

Department of Natural Resources

1313 Sherman Street, Room 215 Denver, CO 80203

December 1, 2015

Gerald Daub Daub & Associates, Inc. 1985 ½ South Broadway Grand Junction, CO 81507

Re: Natural Soda LLC, Nahcolite Project, Permit No.M-1983-194, Surety Reduction Request Approval, Surety Reduction No. 3, SR-3.

Dear Mr. Daub,

On December 1, 2015 the Division of Reclamation, Mining and Safety approved your request for a Financial Warranty Reduction to \$4,158,340.68. This is a reduction of \$470,976.28. This decision reduces the amount of the financial warranty, and does not approve any release of reclamation responsibility for the tasks associated with this request.

Please provide a rider to the current Financial Warranty, or submit a new Financial Warranty reflecting this reduction. If you wish to submit a different type of Financial Warranty, please contact Barbara Coria at (303) 866-3567 ext. 8148 for the applicable form.

If you need additional information, please contact me at the Division of Reclamation, Mining and Safety, Grand Junction Field Office, 101 S. 3rd St., Suite 301, Grand Junction, Colorado 81501, telephone no. (970) 241-2042.

Sincerely

Travis Marshall

Environmental Protection Specialist

Enclosure(s) - Reclamation Cost Estimate Update

ec: Ru

Russ Means, DRMS Barbara Coria, DRMS

cc:

Paul Daggett BLM - White River Field Office 220 East Market Street Meeker, CO 81641

Kirk Daehling Natural Soda, LLC 3200 RBC Road 31 Rifle, CO 81650



COST SUMMARY WORK

Task descrip	ption:						
Site: Nahcolite	e Project	Pe	rmit Action:	SR-03	Permit/Jol	o#: M1983194	
PROJECT	IDENTIFICA	<u> FION</u>					
Task #:	001	State:	Colorado		Abbreviation:	None	
Date:	12/1/2015	County:	Rio Blanco		Filename:	M194-001	_
User:	THM						_

TASK LIST (DIRECT COSTS)

Agency or organization name: DRMS

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demo. of NSI Plant, Pipelines and Powerlines and Parking Lot	DEMOLISH	1	160.00	\$1,671,947.79
02a	Borehole P&A	BOREHOLE	1	460.00	\$1,220,709.25
03a	Re-grade Process Ponds	DOZER	2	141.43	\$59,092.00
04a	Re-grade Plant Area	DOZER	2	83.95	\$35,073.00
05a	Re-grade Well Pads	DOZER	2	117.84	\$49,235.00
06a	Distribute 6" of topsoil over 8 acre process pond area	DOZER	2	5.92	\$2,473.00
07a	Distribute 6" topsoil over 16 acre plant/process area	DOZER	2	11.84	\$4,945.00
08a	Replace topsoil over re-graded well pads and access roads	DOZER	2	28.50	\$11,907.00
09a	Rip compacted areas	RIPPER	2	20.87	\$9,297.00
10A	Distribute 6" topsoil over 27.7 acres of decompacted area	DOZER	2	15.22	\$6,358.00
11a	Revegetate 87.76 acres	REVEGE	1	87.76	\$171,608.00
12a	Mobilization	MOBILIZE	1	8.00	\$6,399.00
	SUBTOTALS:		1141.33	\$3,249,044	

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$65,630.69
Performance bond:	1.05	Total =	\$34,114.96
Job superintendent:	570.67	Total =	\$42,891.18
Profit:	10.00	Total =	\$324,904.40

TOTAL O & P = \$467,541.23 CONTRACT AMOUNT (direct + O & P) = \$3,716,585.23

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$157,954.87
Reclamation management and/or administration:	5.00		\$185,829.26

CONTINGENCY: 3.00 Total = \$97,471.32

TOTAL INDIRECT COST = \$909,296.68

TOTAL BOND AMOUNT (direct + indirect) = __\$4,158,340.68

DEMOLITION WORK

Task description:	Demo. of NSI Plant, Pipelines and Powerlines and Parking Lot
-------------------	--

Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #:	01A	State:	Colorado	Abbreviation:	None
Date:	12/1/2015	County:	Rio Blanco	Filename:	SR-03-01a
User:	THM				

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
NSI Plant	200'L x 175'W x 50'H	Plant (3S) demo./on-site disposal in excavated pit - Max. 200 ft. push	1,750,000.00	CF	\$0.25	\$434,000.00
Product Storage Dome	100'L x 100'W x 50'H	Plant (3S) demo./on-site disposal in excavated pit - Max. 200 ft. push	500,000.00	CF	\$0.25	\$124,000.00
Removal of NSI Plant Slab	200'L x 175'W	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	35,000.00	SF	\$2.33	\$81,550.00
Removal of Storage Dome slab	100'L x 100'W	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 200 ft. push	10,000.00	SF	\$2.28	\$22,800.00
Scale Building	20'W x 100'L x 15'H	Plant (1S) demo./on-site disposal in excavated pit - Max. 200 ft. push	30,000.00	CF	\$0.20	\$5,880.00
Removal of Scale Building Slab	20'W x 100'L	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	2,000.00	SF	\$1.75	\$3,500.00
Removal of Conveyor System	200'L	Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	200.00	LF	\$44.42	\$8,884.00
Removal of Overhead Powerline	2100'L	Powerline or utility line, overhead, wood - Double or "H" pole	2,100.00	LF	\$5.38	\$11,298.00
Tank Farm	30'W x 50'H	Tank Removal and disposal in pit	5.00	Tank	\$2,000.00	\$10,000.00
Removal of Pipeline	3600	Pipe, steel, welded connections - 10 in. diameter pipe	3,600.00	LF	\$1.90	\$6,840.00
Removal of Flagpoles/Monument	70 sq feet	USER PROVIDED ITEM	70.00	FT^2	\$5.00	\$350.00
Removal of 12" barren liquor pileline	5050 LF	Pipe, steel, welded connections - 10 in. diameter pipe	5,050.00	LF	\$1.90	\$9,595.00
TR-36 Process Building 1	165' x 79' x 60'	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	782,100.00	CF	\$0.23	\$183,011.40
TR-36 Process Building 2	105' x 36' x 170'	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 200 ft.	642,600.00	CF	\$0.23	\$150,368.40

