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 <u>\$172,376.00</u> rounded down from <u>\$172,376.09</u>. This is an increase of <u>\$49,583</u> over the <u>\$122,793</u> required surety held by the Division. It is noted that the Division currently holds an actual surety of <u>\$123,000</u>. 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,

1 Call

**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

e: Mid-Continent LST		Permit Action: TR-4 Recalc		Permit/Job#: M198212		
<u>ROJECT</u>	IDENTIFIC	CATION				
Task #:	001	State:	Colorado		Abbreviation:	None
Date:	10/7/2015	County:	Garfield		Filename:	M121-001
User:	ACY					

## TASK LIST (DIRECT COSTS)

Task		Form	Fleet	Task	
	Description	Used	Size	Hours	Cost
01a	Demolition/removal of onsite facilities and	DEMOLISH	1	40.00	\$51,336.52
	structures		J		
	tion Benches				-
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
Process			3		] +====
03a	Placement of backfill against process bench	LOADER	2	45.90	\$13,268.00
	highwall				
03Ь	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
Mill Be			,		
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
07Ь	Secondary mobilization of reclamation	MOBILIZE	1	0.26	\$30.00
	equipment/crew				
				· · · · · · · · · · · · · · · · · · ·	
		SUBTO'	TALS:	283.33	\$143,034

## **INDIRECT COSTS**

### OVERHEAD AND PROFIT:

Liability insurance:		Total =	\$2,889.29
Performance bond:			\$1,501.86
Job superintendent:		Total =	\$10,647.54
Profit:	10.00		\$14,303.40
		TOTAL O & $P =$	
		CONTRACT AMOUNT (direct + O & P) =	\$172,376.09

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

TOTAL INDIRECT COST = \_\_\_\_\$53,147.23\_\_\_

## **DEMOLITION WORK**

1	Task description:	Demolition/removal of onsi	te facilities and s	tructures
Site:	Mid-Continent LST	Permit Action:	TR-4 Recalc	Permit/Job#: M1982121
<u>PROJEC</u>	CT IDENTIFICATION	<u>N</u>		
Task # Date User	: 10/26/2015	State: Colorado County: Garfield		Abbreviation: None Filename: M121-01a
	Agency or organiza	tion 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	СҮ	\$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

				Total Cost	
		Subtotal		(adjusted for	8
Job Hours:	40.00	(unadjusted):	\$50,231.43	location):	\$51,336.52

## HYDRAULIC EXCAVATOR WORK

Task description:	Place loose material a	gainst highwall/grade	benches	
Site: Mid-Continent LST	Permit A	Action: TR-4 Recalc	Permi	t/Job#: M1982121
PROJECT IDENTIFI	<u>CATION</u>			
Task #:         02A           Date:         10/8/2015           User:         ACY		orado field	Abbreviatio Filenan	
Agency or organ	ization name: DRMS		31	
HOURLY EQUIPME	NT COST			
Basic Machine:	Cat 320D LRR 9'-6"			
	Stick		Horsepower:	148
Attachment 1:	ROPS Cab		Weight (MT):	21.55
			Shift Basis:	1 per day
C(D 11			Data Source:	(CRG)
Cost Breakdown:		T T4:1:		
Ownership Cost/H	lour: \$26.63	Utilization % NA		
Operating Cost/H		100	_	
Operator Cost/H	Iour: \$28.17	NA		
Total Unit Cost/H	lour: \$104.15			
Total Fleet Cost/I	Hour: \$104.15			
MATERIAL QUANTI				
	333 CC	Y Swell facto	or: 1.000	
	333 LC			
Source of	estimated volume: The	ree benches approx. 60	0'L x 50'H x50'W (se	ee drawing & F-
	_2)			
		Handbook		
HOURLY PRODUCT	ON			
Excavator Cycle Time (loa	d bucket, swing loaded, du	ump bucket, swing emp	<u>oty):</u>	
	Basic I	ob Condition Descripti	on: SEVERE	
	Secondary Job Condition	within Basic Descripti	on: SEVERE	
	•	Cycle Time Val		minutes
Load Bucket Capacity				
			Bucket Size Class:	Medium
Rated Capacity:		Y (heaped)	-	
Bucket Fill Factor:		sted rock - poorly blast	ed (60 - 75%) 0.675	
Adjusted Capacity:	1.04 LC	Y		
Job Condition Correction F	actors	Site	Altitude: 6800 feet	
		ource		
Altitude Adj:		T HB)		
Job Efficiency:		ift/day)		
Net Correction:	0.75 mult	iplier		
	usted Hourly Unit Produc		LCY/Hour	
	usted Hourly Unit Produc		LCY/Hour	
Adjı	isted Hourly Fleet Produc	tion: <b>119.46</b>	LCY/Hour	
JOB TIME AND COST	-			
Fleet size: 1	Excavator	Total job time:	27.90	Hours
Unit cost:\$0.87	72 /LCY	Total job cost:	\$2,906	

CIRCES Cost Estimating Software

## HYDRAULIC EXCAVATOR WORK

Task description:	Placement of top	osoil on ben	ches			
Site: Mid-Continent LST	Per	rmit Action:	TR-4 Recalc		Permit/Jo	b#: M1982121
PROJECT IDENTIFIC	CATION					
Task #:         02B           Date:         10/8/2015           User:         ACY	State: County:	Colorado Garfield			eviation: ilename:	None M121-02b
Agency or organ	ization name: DR	MS				
HOURLY EQUIPMEN	NT COST					
	Cat 320D LRR 9'-( Stick	6"		Horsepower:		148
	ROPS Cab			Veight (MT): Shift Basis: Data Source:	1	21.55 per day CRG)
Cost Breakdown:				-	<u>.</u>	
Ownership Cost/H Operating Cost/H Operator Cost/H Total Unit Cost/H	our: \$49.3 our: \$28.1	5 7	Utilization % NA 100 NA			
Total Fleet Cost/H						
Loose volume: <u>1,</u> Source of		Cat Hand	6	hes (40' W x 6	00'L)	
	В	asic Job Cor	ndition Description	on: SEVERI	3	
	Secondary Job Cond		Basic Description	on: SEVERI		
Load Bucket Capacity			Cycle Time Val	ue: 0.390		minutes
<b>D</b> . 10				Bucket Size Cl	ass: <u>M</u>	edium
Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	1.54 0.975 <b>1.50</b>	LCY (hea Loose ma LCY	ped) terial - uniform a	ggregates to 1/	8" (95-10	0%) 0.975
Job Condition Correction Fa	actors		Site	Altitude: <u>6800</u>	feet	
Adju Adju	0.90 0.83 0.75 usted Hourly Unit Prusted Hourly Unit Prusted Hourly Unit Prusted Hourly Fleet	roduction:	· · · · · · · · · · · · · · · · · · ·	LCY/Hour LCY/Hour LCY/Hour		
JOB TIME AND COST						
Fleet size: 1	Excavator	Tot	al job time:	7.73		Hours
Unit cost:\$0.60	4 /LCY		Total job cost: _	\$805		

