

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

## Western Sugar cost estimate

1 message

Zuber - DNR, Rob <rob.zuber@state.co.us> To: Garrett Varra <gvarra@raptormaterialsllc.com> Wed, Aug 16, 2023 at 10:07 AM

Hi, Garrett -

Attached is my update of the reclamation cost estimate for the Western Sugar Reclamation Land Development Project, permit M-2010-049. Please look this over during the next 2 - 3 weeks, and let me know if there are issues with my estimate that you want to discuss.

If I do not hear from you by 9/8/2023, we will initiate the Surety Increase process.

Thanks, 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

DRMS\_Rec\_Cost\_Estimate\_Western\_Sugar\_M2010049.pdf 1539K

### **COST SUMMARY WORK**

Task description: Cost Summary

**Western Sugar Reclamation** Permit Action:

Site: Land Development Project 2023 Update Permit/Job#: M2010049

### **PROJECT IDENTIFICATION**

Task #:000State:ColoradoAbbreviation:NoneDate:7/12/2023County:WeldFilename:M049-000

Date: 7/12/2023 User: RDZ

Agency or organization name: DRMS

#### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01A	Dewatering - Tract A	PUMPING	1	167.02	\$20,048
01A 01B	Backfill highwall - Tract A	DOZER	2	21.41	\$18,885
02A	Dewatering - Tract C	PUMPING	1	179.29	\$21,520
02B	Backfill highwall - Tract C	DOZER	2	25.19	\$22,218
03A	Dewatering - Tract D	PUMPING	1	17.81	\$713
03B	Haul material from nearby (within 1 mile) to fill	TRUCK1	1	52.72	\$34,160
032	Tract D	THE CIT	-	32.72	ψ3 1,100
03C	Backfill highwall - Tract D	DOZER	2	21.37	\$18,856
04A	Compaction of slopes	COMPACT	2	20.98	\$12,432
05A	Replace topsoil - 40.06 acres, 6", all tracts	SCRAPER1	1	68.85	\$38,449
06A	Revegetation of all disturbed areas - 40.06 acres	REVEGE	1	40.00	\$35,724
07A	Road grading	GRADER	1	2.67	\$586
08A	Repair and grade embankment failure	DOZER	1	36.01	\$15,317
08B	Excavate for weir construction	TRUCK1	1	40.26	\$27,075
08C	Place bedding material for riprap on weir	TRUCK1	1	11.37	\$6,219
08D	Place riprap on weir	EXCAVATE	1	12.83	\$2,725
10A	Equipment Mobilization/Demobilization	MOBILIZE	1	3.57	\$14,528
		SUBTO	TALS:	721.35	\$289,455

### **INDIRECT COSTS**

### **OVERHEAD AND PROFIT:**

Liability insurance:2.02Total =\$5,847Performance bond:1.05Total =\$3,039Job superintendent:367.80Total =\$23,936

TOTAL O & P =  $\frac{$61,768}{$351,223}$ 

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500 Total = \$500

Engineering work and/or contract/bid preparation: Reclamation management and/or administration: 5.00 Total = \$0

\$17,561

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$79,829

TOTAL BOND AMOUNT (direct + indirect) = \$\\_\$369,284

### **PUMPING WORK**

Task description:	Dewatering -	Tract A			
Western Sugar Recla Land Development P		Permit Action:	2023 Update	Permit/Job#:	M2010049
PROJECT IDENTIF	<u>ICATION</u>				
Task #: 01A Date: 7/12/2023 User: RDZ	State County	-		Abbreviation: _ Filename: _	None M049-01A
Agency or organ	nization name:	DRMS			
HOURLY EQUIPME	ENT COST				
	Description			Quantity	
Make and Model:	Centrifugal pun	np - 200M, 10 i	n.	3	<del></del>
Attachment 1:	Suction hose - 6			3	
Attachment 2:	Discharge hose			3	
Labor Unit 1:	Pump operator	,		0	
Horsepower:	70				
	per day				
	1.95				
<u></u>	S Tons)				
Cost Breakdown:	,				
Cost breakdown.		I	Utilization %		
Ownership Cost/I	Hour \$4	54.75	NA		
Operating Cost/I		55.28	100		
Operator Cost/I		0.00	NA		
Total Unit Cost/l		20.03	<u> </u>		
T . 1 T G	<del></del>				
Total Fleet Cost/	Hour: \$1	120.03			
<b>PUMPING QUANTI</b>	<u> TIES</u>				
Initial Pond Vol	ume: 100.0	00.000,000		Conversion factor:	1.0000
Final Pond Vol		000,000.00	 gallons		
Total Pond Inflow Sur		,	_ 0	Unit inflow rate in	
A	Area: 2	22,000	Sq. ft.	gph/sq. ft.:	0.3516
Total Pond Inflow Vol	lume				
per H	Hour:7,	735.20	_ gallons		
Source of	of estimated volun	ne: Division	Estimate		
PUMPING TIME					
	·	•,	200.000	1 /	
	timum Pump Capa stimated Suction I		200,000 15	gph/pump feet	
	nated Discharge I		5	feet	
Estil	Total F		20	feet	
	CPB Pump Capa		180,000	gph/pump	
	Site Alti		4,600	feet	
	2100 1 1101		.,,,,,,,		
٨٠٠	tad Dumning Con	acity:	540,000	anh	
	ted Pumping Capa ljusted Pumping T		540,000 185.19	gph hours	
	during Initial Pum		1,432,444	gallons	
	ljusted Pumping 7		187.84	Hours	
	ide Adjustment Fa		0.9700	(3% rule)	
	ump Efficiency Fa		0.9167	(55 min./hr.)	
	djusted Pumping T		167.03	hours	
JOB TIME AND COS					
JOD THAIR WAY CO	<u>51</u>		Total job time	e: <u>167.03</u>	Hours
Unit cost: \$0.00	0198 /Gallor	1	Total job cos	t: <b>\$20,048</b>	

