

Zuber - DNR, Rob <rob.zuber@state.co.us>

Bennett's Gravel, TR5, Cost Estimate

1 message

 Zuber - DNR, Rob <rob.zuber@state.co.us>
 Fri, Feb 18, 2022 at 11:35 AM

 To: Jim Doody
 Jim.Doody@peakreadymix.com>, Ben Langenfeld <benl@lewicki.biz>, Michael Cunningham - DNR

 <michaela.cunningham@state.co.us>

Hello, Jim and Ben

Please see that attached letter and Reclamation Cost Estimate. Since the inspection last year, the costs decreased considerably.

Rob

Rob Zuber, P.E. Environmental Protection Specialist Active Mines Regulatory Program



I am working remotely and can be reached by cell at 720.601.2276.

Physical Address: 1313 Sherman Street, Room 215 Denver, CO 80203 Mailing Address: Division of Reclamation, Mining and Safety, Room 215 1001 East 62nd Avenue Denver, CO 80216 rob.zuber@state.co.us | http://drms.colorado.gov

Bennetts_Gravel_TR5_RCE_letter_with_Enclosure.pdf 2628K



February 18, 2022

Jim Doody and Jon Mueller Elam Construction, Inc. 556 Struthers Ave. Grand Junction, CO 81501

Re: Bennett's Gravel Pit, Permit M-1979-166, TR-05, Reclamation Cost Estimate

Dear Sirs:

The Division has reviewed your Technical Revision No. 5 (TR-05) application from Lewicki & Associates and the responses to Division adequacy items (letters from Lewicki and Associates dated 31 January 2022, 9 February 2022, and 11 February 2022). All adequacy items have been addressed.

Based on the TR-05 submittal (including DRMS adequacy items and responses from Lewicki & Associates), the reclamation cost estimate for the Bennett's Gravel Pit has been revised. The following is a summary of the parameters that were used to develop this estimate.

Dewatering the Pits

- The area to dewater is 9.5 acres. This is based on Exhibit L.
- The depth of water is 25 feet. This is based on Exhibit L.
- Based on the area and depth, the volume of water to be pumped is 237.5 acre-feet.

Hauling Fill Material and Backfilling/Grading

- The average haul distance from the soil storage pile to the Phase 1 pit is 600 feet. This is based on Exhibit L.
- The length of highwall used in the estimate is 2,000 feet. This is based on Exhibit E text.
- The cross-sectional area for backfilling the pit slopes is 338 square feet. This is based on Map C-2.
- Based on the length and area above, the volume is 25,037 cubic yards.

Hauling and Spreading Gravel on Industrial Area

- The average haul distance from the pit is 600 feet. This is based on the assumption that the distance is the same as for hauling fill material.
- The area to cover is 9.9 acres. This is based on Exhibit L.
- The depth of gravel is 5 inches. This is based on Exhibit L.
- Based on the area and depth, the volume of gravel is 6,655 cubic yards.

Hauling and Spreading Topsoil

- The average haul distance from the topsoil storage pile to the Phase 1 pit is 600 feet. This is based on Exhibit L.
- The depth of topsoil will be 6 inches. This is based on Exhibit E.
- The area that requires topsoil is 10.1 acres. This is based on Exhibit E.



• Based on the area and depth above, the volume is 8,147 cubic yards.

Revegetation

• The area that requires seeding is 10.1 acres. This is based on Exhibit E. The Division has estimated that one acre of this is for the pond slopes, and the rest is for flat areas above the slopes.

The total amount is \$145,798. The entire reclamation cost estimate from the DRMS cost estimating software (CIRCES) is attached.

If you have any comments or questions, please contact me at <u>Rob.Zuber@state.co.us</u> or by calling (720) 601-2276.

Thank you,

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Robert D. Zuber, P.E. Environmental Protection Specialist

Enclosure

Cc: Michael Cunningham, DRMS; Ben Langenfeld, Lewicki & Associates

COST SUMMARY WORK

Task description:		Cost Summary					
Site:	e: Bennett's Gravel Pit		Pe	Permit Action: T		Permit/Jo	b#: M1979166
<u>P</u>]	ROJECT	IDENTIFIC	CATION				
	Task #:	01	State:	Colorado		Abbreviation:	None
	Date:	2/18/2022	County:	Delta		Filename:	M166-01
	User:	RDZ					
		ency or organi	zation name: DI	RMS			

TASK LIST (DIRECT COSTS)

Task		Form	Fleet	Task	
1 dolx	Description	Used	Size	Hours	Cost
01A	Dewater Pit before Slope Reclamation	PUMPING	1	393.95	\$40,427
02A	Haul backfill material to pit slopes	TRUCK1	1	56.88	\$21,081
02B	Push Material to Backfill Slopes	DOZER	2	14.74	\$6,970
03A	Excavate and transport gravel from pit to	TRUCK1	1	19.39	\$7,185
	processing area				
03B	Spread gravel over process / stockpile area	DOZER	1	21.58	\$5,101
05A	Haul topsoil material	TRUCK1	1	26.44	\$9,800
05B	Spread topsoil over upper pond slope and flat areas	DOZER	1	6.63	\$1,566
06A	Revegetate flat surfaces	REVEGE	1	8.00	\$5,120
06B	Revegetate pit slopes above water	REVEGE	1	4.00	\$594
08A	Mobilization	MOBILIZE	1	2.40	\$4,952
		<u>SUBTO</u>	TALS:	554.01	\$102,796

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$2,076
Performance bond:	1.05	Total =	\$1,079
Job superintendent:	300.00	Total =	\$21,609
Profit:	10.00	Total =	\$10,280
		TOTAL O & P =	\$35,044
		CONTRACT AMOUNT (direct + O & P) = $($	\$137,840

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): Engineering work and/or contract/bid preparation: Reclamation management and/or administration:	\$500 0.00 5.41	Total = Total =	\$500 \$0 \$7,457
CONTINGENCY:	0.00	 Total =	\$0
	TOTAL	NDIRECT COST =	\$43,002
TOTAL BO	ND AMOUNT (direct + indirect) =	\$145,798

Trada la contra			<u>PUMPIN</u>	<u>U WORK</u>			
Task description:	Dewa	ter Pit befor	e Slope Re	clamation			
: Bennett's Gravel Pit		Pern	nit Action:	TR5		Permit/Job#:	M1979166
PROJECT IDENTIF	<u>ICATIO</u>	<u>ON</u>					
Task #: 01A		State:	Colorado		I	Abbreviation:	None
Date: 2/18/2022		County:	Delta			Filename:	M166-01A
User: RDZ							
Agency or orga			MS				
HOURLY EQUIPM	<u>ENT CC</u>	<u>DST</u>					
	Descri	1				Quantity	
Make and Model:		fugal pump -				2	
Attachment 1:		n hose - 6 in.				1	
Attachment 2: Labor Unit 1:		arge hose - 6 i operator	In. D., 25 II			1	
	1	operator				1	
Horsepower:	70						
	per day 1.95						
Weight:	I.95 S Tons)						
Cost Breakdown:	5 10115)						
Cost Bleakdown:				Utilization %			
Ownership Cost/		\$37.8		NA			
Operating Cost/		\$37.0		100	_		
Operator Cost/		\$27.6		NA	_		
Total Unit Cost/	Hour:	\$102.6	52				
Total Fleet Cost	t/Hour:	\$102.0	62				
PUMPING QUANTI	TIES						
Initial Pond Vol		237.	50		Con	version factor:	325850.5800
Final Pond Vol		77,389,5		gallons	Coll	version factor.	525850.5800
FIDAL PODD VO			12.70	Sanono			
	urface	<u> </u>		_ •	Unit	inflow rate in	
Total Pond Inflow Su	urface Area:	15,6	00	_ Sq. ft.	Unit	t inflow rate in gph/sq. ft.:	0.3516
Total Pond Inflow Su Total Pond Inflow Vo	Area:	15,6		Sq. ft.	Unit		0.3516
Total Pond Inflow Su	Area:	, ,		Sq. ft. gallons	Unit		0.3516
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TRUCK/LOADER TEAM WORK