## WHEEL LOADER - LOAD AND CARRY WORK

: Mid-Continent LST	Permit	Action: TR-4 Recalc		Permit/Job#:	M198212
PROJECT IDENTIFIC	ATION				
Task #: 03A	State: Co	lorado	Abb	reviation: N	one
Date: 10/8/2015		rfield			1121-03a
User: ACY					1121-038
Agency or organization	ation name: DRMS				
HOURLY EQUIPMENT	<u>COST</u>				
Basic Machine: C	AT 972H		Horsepower:	287	
	OPS Cab		Shift Basis:	1 per d	
			Data Source:	(CRG	
Cost Breakdown:					
		Utilization %			
Ownership Cost/Hou	ır: \$38.44	NA			
Operating Cost/Hou		100	_		
Operator Cost/Hou		NA	-		
Total Unit Cost/Hou					
Total Fleet Cost/Ho	ur: \$289.04				
MATERIAL QUANTITI	IES				
	IES	CY Swell facto	r: <u>1.000</u>		
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es	1ES         78       CO         27,778       LO         stimated volume:       Fie			ı, see attached	
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es	78       CO         27,778       LC         stimated volume:       Figure 4         ated swell factor:       Ca	CY eld Observations and Re		n, see attached	
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of estima Source of estima IOURLY PRODUCTIO	78       CO         27,778       LC         stimated volume:       Fid         ated swell factor:       Ca         N       Co	CY eld Observations and Re it Handbook Basic Cycle Time (load,	clamation Plar	n, see attached	minutes
<b>MATERIAL QUANTITI</b> Initial volume:       27,7         Loose volume:	TES       CC         78       CC         27,778       LC         stimated volume:       Fie         ated swell factor:       Ca         N       Unadjusted I	CY eld Observations and Re it Handbook Basic Cycle Time (load, man	clamation Plar	0.525	minutes Source
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es Source of estima IOURLY PRODUCTIO oader Cycle Time: Cycle Time Factors Material:	IES       78       CC         78       LC         stimated volume:       Fig         ated swell factor:       Ca         N       Unadjusted I         Bank or broken mate	CY eld Observations and Re at Handbook Basic Cycle Time (load, man erial 0.04	dump, euver): Factor	0.525 (min.)	
Initial volume:       27,7         Loose volume:	IES       78       CO         78       LO         stimated volume:       Fie         ated swell factor:       Ca         N       Unadjusted I         Bank or broken mate       Dumped by truck 0.0	CY eld Observations and Re at Handbook Basic Cycle Time (load, man erial 0.04	dump, euver): 5.000 6.000 6.000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.00000 7.0000 7.0000 7.0000 7.00000 7.00000 7.00000 7.00000000	0.525 (min.) 940 (1	Source
Initial volume:       27,7         Loose volume:       27,7         Loose volume:       Source of estimation         Source of estimation       Source of estimation         IOURLY PRODUCTIO       Oader Cycle Time:         Cycle Time Factors       Material:         Stockpile:       Truck Ownership:	IES       78       CO         78       LO         stimated volume:       Fie         ated swell factor:       Ca         N       Unadjusted I         Bank or broken mate       Dumped by truck 0.00         No adjustment - factor       Ca	CY eld Observations and Re it Handbook Basic Cycle Time (load, man- crial 0.04 )2 or not applicable 0.00	dump, euver): 5.000 6.000 6.000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.00000 7.0000 7.0000 7.0000 7.00000 7.00000 7.00000 7.00000000	0.525 (min.) 040 (1 020 (1	Source Cat HB)
ATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es Source of estima IOURLY PRODUCTIO oader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	IES       78       CO         78       CO         27,778       LO         stimated volume:       Fid         ated swell factor:       Ca         N       Unadjusted I         Bank or broken mate       Dumped by truck 0.0         No adjustment - facta       No adjustment - facta	CY eld Observations and Re at Handbook Basic Cycle Time (load, man erial 0.04	dump, euver): Factor 0.0 0.0	0.525 (min.) 140 (1) 120 (1) 100 (1)	Source Cat HB) Cat HB)
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es Source of estima HOURLY PRODUCTIO Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership:	TES       78       CO         78       CO         27,778       LO         stimated volume:       Fid         ated swell factor:       Ca         N       Unadjusted I         Bank or broken mate       Dumped by truck 0.0         No adjustment - fact       No adjustment - fact         No minal target 0.00       Co	CY eld Observations and Re it Handbook Basic Cycle Time (load, man erial 0.04 02 or not applicable 0.00 tor not applicable 0.00	dump, euver): 5 Factor 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.525 (min.) 140 (( 120 (1 100 (1 100 (1	Source Cat HB) Cat HB) Cat HB)
MATERIAL QUANTITI Initial volume: 27,7 Loose volume: Source of es Source of estima HOURLY PRODUCTIO Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	TES       78       CC         78       Z7,778       LC         stimated volume:       Fie         ated swell factor:       Ca         M       Unadjusted I         Bank or broken mate       Dumped by truck 0.0         No adjustment - factor       No adjustment - factor         No minal target 0.00       No	CY eld Observations and Re it Handbook Basic Cycle Time (load, man- crial 0.04 )2 or not applicable 0.00	dump, euver): 5 Factor 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.525 (min.) 040 (0 20 (0 000 (0 000 (0 000 (0 600 n	Source Cat HB) Cat HB) Cat HB) Cat HB)

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)

Loader Worksheet Cont'd	Task	:#03A		Page 2 of 2
Return Route:	100 0.00	5.00 5.0	0 0.0832	(Cat HB)
		Total Travel Tir Total Cycle Tir		minutes minutes
Load Bucket Capacity				
Rated Capacity:	5.60 LCY (h			
Bucket Fill Factor:		rock - avg. blasted	(75 - 90%) 0.825	
Adjusted Capacity:	4.62 LCY			
Job Condition Correction Fac Site Altitude: <u>6800</u> feet	<u>ctors</u>			
	Source	3		
Altitude Adj:	1.00 (CAT H	B)		
Job Efficiency:	0.83 (1 shift/d	ay)		
Net Correction:	0.83 multiplie	r		
Adju	sted Hourly Unit Production: sted Hourly Unit Production: sted Hourly Fleet Production:	302.57	LCY/Hour LCY/Hour LCY/Hour	
JOB TIME AND COST				
Fleet size: 2	Loader(s)	Total job time:	45.90	Hours
Unit cost: \$0.478	3/LCY	Total job cost:	\$13,268	-