## **BULLDOZER WORK**

	ption:	Duci	xfill highwal	I - IIact II			
		Reclamation ont Project	Per	mit Action:	2023 Update	Permit/Job#:	M2010049
PROJECT	ΓIDEN	TIFICATI	ON				
Task #: Date: User:	01B 7/12/2 RDZ		State: County:	Colorado Weld		Abbreviation: Filename:	None M049-01B
			DI DI	DMC			
Ag	gency or	organization	name: Di	RMS			
HOURLY	<b>EQUII</b>	PMENT CO	<u>OST</u>				
Blade Attacl	power: e Type: hment: Basis:	Cat D9T - 9 405 Semi-Univ NA 1 per day					
Data S	Source:	(CRG)			<u> </u>		
Cost Break				ф <b>2</b> 20 Д с	<u>Utilization %</u>		
Ownership Operating				\$238.76 \$162.29	NA 100		
Ripper own				\$0.00	NA		
Ripper op				\$0.00	0		
Operator Total unit C Total Fleet	Cost/Hou	r: \$441.		\$40.04	NA		
Total unit C Total Fleet	Cost/Hour Cost/Hou <b>AL QU</b> lume: _	r: \$441.	17	\$40.04	NA		
Total unit C Total Fleet C  MATERIA Initial Vol	Cost/Hour Cost/Hour AL QUA lume:	### \$441. ###################################	17	\$40.04	NA		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es	Cost/Hour Cost/Hour AL QUA lume: factor: lume: stimated	\$441. \$882. <b>ANTITIES</b> 64,600 1.000 64,600 LCY	17	of Reclamati	ion, Mining & Safety		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es	Cost/Hour Cost/Hour AL QUA lume: factor: lume: stimated stimated	\$441. \$882. \$441. \$882. \$441. \$882. \$441. \$882. \$441. \$882. \$441. \$64,600 \$1.000 \$64,600 \$LCY \$1.000	Division	of Reclamati			
Total unit C Total Fleet 0  MATERIA  Initial Vol Swell fa Loose vol Source of es Source of es	Cost/Hour Cost/Hour AL QUA lume: factor: lume: stimated stimated stimated sh distan	\$441. \$882. \$441. \$441.	Division	of Reclamati			
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es  HOURLY  Average pus Unadjusted	Cost/Hour Cost/Hour AL QUA lume: factor: lume: stimated stimated Y PROD sh distan- hourly p	\$441. \$882. \$441. \$441.	Division Cat Hance  50 feet 2,110.5 LC	of Reclamati	ion, Mining & Safety		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es  HOURLY  Average pus Unadjusted	Cost/Hour Cost/H	### \$441.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$64,600  1.000  ### \$64,600 LCY  ### volume:  ### swell factor:  #### ### ### ### ### ### ### ### ###		of Reclamati lbook	ion, Mining & Safety		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es Source of es HOURLY  Average pus Unadjusted  Materials co	Cost/Hour Cost/H	### \$441.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$64,600  ### \$1.000  ### \$64,600  ### \$1.000  ###		of Reclamati lbook	ion, Mining & Safety		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es Source of es  HOURLY  Average pus Unadjusted  Materials co  Average pus Average site	Cost/Hour Cost/H	### \$441.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$882.  ### \$441.  ### \$64,600  ### \$1.000  ### \$64,600 LCY  ### Volume:  ### swell factor:  ### UCTION  ### ce:  ### roduction:  ### \$10.00  ###		of Reclamati lbook	ion, Mining & Safety		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es Source of es  HOURLY  Average pus Unadjusted  Materials co  Average pus Average site Material we  Weight desc	Cost/Hour Cost/H	### \$441. ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$882.  ### \$441. ### \$441. ### \$100.	Division Cat Hance  50 feet 2,110.5 LC  Loose 0 feet  blbs/LCY  mposed rock	of Reclamati lbook  Y/hr  stockpile 1.2	, 75% Earth		
Total unit C Total Fleet C  MATERIA  Initial Vol Swell fa Loose vol Source of es Source of es  HOURLY  Average pus Unadjusted  Materials co Average pus Average site Material we Weight desc  Job Condition	Cost/Hour Cost/H	### \$441. #### \$441. ###################################		of Reclamati lbook Y/hr stockpile 1.2	ion, Mining & Safety		

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7149

Adjusted unit production: 1,508.80 LCY/hr
Adjusted fleet production: 3017.6 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.292/LCY

