	\$68.95	100
Operator Cost/Hour:	\$37.13	NA
Total Unit Cost/Hour:	\$144.52	
Total Fleet Cost/Hour:	\$289.04	

**MATERIAL QUANTITIES**

Initial volume: **27,778** CCY Swell factor: **1.000**  
 Loose volume: **27,778** LCY

Source of estimated volume: **Field Observations and Reclamation Plan, see attached**  
 Source of estimated swell factor: **Cat Handbook**

**HOURLY PRODUCTION****Loader Cycle Time:**

Unadjusted Basic Cycle Time (load, dump, maneuver): **0.525** minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.060	minutes
Adjusted Basic Cycle Time:		0.585	minutes

**Rolling Resistance – Road Conditions**

Haul: **Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**  
 Return: **Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**

**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	100	0.00	5.00	5.00	0.0922	(Cat HB)

Return Route:	100	0.00	5.00	5.00	0.0832	(Cat HB)
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Total Travel Time: 0.1754 minutes  
Total Cycle Time: 0.7604 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)  
Bucket Fill Factor: 0.825 Blasted rock - avg. blasted (75 - 90%) 0.825  
Adjusted Capacity: 4.62 LCY

Job Condition Correction Factors

Site Altitude: 6800 feet

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

Unadjusted Hourly Unit Production: 364.54 LCY/Hour  
Adjusted Hourly Unit Production: 302.57 LCY/Hour  
Adjusted Hourly Fleet Production: 605.13 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 45.90 Hours  
Unit cost: \$0.478 /LCY Total job cost: \$13,268

**BULLDOZER WORK**Task description: Finish grading of process bench highwallSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 03BState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-03bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8UHorsepower: 310Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$62.67	NA
Operating Cost/Hour:	\$108.22	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$208.90Total Fleet Cost/Hour: \$417.81**MATERIAL QUANTITIES**Initial Volume: 10,000Swell factor: 1.000Loose volume: 10,000 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 931.6 LCY/hrMaterials consistency description: Rock, avg. ripped or blasted 0.7Average push gradient: 15 %Average site altitude: 6,800 feetMaterial weight: 2,600 lbs/LCYWeight description: Limestone - Crushed**Job Condition Correction Factor**Operator Skill: 0.750

Source

Material consistency: 0.700

(AVG.)

(CAT HB)

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.885	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2055

Adjusted unit  
production: 191.44 LCY/hr

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Adjusted fleet  
production: **382.88 LCY/hr**

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

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Unit cost: \$1.091/LCY

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Total job time: **26.12 Hours**

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Total job cost: **\$10,912**

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**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Transport topsoil to processing bench.Site: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 03CState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-03cUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 972HHorsepower: 287Attachment 1: ROPS CabShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$38.44	NA
Operating Cost/Hour:	\$68.95	100
Operator Cost/Hour:	\$37.13	NA
Total Unit Cost/Hour:	\$144.52	
Total Fleet Cost/Hour:	\$289.04	

**MATERIAL QUANTITIES**Initial volume: 1,936

CCY

Swell factor: 1.000Loose volume: 1,936

LCY

Source of estimated volume: 2.4 ac. / 6" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Loader Cycle Time:**Unadjusted Basic Cycle Time (load, dump,  
maneuver):

0.525

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.525	minutes

**Rolling Resistance – Road Conditions**Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	500	0.00	5.00	5.00	0.4611	(Cat HB)

Return Route:	500	0.00	5.00	5.00	0.4160	(Cat HB)
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Total Travel Time: 0.8771 minutes  
Total Cycle Time: 1.4021 minutes

Load Bucket Capacity

Rated Capacity: 5.60 LCY (heaped)  
Bucket Fill Factor: 0.975 Loose material - uniform aggregates to 1/8" (95-100%) 0.975  
Adjusted Capacity: 5.46 LCY

Job Condition Correction Factors

Site Altitude: 6800 feet

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

Unadjusted Hourly Unit Production: 233.65 LCY/Hour  
Adjusted Hourly Unit Production: 193.93 LCY/Hour  
Adjusted Hourly Fleet Production: 387.86 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 4.99 Hours  
Unit cost: \$0.745 /LCY Total job cost: \$1,443