Page 1 of 2

## BULLDOZER WORK

		bench highwall		
te: Mid-Continent LST	Permit Actio	n: TR-4 Recalc	Permit/Job	o#: M1982121
PROJECT IDENTIF	ICATION			
Task #:3B	State: Colorad		Abbreviation:	None
Date: $10/8/2015$	County: Garfield		Filename:	M121-03b
User: ACY				
Agency or organ	nization name: DRMS			
HOURLY EQUIPME	<u>ENT COST</u>			
Basic Machine: Ca	1t D8T - 8U			
Horsepower: 31				
	niversal			
Attachment: NA				
	per day			
Data Source: (C.	RG)			
Cost Breakdown:				
2010/01/2		Utilization %		
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:	\$208.90			
Total Fleet Cost/Hour:	\$417.81			
Total Fleet Cost/Hour:	\$417.81			
Total Fleet Cost/Hour: MATERIAL QUANT				
MATERIAL QUANT	ITIES			
MATERIAL QUANT	<b>ITIES</b> 000			
MATERIAL QUANT Initial Volume: <u>10,0</u> Swell factor: <u>1.00</u>	<b>ITIES</b> 000			
MATERIAL QUANTInitial Volume:10,0Swell factor:1.00Loose volume:10,0	ITIES 000 00 00 LCY			
MATERIAL QUANT Initial Volume: 10,0 Swell factor: 10,0 Loose volume: 10,0 10,0 Source of estimated volu	ITIES         000         00         00 LCY         ume:       Division of Reclamation	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated swe       10,0	ITIES         000         00         00 LCY         ume:       Division of Reclame	ation, Mining & Safety		
MATERIAL QUANT Initial Volume: 10,0 Swell factor: 10,0 Loose volume: 10,0 10,0 Source of estimated volu	ITIES         000         00         00 LCY         ume:       Division of Reclamation	ation, Mining & Safety		
MATERIAL QUANT Initial Volume: 10,0 Swell factor: 10,0 Loose volume: 10,0 10,0 Source of estimated volu Source of estimated swel factor:	ITIES 000 00 00 LCY ume: Division of Reclama 11 Cat Handbook	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       swe         factor:       HOURLY PRODUCT	ITIES 000 00 00 LCY ume: Division of Reclama 11 Cat Handbook TION	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated swell       factor:         HOURLY PRODUCT       Average push distance:	ITIES 000 00 00 LCY ume: Division of Reclama 11 Cat Handbook CION 100 feet	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swell         factor:       HOURLY PRODUCT         Average push distance:       Unadjusted hourly	ITIES 000 00 00 LCY ume: Division of Reclama 11 Cat Handbook TION	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated swell       factor:         HOURLY PRODUCT       Average push distance:	ITIES 000 00 00 LCY ume: Division of Reclama 11 Cat Handbook CION 100 feet	ation, Mining & Safety		
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swell         factor:       HOURLY PRODUCT         Average push distance:       Unadjusted hourly	ITIES         000         00         000 LCY         ume:       Division of Reclamation         11       Cat Handbook         'ION         100 feet         931.6 LCY/hr			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swe factor:         HOURLY PRODUCT       Average push distance:         Unadjusted hourly production:       Note that the set of the	ITIES         000         00         000 LCY         ume:       Division of Reclamation         11       Cat Handbook         'ION         100 feet         931.6 LCY/hr			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swell         factor:       HOURLY PRODUCT         Average push distance:       Unadjusted hourly         production:       Materials consistency de	ITIES         000         00         000 LCY         ume:       Division of Reclama         11       Cat Handbook         TON         100 feet         931.6 LCY/hr         escription:       Rock, avg. ripped			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swell         factor:       HOURLY PRODUCT         Average push distance:       Unadjusted hourly         production:       Materials consistency de         Average push       Materials consistency de	ITIES         000         00         000 LCY         ume:       Division of Reclama         11       Cat Handbook         TON         100 feet         931.6 LCY/hr         escription:       Rock, avg. ripped			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       Source of estimated swe         factor:       Source of estimated swe         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency de         Average push       gradient:         Average site altitude:	ITIES         000         00         000 LCY         ume:       Division of Reclama         11       Cat Handbook         YION         100 feet         931.6 LCY/hr         escription:       Rock, avg. ripped         15 %         6,800 feet			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       10,0         Source of estimated volu       Source of estimated swell         Source of estimated swell       factor:         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency de       Average push         Average push       gradient:	ITIES 000 00 00 00 00 00 00 00 00			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       Source of estimated swe         factor:       Source of estimated swe         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency de         Average push       gradient:         Average site altitude:	ITIES         000         00         000 LCY         ume:       Division of Reclamation         11       Cat Handbook         YION         100 feet         931.6 LCY/hr         escription:       Rock, avg. ripped         15 %         6,800 feet			
MATERIAL QUANT         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       Source of estimated swe         factor:       Source of estimated swe         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency de       Average push         gradient:       Average site altitude:         Material weight:       Material weight:	ITIES         000         00         000 LCY         ume:       Division of Reclama         11       Cat Handbook         YION         100 feet         931.6 LCY/hr         escription:       Rock, avg. ripped         15 %         6,800 feet         2,600 lbs/LCY         Limestone - Crushed	or blasted 0.7		
MATERIAL QUANTI         Initial Volume:       10,0         Swell factor:       1.00         Loose volume:       10,0         Source of estimated volu       Source of estimated swe factor:         HOURLY PRODUCT       Average push distance:         Unadjusted hourly production:       Materials consistency de         Average push gradient:       Average site altitude:         Material weight:       Weight description:	ITIES         000         00         000 LCY         ume:       Division of Reclama         11       Cat Handbook         'ION			

Task # 03B

Dozing meth	hod:	1.000	(GEN.)
Visibility:		1.000	(AVG.)
Job efficier	ncy:	0.830	(1 SHIFT/DAY)
Spoil p	oile:	0.800	(FND-RF)
Push gradi	Push gradient:		(CAT HB)
Altitude:		1.000	(CAT HB)
Material Weight:		0.885	(CAT HB)
Blade type:		1.000	(PAT)
Net correcti Adjusted unit		0.2055 01.44 LCY/hr	
production: Adjusted fleet production:		32.88 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$1.091/LCY

Total job time:	26.12 Hours
Total job cost:	\$10,912
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## WHEEL LOADER - LOAD AND CARRY WORK

Task description:	Transport topsoil to proce	essing bench.		
te: Mid-Continent LST	Permit Action	n: TR-4 Recalc	Permit/Jo	ob#: <u>M1982121</u>
PROJECT IDENTIFIC	ATION			
Task #: 03C	State: Colorado	n	Abbreviation:	None
Date: 10/8/2015	County: Garfield		Filename:	M121-03c
User: ACY			i nonumo.	
Agency or organiz	zation name: DRMS			
HOURLY EQUIPMEN	T COST			
Basic Machine: (	CAT 972H	Horse	power:	287
	ROPS Cab			per day
				CRG)
Cost Breakdown:				
		Utilization %		
Ownership Cost/Ho		NA		
Operating Cost/Ho		100		
Operator Cost/Ho	our: \$37.13	NA		
Total Unit Cost/Ho	our: \$144.52			
Total Fleet Cost/H	our: \$289.04			
MATERIAL QUANTIT	TIES			
Initial volume: 1,9	36 CCY	Swell factor:	1.000	
Loose volume:	1,936 LCY			
Source of	estimated volume: 2.4 ac.	677 Jan Ale		
	nated swell factor: 2.4 ac. /	6" depth		
Source of estin	lated swell lactor: <u>Cat Han</u>	1000K		
HOURLY PRODUCTIO	ON			
Loader Cycle Time:	Unadjusted Basic	Cycle Time (load, dump	11575	minutes
Cycle Time Factors	1	maneuver	):	
Cycle Time Factors Material:		tor 0.02	Factor (min.)	Source
Stockpile:		101 0.02	0.020	(Cat HB)
Truck Ownership:		t applicable 0.00	0.020	(Cat HB)
Operation:			0.000	(Cat HB)
Dump Target:			-0.040	(Cat HB)
Dump raiget.	<u> </u>	cle Time Adjustment:	0.000	(Cat HB)
	÷	ed Basic Cycle Time:	0.525	minutes
	Aujust	eu Basic Cycle Time.	0.525	minutes
Rolling Resistance - Road C	Conditions			
Haul:		011 4:	tention 5.0	
Return:	Rutted dirt, little maintenance	tire pene	tration 5.0	
Ketuin:	Rutted dirt, little maintenance	se, no water, 2" tire pene	tration 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)