Total job time: 21.41 Hours
Total job cost: \$18,885

## **PUMPING WORK**

Final Pond Volume: 107,000,000.00 gallons Total Pond Inflow Surface		Dewatering - Tract C			
Task #: 02A				Permit/Job#:	M2010049
Date: 7.12/2023   County: Weld   Filename: M049-02	PROJECT IDENTIFICAT	<u>rion</u>			
User: RDZ	Task #: 02A	State: Colorade	o	Abbreviation: No	one
Agency or organization name:   DRMS	-	County: Weld		Filename: M	[049-02A
Description	User: RDZ	_			
Description	Agency or organization	on name: DRMS			
Make and Model:         Centringal pump - 200M, 10 in.         3           Attachment 1:         Succion hose - 6 in. diam., 25 ft.         3           Labor Unit 1:         Discharge hose - 6 in. D, 25 ft.         3           Labor Unit 1:         Pump operator         0           Horsepower:         70           Shift Basis:         1 per day           Weight:         1.95           (US Tons)         Utilization %           Ownership Cost/Hour:         \$54.75         NA           Operating Cost/Hour:         \$65.28         100           Operator Cost/Hour:         \$120.03           Total Unit Cost/Hour:         \$120.03           PUMPING QUANTITIES           Initial Pond Volume:         107,000,000.00         gallons           Final Pond Inflow Surface         Vonersion factor:         1.           Total Pond Inflow Surface         Vonersion factor:         1.           Total Pond Inflow Volume:         pcr Hour:         9,493.20         gallons           Source of estimated volume:         Division Estimate           PUMPING TIME           Maximum Pump Capacity:         200,000         gph/pump           Estimated Suction Head:         15	HOURLY EQUIPMENT	<u>COST</u>			
Attachment 1: Suction hose - 6 in. diam., 25 ft. 3  Attachment 2: Discharge hose - 6 in. D., 25 ft. 3  Labor Unit 1: Pump operator 0  Horsepower: 70 Shift Basis: 1 per day Weight: 195 (US Tons)  Cost Breakdown:  Ownership Cost/Hour: \$54.75 NA Operating Cost/Hour: \$65.28 100 Operator Cost/Hour: \$120.03  Total Fleet Cost/Hour: \$120.03  Total Fleet Cost/Hour: \$120.03  PUMPING QUANTITIES  Initial Pond Volume: 107,000,000.00 gallons Total Pond Inflow Surface Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume  per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump  Estimated Suction Head: 15 feet  Estimated Suction Head: 20 feet  CPB Pump Capacity: 180,000 gph/pump  Estimated Suction Head: 20 feet  CPB Pump Capacity: 180,000 gph/pump  Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph  Initial Unadjusted Pumping Time: 198.15 hours  Altitude Adjusted Pumping Time: 198.15 hours			0.1		_
Attachment 2:					_
Labor Unit 1:   Pump operator   0					_
Horsepower:   70			) It.		_
Shift Basis:   1 per day   1.95   (US Tons)	Labor Unit 1: Pt	imp operator		0	_
Veight:   1.95	Horsepower: 70				
Cost Breakdown:   Utilization %   NA   Operating Cost/Hour: \$54.75   NA   Operating Cost/Hour: \$65.28   100   Operator Cost/Hour: \$0.00   NA   Total Unit Cost/Hour: \$120.03   Total Fleet Cost/Hour: \$107,000,000.00   gallons   Total Pond Volume: \$107,000,000.00   gallons   Total Pond Inflow Surface   Unit inflow rate in Area: \$27,000   Sq. ft. gph/sq. ft.: 0.    Total Pond Inflow Volume   Port Hour: \$9,493.20   gallons   Source of estimated volume: Division Estimate    PUMPING TIME   Maximum Pump Capacity: \$200,000   gph/pump   Estimated Suction Head: \$15   feet   Feet   Estimated Discharge Head: \$5   feet   Fotal Head: \$20   feet   Fotal Head: \$20   feet   Fotal Head: \$20   feet   Fotal Head: \$4,600   feet   Fotal Head: \$					
Cost Breakdown:     Utilization %   NA   Operating Cost/Hour: \$54.75   NA   Operating Cost/Hour: \$65.28   100   Operator Cost/Hour: \$0.00   NA   Total Unit Cost/Hour: \$120.03   Total Fleet Cost/Hour: \$120.03   Total Fleet Cost/Hour: \$120.03   Total Pleet Cost/Hour: \$120.03   Total Pleet Cost/Hour: \$120.03   Total Pleet Cost/Hour: \$120.00   Octoversion factor: 1.   Initial Pond Volume: 107,000,000.00   gallons   Unit inflow rate in Area: 27,000   Sq. ft. gph/sq. ft.: 0.   Octoversion factor: 1.   Octoversion factor					
Ownership Cost/Hour:   \$54.75   NA	(US To	ns)			
Ownership Cost/Hour:         \$54.75         NA           Operating Cost/Hour:         \$65.28         100           Operator Cost/Hour:         \$120.03           Total Unit Cost/Hour:         \$120.03           PUMPING QUANTITIES           Initial Pond Volume:         107,000,000.00         gallons           Final Pond Volume:         107,000,000.00         gallons           Total Pond Inflow Surface         Unit inflow rate in gph/sq. ft.:         0.           Total Pond Inflow Volume per Hour:         9,493.20         gallons           Source of estimated volume:         Division Estimate           PUMPING TIME           Maximum Pump Capacity:         200,000         gph/pump           Estimated Discharge Head:         15         feet           Estimated Discharge Head:         20         feet           CPB Pump Capacity:         180,000         gph/pump           Site Altitude:         4,600         gph           Adjusted Pumping Capacity:         540,000         gph           Inflow during Initial Pumping:         1,881,060         gallons           Net Unadjusted Pumping Time:	Cost Breakdown:		1		
Operating Cost/Hour: \$0.00 NA  Total Unit Cost/Hour: \$120.03  Total Fleet Cost/Hour: \$120.03  PUMPING QUANTITIES  Initial Pond Volume: 107,000,000.00 gallons  Total Pond Inflow Surface Unit inflow rate in Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Discharge Head: 5 feet Total Head: 5 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 180,000 gph/pump fine: 198.15 hours  Inflow during Initial Pumping: 1,881,060 gallons  Net Unadjusted Pumping Time: 201.63 Hours  Adjusted Pumping Time: 0.9700 (3% rule)  Pump Efficiency Factor: 0.9167 (55 min./hr.)  Total Adjusted Pumping Time: 179.29 hours	_				
Operator Cost/Hour:   \$0.00   NA   Total Unit Cost/Hour:   \$120.03					
Total Unit Cost/Hour: \$120.03  Total Fleet Cost/Hour: \$120.03  PUMPING QUANTITIES  Initial Pond Volume: 107,000,000.00 gallons  Total Pond Inflow Surface Unit inflow rate in Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet Total Head: 20 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours					
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Initial Pond Volume: 107,000,000.00 gallons  Total Pond Inflow Surface Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours  Adjusted Pumping Time: 198.15 hours  Net Unadjusted Pumping Time: 201.63 Hours  Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours	Total Fleet Cost/Hou	r: \$120.03			
Final Pond Volume: 107,000,000.00 gallons Total Pond Inflow Surface Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet Total Head: 20 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST	<b>PUMPING QUANTITIES</b>	1			
Total Pond Inflow Surface Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph/pump Site Altitude: 4,600 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JIOB TIME AND COST	Initial Pond Volume:	107,000,000.00		Conversion factor:	1.0000
Area: 27,000 Sq. ft. gph/sq. ft.: 0.  Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet  CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST	Final Pond Volume:	107,000,000.00	gallons		
Total Pond Inflow Volume per Hour: 9,493.20 gallons  Source of estimated volume:  Division Estimate  PUMPING TIME  Maximum Pump Capacity: Estimated Suction Head: Estimated Discharge Head: Total Head: CPB Pump Capacity: 180,000 gph/pump Site Altitude:  Adjusted Pumping Capacity: 180,000 gph Initial Unadjusted Pumping Time: 198.15 Inflow during Initial Pumping: 1,881,060 Net Unadjusted Pumping Time: 201.63 Altitude Adjustment Factor: Altitude Adjusted Pumping Time: 199.16  Altitude Adjusted Pumping Time: 199.17  Altitude Adjusted Pumping Time: 199.16  Altitude Adjusted Pumping Time: 199.17  Altitude Adjusted Pumping Time: 199.19  Altitude Adjusted Pumping Time: 199.10  Altitude Adjusted Pumping Time: 199.29  Altitude And COST	Total Pond Inflow Surface			Unit inflow rate in	
PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST			Sq. ft.	gph/sq. ft.:	0.3516
Source of estimated volume: Division Estimate  PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet Total Head: 20 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST					
PUMPING TIME  Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet  Total Head: 20 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours	per Hour:	9,493.20	gallons		
Maximum Pump Capacity: 200,000 gph/pump Estimated Suction Head: 15 feet Estimated Discharge Head: 5 feet Total Head: 20 feet CPB Pump Capacity: 180,000 gph/pump Site Altitude: 4,600 feet  Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST	Source of est	imated volume: Divisio	on Estimate		
Estimated Suction Head:  Estimated Discharge Head:  Total Head:  CPB Pump Capacity:  Site Altitude:  Adjusted Pumping Capacity:  Initial Unadjusted Pumping Time:  Inflow during Initial Pumping:  Net Unadjusted Pumping Time:  Altitude Adjustment Factor:  Pump Efficiency Factor:  Total Adjusted Pumping Time:  15  feet  feet  20  gph/pump feet  \$4,600  gph  hours  198.15  hours  198.15  hours  201.63  Hours  Altitude Adjustment Factor:  0.9700  (3% rule)  Pump Efficiency Factor:  Total Adjusted Pumping Time:  179.29  hours  JOB TIME AND COST	<b>PUMPING TIME</b>				
Estimated Suction Head:  Estimated Discharge Head:  Total Head:  CPB Pump Capacity:  Site Altitude:  Adjusted Pumping Capacity:  Initial Unadjusted Pumping Time:  Inflow during Initial Pumping:  Net Unadjusted Pumping Time:  Altitude Adjustment Factor:  Pump Efficiency Factor:  Total Adjusted Pumping Time:  15  feet  feet  20  gph/pump feet  \$4,600  gph  hours  198.15  hours  198.15  hours  201.63  Hours  Altitude Adjustment Factor:  0.9700  (3% rule)  Pump Efficiency Factor:  Total Adjusted Pumping Time:  179.29  hours  JOB TIME AND COST	Maximur	n Pump Capacity:	200,000	gph/pump	
Estimated Discharge Head:  Total Head:  CPB Pump Capacity: Site Altitude:  Adjusted Pumping Capacity: Initial Unadjusted Pumping Time: Inflow during Initial Pumping: Net Unadjusted Pumping Time: Altitude Adjustment Factor: Pump Efficiency Factor: Total Adjusted Pumping Time:  198.15 hours gallons Hours Altitude Adjustment Factor: 0.9700 Pump Efficiency Factor: Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST			15		
Total Head:  CPB Pump Capacity: Site Altitude:  Adjusted Pumping Capacity: Initial Unadjusted Pumping Time: Inflow during Initial Pumping: Net Unadjusted Pumping Time: Altitude Adjustment Factor: Pump Efficiency Factor: Total Adjusted Pumping Time: 198.15 hours gallons Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: Total Adjusted Pumping Time: 179.29 hours					
Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST		Total Head:	20	feet	
Adjusted Pumping Capacity: 540,000 gph Initial Unadjusted Pumping Time: 198.15 hours Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST	CPI	B Pump Capacity:	180,000	gph/pump	
Initial Unadjusted Pumping Time:  Inflow during Initial Pumping:  Net Unadjusted Pumping Time:  Altitude Adjustment Factor:  Pump Efficiency Factor:  Total Adjusted Pumping Time:  198.15  hours  gallons  Hours  (3% rule)  (55 min./hr.)  hours  179.29  Hours  179.29		Site Altitude:	4,600		
Initial Unadjusted Pumping Time:  Inflow during Initial Pumping:  Net Unadjusted Pumping Time:  Altitude Adjustment Factor:  Pump Efficiency Factor:  Total Adjusted Pumping Time:  198.15  hours  gallons  Hours  (3% rule)  (55 min./hr.)  hours  179.29  Hours  179.29					
Inflow during Initial Pumping: 1,881,060 gallons Net Unadjusted Pumping Time: 201.63 Hours Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST					
Net Unadjusted Pumping Time:  Altitude Adjustment Factor:  Pump Efficiency Factor:  Total Adjusted Pumping Time:  179.29  Hours  (3% rule)  (55 min./hr.)  hours  JOB TIME AND COST					
Altitude Adjustment Factor: 0.9700 (3% rule) Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST					
Pump Efficiency Factor: 0.9167 (55 min./hr.) Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST					
Total Adjusted Pumping Time: 179.29 hours  JOB TIME AND COST					
JOB TIME AND COST					
	•	ea rumping Time:	1 / 9.29	nours	
	JOB TIME AND COST		Total job	time: <b>179.29</b>	Hours
Unit cost: \$0.000198 /Gallon Total job cost: <b>\$21,520</b>	Unit cost: \$0.000198	3 /Gallon	Total ioh	cost: \$21.520	