		push				
TR-36 Dry handling, Screening and Storage	90' x 65' x 160'	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	936,000.00	CF	\$0.23	\$219,024.00
TR-36 Warehouse and Packaging Building	70' x 65' x 60'	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	273,000.00	CF	\$0.23	\$63,882.00
TR-36 Warehouse Building	400' x 150' x 22'	Plant (1C) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	1,320,000.00	CF	\$0.24	\$316,800.00
TR-36 Removal of concrete foundations	101285 sq. ft	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 200 ft. push	101,285.00	SF	\$1.71	\$173,197.35
TR-36 Asphalt Paarking Removal	133' x 182'	Pavement, bituminous, demolition only - 4 in. to 6 in. thick	897.00	SY	\$7.01	\$6,287.97

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	160.00	(unadjusted): _	\$1,831,268.12	location):	\$1,671,947.79

BOREHOLE SEALING WORK

	Task description:	Borehole P&A	
Site:	Nahcolite Project	Permit Action: SR-03	Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #:	02A	State:	Colorado	Abbreviation:	None	
Date:	12/1/2015	County:	Rio Blanco	Filename:	SR-03-02a	
User:	THM					

Agency or organization name: __DRMS

UNIT COSTS

Borehole	Sealing/Item Method				T		
Description		Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
3M-TDR	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73
4A-1V	Portland cement grout - 10 in. (labor, equip, materials)	9.625"	1876	1,876.00	LF	\$18.36	\$34,446.17
4A-5M	Portland cement grout - 4 in. (labor, equip, materials)	2.375"	1876	1,876.00	LF	\$8.04	\$15,090.73
88-1	Portland cement grout - 10 in. (labor, equip, materials)	9.625"	2200	2,200.00	LF	\$18.36	\$40,395.30
89-1	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1627	1,627.00	LF	\$8.04	\$13,087.75
89-2	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1417	1,417.00	LF	\$8.04	\$11,398.49
89-3	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	347	347.00	LF	\$8.04	\$2,791.30
90-1	Portland cement grout - 10 in. (labor, equip, materials)	9.625"	1417	1,417.00	LF	\$18.36	\$26,018.25
90-2	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73
90-3	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1627	1,627.00	LF	\$8.04	\$13,087.75
90-4	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1417	1,417.00	LF	\$8.04	\$11,398.49
BG-1	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1627	1,627.00	LF	\$8.04	\$13,087.75
BG-4	Portland cement grout - 4 in. (labor, equip, materials)	4.5	1627	1,627.00	LF	\$8.04	\$13,087.75
DS-2	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73

DS-3	Dortland coment grout 4	4.5"	1876	1.976.00	I E	E0.04	615,000,72
D2-3	Portland cement grout - 4 in. (labor, equip,	4.5	1876	1,876.00	LF	\$8.04	\$15,090.73
	materials)						
EX-2	Portland cement grout - 4	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73
	in. (labor, equip,			1,070.00		40.0.	4.5,050.75
	materials)						
IRI-1	Portland cement grout - 4	4"	347	347.00	LF	\$8.04	\$2,791.30
	in. (labor, equip,						
	materials)						
IRI-4	Portland cement grout - 4	4"	1417	1,417.00	LF	\$8.04	\$11,398.49
	in. (labor, equip,						
IDI 6	materials)	4.60511	2.45	0.45.00	1.5	0004	00 501 00
IRI-5	Portland cement grout - 4	4.625"	347	347.00	LF	\$8.04	\$2,791.30
	in. (labor, equip, materials)						
IRI-6	Portland cement grout - 4	4"	1627	1,627.00	LF	\$8.04	\$13,087.75
nd-o	in. (labor, equip,	-	1027	1,027.00	LI	\$0.04	\$13,067.73
	materials)						
IRI-7	Portland cement grout - 4	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73
	in. (labor, equip,			'		1	
	materials)						
IRI-8	Portland cement grout - 4	4.5"	347	347.00	LF	\$8.04	\$2,791.30
	in. (labor, equip,						
STI ID	materials)		1076	1.071.00		-	
7H-1R	Portland cement grout - 8	7.625"	1876	1,876.00	LF	\$12.22	\$22,927.72
	in. (labor, equip, materials)						
7H-1V	Portland cement grout - 8	7.625"	1876	1,876.00	LF	\$12.22	\$22,927.72
/11-1 V	in. (labor, equip,	7.023	1870	1,870.00	Lr	\$12.22	\$22,921.12
	materials)						
7H-2I	Portland cement grout - 8	7.625"	1876	1,876.00	LF	\$12.22	\$22,927.72
	in. (labor, equip,			,			,,
	materials)						
12H-I	Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
	in. (labor, equip,						
	materials)						
12H-R	Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
	in. (labor, equip,						
10H-I	materials) Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
1011-1	in. (labor, equip,	7.023	1933	1,933.00	Lr	\$12.22	\$23,048.80
	materials)						
11H-I	Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
	in. (labor, equip,		1,755	1,500.00		41-1	425,610.00
	materials)						
10H-R	Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
	in. (labor, equip,						
	materials)				1		
11H-R	Portland cement grout - 8	7.625"	1935	1,935.00	LF	\$12.22	\$23,648.80
	in. (labor, equip,					1	
DS-4	materials)	4.5"	1076	1 076 00		00.04	¢15,000,72
D3-4	Portland cement grout - 4 in. (labor, equip,	4.5"	1876	1,876.00	LF	\$8.04	\$15,090.73
	materials)					-	
BG-5	Portland cement grout - 4	4.5"	1645	1,645.00	LF	\$8.04	\$13,232.54
-00	in. (labor, equip,	""	1545	1,045.00	"	Ψ0.07	Ψ13,232.37
	materials)						
DS-5	Portland cement grout - 4	4.5"	1902	1,902.00	LF	\$8.04	\$15,299.88