Task description:	Haul bac	kfill material to	pit slopes			
Site: Bennett's Grave	Pit	Permit Action	on: TR5		Permit/Job#: <u>M</u>	1979166
PROJECT IDEN	TIFICATION					
Task #: 02A		State: Colora	ado	Ab	breviation: No	ne
Date: 2/18/2	022 C	County: Delta			Filename: M1	66-02A
User: RDZ						
Agency or	organization nam	e: DRMS				
HOURLY EQUI	PMENT COST			Shift bas	is: <u>1 per day</u>	
			Equipment Descri			
Т	ruck Loader Tean		eric 12-18 cy, 6x4 T 966H high lift	4		
Supp	ort Equipment -Lo		•			
	-Du	mp Area: NA				
Road Ma	aintenance – Moto					
	-wat	er Truck: NA				
Cost Breakdown:	Truck/Load	der Team	Support 1	Equipment	Maintenan	ce Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$27.72	\$59.72	NA	NA	NA	NA
Operating cost/hour:	\$47.23	\$55.20	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$32.54	\$40.71	NA	NA	NA	NA
Unit Subtotals:	\$107.49	\$155.63	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work:	\$370.61	Support:	\$0.00	Maint:	\$0.00
Total work team cos	t/hour: <u>\$370.61</u>					
MATERIAL QU	ANTITIES					
Initial volume:		CCY		factor: <u>1.000</u>		
Loose volume:	25,037					
	rce of estimated		bit E and Map C-2	2		
Source	of estimated swel Material Purcha		Handbook			
		al Cost: $\frac{$0.00}{$0.00}$				
HOURLY PRO	DUCTION					
Truck Capacity:						
Truck Payload (weig						
Material w Descri	-	Dry, loose	Pounds/LCY			
Rated Pa		71y, 1005C	Pounds			
Payload Car			LCY			

Struck Volume:						
	12.00	LCY				
Heaped Volume:		LCY				
Average Volume:	15.00	LCY				
Adjusted Volume:	18.00	LCY				
	Truck Volume	Based on Number	of Loader Passes:	17.50	LCY	
Loading Tool Capacity					T A	
Rated Capacity:	5.000	LCY (heaped)		ket Size Class: <u>N</u>	A	
Bucket Fill Factor:	0.875		well blasted (80	- 95%) 0 875		
Adjusted Capacity:	4.375	LCY	wein blusted (60			
Job Condition Corrections:			Site Altitude (ft.):	1030 feet		
Job Condition Corrections:	Truck	Loader	Site Altitude (II.). <u>4</u> Source			
Altitude Adj:	1.000	1.000	(CAT HB			
Job Efficiency:	0.830	0.830	(CAT HB	,		
				.,		
Net Correction:	0.830	0.830				
Loading Tool Cycle Time:	Number	of Loading Tool P	Passes Required to	Fill Truck:	4	passes
Excavators and Front Shovel		6	1			1
	T 1 O 11.1	D				
Machine Cycle Time va Selected Value v						
Selected Value v	vithin this Basi	c Rating: NA				
Selected Value v Track Loaders –	vithin this Basi	c Rating: NA				
Selected Value v Track Loaders – Cycle Time Elements (min.):	vithin this Basi Material Descri	c Rating: NA		0.100		
Selected Value v Track Loaders –	vithin this Basi Material Descri	c Rating: NA		 Dump:0.100)	
Selected Value v Track Loaders – Cycle Time Elements (min.):	vithin this Basi Material Descri M	c Rating: NA iption: Ianeuver: NA				nutes
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u>	vithin this Basi Material Descri M – Unadjusted Ba	c Rating: <u>NA</u> iption: Ianeuver: <u>NA</u> sic Loader Cycle T		naneuver):0 Factor (min.)		nutes
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Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basi Material Descri – M Unadjusted Ba No adjustmen No adjustmen Common owr Constant oper	c Rating: NA iption: Ianeuver: NA usic Loader Cycle T at - factor not applicant int - factor not appli	cable 0.00 cable 0.00 nd loaders -0.04 ime Adjustment:	naneuver): 0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes	inutes
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basi Material Descri – M Unadjusted Ba No adjustmen No adjustmen Common owr Constant oper	c Rating: NA iption: Ianeuver: NA usic Loader Cycle T at - factor not applicant int - factor not appli	cable 0.00 cable 0.00 ad loaders -0.04 ime Adjustment: ider Cycle Time:	maneuver): 0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 -0.040 0.040 0.040 0.460	.500 minutes Source (Cat HB) (Cat HB) (Cat HB)	inutes
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	vithin this Basi Material Descri M Unadjusted Ba Unadjustmen No adjustmen No adjustmen Common owr Constant oper Small target 0	c Rating: NA iption: Ianeuver: NA usic Loader Cycle T at - factor not applicant int - factor not appli	cable 0.00 cable 0.00 ad loaders -0.04 ime Adjustment: der Cycle Time: Time per Truck:	maneuver): 0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 -0.040 0.040 0.040 0.460	.500 minutes Source (Cat HB) (Cat HB) (Cat HB)	
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	vithin this Basi Material Descri M Unadjusted Ba No adjustmen No adjustmen Common owr Constant oper Small target 0	c Rating: NA iption: Ianeuver: NA asic Loader Cycle T at - factor not applicant t - factor not applicant int - factor not applica	cable 0.00 cable 0.00 nd loaders -0.04 ime Adjustment: ider Cycle Time: Time per Truck: Adjusted	maneu ver): 0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 0.040 0.460 1.480	0.500 mi Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	 Minute
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time Truck Load Time	vithin this Basi Material Descri M Unadjusted Ba No adjustmen No adjustmen Common owr Constant oper Small target 0 Small target 0 : 0.50	c Rating: NA iption: Ianeuver: NA usic Loader Cycle T at - factor not applic to factor not applic hership of trucks an ration -0.04 0.04 Net Cycle Ti Adjusted Loa Net Load Minutes	cable 0.00 cable 0.00 id loaders -0.04 ime Adjustment: ider Cycle Time: Time per Truck: Adjusted Adjusted	naneuver):0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 0.040 0.460 1.480 for site altitude:	0.500 mi Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes 0.500	Inutes In
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders – Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time	vithin this Basi Material Descri Unadjusted Ba No adjustmen No adjustmen Common owr Constant oper Small target 0 5 0.50 1.480 0.90	c Rating: NA iption: Ianeuver: NA asic Loader Cycle T at - factor not applic to ration -0.04 0.04 Net Cycle Ti Adjusted Loa Net Load Minutes Minutes Minutes Minutes	cable 0.00 cable 0.00 id loaders -0.04 ime Adjustment: ider Cycle Time: Time per Truck: Adjusted Adjusted Adjusted	maneuver): 0 Factor (min.) 0.000 0.000 -0.040 -0.040 0.040 0.040 1.480 for site altitude: for site altitude:	2.500 mi Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) 0.500 1.480 0.900	 Minutes

Haul Route:

Se	eg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	0	(Ft)		(%)	(%)	(fpm)	Time	
		. ,					(min)	
1		300.00	0.00	3.00	3.00	2824	0.268	
2		300.00	0.00	3.00	3.00	2824	0.106	
					Haul Time:	0.374	minutes	
	eturn Rou							
Se	eg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)		(%)	(%)	(fpm)	Time	
1		200.00	0.00	2.00	2.00	2074	(min)	
1		300.00	0.00	3.00	3.00	2874	0.140	
2		300.00	0.00	3.00	3.00	2874	0.104	
					Return Time:	0.244	minut	es
				Total Tru	ck Cycle Time:	3.498	minut	es
L oad	ing Tool	unit						
Load	Produc) LCY/Hour		Adjusted for j	ob efficiency:	440.15	LCY/Hour
Truck Un					Aujusted for j	ob entirenery.	440.15	
Huck On	int i fouut	300.17	LCY/Hour		Adjusted for i	ob efficiency:	249.14	LCY/Hour
					i lajubica ioi j	ob enheneney.		
Optimal N	lo. of Tru	cks: 2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
			Adjuste	ed hourly truc	k team production	on: 498	.28 LC	Y/Hour
			Adjusted sing	le truck/loade	er team production	on: 440	.15 LC	Y/Hour
			Adjusted multip	le truck/loade	er team production	on: 440	.15 LC	Y/Hour
			5 1		1			
J	OB TIM	E AND COST						
	Fleet si	ze: 1	Team(s)]	Fotal job time:	56.8	8 H	ours
	Unit co	ost: \$0.842	/LCY		Total job cost:	\$21,0	81	

BULLDOZER WORK

Task description:	-	Push Mat		Jackini Di	opes		
Bennett's Grave	l Pit		Perm	it Action:	TR5	Permit/Job	t: M1979166
PROJECT IDEN	TIFIC	CATION					
Task #: 02B			State:	Colorado		Abbreviation:	None
Date: $\frac{02D}{2/18/2}$	2022	C	ounty:	Delta		Filename:	M166-02B
User: RDZ	.022	0		Denu			
Agency or	organiz	zation name	E: DRM	AS			
HOURLY EQUI	PMEN	NT COST					
Basic Machine:		08T - 8SU					
Horsepower:	310	TT T T					
Blade Type:		-Universal					
Attachment:	NA	1					
Shift Basis: Data Source:	1 per (CRC						
Data Source:	(CRU	נ)					
Cost Breakdown:				1			
0 11 0				0.7 1.5	<u>Utilizatio</u>	<u>on %</u>	
Ownership Cost/H				\$97.46 \$07.62	NA		
Operating Cost/H Ripper own. Cost/H				\$97.63 \$0.00	100 NA		
Ripper op. Cost/H				\$0.00	<u> </u>		
Ripper op. Cost/11							
Operator Cost/H	011111						
Operator Cost/H		\$22 < 2 0		\$41.30	NA		
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou	r:	\$236.39 \$472.78		\$41.30	NA		
Total unit Cost/Hou Total Fleet Cost/Hou	r: ur:	\$472.78		\$41.30	NA		
Total unit Cost/Hou: Total Fleet Cost/Hou MATERIAL QU	r: ur: ANTI	\$472.78 <u>TIES</u>		\$41.30	NA		
Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QU</u> Initial Volume:	r: ur: <u>ANTI</u> 25,037	\$472.78 <u>TIES</u>			NA		
Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QU</u> Initial Volume: Swell factor:	r: ur: <u>ANTI</u> 25,037 1.060	\$472.78 <u>TIES</u> 7		\$41.30 	NA		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume:	r: ur: 25,037 1.060 26,539	\$472.78 TIES 7 DLCY					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated	r: ur: 25,037 1.060 26,53 9 volume	\$472.78 TIES 7 DLCY e: D		- - - f Reclamati	NA	fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume:	r: ur: 25,037 1.060 26,53 9 volume	\$472.78 TIES 7 DLCY e: D	ivision of at Handbo	- - - f Reclamati		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	r: ur: 25,037 1.060 26,539 volume swell f	\$472.78 TIES 7 D LCY e: <u>D</u> actor: <u>C</u>		- - - f Reclamati		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated	r: ur: 25,037 1.060 26,539 volume swell f	\$472.78 TIES 7 D LCY e: <u>D</u> actor: <u>C</u>		- - - f Reclamati		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	r: ur: 25,037 1.060 26,539 volume swell f	\$472.78 TIES 7 D LCY e: <u>D</u> actor: <u>C</u>	at Handbo	- - - f Reclamati		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD	r: ur: 25,037 1.060 26,539 volume swell f DUCTI Ice:	\$472.78 <u>FIES</u> 7 <u>D LCY</u> e: <u>D</u> actor: <u>C</u> <u>C</u> <u>C</u> 50 f	at Handbo	- - - f Reclamati pok		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p	r: ur: 25,037 1.060 26,539 voluma swell f DUCTI nce: producti	\$472.78 TIES 7 DLCY e: D factor: C 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	at Handbo eet 00.0 LCY	- - f Reclamati pok		fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p	r: ur: 25,037 1.060 26,539 volume swell f DUCTI ace: producti cy descri	\$472.78 TIES 7 DLCY e: Data Contemporal Description: Description:	at Handbo eet 00.0 LCY	- - f Reclamati pok	 on, Mining & Sa 	fety	
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistence Average push gradie	r: ur: 25,037 1.060 26,539 voluma swell f DUCTI ace: producti cy descri- ent:	\$472.78 THES 7 DLCY e: D actor: C 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	at Handbo eet 00.0 LCY	- - f Reclamati pok	 on, Mining & Sa 	fety	-
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p	r: ur: 25,037 1.060 26,539 voluma swell f DUCTI ace: producti cy descri- ent:	\$472.78 TIES 7 DLCY e: Data Contemporal Description: Description:	at Handbo eet 00.0 LCY	- - f Reclamati pok	 on, Mining & Sa 	fety	-
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Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistence Average push gradie Average site altitude	r: ur: 25,037 1.060 26,539 voluma swell f DUCTI ace: producti cy descri- ent:	\$472.78 TIES 7 D LCY e: D actor: C ON fion: 1,40 fiption: -10 % 4,930 feet	eet 0.0 LCY Partly co	- - f Reclamati pok	 on, Mining & Sa 	fety	-
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated MOURLY PROD Average push distan Unadjusted hourly p Materials consistence Average push gradie Average site altitude Material weight: Weight description:	r:	\$472.78 <u>TIES</u> 7 <u>DLCY</u> <u>e:</u> <u>D</u> <u>iactor:</u> <u>C</u> <u>iactor:</u> <u>C</u> <u>1,40</u> <u>ion:</u> <u>1,40</u> <u>ion:</u> <u>1,40</u> <u>ion:</u> <u>2,400 lbs/I</u> <u>Sand - Dry</u>	eet 0.0 LCY Partly co	- - f Reclamati pok	on, Mining & Sa		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistence Average push gradie Average site altitude Material weight: Weight description: Job Condition Corre	r:	\$472.78 TIES 7 D LCY e: D C Cactor: C (ON ion: 1,40 fion: 1,40 fion: 1,40 ciption: - -10 % 4,930 feet 2,400 lbs/I Sand - Dry Factor	eet 0.0 LCY Partly co	- - - - f Reclamati pok /hr nsolidated	on, Mining & Sa	fety	-
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated MOURLY PROD Average push distan Unadjusted hourly p Materials consistence Average push gradie Average push gradie Average site altitude Material weight: Weight description: Job Condition Correc Open Material co	r:	\$472.78 TIES 7 DLCY e: DLCY e: DCY factor: form: 50 ff form:	eet 0.0 LCY Partly co CCY , loose 0.7 1.1	- - - - - - - - - - - - - - - - - - -	 on, Mining & Sa stockpile 1.1		-
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Job efficiency	y: 0.830	(1 SHIFT/DAY)
Spoil pile	e: 0.800	(FND-RF)
Push gradien	t: 1.225	(CAT HB)
Altitude	e: 1.000	(CAT HB)
Material Weigh	t: 0.958	(CAT HB)
Blade type	e: 1.000	(PAT)
Net correction	n: 0.6429	
Adjusted unit production:	900.06 LCY/hr	
Adjusted fleet production:	1800.12 LCY/hr	