## **BULLDOZER WORK**

Task description:	Backf	ill highwal	l - Tract C			
Western Sugar Land Developn		Per	mit Action:	2023 Update	Permit/Job#:	M2010049
PROJECT IDE	NTIFICATIO	N				
Task #: 02B	/2023	State: County:	Colorado Weld		Abbreviation: Filename:	None M049-02B
	or organization n	ame: DI	RMS			
HOURLY EQU	IPMENT CO	<u>ST</u>				
Basic Machine: Horsepower: Blade Type: Attachment: Shift Basis: Data Source:	Cat D9T - 9S 405 Semi-Univer NA 1 per day (CRG)					
Cost Breakdown: Ownership Cost/l	Hour:		\$238.76	<u>Utilization %</u> NA		
Operating Cost/l	Hour:		\$162.29	100	<del></del>	
Ripper own. Cost/l			\$0.00	NA		
Ripper op. Cost/l			\$0.00	0		
Operator Cost/l	Hour:		\$40.04	NA		
MATERIAL QU Initial Volume: Swell factor: Loose volume:	76,000 1.000 76,000 LCY					
Source of estimate Source of estimate		Division Cat Hand		ion, Mining & Safety		
HOURLY PRO	DUCTION					
Average push dista Unadjusted hourly		50 feet 2,110.5 LC	Y/hr			
Materials consister	ncy description:	Loose	stockpile 1.2			
Average push grad Average site altitud		eet				
Material weight:	2,650 1	bs/LCY			_	
Weight description	: Decom	posed rock	- 25% Rock	, 75% Earth		
Job Condition Cor				Source		
	erator Skill:		.750	(AVG.)		
	consistency:		.200	(CAT HB)		
Doz	ing method:	1	.000	(GEN.)		

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7149

Adjusted unit production: 1,508.80 LCY/hr
Adjusted fleet production: 3017.6 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.292/LCY

Total job time: 25.19 Hours
Total job cost: \$22,218

### **PUMPING WORK**

Task description:	Dewa	tering - Tract D			
Western Sugar Recla Land Development P		Permit Action	1: _2023 Update	Permit/Job#: M	2010049
PROJECT IDENTIF	ICATIO	<u> N</u>			
Task #: 03A Date: 7/12/2023 User: RDZ		State: Colorad County: Weld	0	Abbreviation: No. Filename: M0	ne 49-03A
Agency or orga	nization r	name: DRMS			
HOURLY EQUIPME	ENT CO	ST			
Make and Model: Attachment 1: Attachment 2: Labor Unit 1: Horsepower:	Suction Discha	ption fugal pump - 200M, 10 n hose - 6 in. diam., 25 rge hose - 6 in. D., 25 operator	5 ft.	Quantity  1  1  1  0	
Weight:	per day 1.95 S Tons)	_			
Cost Breakdown:					
Ownership Cost/l Operating Cost/l Operator Cost/l	Hour:	\$18.25 \$21.76 \$0.00	Utilization % NA 100 NA		
Total Unit Cost/l		\$40.01	IM		
Total Fleet Cost/	Hour. —	\$40.01	_		
PUMPING QUANTI		Ψ10.01			
Initial Pond Vol		4,000,000.00		Conversion factor:	1.0000
Final Pond Vol	ume:	4,000,000.00	gallons		
Total Pond Inflow Su Total Pond Inflow Vo	Area:	4,000	Sq. ft.	Unit inflow rate in gph/sq. ft.:	0.3516
per I		1,406.40	gallons		
Source of	of estimat	ed volume: Divisio	on Estimate		
PUMPING TIME					
E	stimated S nated Dis	Imp Capacity: Suction Head: Scharge Head: Total Head: Imp Capacity: Site Altitude:	200,000 10 5 15 201,000 4,600	gph/pump feet feet feet gph/pump feet	
Initial Unac Inflow o Net Unac Altitu P	ljusted Pi luring Ini ljusted Pi ide Adjus ump Effic	bing Capacity: umping Time: itial Pumping: umping Time: stment Factor: ciency Factor: umping Time:	201,000 19.90 27,988 20.04 0.9700 0.9167 17.82	gph hours gallons Hours (3% rule) (55 min./hr.) hours	
JOB TIME AND COS	<u>ST</u>		Total job	time: 17.82	Hours
Unit cost: \$0.00	0177	/Gallon	Total job	cost: \$713	

# TRUCK/LOADER TEAM WORK

Ownership cost/hour:         \$26.39         \$65.69         NA         NA         NA         NA         \$11.3           Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         \$22.9           %Utilization-riper:         NA         0         NA         NA         NA         NA	Tasl	k description:	Haul m	aterial from near	by (within 1 mile	e) to fill Tract D		
Task #: 03B				Permit Action		e ]	Permit/Job#: M	2010049
Date: 7/12/2023   County: Weld   Filename: M049-03B	PR	OJECT IDEN	NTIFICATION	<u> </u>				
Na   Na   Na   Na   Na   Na   Na   Na	7				ado	Ab		
Agency or organization name:   DRMS			2023	County: Weld			Filename: M0	49-03B
Equipment Description			organization nat	ne: DRMS				
Equipment Description   Truck Loader Team - Truck:   Generic 12-18 cy, 6x4   CAT 966H high lift								
Truck Loader Team -Truck:	<u>HO</u>	<u>OURLY EQUI</u>	<u>PMENT COS'</u>	<u> </u>			is: <u>1 per day</u>	
CAT 966H high lift   Support Equipment -Load Area:   NA			Fruck Loader Tea					
Cost Breakdown:   Truck/Loader Team   Support Equipment   Maintenance Equipment				-Loader: CA				
Road Maintenance – Motor Grader: -Water Truck:         NA		Supp						
Cost Breakdown:         Truck/Loader Team         Support Equipment         Maintenance Equipment           Truck         Loader         Load Area         Dump Area         Motor Grader         Water Truck           %Utilization-machine:         100         100         NA         NA         NA         NA         100           Ownership cost/hour:         \$26.39         \$65.69         NA         NA         NA         NA         \$11.3           Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         NA           %Utilization-riper:         NA         0         NA         NA         NA         NA		Road M		1				
Truck         Loader         Load Area         Dump Area         Motor Grader         Water Truck           %Utilization-machine:         100         100         NA         NA         NA         100           Ownership cost/hour:         \$26.39         \$65.69         NA         NA         NA         \$11.3           Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         \$22.9           %Utilization-riper:         NA         0         NA         NA         NA         NA         NA			-Wa	nter Truck: Wat	ter Tanker, 2,500	Gal.		
Truck         Loader         Load Area         Dump Area         Motor Grader         Water Truck           %Utilization-machine:         100         100         NA         NA         NA         NA         100           Ownership cost/hour:         \$26.39         \$65.69         NA         NA         NA         NA         \$11.3           Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         NA           %Utilization-riper:         NA         0         NA         NA         NA         NA	Cos	t Rrookdown.	Truck/Lo	adar Taam	Support 1	Fauinment	Maintanan	ce Equipment
Ownership cost/hour:         \$26.39         \$65.69         NA         NA         NA         NA         \$11.3           Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         \$22.9           %Utilization-riper:         NA         0         NA         NA         NA         NA	Cus	a Dicakuowii.				_ 1 1		
Operating cost/hour:         \$64.76         \$48.09         NA         NA         NA         NA         \$22.90           %Utilization-riper:         NA         0         NA         NA         NA         NA	%Utilizat	tion-machine:	100	100	NA	NA	NA	100
%Utilization-riper: NA 0 NA NA NA NA	Ownersl	hip cost/hour:	\$26.39	\$65.69	NA	NA	NA	\$11.35
	Operati	ing cost/hour:	\$64.76	\$48.09	NA	NA	NA	\$22.92
Ripper own cost/hour: NA \$0.00 NA NA NA NA \$0.00		•		-				NA
			NA	\$0.00	NA	NA	NA	\$0.00
		•		·				\$0.00
								\$0.00
								\$34.27
								<u> </u>
Group Subtotals: Work: \$613.63 Support: \$0.00 Maint: \$34.27					Support:	\$0.00	Maint:	\$34.27
Total work team cost/hour: \$647.90	Tota	al work team co	st/hour: <b>\$647.9</b> 0	)				
MATERIAL QUANTITIES	MA	TERIAL QU	JANTITIES					
Initial volume: 24,000 CCY Swell factor: 1.000				CCY	Swell	factor: 1 000		
Loose volume: 24,000 LCY						1.000		
Source of estimated volume: Division of Reclamation, Mining & Safety		Sc	aurce of estimated	l volume: Divis	sion of Reclamatic	on Mining & Safe	tv	
Source of estimated swell factor: Cat Handbook						on, wining & sure	<del>ty</del>	
Material Purchase Cost: \$0.00								
Total Cost: \$0.00			Te	otal Cost: \$0.00	)			
HOURLY PRODUCTION	HC	OURLY PRO	DUCTION					
Truck Capacity:	Tru	ıck Canacity:	_					
Truck Payload (weight) Basis:			ght) Basis:					
Material weight: 2,650 Pounds/LCY				1 1 25				
Description: Decomposed rock - 25% Rock, 75% Earth  Rated Payload: 50,300 Pounds				1		1		