**BULLDOZER WORK**Task description: Distribute topsoil over processing benchSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 03DState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-03dUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8UHorsepower: 310Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$62.67	NA
Operating Cost/Hour:	\$108.22	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$208.90Total Fleet Cost/Hour: \$417.81**MATERIAL QUANTITIES**Initial Volume: 1,936Swell factor: 1.000Loose volume: 1,936 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,627.0 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**Operator Skill: 0.750Source  
(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:	1,398.08 LCY/hr
Adjusted fleet production:	<b>2796.16 LCY/hr</b>

### **JOB TIME AND COST**

Fleet size:	2 Dozer(s)
Unit cost:	\$0.149/LCY

Total job time:	<b>0.69 Hours</b>
Total job cost:	<b>\$289</b>

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Transport backfill material to disturbed slope.Site: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 04AState: ColoradoAbbreviation: NoneDate: 11/2/2015County: GarfieldFilename: M121-04aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 972HHorsepower: 287Attachment 1: ROPS CabShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$38.44	NA
Operating Cost/Hour:	\$68.95	100
Operator Cost/Hour:	\$37.13	NA
Total Unit Cost/Hour:	\$144.52	
Total Fleet Cost/Hour:	\$289.04	

**MATERIAL QUANTITIES**Initial volume: 41,667

CCY

Swell factor: 1.250Loose volume: 52,084

LCY

Source of estimated volume: Field observations and reclamation planSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Loader Cycle Time:**Unadjusted Basic Cycle Time (load, dump,  
maneuver):

0.525

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(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:		0.000	minutes
Adjusted Basic Cycle Time:		0.525	minutes

**Rolling Resistance – Road Conditions**Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	100	0.00	5.00	5.00	0.0922	(Cat HB)

Return Route:	100	0.00	5.00	5.00	0.0832	(Cat HB)
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Total Travel Time: 0.1754 minutes  
 Total Cycle Time: 0.7004 minutes

Load Bucket Capacity

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

Job Condition Correction Factors

Site Altitude: 6800 feet

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

Unadjusted Hourly Unit Production: 527.69 LCY/Hour  
 Adjusted Hourly Unit Production: 437.98 LCY/Hour  
 Adjusted Hourly Fleet Production: 875.96 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 59.46 Hours  
 Unit cost: \$0.330 /LCY Total job cost: \$17,186

**BULLDOZER WORK**Task description: Grade disturbed slope to 2H:1VSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 04BState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-04bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8UHorsepower: 310Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$62.67	NA
Operating Cost/Hour:	\$108.22	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$208.90Total Fleet Cost/Hour: \$417.81**MATERIAL QUANTITIES**Initial Volume: 20,834Swell factor: 1.000Loose volume: 20,834 LCYSource of estimated volume: Assume placement by loaders completed half of slope formationSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 931.6 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 15 %Average site altitude: 6,800 feetMaterial weight: 2,650 lbs/LCYWeight description: Decomposed rock - 25% Rock, 75% Earth**Job Condition Correction Factor**Operator Skill: 0.750Source  
(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:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2591

Adjusted unit  
production: 241.38 LCY/hr

Adjusted fleet  
production: **482.76 LCY/hr**

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)  
Unit cost: \$0.865/LCY

Total job time: **43.15 Hours**  
Total job cost: **\$18,030**

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: **Transport topsoil to mill pad**Site: **Mid-Continent LST**Permit Action: **TR-4 Recalc**Permit/Job#: **M1982121****PROJECT IDENTIFICATION**Task #: **04C**State: **Colorado**Abbreviation: **None**Date: **10/8/2015**County: **Garfield**Filename: **M121-04c**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **CAT 972H**Horsepower: **287**Attachment 1: **ROPS Cab**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$38.44	NA
Operating Cost/Hour:	\$68.95	100
Operator Cost/Hour:	\$37.13	NA
Total Unit Cost/Hour:	\$144.52	
Total Fleet Cost/Hour:	\$289.04	