	2 Dozer(s)
Unit cost:	\$0.263/LCY
Total job time:	14.74 Hours

iotai job tink.	14.74 110013
Total job cost:	\$6,970

TRUCK/LOADER TEAM WORK

Remett's Gravel Pit Permit Action: Rf. Permit/Johlt, M197164 FROECT DENTIFICATION Task #: 03A None: Non::	Task description:	Excavat	e and trans	port	gravel from pit to) processing area	l	
Task #: 03A State: County: Delta Plename: MIG6-03A Use: RDZ County: Delta Plename: MIG6-03A Agency or or granization name: DRMS Mathematical States of States o	Site: Bennett's Grave	te: Bennett's Gravel Pit Permit Action:			on: TR5		Permit/Job#: <u>M</u>	1979166
Task #: 03A State: County: Delta Plename: MIG6-03A Use: RDZ County: Delta Plename: MIG6-03A Agency or or granization name: DRMS Mathematical States of States o								
Date: 21/8/2022 User: County: Delta Filename: M166-03A Agency or organization name: DRMS Shift basis: 1 per day Generic 12-18 cy, 6x4 CAT 966H high lift Support Equipment - Coad Area: NA -Dump Area: NA -Dump Area: NA -Oad Maintenance - Motor Grader: NA -Water Truck: NA NA <t< td=""><td></td><td>TIFICATION</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		TIFICATION						
User: IND Agency or organization name: DRMS Agency or organization name: DRMS Shift basis: 1 per day Equipment Description Truck Loader Team -Truck: Cart 966H high lift Support Equipment - Load Area: NA Doump Area: NA Road Maintenance Maintenance Equipment -Water Truck: NA -Water Truck: NA -Water Truck: NA -Water Truck: NA -Water Truck: Load Area: -Water Truck: NA -Water Truck: NA -Water Truck: Load Area: 100 NA NA -Water Truck: Load Area Water Truck: NA % Utilization-machine: 100 NA NA 0 NA NA NA % Utilization-riper: NA 0 NA NA Noperating costhour: S32.54 \$40.71 NA NA Number or Unitis: 2 1 0 0 0					ado	Ab		-
HOURLY EQUIPMENT COST Shit basis 1 ge day Image: Support Equipment Touck Generic 12-18 cy, 6x4 Image: Support Equipment Touck Na Image: Dump Area Na Image: Dump Area Na Image: Note of Cader: Na Image: Dump Area Mater Image: Na Image: Dump Area Motor Grader Vater Image: Dump Area Motor Grader		2022		Jena				00-03A
HOURLY EQUIPMENT COST Shit basis 1 ge day Image: Support Equipment Touck Generic 12-18 cy, 6x4 Image: Support Equipment Touck Na Image: Dump Area Na Image: Dump Area Na Image: Note of Cader: Na Image: Dump Area Mater Image: Na Image: Dump Area Motor Grader Vater Image: Dump Area Motor Grader	Agency or	organization nar	ne: DRM	S				
Equipment Description Truck Loader Team -Truck: Cart 960H high lift Support Equipment -Load Area: NA -Dump Area: NA Road Maintenance -Motor Grader: NA -Water Truck: Stores -Water Truck: Stores -Water Truck:		-				01.10.1	• 1 1	
Truck Loader Team -Truck: Generic 12-18 cy, 6x4 Loader: NA Support Equipment -Load Area: NA Na Road Maintenance -Motor Grader: NA Water Truck: NA Outport Equipment Maintenance - Bottor Grader: Water Truck: NA Water Truck: Water Truck: Maintenance Equipment Motor Grader: Motor Grader: NA NA Outpoint Equipment Motor Grader: Motor Grader: Maintenance Motor Grader: NA NA NA NA NA NA NA NA	HOUKLY EQUI	PMENI COSI	<u>L</u>				ais: <u>1 per day</u>	
-Loader: CAT 966H high lift Support Equipment - Load Area: NA -Dump Area: NA -Road Maintenance - Motor Grader: NA -Water Truck: NA %Utilization-machine: 100 100 100 NA Ownership cost/hour: \$\$27.72 \$\$55.20 NA NA Operating cost/hour: \$\$47.23 \$\$55.20 NA NA NA Na NA 0 NA NA NA NA Ripper own. cost/hour: NA \$\$0.00 NA NA NA Operator cost/hour: S32.54 \$\$40.71 NA NA NA Number of Units: 2 1 0 0 0 0 Graup Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Core of estimated volume: <u>6.655</u> <u>CCY</u> <t< td=""><td>т</td><td>ruck Loader Tea</td><td>m - Truck</td><td></td><td></td><td></td><td></td><td></td></t<>	т	ruck Loader Tea	m - Truck					
Support Equipment -Load Area: -Dump Area: -Dump Area: -Dump Area: -Water Truck: NA Road Maintenance -Motor Grader: NA	1	Tuck Loader Tea				T		
Road MaintenanceMotor Grader: NA Water Truck: NA Water Truck: NA	Supp			NA	<u> </u>			
-Water Truck: NA Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment %Utilization-machine: 100 100 NA NA NA %Utilization-machine: 100 100 NA NA NA Ownership cost/hour: \$27.72 \$59.72 NA NA NA Operating cost/hour: \$47.23 \$55.20 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA \$0.00 NA NA NA Ripper own.cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA Munter of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Cose volume:	Dead M							
Truck Load Area Dump Area Motor Grader Water Truck %Utilization-machine: 100 100 NA NA NA NA Ownership cost/hour: \$27.72 \$59.72 NA NA NA NA Operating cost/hour: \$47.23 \$55.20 NA NA NA NA %Utilization-riper: NA 0 NA NA NA NA %Utilization-riper: NA \$0.00 NA NA NA Ripper own.cost/hour: NA \$0.00 NA NA NA Querator cost/hour: \$32.54 \$40.71 NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Source of estimated swell factor:	Koad M							
Truck Load Area Dump Area Motor Grader Water Truck %Utilization-machine: 100 100 NA NA NA NA Ownership cost/hour: \$27.72 \$59.72 NA NA NA NA Operating cost/hour: \$47.23 \$55.20 NA NA NA NA %Utilization-riper: NA 0 NA NA NA NA %Utilization-riper: NA \$0.00 NA NA NA Ripper own.cost/hour: NA \$0.00 NA NA NA Querator cost/hour: \$32.54 \$40.71 NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Source of estimated swell factor:								
Matrix Intervent Description Intervent Intervent <thintervent< th=""> Intervent Intervent</thintervent<>	<u>Cost Breakdown</u> :							
Ownership cost/hour: \$27.72 \$59.72 NA NA NA NA Operating cost/hour: \$47.23 \$55.20 NA NA NA NA %Utilization-riper: NA 0 NA NA NA NA %Utilization-riper: NA 0 NA NA NA NA %Ipper own.cost/hour: NA \$0.00 NA NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA Number of Units: 2 1 0 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 LCY Source of estimated volume: Division of Reclamation, Mining & Safety <td< td=""><td></td><td>Iruck</td><td>Loader</td><td></td><td>Load Area</td><td>Dump Area</td><td>Motor Grader</td><td>water muck</td></td<>		Iruck	Loader		Load Area	Dump Area	Motor Grader	water muck
Operating cost/hour: \$47.23 \$55.20 NA NA NA NA %Utilization-riper: NA 0 NA NA NA NA Ripper own. cost/hour: NA \$0.00 NA NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 LCY Swell factor: 1.120								
%Utilization-riper: NA 0 NA NA NA NA Ripper own. cost/hour: NA \$0.00 NA NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 Support: \$0.00 Maint: \$0.00 Source of estimated volume: Division of Reclamation, Mining & Safety Cat Handbook Cat Handbook Material Purchase Cost: \$0.00 S0.00 Source \$0.00 Source \$0.00 HOURLY PRODUCTION \$2.250 Pounds/LCY Pounds/LCY Pounds/LCY Descriptio	-							
Ripper own. cost/hour: NA \$0.00 NA NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 LCY Source of estimated volume:			\$55					
Ripper op. cost/hour: NA \$0.00 NA NA NA NA Operator cost/hour: \$32.54 \$40.71 NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES	-		¢	*				
Operator cost/hour: \$32.54 \$40.71 NA NA NA NA NA Unit Subtotals: \$107.49 \$155.63 NA NA NA NA NA Number of Units: 2 1 0 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Swell factor: 1.120 Source of estimated volume: Division of Reclamation, Mining & Safety Cat Handbook Source of estimated swell factor: 50.00 Source \$0.00 HOURLY PRODUCTION Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun Pounds/LCY								
Initi Subtotals: \$107.49 \$155.63 NA NA NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume:								
Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$370.61 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$370.61 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Division of Reclamation, Mining & Safety Cat Handbook Source of estimated swell factor: Division of Reclamation, Mining & Safety Cat Handbook Material Purchase Cost: \$0.00 \$0.00 Pounds/LCY HOURLY PRODUCTION Pounds/LCY Pounds/LCY Pounds/LCY Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun Pounds/LCY	÷							
Total work team cost/hour: \$370.61 MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Division of Reclamation, Mining & Safety Source of estimated volume: Division of Reclamation, Mining & Safety Cat Handbook Source of estimated swell factor: Material Purchase Cost: \$0.00 Material Purchase Cost: \$0.00 \$0.00 Total Cost: \$0.00 \$0.00 HOURLY PRODUCTION \$0.00 \$0.00 Material weight: 3,250 Pounds/LCY Material weight: 3,250 Pounds/LCY								
MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook Source of estimated swell factor: Cat Handbook Material Purchase Cost: \$0.00 Total Cost: \$0.00 HOURLY PRODUCTION \$0.00 Truck Payload (weight) Basis: Pounds/LCY Material weight: 3,250 Pounds/LCY	Group Subtotals:	Work:	\$370.61		Support:	\$0.00	Maint:	\$0.00
MATERIAL QUANTITIES Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook Source of estimated swell factor: Cat Handbook Material Purchase Cost: \$0.00 Total Cost: \$0.00 HOURLY PRODUCTION \$0.00 Truck Payload (weight) Basis: Pounds/LCY Material weight: 3,250 Pounds/LCY	Total work team cos	st/hour: \$370.61						
Initial volume: 6,655 CCY Swell factor: 1.120 Loose volume: 7,454 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook Material Purchase Cost: \$0.00 Total Cost: \$0.00 Build Cost: \$0.00 Source of estimated swell factor: \$0.00 Total Cost: \$0.00 Build Cost: \$0.00 Source of estimated swell \$0.00 Build Cost: Build Cost: Build Cost: Build Cost: Build Cost: Build Cost:<		<u> </u>						
Loose volume: 7,454 LCY Source of estimated volume: Division of Reclamation, Mining & Safety Source of estimated swell factor: Cat Handbook Material Purchase Cost: \$0.00 Total Cost: \$0.00 HOURLY PRODUCTION \$0.00 Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Pounds/LCY Pounds/LCY	MATERIAL QU	ANTITIES						
Source of estimated volume: Source of estimated swell factor: Material Purchase Cost: Total Cost: HOURLY PRODUCTION HOURLY PRODUCTION Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Material weight: Material weight: Source of estimated volume: Source of es	Initial volume:	6,655		CCY	Swell	factor: 1.120		
Source of estimated swell factor: Material Purchase Cost: Total Cost: S0.00 HOURLY PRODUCTION <u>Truck Capacity:</u> <u>Truck Payload (weight) Basis:</u> Material weight: 3,250 Description: Gravel - Pitrun	Loose volume:	7,454	4	LCY				
Material Purchase Cost: \$0.00 Total Cost: \$0.00 HOURLY PRODUCTION Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun				Divis	ion of Reclamatic	on, Mining & Safe	ety	
Total Cost: \$0.00 HOURLY PRODUCTION Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun	Source							
HOURLY PRODUCTION <u>Truck Capacity:</u> <u>Truck Payload (weight) Basis:</u> Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun								
Truck Capacity: Truck Payload (weight) Basis: Material weight: 3,250 Pounds/LCY Description: Gravel - Pitrun		10		φ0.00	,			
Truck Payload (weight) Basis:Material weight:3,250Description:Gravel - Pitrun	HOURLY PRO	DUCTION						
Material weight:3,250Pounds/LCYDescription:Gravel - Pitrun								
Description: Gravel - Pitrun					Dounda/I CV			
			- Pitrun					
	Rated Pa	yload: 50,300			Pounds			
Payload Capacity: 15.48 LCY	Payload Cap	pacity: 15.48			LCY			