Payload Capacity: _	18.98	LC	Y			
Truck Bed (volume) Basis:						
Struck Volume:	12.00	LCY				
Heaped Volume:	18.00	LCY				
Average Volume:	15.00	LCY				
Adjusted Volume:	18.00	LCY				
	Truck Volume	e Based on Number	of Loader Passes:	14.63	LCY	
Loading Tool Capacity			Buck	ket Size Class: N	NA	
Rated Capacity:	5.000	LCY (heaped	)			<del>_</del>
Bucket Fill Factor:	0.975		al - uniform aggrega	ates to 1/8" (95-10	0%) 0.975	=
Adjusted Capacity:	4.875	LCY			,	_
Job Condition Corrections:			Site Altitude (ft.): 4	1600 feet		
GOD CONTRICTION CONTRICTIONS.	_					
Altitudo Adi.	Truck	Loader	Source			
Altitude Adj:	1.000 0.830	1.000 0.830	(CAT HB			
	0.650	0.030	(CAI III	•)		
Job Efficiency:						
Net Correction:	0.830	0.830				
·			Passes Required to 1	Fill Truck:	3 p	oasses
Net Correction:	Numbe		Passes Required to	Fill Truck:	<u>3</u> "	oasses
Net Correction:  Loading Tool Cycle Time:	Numbes:  S. Job Condition	er of Loading Tool l	Passes Required to	Fill Truck:	<u>3</u> "	passes
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs	Numbes: s. Job Condition vithin this Base	on Rating:  NA  NA	Passes Required to	Fill Truck:	3 F	oasses
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs  Selected Value v	Numbes: s. Job Condition vithin this Base	on Rating:  NA  NA	Passes Required to	Fill Truck:	3 F	passes
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs  Selected Value v  Track Loaders – 1	Numbes:  S. Job Condition  S.	on Rating: NA ic Rating: NA	Passes Required to	Fill Truck:  Dump:0.10	· · · · · · · · · · · · · · · · · · ·	passes
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs  Selected Value v  Track Loaders – I  Cycle Time Elements (min.):	Numbes: s. Job Condition within this Base Material Description	on Rating: NA In Rating: NA In Rating: NA In NA	· 	Dump: 0.10	· · · · · · · · · · · · · · · · · · ·	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value v.  Track Loaders – I.  Cycle Time Elements (min.):  Load: NA	Numbes: s. Job Condition within this Base Material Description	on Rating: NA In Rating: NA In Rating: NA In NA	· 	Dump: 0.10 maneuver): ( Factor (min.)	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value vs. Track Loaders — In the Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders — In the Cycle Time In the C	Numbes: s. Job Condition within this Base Material Descript  M  Unadjusted Base	on Rating: NA In Rating: NA In Rating: NA In NA	Γime (load, dump, r	Dump: 0.10 maneuver): (	0 0.500 minu	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs Selected Value v Track Loaders - 1  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders - Cycle Time Factors Material: Stockpile:	Numbe s: s. Job Condition within this Base Material Descript M Unadjusted Base No adjustme No adjustme	er of Loading Tool I on Rating: NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tent - factor not applient - factor not ap	Fime (load, dump, r	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000	0 0.500 minus   Source   (Cat HB)   (Cat HB)	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs Selected Value v Track Loaders – I  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders -  Cycle Time Factors Material: Stockpile: Truck Ownership:	Numbe s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme	er of Loading Tool I on Rating: NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tent - factor not applient - factor not ap	Fime (load, dump, recable 0.00 cable 0.00 cable 0.00	Dump: 0.10 maneuver): 0.00 Factor (min.) 0.000 0.000 0.000	0 minu Source (Cat HB) (Cat HB) (Cat HB)	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value vs. Track Loaders — Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders — Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Numbe  s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme No adjustme No adjustme	er of Loading Tool I on Rating: NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tent - factor not applient - factor not ap	Fime (load, dump, r cable 0.00 cable 0.00 cable 0.00 icable 0.00	Dump: 0.10 maneuver): 0.000 Factor (min.) 0.000 0.000 0.000 0.000	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs Selected Value v Track Loaders – I  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders -  Cycle Time Factors Material: Stockpile: Truck Ownership:	Numbe  s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme No adjustme No adjustme	er of Loading Tool I on Rating: NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tent - factor not applient - factor not ap	Cable 0.00	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000 0.000 0.000 0.000	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value vs. Track Loaders — Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders — Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Numbe  s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme No adjustme No adjustme	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tent - factor not applient - factor not	Cable 0.00	Dump: 0.10 maneuver): 0.000 Factor (min.) 0.000 0.000 0.000 0.000 0.000 0.000	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value vs. Track Loaders — Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders — Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Numbe  s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme No adjustme No adjustme	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle ont - factor not applient - factor not a	Cable 0.00	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000 0.000 0.000 0.000	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value vs. Track Loaders — Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders — Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	Numbe  s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme No adjustme No adjustme No adjustme No adjustme	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle ont - factor not applient - factor not a	Cable 0.00 Cable O.00 Cable O.00 Cable O.00 Cable O.00 Cable O.00	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.500	0	
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs Selected Value v Track Loaders – I Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	Numbe s: s. Job Condition within this Base Material Description  Unadjusted Base No adjustme	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle ont - factor not applient - factor not a	Cable 0.00 Cime Adjustment: Cader Cycle Time: Compared to the com	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.500	0	utes
Net Correction:  Loading Tool Cycle Time:  Excavators and Front Shovel  Machine Cycle Time vs. Selected Value v. Track Loaders – I.  Cycle Time Elements (min.):  Load: NA  Wheel and Track Loaders - Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:  Truck Cycle Time:	Number Sizes.  Solve Condition within this Base Material Description.  Unadjusted Base No adjustme No	er of Loading Tool I  on Rating: IC Rating: IC Rating: IC NA  ription:  Maneuver: IC NA  asic Loader Cycle To  ent - factor not applient - factor not appl	Cable 0.00 Cime Adjustment: Cader Cycle Time:	Dump: 0.10 maneuver): ( Factor (min.) 0.000 0.000 0.000 0.000 0.000 0.000 0.500 1.100	O.500 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> penetration 1.2

Road Condition: Very hard, smooth, asphalt or concrete, no tire

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	0.00	1.20	1.20	2895	1.860

Haul Time: 1.860 minutes

Return Route:

Return Route.							
	Seg#	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
	1	5000.00	0.00	1.20	1.20	2913	1.751