Loader Worksheet Cont'd	Task	c # 03C		Page 2 of 2
Return Route: 500	0.00	5.00 5.0	0 0.4160	(Cat HB)
		Total Travel Tir Total Cycle Tir		minutes minutes
Load Bucket Capacity				
Rated Capacity:	5.60         LCY (h           0.975         Loose r           5.46         LCY		gregates to 1/8" (95-1	00%) 0.975
Job Condition Correction Factors Site Altitude: <u>6800</u> feet	<u>S</u>			
Job Efficiency:	Sourc 1.00 (CAT H 0.83 (1 shift/c 0.83 multiplie Hourly Unit Production	B) lay) er	LCY/Hour	
Adjusted	Hourly Unit Production: Hourly Fleet Production:	193.93	LCY/Hour 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: Dis	stribute topsoil over proce	ssing bench		
Site: Mid-Continent LST	Permit Action:	TR-4 Recalc	Permit/Jo	b#: M1982121
PROJECT IDENTIFICATI	ION			
Task #:         03D           Date:         10/8/2015           User:         ACY	State: Colorado County: Garfield		Abbreviation: Filename:	None M121-03d
Agency or organization	n name: DRMS			
HOURLY EQUIPMENT C	<u>OST</u>			
Basic Machine:Cat D8THorsepower:310Blade Type:UniversalAttachment:NAShift Basis:1 per dayData Source:(CRG)		=) =) =) =)		
<u>Cost Breakdown:</u>	,	-		
Ownership Cost/Hour: Operating Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour:	\$62.67 \$108.22 \$0.00 \$38.01	Utilization % NA 100 0 NA		
Total unit Cost/Hour:       \$208         Total Fleet Cost/Hour:       \$417         MATERIAL ONANTITION	7.81			
MATERIAL QUANTITIESInitial Volume:1,936Swell factor:1.000Loose volume:1,936 LCY				
Source of estimated volume: Source of estimated swell factor:	Division of Reclamatio Cat Handbook	n, Mining & Safety		
HOURLY PRODUCTION				
Average push distance: Unadjusted hourly production:	50 feet 1,627.0 LCY/hr			
Materials consistency description	on: Loose stockpile 1.2			
Average push 0 % gradient:				
Average site altitude: 6,800	) feet			
Material weight: 1,600	0 lbs/LCY		_	
Weight description: Top	Soil			
Job Condition Correction Factor	0.550	Source		
Operator Skill: Material consistency:	0.750 1.200	(AVG.) (CAT HB)		

Dozing metho	od: 🗧	1.000	(GEN.)
Visibili	ty:	1.000	(AVG.)
Job efficient	cy:	0.830	(1 SHIFT/DAY)
Spoil pi	Spoil pile:		(FND-RF)
Push gradie	nt:	1.000	(CAT HB)
Altitude:		1.000	(CAT HB)
Material Weig	ht:	1.438	(CAT HB)
Blade type:		1.000	(PAT)
Net correction	on:	0.8593	
Adjusted unit production:	1,3	398.08 LCY/hr	
Adjusted fleet production:	27	96.16 LCY/hr	