Borehole Worksheet Cont'd Task # TTT Page 3 of 3

	in. (labor, equip, materials)						
BG-6	Portland cement grout - 4 in. (labor, equip, materials)	4.5"	1639	1,639.00	LF	\$8.04	\$13,184.28
WSW-2	Portland cement grout - 8 in. (labor, equip, materials)	7.625"	1460	1,460.00	LF	\$12.22	\$17,843.54
DVPW-1(A)	Portland cement grout - 8 in. (labor, equip, materials)	7"	2350	2,350.00	LF	\$12.22	\$28,720.76
DVPW-(B)	Portland cement grout - 8 in. (labor, equip, materials)	7"	2350	2,350.00	LF	\$12.22	\$28,720.76
IOH-1V	Portland cement grout - 8 in. (labor, equip, materials)	7"	2010	2,010.00	LF	\$12.22	\$24,565.42
13H-I	Portland cement grout - 8 in. (labor, equip, materials)	8"	2335	2,335.00	LF	\$12.22	\$28,537.44
13H-R	Portland cement grout - 8 in. (labor, equip, materials)	8"	2310	2,310.00	LF	\$12.22	\$28,231.90
8H-I	Portland cement grout - 8 in. (labor, equip, materials)	7"	2110	2,110.00	LF	\$12.22	\$25,787.58
8H-R	Portland cement grout - 8 in. (labor, equip, materials)	7"	2110	2,110.00	LF	\$12.22	\$25,787.58
14H-I	Portland cement grout - 8 in. (labor, equip, materials)	7"	2110	2,110.00	LF	\$12.22	\$25,787.58
14H-R	Portland cement grout - 8 in. (labor, equip, materials)	7"	2110	2,110.00	LF	\$12.22	\$25,787.58
WSW-3	Portland cement grout - 8 in. (labor, equip, materials)	7"	1420	1,420.00	LF	\$12.22	\$17,354.67
WSW-4	Portland cement grout - 8 in. (labor, equip, materials)	7"	1431	1,431.00	LF	\$12.22	\$17,489.11
						\$	\$
						\$	\$

					T)	3	
Job Hour	·c·	CTJT		Total (Cost	CTotalCos	4
JUD HUUI	٥.	CIUI	_	IUIAI	Cust.	ClutalCus	L

Dozing method:

Job efficiency:

Visibility:

1.000

1.000

0.830

(GEN.)

(AVG.)

(1 SHIFT/DAY)

BULLDOZER WORK

Task description: Re-grade Process Ponds Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194 PROJECT IDENTIFICATION Task #: 03A State: Colorado None Abbreviation: Date: 12/1/2015 County: Rio Blanco SR-03-03a Filename: User: THM Agency or organization name: DRMS **HOURLY EQUIPMENT COST** Basic Machine: Cat D8T - 8SU Horsepower: 310 Blade Type: Semi-Universal Attachment: NA Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: **Utilization %** Ownership Cost/Hour: \$62.67 NA Operating Cost/Hour: 100 \$108.22 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 **MATERIAL QUANTITIES** Initial Volume: 52,723 Swell factor: 1.110 Loose volume: 58,523 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook **HOURLY PRODUCTION** Average push distance: 175 feet Unadjusted hourly production: 562.2 LCY/hr Materials consistency description: Compacted fill or embankment 0.9 0 % Average push gradient: Average site altitude: 6,600 feet Material weight: 2,800 lbs/LCY Weight description: Clay - Natural bed Job Condition Correction Factor Source Operator Skill: 0.750 (AVG.) Material consistency: 0.900 (CAT HB))

0.800	(FND-RF)
1.000	(CAT HB)
1.000	(CAT HB)
0.821	(CAT HB)
1.000	(PAT)
	1.000 1.000 0.821

Net correction:

0.3680

Adjusted unit production:

206.89 LCY/hr

Adjusted fleet production:

413.78 LCY/hr

JOB TIME AND COST

Fleet size:

2 Dozer(s)

Unit cost:

\$1.010/LCY

Total job time:

141.43 Hours

Total job cost:

\$59,092

Nahcolite Project		Permit Action:	SR-03	Permit/Job#:	M1983194
PROJECT IDENT	TIFICATION	<u>v</u>			
Task #: 04A		State: Colorado		Abbreviation:	None
Date: 12/1/20	15	County: Rio Blanco		Filename:	SR-03-04a
User: THM				_	
Agency or o	rganization na	me: DRMS	7		
HOURLY EQUIP	MENT COS	<u>T</u>			
Basic Machine:	Cat D8T - 8S	U	===		
Horsepower:	310				
Blade Type:	Semi-Univers	al			
and the same of th	NA		=		
Shift Basis:	1 per day				
Data Source:	(CRG)	2 2 2	—		
Cost Breakdown:		0			
			Utilization %		
Ownership Cost/Hor		\$62.67	NA NA		
Operating Cost/Hor		\$108.22	100		
Ripper op. Cost/Hor		\$0.00	0		
Operator Cost/Hor	ur:	\$38.01	NA		
Total unit Cost/Hour:	\$208.90				
MATERIAL QUA Initial Volume: _3	NTITIES 39,364				
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v	NTITIES 39,364 1.110 13,694 LCY olume:	Division of Reclamation	on, Mining & Safety		
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v	NTITIES 39,364 1.110 13,694 LCY olume:	Division of Reclamatic	on, Mining & Safety		
Swell factor:	9,364 1.110 43,694 LCY colume: well factor:		on, Mining & Safety		
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU	NTITIES 19,364 1.110 13,694 LCY 10 lume: 11 well factor: 12	Cat Handbook 50 feet	on, Mining & Safety		
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU	NTITIES 19,364 1.110 13,694 LCY 10 lume: 11 well factor: 12	Cat Handbook	on, Mining & Safety		
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro	9,364 1.110 13,694 LCY olume: well factor: JCTION e:	Cat Handbook 50 feet			
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly productions Materials consistency	NTITIES 19,364 1.110 13,694 LCY olume: well factor: UCTION e: 1 oduction: 6	Cat Handbook 50 feet 34.3 LCY/hr			
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s: HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradien	NTITIES 39,364 1.110 13,694 LCY rolume: well factor: UCTION e: 1 oduction: 6 description:	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er			
MATERIAL QUA Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s: HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradien Average site altitude:	NTITIES 39,364 1.110 13,694 LCY rolume: well factor: UCTION e: 1 oduction: 6 description: at: -5 %	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er			
Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradien Average site altitude: Material weight:	9,364 1.110 13,694 LCY olume: well factor: UCTION e:	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er			
Initial Volume: Swell factor: Loose volume: Source of estimated volumes of estimated volumes of estimated such control of the standard of t	9,364 1.110 13,694 LCY rolume: well factor: UCTION e: 1 oduction: 6 description: at: -5 % 6,600 fe 2,800 lb Clay - N tion Factor	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er et s/LCY	nbankment 0.9		
Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradien Average site altitude: Material weight: Weight description: Job Condition Correct Opera	NTITIES 19,364 1.110 13,694 LCY 10 10 10 10 10 10 10 1	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er et s/LCY fatural bed 0.750	nbankment 0.9 Source (AVG.)		
Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradient Average site altitude: Material weight: Weight description: Job Condition Correct Opera	NTITIES 19,364 1.110 13,694 LCY 10 10 10 10 10 10 10 1	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er et s/LCY latural bed 0.750 0.900	Source (AVG.) (CAT HB))		
Initial Volume: 3 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradient Average site altitude: Material weight: Weight description: Job Condition Correct Opera Material con Dozing	NTITIES 19,364 1.110 13,694 LCY 10 10 10 10 10 10 10 1	Cat Handbook 50 feet 34.3 LCY/hr Compacted fill or er et s/LCY fatural bed 0.750	nbankment 0.9 Source (AVG.)		

Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.821	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4103

260.25 LCY/hr Adjusted unit production:

Adjusted fleet production: 520.5 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.803/LCY

83.95 Hours

Total job time: _ Total job cost: _ \$35,073

Job efficiency:

0.830

(1 SHIFT/DAY)

BULLDOZER WORK

Task description: Re-grade Well Pads Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194 PROJECT IDENTIFICATION Task #: 05A Colorado State: Abbreviation: None Date: 12/1/2015 County: Rio Blanco Filename: SR-03-05a User: THM Agency or organization name: **DRMS HOURLY EQUIPMENT COST** Basic Machine: Cat D8T - 8SU Horsepower: 310 Semi-Universal Blade Type: Attachment: NA Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: 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 **MATERIAL QUANTITIES** Initial Volume: 87,700 Swell factor: 1.110 Loose volume: 97,347 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook **HOURLY PRODUCTION** Average push distance: 75 feet Unadjusted hourly production: 1,017.1 LCY/hr Partly consolidated stockpile 1.1 Materials consistency description: Average push gradient: 5 % Average site altitude: 6,600 feet Material weight: 2,800 lbs/LCY Weight description: Clay - Natural bed Job Condition Correction Factor Source Operator Skill: 0.750 (AVG.) Material consistency: 1.100 (CAT HB) Dozing method: 1.000 (GEN.) Visibility: 1.000 (AVG.)

Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.821	(CAT HB)
Blade type:	1.000	(PAT)

Net correction:

0.4061

Adjusted unit production:

413.04 LCY/hr

Adjusted fleet production:

826.08 LCY/hr

JOB TIME AND COST

Fleet size:

2 Dozer(s)

Unit cost:

\$0.506/LCY

Total job time:

117.84 Hours

Total job cost:

\$49,235

NT 1 114 TO 1			er 8 acre process pond ar		
Nahcolite Project		Permit Action	n: <u>SR-03</u>	Permit/Job#:	M1983194
PROJECT IDENTII	FICATION				
Task #: 06A	S	State: Colorad	lo	Abbreviation:	None
Date: 12/1/2015	Cor	unty: Rio Bla	nco	Filename:	SR-03-06a
User: THM				-	
Agency or orga	anization name:	DRMS			
HOURLY EQUIPM	ENT COST				
	it D8T - 8SU				
Horsepower: 31					
- 1	mi-Universal				
Attachment: NA					
	per day				
	RG)				
Cost Breakdown:			v		
			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:	000000				
	\$20X 90				
Total Fleet Cost/Hour: MATERIAL QUAN					
Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,4: Swell factor: 1.00	\$417.81 FITIES 53 00				
Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,4: Swell factor: 1.00	\$417.81 <u>FITIES</u> 53				
MATERIAL QUAN Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4:	\$417.81 FITIES 53 00 53 LCY	vision of Reclam	nation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volume	\$417.81 FITTES 53 00 53 LCY ume: Div	vision of Reclam	ation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volume	\$417.81 FITTES 53 00 53 LCY ume: Div		nation, Mining & Safety		
Initial Volume: Swell factor: Loose volume: Source of estimated volumes of estimated swell swell swell swell swell source of estimated swell sw	\$417.81 FITIES 53 00 53 LCY Ime: Div Cat		nation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factors of estimated swell four PRODUC	\$417.81 FITIES 53 00 53 LCY Ime: Div Cat	Handbook	nation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volusource of estimated swell factor: 6,4: Average push distance:	\$417.81 FITIES 53 00 53 LCY Ime: Div Cat TION 150 for	: Handbook eet	ation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volusource of estimated swell factor: 6,4: Average push distance:	\$417.81 FITIES 53 00 53 LCY Ime: Div Cat TION 150 for	Handbook	nation, Mining & Safety		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factor: 6,4: Source of estima	\$417.81 FITTES 53 00 53 LCY Ime: Div Cat TION 150 for 634.3	: Handbook eet			
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factors of estimated swell factors of estimated swell four PRODUC for a factor of the factor of estimated swell four PRODUC for a factor of estimated swell four PRODUC for a factor of the factor of estimated for a factor of the fact	\$417.81 FITTES 53 00 53 LCY Ime: Div Il factor: Cat TION 150 fa 634.3 escription: L	eet LCY/hr			
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factor: 6,4: MATERIAL QUANT Initial Volume: 6,4: 1.00 6,4: Source of estimated volumes of estimated swell factor: 1.00 Materials consistency destinated swell factor of estimated swell factor of esti	\$417.81 FITTES 53 00 53 LCY Ime: Div Cat TION 150 for 634.3	eet LCY/hr			
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volusource of estimated swe HOURLY PRODUC Average push distance: Unadjusted hourly produ Materials consistency de Average push gradient: Average site altitude:	\$417.81 FITTES 53 00 53 LCY Ime: Div Cat TION 150 fe action: 634.3	eet LCY/hr Loose stockpile 1			
Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,4: Swell factor: 1.00	\$417.81 FITIES 53 00 53 LCY Ime: Div Il factor: Cat TION action: 450 fc 634.3 escription: L 0 % 6,600 feet	eet LCY/hr Loose stockpile 1			
Initial Volume: Swell factor: Loose volume: Source of estimated volumes FOURLY PRODUC Average push distance: Unadjusted hourly product Materials consistency de Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	\$417.81 FITIES 53 00 53 LCY Ime: Div Il factor: Cat TION action: 150 fa 634.3 escription: I 0 % 6,600 feet 1,600 lbs/LC Top Soil	eet LCY/hr Loose stockpile 1	1.2 Source		
Initial Volume: Swell factor: Loose volume: Source of estimated volumes of estimated swell factors of estimated swell factors. HOURLY PRODUCE Average push distance: Unadjusted hourly produce of estimated swell factors of estimated swell factors. Materials consistency destances of estimated factors. Weight description: Job Condition Correction of Correction of the product of	\$417.81 FITTES 53 00 53 LCY Ime: Div Il factor: Cat TION 150 faction: 634.3 Escription: L 0 % 6,600 feet 1,600 lbs/LC Top Soil Factor Skill:	eet LCY/hr Loose stockpile 1	Source (AVG.)		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factor: 1.00 Source of estimated swell factor: 6,4: Source of estimated swell factor: 1.00 Average push distance: 1.00 Unadjusted hourly product factorials consistency destimated swell factorials consistency destinated factorials weight: 1.00 Weight description: 1.00 Undertal factorials fa	\$417.81 FITTES 53 50 53 LCY Ime: Div Il factor: Cat TION 150 faction: 634.3 Escription: I 0 % 6,600 feet 1,600 lbs/LC Top Soil Factor Skill: tency:	eet LCY/hr Loose stockpile 1 CY 0.750 1.200	Source (AVG.) (CAT HB)		
Initial Volume: 6,4: Swell factor: 1.00 Loose volume: 6,4: Source of estimated volumes of estimated swell factor: 1.00 Source of estimated swell factor: 6,4: Source of estimated swell factor: 1.00 Source of estimated swell factor: 1.00 Average push distance: 1.00 Unadjusted hourly product for factor fa	\$417.81 FITTES 53 50 53 LCY Ime: Div Il factor: Cat TION 150 faction: 634.3 Escription: I 0 % 6,600 feet 1,600 lbs/LC Top Soil Factor Skill: tency:	eet LCY/hr Loose stockpile 1	Source (AVG.)		