**MATERIAL QUANTITIES**Initial volume: **1,600**

CCY

Swell factor: **1.000**Loose volume: **1,600**

LCY

Source of estimated volume: **6" deep over 2 acres**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Loader Cycle Time:**Unadjusted Basic Cycle Time (load, dump, maneuver): **0.525** minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.040	minutes
Adjusted Basic Cycle Time:		0.565	minutes

**Rolling Resistance – Road Conditions**Haul: **Rutted dirt, little maintenance, no water, 2" tire penetration 5.0**Return: **Rutted dirt, little maintenance, no water, 2" tire penetration 5.0****Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	100	0.00	5.00	5.00	0.0922	(Cat HB)

Return Route:	100	0.00	5.00	5.00	0.0832	(Cat HB)
Total Travel Time:						0.1754 minutes
Total Cycle Time:						0.7404 minutes

Load Bucket Capacity

Rated Capacity:	5.60	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	5.46	LCY

Job Condition Correction Factors

Site Altitude: 6800 feet

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

Unadjusted Hourly Unit Production:	442.45	LCY/Hour
Adjusted Hourly Unit Production:	367.24	LCY/Hour
Adjusted Hourly Fleet Production:	734.47	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	2.18	Hours
Unit cost:	\$0.394	/LCY	Total job cost:	\$630	

**BULLDOZER WORK**Task description: Spread topsoil over mill pad areaSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 04DState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-04dUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8UHorsepower: 310Blade Type: UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$62.67	NA
Operating Cost/Hour:	\$108.22	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$38.01	NA

Total unit Cost/Hour: \$208.90Total Fleet Cost/Hour: \$417.81**MATERIAL QUANTITIES**Initial Volume: 1,600Swell factor: 1.000Loose volume: 1,600 LCYSource of estimated volume: 6" deep spread over 2 acresSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 931.6 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,800 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**Operator Skill: 0.750Source  
(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:	800.52 LCY/hr
Adjusted fleet production:	<b>1601.04 LCY/hr</b>

### **JOB TIME AND COST**

Fleet size:	2 Dozer(s)
Unit cost:	\$0.261/LCY

Total job time:	<b>1.00 Hours</b>
Total job cost:	<b>\$418</b>

## BULLDOZER RIPPING WORK

Task description: Rip upper and lower access roads

Site: Mid-Continent LST Permit Action: TR-4 Recalc Permit/Job#: M1982121

### PROJECT IDENTIFICATION

Task #: 05A State: Colorado Abbreviation: None  
Date: 10/8/2015 County: Garfield Filename: M121-05a  
User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8U Horsepower: 310  
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$69.05</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$108.22</u>	<u>100</u>
Ripper Operating Cost/Hour:	<u>\$7.46</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.01</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$222.73</u>	
Total Fleet Cost/Hour:	<u>\$445.46</u>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 2.00 acres Rip Depth (ft): 2.00 Volume: 6,453 BCY or CCY

Source of estimated quantity: \_\_\_\_\_

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth:	<u>2.56</u>	<u>mph</u>
Average Ripping Width:	<u>7.08</u>	<u>degrees</u>
Average Ripping Length:	<u>500.00</u>	<u>feet</u>
Average Dozer Speed:	<u>88.00</u>	<u>feet</u>
Average Maneuver Time:	<u>0.25</u>	<u>feet</u>
Production per unit area:	<u>0.822</u>	<u>acres/hour</u>

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production:	<u>0.822</u>	<u>Acres/hr</u>
Site Altitude:	<u>6,800</u>	<u>feet</u>
Altitude Adj:	<u>1.00</u>	<u>(CAT HB)</u>
Job Efficiency:	<u>0.83</u>	<u>(1 shift/day)</u>
Net Correction:	<u>0.83</u>	<u>multiplier</u>

Adjusted Hourly Unit Production:	<u>0.68</u>	<u>Acres/hr</u>
Adjusted Hourly Fleet Production:	<u>1.36</u>	<u>Acres/hr</u>