Fleet size:	2 Dozer(s)	
Unit cost:	\$0.149/LCY	
stal ich time.	0.60 11	

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

## WHEEL LOADER - LOAD AND CARRY WORK

Utilization %         Ownership Cost/Hour:       \$38,44       NA         Operating Cost/Hour:       \$68,95       100         Operator Cost/Hour:       \$37,13       NA         Total Unit Cost/Hour:       \$37,13       NA         Total Unit Cost/Hour:       \$144,52         Total Fleet Cost/Hour:       \$289,04         TERIAL QUANTITIES         Initial volume:       41,667         CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         Operation:       Constant operation -0.04       -0.040       (Cat HB         Dump Target:       Nominal target 0.00       0.000       (Cat HB		Permit Action	on: TR-4 Recalc	Permit/Jo	b#: <u>M198212</u>
Task #:       04A       State:       Colorado       Abbreviation:       None         Date:       11/2/2015       County:       Garfield       Filename:       M121-04         Agency or organization name:       DRMS         PURLY EOUIPMENT COST         Basic Machine:       CAT 972H       Horsepower:       287         Attachment 1:       ROPS Cab       Shift Basis:       1 per day         Data Source:       (CRG)       (CRG)         t Breakdown:       Utilization %       Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA       Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52       Total Vitur:       \$289.04       Sucree of estimated volume:       1.250         Source of estimated volume:       Field observations and reclamation plan       Source of estimated swell factor:       0.525       ninut         Source of estimated swell factor:       Cat Handbook       Factor (min.)       Source       Source         Cycle Time:       Unadjusted Basic Cycle Time (load, dump, manuever):       0.525       ninut         Stockpile:       No adjustment - factor not applicable 0.00       0.000       (Cat HB         Operation:       Costata	<b>PROJECT IDENTIFIC</b>	ATION			
Date:       11/2/2015       County:       Garfield       Filename:       M121-04         Agency or organization name:       DRMS         DURLY EQUIPMENT COST         Basic Machine:       CAT 972H       Horsepower:       287         Attachment 1:       ROPS Cab       Shift Basis:       1 per day         Data Source:       (CRG)       (CRG)         t Breakdown:       Utilization %       (CRG)         Operating Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$289.04			do	Abbreviation	None
User: ACY Agency or organization name: DRMS  PURLY EQUIPMENT COST Basic Machine: CAT 972H Attachment 1: ROPS Cab Data Source: 287 Attachment 1: ROPS Cab Data Source: (CRG)  t Breakdown:  Ownership Cost/Hour: \$38.44 NA Operating Cost/Hour: \$38.44 NA Operating Cost/Hour: \$38.44 NA Operating Cost/Hour: \$38.44 NA Operator Cost/Hour: \$38.44 NA Operator Cost/Hour: \$144.52 Total Unit Cost/Hour: \$144.52 Total Fleet Cost/Hour: \$289.04  TERIAL OUANTITIES Initial volume: 11,667 Loose volume: 52,084 LCY Source of estimated volume: Field observations and reclamation plan Source of estimated swell factor: Cat Handbook  URLY PRODUCTION der Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.525 Cycle Time Factors No adjustment - factor not applicable 0.00 0,000 (Cat HB Operatin: Constant operation -0.04 0,000 (Cat HB Dump Target: Nominal target 0.00 Net Cycle Time: 0.525 minutes Adjusted Basic Cycle Time: 0.525	Date: 11/2/2015				
PURLY EQUIPMENT COST         Basic Machine:       CAT 972H         Attachment 1:       ROPS Cab         Shift Basis:       1 per day         Data Source:       (CRG)         tBreakdown:       Utilization %         Ownership Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52	User: ACY				11121 044
Basic Machine:       CAT 972H       Horsepower:       287         Attachment 1:       ROPS Cab       Shift Basis:       I per day         Data Source:       (CRG)         t Breakdown:       Utilization %         Ownership Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52       Total Fleet Cost/Hour:       \$289.04 <b>TERIAL QUANTITIES</b> Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY       Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook       0.525       minute maneuver):         URLY PRODUCTION       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minute maneuver):         Cycle Time:       Unadjustment - factor not applicable 0.00       0.000       (Cat HB         Truck Ownership:       No adjustment - factor not applicable 0.00       0.000       (Cat HB         Operatin:       Constant operation -0.04       -0.0400       (Cat	Agency or organiz	ation name: DRMS			
Basic Machine:       CAT 972H       Horsepower:       287         Attachment 1:       ROPS Cab       Shift Basis:       I per day         Data Source:       (CRG)         t Breakdown:       Utilization %         Ownership Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52       Total Fleet Cost/Hour:       \$289.04 <b>TERIAL QUANTITIES</b> Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY       Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook       0.525       minute maneuver):         URLY PRODUCTION       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minute maneuver):         Cycle Time:       Unadjustment - factor not applicable 0.00       0.000       (Cat HB         Truck Ownership:       No adjustment - factor not applicable 0.00       0.000       (Cat HB         Operatin:       Constant operation -0.04       -0.0400       (Cat	IOURLY FOURPMEN	L COST			
Attachment 1:       ROPS Cab       Instit Basis:       1 per day         Data Source:       (CRG)         t Breakdown:       Utilization %         Ownership Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52         Total Fleet Cost/Hour:       \$289.04         TERIAL OUANTITIES         Initial volume:       41,667         CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION       Indujusted Basic Cycle Time (load, dump, 0.525       minut maneuver):         Cycle Time Factors       Vnadjustment - factor not applicable 0.00       0.000       (Cat HB         Stockpile:       No adjustment - factor not applicable 0.00       0.000       (Cat HB         Operation:       Constant operation -0.04       -0.040       (Cat HB         Operation:       Constant operation -0.04       -0.040       (Cat HB			I.I.		202
Data Source:       Iper day         Data Source:       (CRG)         t Breakdown:       Utilization %         Ownership Cost/Hour:       \$38.44       NA         Operating Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$38.44       NA         Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52         Total Fleet Cost/Hour:       \$289.04 <b>TERIAL QUANTITIES</b> Initial volume:       41,667         CCY       Swell factor:       1.250         Source of estimated volume:         Field observations and reclamation plan       Cat Handbook <b>URLY PRODUCTION</b> der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         Operation:       Constant operation -0.04       -0.040       (Cat HB         Oup Target:       Nominal target 0.00       0.000       (Cat HB         Net Cycle Time Adjust					
t 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					
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	Cost Breakdown:				
Operating Cost/Hour:       \$68.95       100         Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52         Total Fleet Cost/Hour:       \$289.04         TTERIAL QUANTITIES         Initial volume:       41,667         CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Cat Handbook       Cat Handbook         URLY PRODUCTION       64er Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minut         Cycle Time Factors       Factor (min.)       Source of cat Handbook       Source       Source of estimated volume:       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         Operation:       Constant operation -0.04       -0.040       (Cat HB         Dump Target:       Nominal target 0.00       0.000       minutes         Adjusted Basic Cycle Time:       0.525       minutes			Utilization %		
Operator Cost/Hour:       \$37.13       NA         Total Unit Cost/Hour:       \$144.52         Total Fleet Cost/Hour:       \$289.04         TERIAL QUANTITIES         Initial volume:       41,667         CCY       Swell factor:         1.250         Loose volume:       52,084         LCY         Source of estimated volume:         Field observations and reclamation plan         Source of estimated swell factor:         Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):         Cycle Time Factors       Factor (min.)         Material:       Bank or broken material 0.04       0.040         Material:       Bank or broken material 0.04       0.040         Truck Ownership:       No adjustment - factor not applicable 0.00       0.000         Operation:       Constant operation -0.04       -0.040         Operation:       Constant operation -0.04       -0.040         Dump Target:       Nominal target 0.00       No00       minutes         Adjusted Basic Cycle Time:       0.525       minutes	Ownership Cost/Ho	ur: \$38.44	NA		
Total Unit Cost/Hour:       \$144.52         Total Fleet Cost/Hour:       \$289.04         TERIAL QUANTITIES         Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY       LCY         Source of estimated volume:       Field observations and reclamation plan       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minute         Cycle Time Factors       Factor (min.)       Source       Source         Material:       Bank or broken material 0.04       0.040       (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			100		
Total Fleet Cost/Hour:       \$289.04         TERIAL QUANTITIES         Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         Operation:       Constant operation -0.04       -0.040       (Cat HB         Dump Target:       Nominal target 0.00       0.000       (Cat HB         Net Cycle Time:       0.020       minutes         Adjusted Basic Cycle Time:       0.525       minutes	-		NA		
ATERIAL QUANTITIES         Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         Cycle Time Factors       Factor (min.)       Source of Cycle Time         Material:       Bank or broken material 0.04       0.040       (Cat HB Stockpile:         No adjustment - factor not applicable 0.00       0.000       (Cat HB Operation:         Operation:       Constant operation -0.04       -0.040       (Cat HB Oump Target:         Nominal target 0.00       Net Cycle Time       0.000       (Cat HB Oump Target:	Total Unit Cost/Ho	ur: \$144.52	_		
Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         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	Total Fleet Cost/Ho	our: \$289.04			
Initial volume:       41,667       CCY       Swell factor:       1.250         Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         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					
Loose volume:       52,084       LCY         Source of estimated volume:       Field observations and reclamation plan         Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION       Cat Handbook         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):         Cycle Time Factors       Factor (min.)         Stockpile:       No adjustment - factor not applicable 0.00         Material:       Bank or broken material 0.04         Constant operation - 0.04       -0.040         Operation:       Constant operation - 0.04         Net Cycle Time Adjustment:       0.000         Material:       Nominal target 0.00         Material:       Nominal target 0.00	MATERIAL QUANTIT	IES			
Source of estimated volume: Source of estimated swell factor:       Field observations and reclamation plan         Cat Handbook       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         Cycle Time Factors       Factor (min.)       Source         Material:       Bank or broken material 0.04       0.040       (Cat HB 0.040         Stockpile:       No adjustment - factor not applicable 0.00       0.000       (Cat HB 0.000         Truck Ownership:       No adjustment - factor not applicable 0.00       0.000       (Cat HB 0.000         Dump Target:       Nominal target 0.00       0.000       (Cat HB 0.000       Minutes 0.025         Net Cycle Time Adjustment:       0.000       minutes 0.525       minutes minutes		i67 CCY	Swell factor: 1	.250	
Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         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	Loose volume:	<b>52,084</b> LCY			
Source of estimated swell factor:       Cat Handbook         URLY PRODUCTION         der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525         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         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	Source of e	stimated volume: Field c	observations and reclamation	on nlan	
URLY PRODUCTION       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minute         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         Adjusted Basic Cycle Time Adjustment:       0.000       minutes         Adjusted Basic Cycle Time:       0.525       minutes					
der Cycle Time:       Unadjusted Basic Cycle Time (load, dump, maneuver):       0.525       minute maneuver):         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         Adjusted Basic Cycle Time Adjustment:       0.000       minutes         Adjusted Basic Cycle Time:       0.525       minutes					
Cycle Time Factors       0.525         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	HOURLY PRODUCTIC	<u>N</u>			
maneuver):         Cycle Time Factors         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	oader Cycle Time:	Unadjusted Basi	ic Cycle Time (load, dumn		minutes
Material:Bank or broken material 0.040.040(Cat HBStockpile:No adjustment - factor not applicable 0.000.000(Cat HBTruck Ownership:No adjustment - factor not applicable 0.000.000(Cat HBOperation:Constant operation -0.04-0.040(Cat HBDump Target:Nominal target 0.000.000(Cat HBNet Cycle Time Adjustment:0.000minutesAdjusted Basic Cycle Time:0.525minutes		3			11111400
Stockpile:No adjustment - factor not applicable 0.000.000(Cat HBTruck Ownership:No adjustment - factor not applicable 0.000.000(Cat HBOperation:Constant operation -0.04-0.040(Cat HBDump Target:Nominal target 0.000.000(Cat HBNet Cycle Time Adjustment:0.000minutesAdjusted Basic Cycle Time:0.525minutes	Cycle Time Factors				Source
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					(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					(Cat HB)
Dump Target:     Nominal target 0.00     Oto Vo     Oto Vo       Net Cycle Time Adjustment:     0.000     (Cat HB       Adjusted Basic Cycle Time:     0.525     minutes	Stockpile:				(Cat HB)
Net Cycle Time Adjustment:       0.000       minutes         Adjusted Basic Cycle Time:       0.525       minutes	Stockpile: Truck Ownership:				(Cat HB)
Adjusted Basic Cycle Time: 0.525 minutes	Stockpile: Truck Ownership: Operation:			0.000	
	Stockpile: Truck Ownership: Operation:	Nominal target 0.00	uala Tima A diversionante	0.000	
ng Resistance – Road Conditions	Stockpile: Truck Ownership: Operation:	Nominal target 0.00 Net C			
$u_{R}$ Resistance – Ruau Conditions	Stockpile: Truck Ownership: Operation:	Nominal target 0.00 Net C			minutes
	Stockpile: Truck Ownership: Operation: Dump Target:	Nominal target 0.00 Net C Adjus			
Haul: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0	Stockpile: Truck Ownership: Operation: Dump Target:	Nominal target 0.00 Net C Adjus			