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: 545.05 LCY/hr

Adjusted fleet production: 1090.1 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s) Unit cost: \$0.383/LCY

Total job time: 5.92 Hours
Total job cost: \$2,473

Task description: Distribute 6" topsoil over 16 acre plant/process area Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194 PROJECT IDENTIFICATION Task #: Colorado 07A State: Abbreviation: None Date: 12/1/2015 Rio Blanco Filename: SR-03-07a County: User: **THM** Agency or organization name: **DRMS HOURLY EQUIPMENT COST** Basic Machine: Cat D8T - 8SU Horsepower: 310 Semi-Universal Blade Type: Attachment: NA Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: **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 **MATERIAL QUANTITIES** Initial Volume: 12,903 Swell factor: 1.000 Loose volume: 12,903 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook **HOURLY PRODUCTION** Average push distance: 150 feet Unadjusted hourly production: 634.3 LCY/hr Materials consistency description: Loose stockpile 1.2 Average push gradient: 0 % Average site altitude: 6,600 feet Material weight: 1,600 lbs/LCY Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)

Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 545.05 LCY/hr

Adjusted fleet production: 1090.1 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: \$0.383/LCY

Total job time: 11.84 Hours

Total job cost: \$4,945

: Nahcolite	Project		Permit Action	on: SR-03		Permit/Job#:	M1983194
PROJECT	'IDENTIF	ICATION	Ī				
Task #:	08A		State: Colora	ado		Abbreviation:	None
Date:	12/1/2015		County: Rio Bl	lanco		Filename:	SR-03-08a
User:	THM						
Age	ency or organ	nization na	me: DRMS				
HOURLY	<u>EQUIPME</u>	NT COS	<u>r</u>				
Basic Mad	chine: Cat	D8T - 8SU	J				
Horsep							
Blade		ni-Universa	al				
Attach							
Shift I		er day	ES TECHNOMICS OF				
Data So	ource: (CF	RG)					
Cost Breakdo	own:						
	_			<u>Utili</u>	zation %		
	Cost/Hour:		\$62.67		NA		
	Cost/Hour:		\$108.22		100		
	Cost/Hour:	in the second	\$0.00		0		
Operator	Cost/Hour:		\$38.01		NA		
			•				
•		P209 00		1		-	
Total unit Co Total Fleet C	ost/Hour: Cost/Hour:	\$208.90 \$417.81				t,	
Total unit Co	ost/Hour: Cost/Hour: AL QUANT ume:31,80	\$417.81 SITIES 01				T)	
Total unit Co Total Fleet C	ost/Hour: Cost/Hour: L QUANT ume: 31,80 actor: 1.000	\$417.81 SITIES 01					
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu	ost/Hour: Cost/Hour: AL QUANT ume: 31,80 ctor: 1.000 ume: 31,80	\$417.81 TITIES 01 00 01 LCY					
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est	ost/Hour: Cost/Hour: L QUANT ume: 31,80 ctor: 1.000 ume: 31,80 timated volur	\$417.81 TTIES 01 00 01 LCY ne:	Division of Recla			T)	
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est	ost/Hour: Cost/Hour: AL QUANT ume: 31,80 ctor: 1.000 ume: 31,80	\$417.81 TTIES 01 00 01 LCY ne:					
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est	ost/Hour: Cost/Hour: AL QUANT ume: 31,80 ctor: 1.000 ume: 31,80 timated voluntimated swell	\$417.81 TITIES 01 0 01 LCY ne: factor:	Division of Recla				
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est	ost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000 31,80 timated volur timated swell PRODUCT	\$417.81 TITIES 01 0 01 LCY ne: factor:	Division of Reclar Cat Handbook				
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average pusi	ost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000 31,80 timated volur timated swell PRODUCT h distance:	\$417.81 TITIES 01 0 01 LCY ne: factor:	Division of Reclar Cat Handbook				
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est	ost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000 31,80 timated volur timated swell PRODUCT h distance:	\$417.81 TITIES 01 0 01 LCY ne: factor:	Division of Reclar Cat Handbook				
Total unit Co Total Fleet Co MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY	ost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000	\$417.81 TITIES 01 0	Division of Reclar Cat Handbook	mation, Mining &			
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average push Unadjusted h	ost/Hour: Cost/Hour: L QUANT ume: 31,80	\$417.81 TITIES 01 0	Division of Reclar Cat Handbook 00 feet 52.6 LCY/hr Loose stockpile	mation, Mining &			
Total unit Co Total Fleet Co MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average push Unadjusted h	ost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000 31,80 timated volur timated swell PRODUCT h distance: hourly product nsistency des h gradient: altitude:	\$417.81 TITES 01 0 01 LCY ne: factor: factor: 10 ction: 85	Division of Reclar Cat Handbook 00 feet 52.6 LCY/hr Loose stockpile	mation, Mining &			
Total unit Co Total Fleet Co MATERIA Initial Volu Swell far Loose volu Source of est Source of est HOURLY Average push Unadjusted h	ost/Hour: Cost/Hour: L QUANT ume: 31,80 ctor: 1.000 ume: 31,80 timated voluntimated swell PRODUCT h distance: hourly productionsistency des ch gradient: altitude: ght:	\$417.81 TTIES 01 0 01 LCY ne: factor: factor: CTION ction: 85 cription: 0 % 6,600 fee	Division of Reclar Cat Handbook 00 feet 62.6 LCY/hr Loose stockpile	mation, Mining &			
Total unit Co Total Fleet C MATERIA Initial Volu Swell fa Loose volu Source of est Source of est Unadjusted h Materials con Average push Average push Average site Material wei	ost/Hour: Cost/Hour: Cost/Hour: L QUANT ume: 31,80 1.000 31,80 timated volur timated swell PRODUCT h distance: hourly product nsistency des h gradient: altitude: ght: ription: on Correction	\$417.81 TTIES 01 0 01 LCY ne: factor: factor: TION ction: 85 cription: 0 % 6,600 fee 2,100 lbs Earth - L Factor	Division of Reclar Cat Handbook 00 feet 62.6 LCY/hr Loose stockpile et	mation, Mining &	& Safety Source		
Total unit Co Total Fleet Co MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average push Unadjusted h Materials con Average push Average site Material weight description	ost/Hour: Cost/Hour: Cost/Hour: AL QUANT ume: 31,80	\$417.81 TITIES 01 0 01 LCY ne: factor: factor: FION ction:	Division of Reclar Cat Handbook 00 feet 52.6 LCY/hr Loose stockpile et 5/LCY .oam 0.750	mation, Mining &	Source (AVG.)		
Total unit Co Total Fleet Co MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average push Unadjusted h Materials con Average push Average site Material weight description	ost/Hour: Cost/Hour: L QUANT ume: 31,80 ctor: 1.000 ume: 31,80 timated voluntimated swell PRODUCT h distance: hourly product nsistency des h gradient: altitude: ght: con Correction Operator Sterial consiste	\$417.81 TITES 01 0 01 LCY ne: factor: factor: FION ction:	Division of Reclar Cat Handbook 00 feet 52.6 LCY/hr Loose stockpile et 5/LCY .oam 0.750 1.200	mation, Mining &	Source (AVG.) (CAT HB)		
Total unit Co Total Fleet Co MATERIA Initial Volu Swell fa Loose volu Source of est Source of est HOURLY Average push Unadjusted h Materials con Average push Average site Material wei Weight descri	ost/Hour: Cost/Hour: Cost/Hour: AL QUANT ume: 31,80	\$417.81 TITES 01 0 01 LCY ne: factor: factor: FION ction:	Division of Reclar Cat Handbook 00 feet 52.6 LCY/hr Loose stockpile et 5/LCY .oam 0.750	mation, Mining &	Source (AVG.)		

Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6544

Adjusted unit production: 55

557.94 LCY/hr

Adjusted fleet production:

1115.88 LCY/hr

JOB TIME AND COST

Fleet size:

2 Dozer(s)

Unit cost:

\$0.374/LCY

Total job time:

28.50 Hours

Total job cost:

\$11,907

BULLDOZER RIPPING WORK

	Task description	: Rip com	pacted areas				
Site	: Nahcolite Pro	ject	Permit Action:	SR-03	Permit/Jo	ob#: <u>M198</u>	3194
	PROJECT ID	ENTIFICATION					
	Task #: 09.	Δ	State: Colorado		Abbreviatio	n: None	
			County: Rio Blanco	1	Filenam		09a
		łМ				510 05	<u> </u>
	Agency	or organization nar	ne: DRMS				
	HOURLY EQ	UIPMENT COST	<u>r</u>				
			T - 8SU	_	Horsepower:	310	
	Ripper Att	tachment: 3-Shan	k Ripper	_	Shift Basis:	1 per day	
					Data Source:	(CRG)	
	Cost Breakdown	<u>.</u>					
					Utilization %		
		Ownership Cost/l			NA NA		
	D.i.e.	Operating Cost/l per Operating Cost/l			100		
	Kip	Operator Cost/l			100 NA		
		Total Unit Cost/l			NA		
		Total Fleet Cost/l					
	MATERIAL (Sele	cted estimating n	nethod: Area		
	Alternate Method	<u>ds:</u>					
Seismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	27.70	acres	Rip Depth (ft):	2.00	Volume: 89,379		BCY or CCY
		Source of estimate	ed quantity: Staff Es	stimate			
	HOURLY PR	ODUCTION					
	Seismic:						
	Beisime.	Seis	mic Velocity:	NA	feet/second		
	A ====:			•			
	Area:	Average D	ipping Depth:	2.56	mnh		
		_	ipping Depthi	7.08	mph degrees		
			pping Width:	300.00	feet		
		•	Dozer Speed:	88.00	feet		
			neuver Time:	0.25	feet		
		_	per unit area:	0.800	acres/hour		
	Job Condition Co	orrection Factors					
	Ur	nadjusted Hourly Un	it Production:	0.800	Acres/hr		
			Site Altitude:	6,600	feet		
			Altitude Adj:	1.00	(CAT HB)		
		Je	ob Efficiency:	0.83	(1 shift/day)		
		N	et Correction:	0.83	multiplier		
		Adjusted Ho	urly Unit Production:	0.66	Acres/hr		
		_	rly Fleet Production:	1.33	Acres/hr		
	JOB TIME A				_		
	Fleet size:		frader(s)	Total job time:	: 20.87	F	lours
	Unit cost:		er acre	Total job cost:			
		1			·		