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 1.47 Hours

Unit cost: \$326.454 Per acre Total job cost: \$653

**REVEGETATION WORK**Task description: Revegetate disturbed areasSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 06AState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-06aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost / Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost / Acre
Chisel plowing {DMG}	\$88.58
<b>Total Tilling Cost/Acre</b>	<b>\$88.58</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost / Acre
Indian Ricegrass - Native	10.00	32.37	\$67.40
Mountain Brome - Bromar	10.00	16.07	\$34.00
Kentucky Bluegrass - Lato	10.00	493.57	\$31.60
Milk Vetch, Cicer - Lutana	10.00	33.29	\$50.80
Thurber's Fescue	10.00	103.31	\$613.00
Western Wheatgrass - Native	10.00	25.25	\$30.40
<b>Totals Seed Mix</b>	<b>60.00</b>	<b>703.86</b>	<b>\$827.20</b>

**Application**

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$847.24
<b>Total Seed Application Cost/Acre</b>	<b>\$847.24</b>

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$1.23	\$1.23
Hydromulch tackifier, <15 ac. {Materials Only}	1.00	ACRE	\$153.53	\$153.53
<b>Total Mulch Materials Cost/Acre</b>				<b>\$154.76</b>

**Application**

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
Weed spray, truck, non-aquatic area, nox. [DMG]	\$61.49
<b>Total Mulch Application Cost/Acre</b>	<b>\$61.49</b>

**NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Oak, Gambel's	50	Bare root seedling, 11-16 inch ht. (MEANS)	\$1.62	\$0.00	\$81.00
Serviceberry	50	Bare root seedling, 11-16 inch ht. (MEANS)	\$1.62	\$0.00	\$81.00
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$162.00</b>

**JOB TIME AND COST**

No. of Acres: 8 Cost /Acre: \$2,141.27  
 Estimated Failure Rate: 25% Cost /Acre\*: \$1,979.27  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$17,130.16  
 Reseeding Job Cost: \$3,958.54  
 Total Job Cost: \$21,089  
 Job Hours: 20.00

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: Initial mobilization of reclamation equipment/crewSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 07AState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-07aUser: 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 320D LRR 9'-6" Stick	23.70	\$26.63	\$88.67	1	\$115.30	\$88.67	\$250.00
Cat D8T - 8U	53.70	\$69.05	\$125.45	2	\$388.99	\$250.90	\$250.00
CAT 972H	28.00	\$36.70	\$117.55	2	\$308.50	\$235.10	\$500.00

Subtotals: **\$812.79** **\$574.67** **\$1,000.00****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	\$25.30	1	\$25.30	\$25.30
Hydroseeder with Tractor	\$133.82	1	\$133.82	\$133.82

Subtotals: **\$159.12** **\$159.12**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>GLENWOOD SPRINGS</u>	
Total one-way travel distance:	<u>2.00</u>	miles
Average Travel Speed:	<u>15.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$3,995.57</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$42.43</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.13	0.13
Return Time (Hours):	0.13	0.13
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.27	0.27

**JOB TIME AND COST**

Total job time:	<u>2.53</u>	Hours
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Total job cost:	<u>\$4,038</u>
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**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: Secondary mobilization of reclamation equipment/crewSite: Mid-Continent LSTPermit Action: TR-4 RecalcPermit/Job#: M1982121**PROJECT IDENTIFICATION**Task #: 07BState: ColoradoAbbreviation: NoneDate: 10/8/2015County: GarfieldFilename: M121-07bUser: 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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
Subtotals:					<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

**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	\$25.30	1	\$25.30	\$25.30
Hydroseeder with Tractor	\$88.67	1	\$88.67	\$88.67
Subtotals:			<b>\$113.97</b>	<b>\$113.97</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>GLENWOOD SPRINGS</u>	
Total one-way travel distance:	<u>2.00</u>	miles
Average Travel Speed:	<u>15.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$0.00</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$30.39</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.13</u>	<u>0.13</u>
Return Time (Hours):	<u>0.13</u>	<u>0.13</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.27</u>	<u>0.27</u>