## 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)

Loader Worksheet Cont'd	Tasl	k # 04A		Page 2 of 2
Return Route: 10	00 0.00	5.00 5.	.00 0.0832	(Cat HB)
		Total Travel T Total Cycle T		minutes minutes
Load Bucket Capacity				
Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Job Condition Correction Factor Site Altitude: <u>6800</u> feet	6.16 LCY	neaped) rock/dirt mixtures	(100-120%) 1.100	
	Sourc	e		
Altitude Adj:	1.00 (CAT H	IB)		
Job Efficiency:	0.83 (1 shift/d	day)		
Net Correction:	0.83 multiplie	er		
Adjuste	d Hourly Unit Production d Hourly Unit Production d Hourly Fleet Production	: 437.98	LCY/Hour LCY/Hour 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:	IV		
Site: Mid-Continent LS	Г Perm	nit Action:	TR-4 Recalc	Permit/Jo	b#: M1982121
PROJECT IDENTI	FICATION				
Task #:       04B         Date:       10/8/201         User:       ACY	5 County:	Colorado Garfield		Abbreviation: Filename:	None M121-04b
Agency or org	anization name: <u>DRN</u>	4S			
Basic Machine: C Horsepower: 3 Blade Type: U Attachment: N Shift Basis: 1	Cat D8T - 8U 10 Jniversal JA per day		-		
<u>Cost Breakdown</u> :	CRG)				
Ownership Cost/Hour Operating Cost/Hour Ripper op. Cost/Hour Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour:	: \$108.22 : \$0.00 : \$38.01 \$208.90		Utilization % NA 100 0 NA		
Swell factor: 1.0	FITIES ,834 )000 ,834 LCY				
Source of estimated vo		cement by l	oaders completed hal	f of slope	
Source of estimated sw factor:	rell formation Cat Handbo	ook			
HOURLY PRODUC	TION				
Average push distance: Unadjusted hourly production:		•			
Materials consistency d	lescription: Compacted	ed fill or em	bankment 0.9		
Average push gradient: Average site altitude:	15 % 6,800 feet	-			
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock - 2	25% Rock, 7	75% Earth		
Job Condition Correction Operator		0	Source (AVG.)		

Task # 04B

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

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 j	pad		
ite: Mid-Continent LST	Permit Actio	n: TR-4 Recalc	Permit/Jo	b#: _M1982121
PROJECT IDENTIFIC	CATION			
Task #: 04C	State: Colorad	0	Abbreviation:	None
Date: 10/8/2015	County: Garfield		Filename:	M121-04c
User: ACY				
Agency or organi	ization name: DRMS			
HOURLY EQUIPMEN	NT COST			
	САТ 972Н	Horsep	011/07:	287
	ROPS Cab	Shift		er day
		Data So		CRG)
Coat Propled		2 4 4 6 4	(	
Cost Breakdown:		T TA:1:		
Ownership Cost/H	our: \$38.44	Utilization % NA		
Operating Cost/H		100		
Operator Cost/H		NA		
Total Unit Cost/H	our: \$144.52			
T-4-1 T1 (7)				
Total Fleet Cost/H	Iour: \$289.04			
MATERIAL	FIEO			
MATERIAL QUANTI	<u>11E5</u>			
	500 CCY	Swell factor: 1	000	
Loose volume:	1,600 LCY			
Source of	estimated volume: 6" deep	over 2 acres		
	mated swell factor: Cat Har			
<b>HOURLY PRODUCTI</b>	ON			
Loader Cycle Time:				
		Cycle Time (load, dump, maneuver):	0.525	minutes
Cycle Time Factor			Factor (min.)	Source
Material Stockpile	A	ter 0.02	0.020	(Cat HB)
Truck Ownership		t applicable 0.00	0.020	(Cat HB)
Operation	<u> </u>		0.000	(Cat HB)
Dump Target	5		0.000	(Cat HB) (Cat HB)
		cle Time Adjustment:	0.040	minutes
		ed Basic Cycle Time:	0.565	minutes
	5	·		
Rolling Resistance - Road (	<u>Conditions</u>			
Haul:	Rutted dirt, little maintenand	e no water ?" tire south	ration 5.0	
Return:	Rutted dirt, little maintenand	re no water ?" tire penet	ation 5.0	
Ketum:	Auteu uiri, little maintenand	ce, no water, 2" tire peneti	ation 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)