Struck Volume:						
Struck volume.	12.00 L	CY				
Heaped Volume:	18.00 L	CY				
Average Volume:	15.00 L	.CY				
Adjusted Volume:	15.48 L	CY				
Final 7	Truck Volume B	Based on Number of	of Loader Passes:	13.13	LCY	
Loading Tool Capacity						
				ket Size Class: <u>N</u>	VА	_
Rated Capacity:	5.000	LCY (heaped)		0.50() 0.055		_
Bucket Fill Factor:	0.875		well blasted (80	- 95%) 0.875		_
Adjusted Capacity:	4.375	LCY				
Job Condition Corrections:		S	Site Altitude (ft.):	<u>4930</u> feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HE	B)		
Job Efficiency:	0.830	0.830	(CAT HE	3)		
Net Correction:	0.830	0.830				
	I.		 	T '11 (T) 1	2	
Loading Tool Cycle Time:		of Loading Tool Pa	asses Required to	Fill Truck:	3]	passes
Excavators and Front Shovels	<u>s:</u>					
Machine Cycle Time vs	Job Condition	Define NIA				
Selected Value w	vithin this Basic	Rating: NA				
Selected Value w Track Loaders – N	vithin this Basic	Rating: NA				
Selected Value w Track Loaders – N	vithin this Basic Material Descrip	Rating: NA		 Dump: 0.10	0	
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: <u>NA</u>	vithin this Basic Material Descrip Ma	Rating: NA otion:	ime (lead dump)			utos
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Loaders -	vithin this Basic Material Descrip Ma	Rating: NA otion:	ime (load, dump, 1	maneuver): ().500 min	utes
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Loaders - Cycle Time Factors	vithin this Basic Material Descrip Ma - Unadjusted Bas	Rating: NA otion: neuver: NA ic Loader Cycle Ti		naneuver):(Factor (min.)	0.500 min Source	utes
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Loaders - <u>Cycle Time Factors</u> Material:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and	Rating: NA otion:		maneuver):(Factor (min.) 0.030	0.500 min Source (Cat HB)	utes
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru	Rating: NA otion: meuver: NA ic Loader Cycle Ti d over diameter 0.0 ick 0.02	03	naneuver): (Factor (min.) 0.030 0.020	0.500 min Source (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently	Rating: NA otion:	03	maneuver):(Factor (min.) 0.030 0.020 0.040	0.500 min Source (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera	Rating: NA otion:	03	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040	0.500minSource(Cat HB)(Cat HB)(Cat HB)(Cat HB)(Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently	Rating: NA otion:	03	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000	0.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera	Rating: NA otion: neuver: NA ic Loader Cycle Tr d over diameter 0.0 ick 0.02 owned trucks 0.04 ition -0.04 t 0.00 Net Cycle Ti	03 me Adjustment:	maneuver): (Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera	Rating: NA otion:	03 me Adjustment: der Cycle Time:	maneuver): Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera	Rating: NA otion:	03 me Adjustment:	maneuver): (Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera	Rating: NA otion:	03 me Adjustment: der Cycle Time:	maneuver): Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Cycle Time:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera Nominal target	Rating: NA otion:	03 me Adjustment: der Cycle Time: Time per Truck:	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550 1.200	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera Nominal target	Rating: NA ption:	03 me Adjustment: der Cycle Time: Time per Truck: Adjusted	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550 1.200	0.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes 0.500	
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time: Truck Load Time:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera Nominal target 0.50 1.200	Rating: NA ption:	03 me Adjustment: der Cycle Time: Time per Truck: Adjusted Adjusted	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550 1.200 for site altitude: for site altitude:	0.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) 0.500 1.200	 Minute
Selected Value w Track Loaders – M Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera Nominal target 0.50 1.200	Rating: NA ption:	03 me Adjustment: der Cycle Time: Time per Truck: Adjusted Adjusted	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550 1.200	0.500 min Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes 0.500	utes
Selected Value w Track Loaders – N Cycle Time Elements (min.): Load: NA Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Exchange Time: Truck Load Time:	vithin this Basic Material Descrip Ma Unadjusted Bas Material 6" and Dumped by tru Independently Constant opera Nominal target 0.50 1.200 0.90	Rating: NA ption:	03 me Adjustment: der Cycle Time: Time per Truck: Adjusted Adjusted	maneuver):(Factor (min.) 0.030 0.020 0.040 -0.040 0.000 0.050 0.550 1.200 for site altitude: for site altitude:	0.500 minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) 0.500 0.500 1.200 0.900	 Minute