Return Time: 1.751 minutes
Total Truck Cycle Time: 6.111 minutes

Loading Tool unit

Production 548.44 LCY/Hour Adjusted for job efficiency: 455.20 LCY/Hour Truck Unit Production 143.59 LCY/Hour Adjusted for job efficiency: 119.18 LCY/Hour

Optimal No. of Trucks: 4 Truck(s) Selected Number of Trucks: 4 Truck(s)

Adjusted hourly truck team production: 476.73 LCY/Hour Adjusted single truck/loader team production: 455.20 LCY/Hour Adjusted multiple truck/loader team production: 455.20 LCY/Hour

### JOB TIME AND COST

 Fleet size:
 1
 Team(s)
 Total job time:
 52.72
 Hours

 Unit cost:
 \$1.423
 /LCY
 Total job cost:
 \$34,160

## **BULLDOZER WORK**

Task description:	Backf	ill highwal	l - Tract D			
Western Sugar Land Developm		Per	mit Action:	2023 Update	Permit/Job#:	M2010049
PROJECT IDE	NTIFICATIO	N				
Task #: 03C	/2023	State: County:	Colorado Weld		Abbreviation: Filename:	None M049-03C
Agency o	or organization r	name: Dl	RMS			
HOURLY EQU	IPMENT CO	ST				
Basic Machine:	Cat D9T - 98					
	405	30		<del></del>		
Horsepower:		ma a 1		<u> </u>		
Blade Type:	Semi-Univer	rsai				
Attachment:	NA					
Shift Basis:	1 per day			_		
Data Source:	(CRG)					
Cost Breakdown:						
Cost breakdown:				TT('1' - 4' 0'		
0 11 0 1			<b>***</b>	<u>Utilization %</u>		
Ownership Cost/I			\$238.76	NA		
Operating Cost/I			\$162.29	100		
Ripper own. Cost/I	Hour:		\$0.00	NA		
Ripper op. Cost/l	Hour:		\$0.00	0		
Operator Cost/l			\$40.04	NA	<del></del>	
MATERIAL QU Initial Volume: Swell factor:	64,500 1.000					
Loose volume:	<b>64,500</b> LCY					
Source of estimated Source of estimated		Division Cat Hand		on, Mining & Safety		
<b>HOURLY PRO</b>	<b>DUCTION</b>					
Average push dista	ince:	50 feet				
Unadjusted hourly		2,110.5 LC	Y/hr			
		2,110.0 20				
Materials consister	ncy description:	Loose	stockpile 1.2			
Average push grad	ient: -10 %					
Average site altitud		feet				
Material weight:	2,650	lbs/LCY			<u></u>	
Weight description	: Decom	nposed rock	- 25% Rock	, 75% Earth		
Job Condition Cor				Source		
	erator Skill:	0	.750	(AVG.)		
Material	consistency:	1	.200	(CAT HB)	<del>-</del>	
	ing method:	1	.000	(GEN.)		
DOL		1		(0111.)		

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7149

Adjusted unit production: 1,508.80 LCY/hr
Adjusted fleet production: 3017.6 LCY/hr

# **JOB TIME AND COST**

Fleet size: 2 Dozer(s)
Unit cost: \$0.292/LCY

Total job time: 21.37 Hours
Total job cost: \$18,856

# **COMPACTION WORK**

Task description:	Compaction of slo	pes				
Western Sugar Rec Land Development		it Action:	23 Update	Pe	rmit/Job#:	M2010049
PROJECT IDENT	IFICATION					
Task #: 04A	State:	Colorado		Abbr	eviation:	None
Date: 7/12/202		Weld			ilename:	M049-04A
User: RDZ					•	
Agency or or	ganization name: DRI	MS				
HOURLY EQUIPM	MENT COST					
Basic Mach	ine: CAT 815F			Horsepower:	,	240
Compactor Ty		ot		Shift Basis:		er day
		<del> </del>		Data Source:		CRG)
Cost Breakdown:				_		
COSt DICARGOWIII				Utilization %		
Ow	nership Cost/Hour:	\$147.57		NA		
	perating Cost/Hour:	\$117.19		100		
C	Operator Cost/Hour:	\$31.50		NA		
To	tal Unit Cost/Hour:	\$296.26				
Tot	tal Fleet Cost/Hour:	\$592.53				
Loose vol	ume: 205,0		LCY CCY	Shr	nkage fact	tor: <u>0.900</u>
Compacted vol	ume: 184,5	<u> </u>	CCY			
	Source of estimated volume			ation, Mining & S	afety	
Source of	estimated shrinkage fac	tor: Cat Han	dbook			
HOURLY PRODU	<u>CTION</u>		Unadjuste	ed hourly producti	on = (W x)	<u>S x L x C) / P</u>
C	ompacted width per pass	s (W):	6.50	feet		
A	Average Compactor Spee	d (S):	5.00	mph		
Compa	cted thickness of each li		10.00	inches		
<b>~</b>	Conversion Constan		16.3		/12in./27ci	u.ft.)
*	number of machine passe	• • — —	1 5 207 50	passes		
_	usted Hourly Unit Produ	cuon:	5,297.50	CCY/ho	ur	
Job Condition Correcti	on factors	Covers	Site Altiti	ude: <u>4,600</u> feet		
Altitude Adj:	1.00	Source (CAT HB)				
Job Efficiency:		(1 shift/day)				
Net Correction:		multiplier				
Tier Correction.		-	4.20 < 0.2	CCMAT		
	Adjusted Hourly Unit P		4,396.93	CCY/Hour		
	Adjusted Hourly Fleet P	roduction:	8,793.85	CCY/Hour		
JOB TIME AND C	<u>OST</u>					
Fleet size:	2 Compactor	(s)	То	otal job time:	20.98	Hours
Unit cost: \$	0.067 per CCY		Т	otal iob cost	\$12,432	

# **SCRAPER TEAM WORK**

Task description:		_		s, 6", all tracts				
Western Sugar R Site: Land Developmen		Permit	Action:	2023 Update	Pe	rmit/Job#:	M201004	49
PROJECT IDEN	<b>FIFICATION</b>							
Task #: 05A		State: (	Colorado		Abbr	eviation:	None	
Date: 7/13/20			Weld			ilename:	M049-05	A
User: RDZ						<del>-</del>		
Agency or o	organization name	DRM	S					
HOURLY EQUIP	PMENT_			COSTS	hift basis: 1 per	day		
			Equipme	ent Description				
		Scraper:	Cat 627	7G				
		-Dozer:	NA					
Suppo	rt Equipment -Loa	d Area: p Area:	NA NA					
Road Ma	intenance –Motor		NA NA					
		Truck:	NA					
Cost Breakdown:	Scraper Wo	rk Team		Support Equi	nment	Mair	ntenance Ec	wipment
<u></u>	Scraper	Doz	zer	Load Area	Dump Area	Motor		Water Truck
%Utilization-machine:	100		NA	NA	NA		NA	NA
Ownership cost/hour:	\$230.18		NA	NA	NA		NA	NA
Operating cost/hour:	\$281.21		NA	NA	NA		NA	NA
%Utilization-ripper:	NA		NA	NA	NA		NA	NA
Ripper own. cost/hour:	NA		NA	NA	NA		NA	NA
Ripper op. cost/hour:	NA		NA	NA	NA		NA	NA
Operator cost/hour:	\$47.07		NA	NA	NA		NA	NA
Unit Subtotals:	\$558.46		NA	NA	NA		NA	NA
Number of Units:	1		0	0	0		0	(
Group Subtotals:	Work:	\$558	3.46	Support:	\$0.00		Maint:	\$0.00
Total work team cost	/hour: \$558.46							
MATERIAL QUA	ANTITIES							
Initial volume:	32,315		CCY	Swell fact	tor: 1.000			
Loose volume:	32,315		LCY					
Sou	rce of estimated vo	olume:	Division	of Reclamation,	Mining & Safety			
Source of	of estimated swell	factor:	Cat Han	dbook				
HOURLY PROD	<u>UCTION</u>							
				Scraper B	owl (volume) Ba	sis:		
Material weight:	1,600 lbs/LCY			Struck	Volume: 15.70	)	LCY	7
Material description:	Top Soil				Volume: 22.00		LCY	
Rated Payload:	52,800 pounds			Average	Volume: 18.85		LCY	
Payload Capacity:	33.00 LCY			Adjusted C	Capacity: <b>18.85</b>	;	LCY	<b>7</b>

$\sim$	1	<b>—</b> :	
( '\77	CIA	111	me:
$\sim$ y	-	11.	m.