Loader Worksheet Cont'd		Task # 04C		Page 2 of 2
Return Route:	100 0.00	5.00 5	.00 0.0832	(Cat HB)
		Total Travel 1 Total Cycle 1		minutes minutes
Load Bucket Capacity				
Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Job Condition Correction Fa Site Altitude: <u>6800</u> feet	0.975 Lo 5.46 Lo	CY (heaped) pose material - mixed mo CY	oist aggregates (95-10	0%) 0.975
		Source		
Altitude Adj:	1.00 (C	AT HB)		
Job Efficiency:	0.83 (1 s	shift/day)		
Net Correction:	0.83 mu	ltiplier		
Adju	isted Hourly Unit Produ isted Hourly Unit Produ sted Hourly Fleet Produ	ction: 367.24	LCY/Hour LCY/Hour LCY/Hour	
JOB TIME AND COST				
Fleet size: 2	Loader(s)	Total job time:	2.18	Hours
Unit cost:\$0.394	4 /LCY	Total job cost:	\$630	

#### BULLDOZER WORK

Task description:	Spread topsoil over mill	pad area		
e: Mid-Continent LST	Permit Act	ion: TR-4 Recalc	Permit/Jo	b#: M1982121
PROJECT IDENTIF	<b>ICATION</b>			
Task #: 04D	State: Colora		Abbreviation:	None
Date: 10/8/2015	County: Garfie	ld	Filename:	M121-04d
User: ACY				
Agency or organ	nization name: DRMS			
HOURLY EQUIPME	NT COST			
	t D8T - 8U			
Horsepower: 31				
	niversal			
Attachment: NA				
	per day			
	RG)			
Cost Breakdown:		· · · · · · · · · · · · · · · · · · ·		
o 11 o	<b>* **</b> *=	Utilization %		
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:	\$208.90			
Total Fleet Cost/Hour:	\$208.90 \$417.81 ITIES			
Total Fleet Cost/Hour: <u>MATERIAL QUANT</u> Initial Volume: 1,60 Swell factor: 1.00	<b>\$417.81</b> <b>ITIES</b> 00			
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       1,60         Swell factor:       1.00         Loose volume:       1,60	\$417.81 ITIES 00 00 00 LCY			
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       1,60         Swell factor:       1.00         Loose volume:       1,60         Source of estimated volume	\$417.81 ITIES 00 00 00 LCY ume: 6" deep spread ov	ver 2 acres		
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       1,60         Swell factor:       1.00         Loose volume:       1,60	\$417.81 ITIES 00 00 00 LCY ume: 6" deep spread ov	ver 2 acres		
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       1,60         Swell factor:       1.00         Loose volume:       1,60         Source of estimated volu       5000000000000000000000000000000000000	\$417.81 ITIES 00 00 00 LCY ume: 6" deep spread ov	ver 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT: Initial Volume: 1,60 Swell factor: 1,00 Loose volume: 1,60 Source of estimated volu Source of estimated swe factor:	\$417.81 ITIES 00 00 00 00 LCY ume: 6" deep spread ov 11 Cat Handbook	ver 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT	\$417.81 ITIES 00 00 00 00 00 Cat Handbook TION	ver 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance:	\$417.81 ITIES 00 00 00 00 00 00 00 00 00 0	/er 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1,00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	\$417.81 ITIES 00 00 00 00 00 Cat Handbook TION	ver 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance:	\$417.81 ITIES 00 00 00 00 00 00 00 00 00 0	ver 2 acres		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	\$417.81 ITIES 00 00 00 00 00 00 00 00 00 0			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push	\$417.81         ITIES         00         III         Cat Handbook			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push gradient:	\$417.81         ITIES         00         00         00         00         00         00         00         00         00         00         00         00         100         feet         931.6         LCY/hr         escription:         Loose stockpile         0 %			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push	\$417.81 ITIES 00 00 00 00 00 00 00 00 00 0			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push gradient:	\$417.81         ITIES         00         00         00         00         00         00         00         00         00         00         00         00         100         feet         931.6         LCY/hr         escription:         Loose stockpile         0 %			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push gradient: Average site altitude:	\$417.81         ITIES         00         00         00         00         00         00         00         00         00         00         00         00         00         100			
Total Fleet Cost/Hour:         MATERIAL QUANT:         Initial Volume:       1,60         Swell factor:       1.00         Loose volume:       1,60         Source of estimated volu       3,60         Source of estimated volu       500         Source of estimated swee       factor:         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency de       Average push         gradient:       Average site altitude:         Material weight:       Weight description:	\$417.81         ITIES         00         00         00         00         00         00         00         00         00         00         00         01         02         100	1.2		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 1,60 Swell factor: 1.00 Loose volume: 1,60 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push gradient: Average site altitude: Material weight:	\$417.81 ITIES 00 00 LCY ume: 6" deep spread ov 10 Cat Handbook TON 100 feet 931.6 LCY/hr escription: Loose stockpile 0 % 6,800 feet 1,600 lbs/LCY Top Soil Factor			

Adjusted unit 8 production:	00.52 LCY/hr	
Net correction:	0.8593	
Blade type:	1.000	(PAT)
Material Weight:	1.438	(CAT HB)
Altitude:	1.000	(CAT HB)
Push gradient:	1.000	(CAT HB)
Spoil pile:	0.800	(FND-RF)
Job efficiency:	0.830	(1 SHIFT/DAY)
Visibility:	1.000	(AVG.)
Dozing method:	1.000	(GEN.)