Haul Route:

Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
565 "	(Ft)	Grade (70)	(%)	(%)	(fpm)	Time	
	(11)		(70)	(70)	(ipili)	(min)	
1	200.00	-15.00	8.00	-7.00	2367	0.126	
2	400.00	0.00	8.00	8.00	1381	-0.571	
				Haul Time:	-0.445	minutes	
Return F			1				
Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)		(%)	(%)	(fpm)	Time (min)	
1	400.00	0.00	8.00	8.00	2202	0.204	
2	200.00	15.00	8.00	23.00	768	0.363	
				Return Time:	0.567	minute	
			Total Tru	ck Cycle Time:	2.722	minute	es
Loading To	ol unit						
0	luction 463.	24 LCY/Hour		Adjusted for j	ob efficiency:	384.49	LCY/Hour
Truck Unit Proc				110/00/00/01/01/j			
	289.	31 LCY/Hour		Adjusted for j	ob efficiency:	240.13	LCY/Hour
					j.		
Optimal No. of T	Trucks: 2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
		Adjuste	ed hourly truc	k team production	on: 480	.25 LCY	Y/Hour
		Adjusted sing	le truck/loade	er team production	on: 384	.49 LCY	Y/Hour
				er team production		.49 LCY	Y/Hour
		5 1		Ĩ			
JOB TI	ME AND COS	<u>Γ</u>					
Flee	t size: 1	Team(s)	r	Fotal job time:	19.3	9 He	ours
Unit	cost: \$0.96	54 /LCY		Total job cost:	\$7,18	35	

BULLDOZER WORK

-	1 8	er process /	stockpile area		
Bennett's Gravel Pit	Perr	mit Action:	TR5	Permit/Job#:	M1979166
PROJECT IDENTIFI	ICATION				
Task #: 03B Date: 2/18/2022	State: County:	Colorado Delta		Abbreviation: Filename:	None M166-03B
User: <u>RDZ</u>		MC			
Agency or organ		MS			
HOURLY EQUIPME	<u>ENT COST</u>				
	D8T - 8SU				
	ni-Universal		_		
Attachment: NA					
	er day				
Data Source: (CR					
	,				
Cost Breakdown:		i			
0 11 0 77			<u>Utilization %</u>		
Ownership Cost/Hour:		\$97.46	NA		
Operating Cost/Hour:		\$97.63	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.30	NA		
	\$236.39				
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume:6,652 Swell factor:1000	TITIES 5				
MATERIAL QUANT Initial Volume: <u>6,655</u> Swell factor: <u>1.000</u>	TITIES 5				
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated swell	TTIES 5 0 5 LCY ne: Division of factor: factor: Cat Handle		on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated volur Source of estimated swell HOURLY PRODUCT	TTIES 5 0 5 LCY ne: Division of Cat Handle factor: Cat Handle		on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance:	TTIES 5 0 5 LCY ne: Division of Cat Handle factor: Cat Handle CION 100 feet	book	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated volur Source of estimated swell HOURLY PRODUCT	TTIES 5 0 5 LCY ne: Division of Cat Handle factor: Cat Handle CION 100 feet	book	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance:	TTIES 5 0 5 LCY ne: Division of Cat Handle factor: Cat Handle CION ettion: $\frac{100 \text{ feet}}{852.6 \text{ LCY/}}$	book	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product	TTIES 5 0 5 LCY ne: Division of Cat Handle factor: Cat Handle CION ettion: $\frac{100 \text{ feet}}{852.6 \text{ LCY/}}$	book hr	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency destributed	TTIES 5 0 5 LCY ne: Division of card the second sec	book hr	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient:	TTIES 5 0 5 LCY ne: Division of factor: factor: Cat Handle FION ction: 100 feet ction: 852.6 LCY/10 cription: Loose s 0 %	book hr	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average site altitude:	ITTIES 5 0 5 0 5 5 0 5 5 0 5 5 0 5 100 <t< td=""><td>hr tockpile 1.2</td><td>on, Mining & Safety</td><td></td><td></td></t<>	hr tockpile 1.2	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volur Source of estimated volur Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	TTIES 5 0 5 LCY ne: Division of Carl Handle factor: Carl Handle CION etion: 100 feet etion: 100 feet cription: Loose s 0 % 4,930 feet 2,850 lbs/LCY Gravel - Dry (1/4)** Factor Factor	hr tockpile 1.2	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 6,653 Swell factor: 1.000 Loose volume: 6,653 Source of estimated volum 6,654 Source of estimated volum 6,655 Source of estimated volum 6,654 Source of estimated volum 6,655 Material sconsistence: 1000 Materials consistency dest Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S	TTIES 5 0 5 LCY ne: Division of Carl Handle factor: Carl Handle CION cription: 100 feet cription: Loose s 0 % 4,930 feet 2,850 lbs/LCY Gravel - Dry (1/4)** Factor Skill: 0.7	book hr tockpile 1.2 			
MATERIAL QUANT Initial Volume: 6,655 Swell factor: 1.000 Loose volume: 6,655 Source of estimated volum 6,655 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S Material consistence Source S	TTIES 5 0 5 LCY ne: Division of Carl Handle factor: Carl Handle CION cription: 100 feet cription: Loose s 0 % 4,930 feet 2,850 lbs/LCY Gravel - Dry (1/4 ^{**}) Factor Skill: 0.7 ency: 1.7	book hr tockpile 1.2 	Source		
MATERIAL QUANT Initial Volume: 6,653 Swell factor: 1.000 Loose volume: 6,653 Source of estimated volum 6,654 Source of estimated volum 6,655 Source of estimated volum 6,654 Source of estimated volum 6,655 Material sconsistence: 1000 Materials consistency dest Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S	TTIES 5 0 5 0 5 5 0 5 5 0 5 5 0 5 100 10 10	book hr tockpile 1.2 			