Task description:	Distri	bute 6" topsoil over 27	1.7 acres of decompacted	larea	
Nahcolite Proje	et	Permit Action:	SR-03	Permit/Job#:	M1983194
PROJECT IDEN	NTIFICATIO	<u>DN</u>			
Task #: 10A		State: Colorado		Abbreviation:	None
Date: 12/1/	2015	County: Rio Blanc	0	Filename:	SR-03-10A
User: THM		(
Agency or	r organization r	name: DRMS			
HOURLY EQU	PMENT CO	<u>ST</u>			
Basic Machine:	Cat D8T - 8	SU			
Horsepower:	310		_		
Blade Type:	Semi-Unive	rsal			
Attachment:	NA				
Shift Basis:	1 per day				
Data Source:	(CRG)		_		
Cost Breakdown:			T		
	_		Utilization %		
Ownership Cost/I		\$62.67	NA 100		
Operating Cost/F		\$108.22	100	-	
Ripper op. Cost/F		\$0.00	0	19	
Operator Cost/F	iour:	\$38.01	NA	-	
Total unit Cost/Hou					
Total Fleet Cost/Ho	our: \$417.8 JANTITIES				
Total Fleet Cost/Ho	Dur: \$417.8 JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor:		ion, Mining & Safety		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor: DUCTION	Division of Reclamat	ion, Mining & Safety		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	DUCTION S417.8 22,297 1.000 22,297 LCY 1 volume: 1 swell factor:	Division of Reclamat Cat Handbook	ion, Mining & Safety		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista	JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor: DUCTION nce: production:	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr			
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROJ Average push dista Unadjusted hourly	DUCTION nce: production: cy description: 0 %	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2			
MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consisten Average push grad	JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor: DUCTION nce: production: ccy description: de: 6,600	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2			
MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consisten Average push gradia Average site altitude	DUCTION nce: production: 1,600	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2			
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consisten Average push gradia Average site altitud Material weight: Weight description Job Condition Corr	S417.8 S	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2 feet lbs/LCY	Source		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consistent Average push gradi Average site altitud Material weight: Weight description Job Condition Corr	JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor: DUCTION nce: production: cy description: de: 6,600 1,600 Top Sorection Factor erator Skill:	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2 feet lbs/LCY bil 0.750	Source (AVG.)		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consisten Average push gradi Average site altitud Material weight: Weight description Job Condition Corr Ope Material of	DUCTION nce: production: ient: 0 % de: 1,600 Top Section Factor erator Skill: consistency:	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2 feet lbs/LCY pil 0.750 1.200	Source (AVG.) (CAT HB)		
MATERIAL OU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push dista Unadjusted hourly Materials consisten Average push gradi Average site altitud Material weight: Weight description Job Condition Corr Ope Material of	JANTITIES 22,297 1.000 22,297 LCY d volume: d swell factor: DUCTION nce: production: cy description: de: 6,600 1,600 Top Sorection Factor erator Skill:	Division of Reclamat Cat Handbook 100 feet 852.6 LCY/hr Loose stockpile 1.2 feet lbs/LCY bil 0.750	Source (AVG.)		

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:

732.64 LCY/hr

Adjusted fleet production:

1465.28 LCY/hr

JOB TIME AND COST

Fleet size:

2 Dozer(s)

Unit cost:

\$0.285/LCY

Total job time: 15.22 Hours

Total job cost:

\$6,358

REVEGETATION WORK

Task description: Revegetate 87.76 acres

Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #:11AState:ColoradoAbbreviation:NoneDate:12/1/2015County:Rio BlancoFilename:SR-03-11a

User: THM

Agency or organization name: <u>DRMS</u>

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$98.01
Weed control spraying (MEANS 31 31 16.13 3100)	\$145.20
Total Tillin	ig Cost/Acre \$243.21

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.28
Crested Wheatgrass - Ephraim	4.00	18.37	\$8.92
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$17.88
Russian Wildrye - Bozoisky	1.50	6.03	\$9.36
Hard Fescue - Discovery	1.00	12.97	\$2.09
Pubescent Wheatgrass - Luna	1.50	3.10	\$3.36
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.28
Tall Wheatgrass - Jose	1.80	3.26	\$4.05
Thickspike Wheatgrass - Critana	4.30	15.20	\$22.23

Yarrow, Western	0.20 otals Seed Mix 18.00	12.16 86.97	\$6.13
Western Wheatgrass - Barton	1.50	3.79	\$5.52
Sweetvetch, Utah or Northern	0.10	0.05	\$4.09

Application

Description		Cost /Acre
Drill seeding (MEANS 32 92 19.13 0020)		\$404.00
	Trade la la la cara	
	Total Seed Application Cost/Acre	\$404.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$1.23	\$2.46
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$265.00	\$530.00
Total Mulch Materials Cost/Acre				\$532.46

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$65.89
Power mulcher (MEANS 32 91 13.16 0250)		\$86.68
	Total Mulch Application Cost/Acre	\$152.57

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		То	tals Nursery Stoc	k Cost / Acre	\$0.00

JOB TIME AND COST

No. of Acres: 93

Cost /Acre: \$1,419.42 Cost /Acre*: \$1,419.42 Estimated Failure Rate: 30%

*Selected Replanting Work Items: TILLING, SEEDING, MULCHING

Initial Job Cost: \$132,006.06
Reseeding Job Cost: \$39,601.82

Total Job Cost: \$171,608

Job Hours: 87.76

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilization

Site: Nahcolite Project Permit Action: SR-03 Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 12A State: Colorado Abbreviation: None

Date: 12/1/2015 County: Rio Blanco Filename: SR-03-12a
User: THM

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,

400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT

TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

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

NON ROADABLE EQUIPMENT:

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/uni	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
•	(TONS)	117	t		fleet		
Cat D8T - 8SU	53.08	\$65.28	\$125.45	2	\$381.46	\$250.90	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$39.59	\$88.67	1	\$128.26	\$88.67	\$250.00
Power Mulcher (Reinco M90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00

Subtotals: \$605.42 \$428.24 \$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, 3/4 T.	\$14.59	2	\$29.18	\$29.18

Subtotals: \$29.18 \$29.18

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

RIFLE

60.00

miles

40.00

mph

Total Non-Roadable Mob/Demob Cost *

'* two round trips with haul rig:

Total Roadable Mob/Demob Cost **

** one round trip, no haul rig:

\$6,311.82 \$87.54

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.50	1.50
Return Time (Hours):	1.50	1.50
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	4.00	3.00

JOB TIME AND COST

Total job cost: \$6,399 Hours