**JOB TIME AND COST**

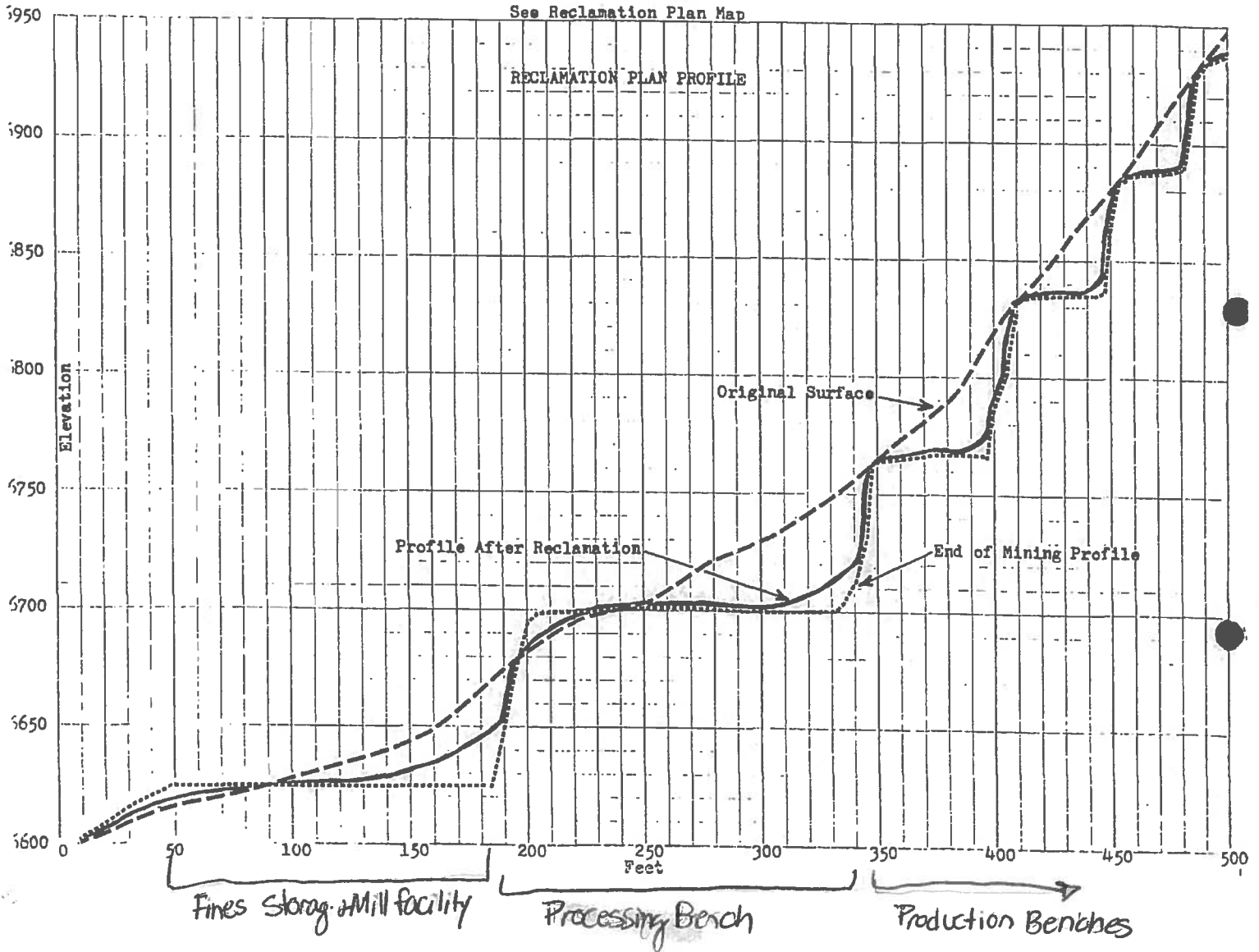
Total job time:	<u>0.27</u>	Hours
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Total job cost:	<u>\$30</u>
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Cross Section AA  
(Center of Quarry)

EXHIBIT F-2

See Reclamation Plan Map



## Highwall reduction - backfill

Production bench-3x toe slopes recontour

Highwall Height (ft.)	10.00	
Length of Highwall (lft.)	600.00	
- - - - Initial Slope	0.00	H:1V
— Desired Slope	1.00	H:1V