Job efficiency:		0.830	(1 SHIFT/DAY)
Spoil pi	Spoil pile:		(FND-SF)
Push gradie	Push gradient:		(CAT HB)
Altitud	de:	1.000	(CAT HB)
Material Weight	Material Weight:		(CAT HB)
Blade typ	Blade type:		(PAT)
Net correction	on:	0.3617	
Adjusted unit production:	30	8.39 LCY/hr	
Adjusted fleet production:	30	8.39 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.767/LCY	
Total job time: Total job cost:	21.58 Hours \$5,101	_

TRUCK/LOADER TEAM WORK

Task description:	Haul top	soil material				
Site: Bennett's Grave	Pit	Permit Action	on: TR5		Permit/Job#: <u>M</u>	1979166
PROJECT IDEN	TIFICATION					
Task #: $05A$		State: Colora	ado	Ab	breviation: No	
Date: 2/18/2 User: RDZ	<u>.022</u> C	County: Delta			Filename: M1	66-05A
	•					
Agency or	organization nam	e: DRMS				
HOURLY EQUI	PMENT COST	-		Shift bas	sis: <u>1 per day</u>	
			Equipment Descri	ption		
T	ruck Loader Tear	n -Truck: Ger	neric 12-18 cy, 6x4			
Sunn	ort Equipment -Lo		T 966H high lift			
Supp		mp Area: NA				
Road M	aintenance – Moto	or Grader: NA				
	-Wat	er Truck: NA				
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Maintenar	ce Equipment
COSt Di Cuindo Mili	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$27.72	\$59.72	NA	NA	NA	NA NA
Operating cost/hour:	\$47.23	\$55.20	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$32.54	\$40.71	NA	NA	NA	NA
Unit Subtotals:	\$107.49	\$155.63	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	(
Group Subtotals:	Work:	\$370.61	Support:	\$0.00	Maint:	\$0.00
Total work team cos	t/hour: <u>\$370.61</u>					
MATERIAL QU	<u>ANTITIES</u>					
Initial volume:	/	CCY		factor: <u>1.429</u>		
Loose volume:	11,639	LCY				
	arce of estimated		bit E and Exhibit	L		
Source	of estimated swel Material Purcha		Handbook			
		tal Cost: $\frac{$0.00}{$0.00}$				
HOURLY PRO	DUCTION					
Truck Capacity:						
Truck Payload (weig						
Material w Descri		1	Pounds/LCY			
Rated Pa		L I	Pounds			
Payload Car			LCY			

Struck Volume:		LCY				
Heaped Volume:		LCY				
Average Volume:		LCY				
Adjusted Volume:	18.00	LCY				
Final	Truck Volume	Based on Number	of Loader Passes:	17.50	LCY	
Loading Tool Capacity						
				ket Size Class: <u>N</u>	NA	
Rated Capacity:	5.000	LCY (heaped)				
Bucket Fill Factor:	0.875		well blasted (80	- 95%) 0.875		
Adjusted Capacity:	4.375	LCY				
Job Condition Corrections:	_	S	Site Altitude (ft.):	<u>4930</u> feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HE	3)		
Job Efficiency:	0.830	0.830	(CAT HE	3)		
Net Correction:	0.830	0.830				
	I					
Loading Tool Cycle Time:	Number	of Loading Tool P	asses Required to	Fill Truck:	4	passes
Excavators and Front Shovel	ls:					
Machine Cycle Time v	s Job Condition	n Rating· NA				
Machine Cycle Time vs Selected Value v	within this Basic	c Rating: NA				
	within this Basic	c Rating: NA				
Selected Value v	vithin this Basic Material Descri	c Rating: NA				
Selected Value v Track Loaders –	vithin this Basic Material Descri	c Rating: NA		 Dump: 0.10	0	
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u>	vithin this Basic Material Descri M	c Rating: NA		·		ninutes
Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Loaders -	vithin this Basic Material Descri M	c Rating: NA	ïme (load, dump, 1	maneuver): (0.500 n	ninutes
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Haul Route:

ſ	Seg #	Haul D	istance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time	
-	1	300.00		0.00	3.00	3.00	2824	(min) 0.268	
-	2	300.00		0.00	3.00	3.00	2824	0.106	
L	-	200100		0.00	2.00				
	D . D					Haul Time:	0.374	minutes	
г	Return R								1
	Seg #	Haul D	istance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	300.00		0.00	3.00	3.00	2874	0.140	
-	2	300.00		0.00	3.00	3.00	2874	0.140	
L	2	300.00		0.00	5.00	5.00	2074	0.104	
						Return Time:	0.244	minut	es
					Total True	ck Cycle Time:	3.498	minut	es
т	i' m	1 •							
L	oading To		520.20			A 1	1	440.15	
T		uction	530.30	LCY/Hour		Adjusted for j	ob efficiency:	440.15	LCY/Hour
Iruck	Unit Prod	uction	200 17			A 1'	1	240.14	
			300.17	LCY/Hour		Adjusted for j	ob efficiency:	249.14	LCY/Hour
Ontim	al No. of T	rucks	2	Truck(s)		Selected Numl	her of Trucks	2	Truck(s)
optim			2			Beleeted I tulla	ber of frueks.		
				Adjuste	ed hourly true	k team production	on: 498	.28 LC	Y/Hour
				Adjusted sing	le truck/loade	r team production	on: 440	.15 LC	Y/Hour
				Adjusted multip	le truck/loade	r team production	on: 440	.15 LC	Y/Hour
	JOB TI	ME ANI	D COST						
	Fleet	size:	1	Team(s)]	Fotal job time:	26.44	4 Н	ours
	I In: t	aasti	\$0.842	/LCY	, ,	- Total ich acati	¢0.00		
	Unit	cost:	Ф 0.042			Total job cost:	\$9,80	U.	