 $\begin{array}{lll} \text{Scraper Loading Time:} & \underline{0.70} \text{ Minutes} \\ \text{Maneuver and Spread Time:} & \underline{0.60} \text{ Minutes} \\ \end{array}$ 

Job Condition Correction: Site Altitude: 4600 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

**Travel Time:** 

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	3.00	3.00	2824	0.38

Haul Time: **0.38** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	3.00	3.00	2874	0.32

Return Time: 0.32 minutes

Total Scraper team cycle time:
Adjusted for job conditions:
Selected Number of Scrapers:
Adjusted single scraper team (unit) hourly production:
Adjusted multiple scraper team (fleet) hourly production:

Total Scraper team cycle time:
2.00
Minutes
469.37
LCY/Hour
469.37
LCY/Hour
469.37
LCY/Hour

Unadjusted unit production/hour: 565.50 LCY/Hour Optimal Number of Scrapers per push dozer:

### JOB TIME AND COST

Fleet size: \_\_\_\_\_1 Team(s) Total job time: \_\_\_\_\_68.85 Hours

Unit cost: \$1.190 /LCY Total job cost: \$38,449

# **REVEGETATION WORK**

Permit Action:   2023 Update   Permit/Job#:   M2010049	Land Development Project         2023 Update           ROJECT IDENTIFICATION           Task #:         06A		M2010049
Task #: 06A State: Colorado Abbreviation: None Date: 7/13/2023 County: Weld Filename: M049-06A  User: RDZ  Agency or organization name: DRMS  ERTILIZING  aterials  Description Unit Cost / Unit Cost / Unit Cost / Acre  Total Fertilizer Materials Cost/Acre  Splication  pplication  Plant	Task #:06AState:ColoradoAbbreDate:7/13/2023County:WeldF	eviation: N	
Date: 7/13/2023 County: Weld Filename: M049-06A User: RDZ  Agency or organization name: DRMS  ERTILIZING  aterials  Description  Units / Acre Unit Cost / Unit Cost / Acre Total Fertilizer Materials Cost/Acre Solution	Date: 7/13/2023 County: Weld F	eviation: N	
Agency or organization name: DRMS  ERTILIZING aterials  Description  Units / Acre Unit Cost / Unit Cost / Acre  Total Fertilizer Materials Cost/Acre Splication			Vone
Agency or organization name: DRMS  ERTILIZING aterials  Description  Units / Acre Unit Cost / Unit Cost / Acre  \$  Total Fertilizer Materials Cost/Acre \$0.00	User: RD7	ilename: N	/I049-06A
ERTILIZING aterials  Description  Units / Acre Unit Cost / Unit Cost / Acre  \$ Total Fertilizer Materials Cost/Acre Soplication	Coci. KDL		
Description  Units / Acre Unit  Cost / Unit  Cost / Acre  Total Fertilizer Materials Cost/Acre  Poplication	Agency or organization name: DRMS		
Total Fertilizer Materials Cost/Acre \$0.00		Unit	Cost /Acre
Materials Cost/Acre \$0.00	\$		\$
		Materials	\$0.00
Description			Cost /Acre
	Description		COSCILICIE

# **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
Total Tilling Cost/Acre	\$112.82

**Total Fertilizer Application Cost/Acre** 

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.01	0.39	\$0.28
Switchgrass - Blackwell	0.90	8.04	\$10.35
Blue Grama - Lovington	0.20	3.26	\$3.20
Indian Ricegrass - Native	1.90	6.15	\$12.35
Sand Dropseed	0.01	1.19	\$0.10
Kentucky Bluegrass - Ginger	0.05	2.47	\$0.16
Little Bluestem - Pastura	0.70	4.18	\$9.44
Sideoats Grama - Vaughn	1.80	5.91	\$15.08
Strawberry Clover (coated)	0.10	0.68	\$0.63

\$0.00

Smooth Brome - Manchar	0.10	0.33	\$0.33
Sheep Fescue - Covar	0.40	6.24	\$2.44
Tall Wheatgrass - Jose	1.10	1.99	\$3.71
Totals Seed Mix	7.27	40.84	\$58.06

**Application** 

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

### **MULCHING and MISCELLANEOUS**

#### Materials

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

Application

Description		Cost /Acre
Weed spray, hand, aquatic area, annuals [DMG]		\$119.47
Weed spray, hand, aquatic area, nox. [DMG]		\$183.16
Weed spray, truck, non-aquatic area, nox. [DMG]		\$62.72
Weed spray, truck, non-aquatic areas, ann. [DMG]		\$22.81
	<b>Total Mulch Application Cost/Acre</b>	\$388.16

### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 1	Nursery Stoc	k Cost / Acre	\$0.00

### **JOB TIME AND COST**

No. of Acres: 40.06 Cost /Acre: \$791.04

Estimated Failure Rate: 25% Cost /Acre\*: \$402.88

\*Selected Replanting Work Items: TILLING,SEEDING

Initial Job Cost: \$31,689.06

Reseeding Job Cost: \$4,034.84

Total Job Cost: \$35,724

Job Hours: 40.00

# **MOTOR GRADER WORK**

Task description:	Road grad	ing					
Western Sugar Red Land Development		Perm	nit Action:	2023 Update	1	Permit/Job#:	M2010049
PROJECT IDENT	IFICATION						
Task #: 07A Date: 7/13/202 User: RDZ		State: _ unty: _	Colorado Weld		Ab	breviation: Filename:	None M049-07A
	ganization name:	DR	MS				
		_ DK	1415				
HOURLY EQUIP							
Basic Mach		[			Horsepower:		259
Ripper Attachm	ent:				Shift Basis:		er day
					Data Source:	((	CRG)
Cost Breakdown:							
					Utilization %		
	vnership Cost/Ho			\$149.33	NA	_	
	perating Cost/Ho			\$23.20	25	_	
	vnership Cost/Ho			\$0.00	NA	<u> </u>	
	perating Cost/Ho Operator Cost/Ho			\$0.00 \$46.87	NA	_	
	otal Unit Cost/Ho			\$219.40	INA	_	
10	nai Omi Cost/fio	uı. ——		φ417.40			
То	tal Fleet Cost/Ho	ur:	\$219	9.40			
MATERIAL QUA	NTITIES						
	ea to be graded o	r ripped	l: 4.60				acres
	urce of estimated		-	t D - Mining Pla			
		υ		<u> </u>			
HOURLY PRODU	<u>CTION</u>						
	Average Gra	-		6.25	mph		
	Selected A				ntenance (3-9.5		
	Selected Bl			30	degree	S	
XX7: .1	Effective Bla			12.10	feet		
	th of blade overla			2.00	feet		
	ng or ripping widt sted Hourly Unit I			10.10 7.6515	feet acres/h	our	
Job Condition Correct	-	10000			te Altitude: 460		
			Source			_	
Altitude Adj	: 1.00		(CAT HE	3)			
Job Efficiency:			(1sh/d, far				
Net Correction:			multiplier				
			•		/ <b>T T</b>		
	Adjusted Hourly			6.8864	acres/Hou		
	Adjusted Hourly	rieet i	Toduction:	6.8864	acres/Hou	ı	
JOB TIME AND C	COST						
Fleet size:		der(s)		Total job time	: <b>2.</b> 6	67	Hours
TT *				m . 1: 1	.h =-		
Unit cost:	\$31.86 per	acre		Total job cost	: \$5	80	