Volume of material to be moved (ft.<sup>3</sup>) **30,000**

Volume of material to be moved (yd.<sup>3</sup>) **1,111**

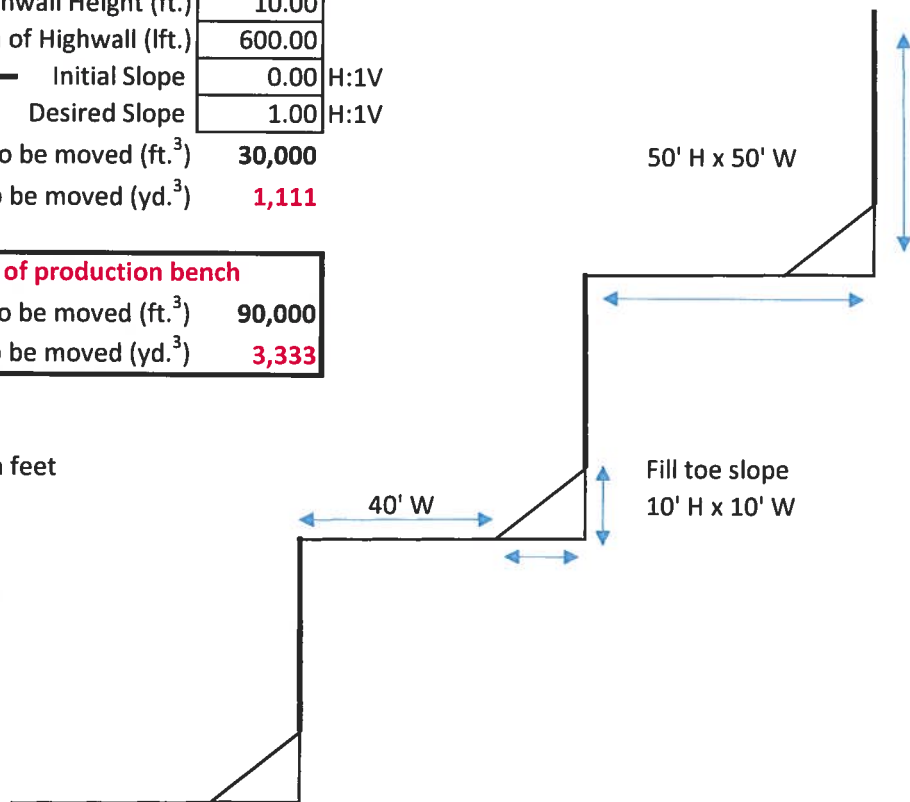
### Total for 3 fill areas of production bench

Volume of material to be moved (ft.<sup>3</sup>) **90,000**

Volume of material to be moved (yd.<sup>3</sup>) **3,333**

All dimensions measured in feet

Drawing not to scale



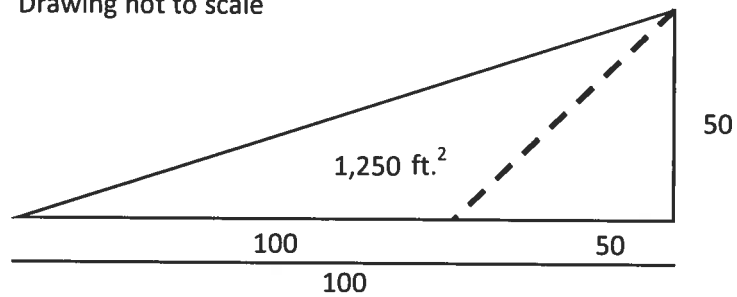
## Highwall reduction - backfill

Processing Bench

Highwall Height (ft.)	50.00	
Length of Highwall (lft.)	600.00	
- - - - Initial Slope	1.00	H:1V
———— Desired Slope	2.00	H:1V
Volume of material to be moved (ft. <sup>3</sup> )	<b>750,000</b>	
Volume of material to be moved (yd. <sup>3</sup> )	<b>27,778</b>	

All dimensions measured in feet

Drawing not to scale



### Highwall reduction - backfill

Fine storage area

Highwall Height (ft.)	50.00
Length of Highwall (lft.)	900.00
- - - - Initial Slope	1.00 H:1V
———— Desired Slope	2.00 H:1V

Volume of material to be moved (ft.<sup>3</sup>) **1,125,000**

Volume of material to be moved (yd.<sup>3</sup>) **41,667**

All dimensions measured in feet

Drawing not to scale