BULLDOZER WORK

			-		
Bennett's Gravel Pit	Peri	mit Action:	TR5	Permit/Job#:	M1979166
PROJECT IDENTIFI	CATION				
Task #: 05B	State:	Colorado		Abbreviation:	None
Date: $\frac{0.01}{2/18/2022}$	County:	Delta		Filename:	M166-05B
User: RDZ	County.	Denta		-	11100 05D
	ization name: DB	RMS			
Agency or organ	Ization name. Dr				
HOURLY EQUIPME	<u>NT COST</u>				
	D8T - 8SU				
Horsepower: 310					
	ni-Universal				
Attachment: NA					
	er day				
Data Source: (CR	.G)				
Cost Breakdown:					
<u>Cost Dioundo mil</u> i			Utilization %		
Ownership Cost/Hour:		\$97.46	NA		
Operating Cost/Hour:		\$97.63	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.30	NA		
Total Fleet Cost/Hour:	\$236.39				
Total Fleet Cost/Hour:	ITIES				
MATERIAL QUANT	ITIES				
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000	<u>ITIES</u> 7				
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000	ITIES				
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000	ITIES 7 0 7 LCY	 of Reclamati	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147	TTIES 7 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		on, Mining & Safety		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum	TTIES 7 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		on, Mining & Safety		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1		on, Mining & Safety		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated swell HOURLY PRODUCT	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1 <		on, Mining & Safety		
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MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated swell HOURLY PRODUCT	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 10 50 feet	book	on, Mining & Safety		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance:	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 9 7 9 7 9	book Y/hr	on, Mining & Safety		
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MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient:	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1 <tr td=""></tr>	book Y/hr			
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1	book Y/hr			
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient:	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1 <tr td=""></tr>	book Y/hr			
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight:	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1	book Y/hr			
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Average push gradient: Average site altitude: Material weight: Weight description:	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1,400.0 LCY cription:	book Y/hr	stockpile 1.1		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight: Weight description: Job Condition Correction	ITIES 7 7 7 7 7 7 7 7 7 7 7 7 1,400.0 LCY cription: Partly c -5 % 4,930 feet 1,600 lbs/LCY Top Soil Factor	book Y/hr consolidated	stockpile 1.1		
MATERIAL QUANT Initial Volume: 8,147 Swell factor: 1.000 Loose volume: 8,147 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight: Weight description: Job Condition Correction	ITIES 7 Division of factor: 7 LCY Division of factor of factor: 7 LCY Division of factor of factor: 7 LCY Division of factor of factor: 7 Division of factor: Division of Cat Hand 1 Division of Cat Hand Cat Hand 1 Division of Cat Hand				

Task # 05B

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.8783	
Adjusted unit production: 1	,229.62 LCY/hr	
Adjusted fleet production: 1	229.62 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.192/LCY
Total job time:	6.63 Hours
Total job cost:	\$1,566

REVEGETATION WORK

Task de	escription:	Revegetate flat surfaces				
Site: Bennett's Gravel Pit		Permit Action:	TR5	Permit/Job#	: M1979166	
<u>PROJE</u> Tasl	E CT IDENTIFIC k #: 06A	ATION State: Colorado		Abbreviation:	None	
D	pate: $\frac{2}{18}/2022$ ser: RDZ	County: Delta			M166-06A	
	Agency or organiz	zation name: DRMS				

FERTILIZING

Materials

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

Application

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

TILLING

Description		Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)		\$114.56
	Total Tilling Cost/Acre	\$114.56

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.50	19.51	\$14.24
Sand Dropseed	0.20	23.88	\$1.95
Crested Wheatgrass - Nordan	2.00	9.18	\$7.80
Tall Wheatgrass - Jose	5.00	9.07	\$16.88
Totals Seed Mix	7.70	61.64	\$40.86

Application

Description	Cost /Acre
Description	Cost /Acre

Drill Seeding (DRMS Survey Cost)		\$232.00
То	otal Seed Application Cost/Acre	\$232.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
	1.00		\$0.00	\$0.00
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$62.72

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	9.1	Cost /Acre:	\$450.14
Estimated Failure Rate:	25%	Cost /Acre*:	\$450.14
*Selected Replanting Work Items:	TILLING,SEEDIN	G,MULCHING	

Initial Job Cost:	\$4,096.27
Reseeding Job Cost:	\$1,024.07
Total Job Cost:	\$5,120
Job Hours:	8.00

REVEGETATION WORK

Task	k descrip	otion:	Revegetate pit slopes abo	ve water		
Site: B	ite: Bennett's Gravel Pit		Permit Actio	on: TR5	Permit/Job	o#: M1979166
<u>PRO</u>)JECT]	IDENTIFIC	ATION			
Т	Task #:	06B	State: Colorad	lo	Abbreviation:	None
	Date:	2/18/2022	County: Delta		Filename:	M166-06B
	User:	RDZ				

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)		\$114.56
	Total Tilling Cost/Acre	\$114.56

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Red Top	0.30	34.37	\$2.36
Reed Canarygrass - VNS	5.30	61.57	\$26.24
Totals Seed Mix	5.60	95.93	\$28.60

Application

Description	Cost /Acre
Broadcast seeding [DMG]	\$267.22

Total Seed Application Cost/Acre \$267.22

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
	1.00		\$0.00	\$0.00
Total Mulch Materials Cost/Acre				\$0.00

Application

Description		Cost /Acre
Weed spray, hand, aquatic area, nox. [DMG]		\$183.16
	Total Mulch Application Cost/Acre	\$183.16

NURSERY STOCK PLANTING

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

	No. of Acres:	1	Cost /Acre:	\$593.54	
Estimate	ed Failure Rate:	0%	Cost /Acre*:	\$593.54	
*Selected Replanti	ng Work Items:	TILLING,SEEDI	NG,MULCHING		
Initial Job Cost:	\$593.54				
Reseeding Job Cost:	\$0.00				
Total Job Cost:	\$594				
Job Hours:	4.00				

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Mo	bilization					
Bennett's Grave	el Pit	Permit	Action: TR5			Permit/Job#: <u>N</u>	A1979166
PROJECT IDEN	TIFICATI	ON					
Task #: 08A		State: Co	olorado		Abbre	eviation: Non	e
Date: 2/18/ User: RDZ		County: De	elta		F	ilename: M16	66-08A
Agency or	organizatio	n name: DRMS					
EQUIPMENT TH	RANSPOR	<u>T RIG COST</u>					
					Shift ba Cost Data Sou		
Truck	Fractor Desc	ription: GENE	RIC ON-HIGH		UCK TRACTO (2ND HALF,	OR, 6X4, DIESE 2006)	L POWERED,
Truck	Trailer Desc	ription: G		ING GOO		ROP DECK EQU	JIPMENT
Cost Breakdown:							
Available Rig Ca		0-25 Tons	26-50 Tons		+ Tons		
Ownership (\$21.28	\$37.94		47.67		
Operating C		\$26.55	\$50.48		56.21		
Operator (\$20.54	\$20.54		20.54		
	Cost/Hour:	\$0.00	\$23.53		23.53		
Total Unit C	Cost/Hour:	\$68.37	\$132.49	\$.	47.95		
NON ROADABL	E EQUIPN	MENT:					
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
L	(TONS)		t		fleet		
Cat D8T - 8SU	47.71	\$97.46	\$132.49	2	\$459.90	\$264.98	\$500.00
CAT 966H	25.80	\$59.72	\$68.37	1	\$128.09	\$68.37	\$250.00
Centrifugal pump - 200M, 10 in.	1.95	\$18.13	\$68.37	2	\$173.00	\$136.74	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00

Subtotals: \$837.34 \$538.46 \$1,500.00

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.	\$12.93	1	\$12.93	\$12.93
		Subtotals:	\$12.93	\$12.93

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	DELTA	
Total one-way travel distance:	4.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$4,949.84	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$2.59	

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.10	0.10
Return Time (Hours):	0.10	0.10
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.20	0.20

JOB TIME AND COST

Total job time: **2.40** Hours

Total job cost: \$4,952