## Adjusted fleet 1601.04 LCY/hr

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

Total job time:	1.00 Hours
Total job cost:	\$418

## BULLDOZER RIPPING WORK

Task description	n: <b>Rip</b>	upper and lower access	s roads				
Site: Mid-Contine	nt LST	Permit Action	TR-4 Recalc		Permit/Jo	b#: M19821	21
PROJECT IDE	ENTIFICATIO	<u>DN</u>					
Task #: 05	δA	State: Colorado		Abb	reviation:	None	
Date: 10	0/8/2015	County: Garfield			Filename:	M121-05a	
User: A	CY						
Agency	or organization	name: DRMS					2
HOURLY EQU	UIPMENT CO	<u>ST</u>					
Basic	Machine: Cat	D8T - 8U		Horsepower:		310	
Ripper Att	tachment: 3-S	hank Ripper		Shift Basis:		per day	
				Data Source:		CRG)	
Cost Breakdown:							-
			-	Utilization %			
	Ownership Co	st/Hour: \$69	0.05	NA			
	Operating Co		8.22	100	-		
Ripp	per Operating Co		.46	100			
	Operator Co		8.01	NA	_		
	Total Unit Co	st/Hour: \$22	2.73				
	Total Fleet Co	st/Hour: \$44	5.46				
		<b>_</b>					
MATERIAL Q	UANTITIES	Sala	atad antimating a	anthad. Ana	_		
		56160	cted estimating n	nethod: Area	a		
Alternate Methods	<u>s:</u>						
Seismic: NA		Bank Volume:	NA	BCY		NA	
Area: 2.00	acres	Rip Depth (ft):	2.00	Volume:	6,453		BCY or CCY
	Source of estim	ated quantity:					
HOURLY PRO	DUCTION						
Seismic:							
beisime.	S	eismic Velocity:	NA	feet/sec	ond		
			1111	1000 500	Jonu		
<u>Area:</u>							
		Ripping Depth:	2.56	mph			
		Ripping Width:	7.08	degrees	5		
		ge Dozer Speed:	500.00 88.00	feet feet			
		Maneuver Time:	0.25	feet			
		on per unit area:	0.822	acres/h	our		
Job Condition Cor							
	djusted Hourly I	Init Draduation	0.833	A			
Ulla	ajusted fibully (		0.822	Acres/h	r		
		Site Altitude:	6,800	feet			
		Altitude Adj:	1.00	(CAT H			
		Job Efficiency:	0.83	(1 shift			
		Net Correction:	0.83	multipl	ier		
		ourly Unit Production:	0.68	Acres/hr			
	Adjusted H	ourly Fleet Production:	1.36	Acres/hr			
JOB TIME AN	D COST						
Fleet size:	2	Grader(s)	Total job time:		1.47	Hours	
Unit cost:	\$326.454	Per acre	Total job cost:	· · · · ·	\$653		
	Ψυμυ.τυτ		1 0tai juu cust.		0000		

## **REVEGETATION WORK**

i ask deserip	otion:	Revegetate disturbed areas				
ite: Mid-Continent LST		Permit Action:	TR-4 Recalc	Permit/Job#: M1982121		
PROJECT	<b>IDENTIFIC</b>	CATION				
Task #: Date: User:	06A 10/8/2015 ACY	State: Colorado County: Garfield		Abbreviation: Filename:	None M121-06a	

## **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 Chisel plowing {DMG}		Cost /Acre \$88.58
	Total Tilling Cost/Acre	\$88.58

## **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
Totals Seed Mix	60.00	703.86	\$827.20

Application

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

## **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
Total Mulch Materials Cost/Acre				\$154.76

#### Application

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

## **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
		Totals	Nursery Stoc	ek Cost / Acre	\$162.00

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

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:	In	itial mobilization	of reclamation	n equipme	nt/crew		
: Mid-Continent	LST	Permit	Action: <u>TR-</u>	4 Recalc		Permit/Job#:	M1982121
PROJECT IDEN	TIFICAT	ION					
Task #: _07A		State: Co	olorado		Abbr	eviation: N	Vone
Date: 10/8 User: ACY	/2015 7	County: G	arfield				/121-07a
Agency of	r organizatio	on name: DRMS					
EQUIPMENT T	<u>RANSPOF</u>	<u>RT RIG COST</u>					
					Shift ba Cost Data Sou		er day G Data
Truck	Tractor Des	cription: GENE	RIC ON-HIGH		UCK TRACTO (2ND HALF,		ESEL POWERED,
Truck	Trailer Des	cription: G	ENERIC FOL	DING GOO		ROP DECK E	EQUIPMENT
Cost Breakdown:							
Available Rig Ca		0-25 Tons	26-50 Tons	51	+ Tons		
Ownership (		\$16.63	\$18.37	\$	22.33		
Operating (		\$44.38	\$46.13	\$	50.07		
	Cost/Hour:	\$27.66	\$27.66	\$	27.66		
	Cost/Hour:	\$0.00	\$25.39	\$	25.39		
Total Unit (	Cost/Hour:	\$88.67	\$117.55	\$1	25.45		
			411100		123.43		
NON ROADABL	E EQUIP	MENT:					
	E EQUIP	MENT: Owner ship	Haul Rig	Fleet		Return Trij	DOT Permit
NON ROADABL					Haul Trip Cost/hr/	Return Trij Cost/hr/ fle	
NON ROADABL Machine Description Cat 320D LRR 9'- 6" Stick	Weight/ Unit	Owner ship	Haul Rig Cost/hr/uni	Fleet	Haul Trip		
NON ROADABL Machine Description Cat 320D LRR 9'- 6" Stick Cat D8T - 8U	Weight/ Unit (TONS) 23.70 53.70	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/uni t	Fleet Size	Haul Trip Cost/hr/ fleet	Cost/hr/ fle \$88.67	\$250.00
NON ROADABL Machine Description Cat 320D LRR 9'- 6" Stick	Weight/ Unit (TONS) 23.70	Owner ship Cost/hr/ unit \$26.63	Haul Rig Cost/hr/uni t \$88.67	Fleet Size	Haul Trip Cost/hr/ fleet \$115.30	Cost/hr/ fle	et Cost/ fleet

## **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:	GLENWOOD SPRINGS	
Total one-way travel distance:	2.00	miles
Average Travel Speed:	15.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$3,995.57	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$42.43	~

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: 2.53 Hours

Total job cost: **\$4,038** 

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Sec	ondary mobiliza	tion of reclama	ation equip	ment/crew		
te: Mid-Continent	LST	Permit	Action: TR-4	4 Recalc		Permit/Job#:N	/1982121
PROJECT IDEN	TIFICATI	ON					
Task #:         07B           Date:         10/8           User:         ACY	/2015		olorado arfield			eviation: <u>Non</u> ilename: <u>M12</u>	e 1-07b
Agency o	r organization	n name: DRMS					
EQUIPMENT T	RANSPOR	<u>T RIG COST</u>					
Truck	Tractor Desc	ription: GENE	RIC ON-HIGH		Shift ba Cost Data Sou JCK TRACT(		ata
Truck	Trailer Desc		·	400 HP	(2ND HALF,	2006)	
THUCK	Trailer Desc				(25T, 50T, A)	ROP DECK EQU ND 100T)	JIPMENI
<u>Cost Breakdown:</u>		÷	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
Available Rig Ca	pacities	0-25 Tons	26-50 Tons	51-	+ Tons		
Ownership		\$16.63	\$18.37		22.33		
Operating		\$44.38	\$46.13	\$5	50.07		
	Cost/Hour:	\$27.66	\$27.66	\$2	27.66		
	Cost/Hour:	\$0.00	\$25.39		25.39		
Total Unit	Cost/Hour:	\$88.67	\$117.55	\$1	25.45		
NON ROADABI	<u>E EQUIPN</u>	IENT:					
Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit (TONS)	Cost/hr/ unit	Cost/hr/uni t	Size	Cost/hr/ fleet	Cost/hr/ fleet	Cost/ fleet
				Subtotals:	\$0.00	\$0.00	\$0.00

## **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	\$88.67	1	\$88.67	\$88.67
		Subtotals:	\$113.97	\$113.97

# Mobilization Worksheet Cont'd EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	GLENWOOD SPRINGS 2.00 15.00	miles mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$0.00	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$30.39	

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

Total job time:	0.27	Hours
Total job cost:	\$30	



## **Highwall reduction - backfill**



# Highwall reduction - backfill

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



#### 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