# **BULLDOZER WORK**

Task description:	<b>Repa</b>	ir and grad	e embankm	ent failure		
Western Sugar l : Land Developme		Per	mit Action:	2023 Update	Permit/Job#:	M2010049
PROJECT IDEN	TIFICATIO	<u>)N</u>				
Task #: 08A  Date: 7/19/2  User: RDZ	2023	State: County:	Colorado Weld		Abbreviation: Filename:	None M049-08A
	organization i	name: DF	RMS			
HOURLY EQUI	PMENT CO	ST				
Basic Machine:	Cat D8T - 8	SU				
Horsepower:	310					
Blade Type:	Semi-Unive	rsal		<del></del>		
Attachment:	NA			<del></del>		
Shift Basis:	1 per day			<u></u>		
Data Source:	(CRG)			<u> </u>		
	(CNU)			<u></u>		
Cost Breakdown:				TT.'11' .' 0'		
				<u>Utilization %</u>		
Ownership Cost/H			\$241.38	NA		
Operating Cost/H	our:		\$143.92	100		
Ripper own. Cost/H	our:		\$0.00	NA	<del></del>	
Ripper op. Cost/H			\$0.00	0		
Operator Cost/H			\$40.04	NA		
MATERIAL QU Initial Volume: Swell factor:	13,000 1.000					
Loose volume:	<b>13,000</b> LCY		_			
Source of estimated Source of estimated		Division Cat Hand		ion, Mining & Safety		
HOURLY PROI	<u>OUCTION</u>					
Average push distar	nce:	100 feet				
Unadjusted hourly p		852.6 LCY	/hr			
Materials consistend	cy description:	Loose	stockpile 1.2			
Average push gradie Average site altitude		feet				
Material weight:	3,400	lbs/LCY			<u> </u>	
Weight description:	Sand a	nd gravel -	Wet			
Job Condition Corre	ection Factor rator Skill:	1.	.000	Source (EXCL.)		
Material co			200	(CAT HB)	<del></del>	
	ng method:		000	(GEN.)	<del></del>	

_		
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.676	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4234

Adjusted unit production: 360.99 LCY/hr
Adjusted fleet production: 360.99 LCY/hr

# **JOB TIME AND COST**

Fleet size: 1 Dozer(s)
Unit cost: \$1.178/LCY

Total job time: 36.01 Hours
Total job cost: \$15,317

# TRUCK/LOADER TEAM WORK

Western Sugar Land Developm		Permit Acti	on: 2023 Update	<u>e</u>	Permit/Job#: N	12010049
PROJECT IDEN	NTIFICATION	[				
Task #: 08B		State: Color	ado	Ab		one
Date: 7/19/2 User: RDZ	2023	County: Weld			Filename: Me	049-08B
	organization nar	ne: DRMS				
		<del> </del>				
HOURLY EQUI	PMENT COST	<del>_</del>			is: <u>1 per day</u>	
	Fruck Loader Tea		Equipment Descri neric 5-6 cy, 4x2	ption		
•	Truck Loader Tea		T 950H			
Supp	ort Equipment -L					
Poad M	-Di Iaintenance –Mot	1	D8T - 8SU			
Road IV		iter Truck: NA				
			~			
Cost Breakdown:	Truck/Loa Truck	ader Team Loader	Support Load Area	Equipment Dump Area	Maintenar Motor Grader	water Truck
Utilization-machine:	100	100	NA	90	NA	NA
Ownership cost/hour:	\$12.22	\$49.32	NA	\$241.38	NA	NA
Operating cost/hour:	\$31.22	\$39.80	NA	\$129.53	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
ipper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA *24.82	\$0.00	NA NA	\$0.00	NA NA	NA NA
Operator cost/hour: Unit Subtotals:	\$24.82 \$68.26	\$35.97	NA NA	\$40.04	NA NA	NA NA
Number of Units:	2	\$125.09 1	0	\$410.94	0	0
Group Subtotals:	Work:	\$261.61	Support:	\$410.94	Maint:	\$0.00
•			Support.	ψ110.51	TVIGITE.	ψ0.00
Total work team co	st/nour: <b>50/2.53</b>	<u>)                                    </u>				
MATERIAL QU	ANTITIES					
Initial volume	: 7,510	CCY	Swell	factor: 1.124		
Loose volume		8 LCY				
Sc	ource of estimated	volume: Divi	sion of Reclamation	on, Mining & Safe	ety	
Source	of estimated swe		Handbook			
	Material Purch	ase Cost: $\frac{\$0.00}{\$0.00}$				
	10	λωι Cost. <u>φυ.υ</u>	<u> </u>			
<b>HOURLY PRO</b>	DUCTION					
Truck Capacity:						
	105					
Truck Payload (wei						
Material v	weight: 2,900	nd gravel - Dry	Pounds/LCY			

Payload Capacity:	5.72	LCY				
Truck Bed (volume) Basis:						
Struck Volume:	5.00	LCY				
Heaped Volume:	6.00	LCY				
Average Volume:	5.50	LCY				
Adjusted Volume: _	5.72	LCY				
Fina	l Truck Volume	e Based on Number of	Loader Passes:	3.98	LCY	
<u>Loading Tool Capacity</u>			Buck	ket Size Class: N	Ā	
Rated Capacity:	4.300	LCY (heaped)			71	_
Bucket Fill Factor:	0.925	Loose material -	1/8" to 3/8" (90	- 95%) 0.925		_
Adjusted Capacity:	3.978	LCY				
Job Condition Correction	S:_	Sit	e Altitude (ft.): 4	1658 feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HB	5)		
Job Efficiency:	0.830	0.830	(CAT HB	5)		
Net Correction:	0.830	0.830				
<b>Loading Tool Cycle Time</b>	: Numbe	0.830 er of Loading Tool Pas	sses Required to l	Fill Truck:		passes
Loading Tool Cycle Time  Excavators and Front Show	: Numbe	er of Loading Tool Pas	ses Required to l	Fill Truck:	1 1	passes
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time	: Numbe	er of Loading Tool Pas	sses Required to l	Fill Truck:	<u>1</u> 1	passes
Excavators and Front Show  Machine Cycle Time Selected Value	<u>:</u> Numbe <u>els:</u> vs. Job Conditio	on Rating: NA	ses Required to l	Fill Truck:	1 1	passes
Excavators and Front Show  Machine Cycle Time Selected Value	Numbeels:  vs. Job Condition  within this Base  Material Descri	on Rating: NA	ses Required to l	Fill Truck:	1 1	passes
Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders	: Numbe els: vs. Job Conditio within this Bas: - Material Desci	on Rating: NA	ses Required to l	Fill Truck:	-	passes
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.	E Number els:  vs. Job Condition within this Baser Material Descript:	on Rating:  Ic Rating:  NA  NA  ription:  Maneuver:  NA		Dump: 0.100	-	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.  Load: NA	E Number els:  vs. Job Condition within this Baser Material Descript:	on Rating:  Ic Rating:  NA  NA  ription:  Maneuver:  NA		Dump: 0.100	)	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material:	E Number els:  vs. Job Condition within this Baser Material Descript:  Unadjusted Baser Material 1/8	on Rating:  In Rating:  NA  In Rating:  NA  In NA	ne (load, dump, n	Dump: 0.100 naneuver): 0.100 Factor (min.) -0.020	) min	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile:	E Number els:  vs. Job Condition within this Baser Material Description:  - Unadjusted Baser Material 1/8'  No adjustme	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tim to 3/4" diameter -0.0 nt - factor not applicate	ne (load, dump, no load)	Dump: 0.100 naneuver): 0. Factor (min.) -0.020 0.000	Source (Cat HB) (Cat HB)	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors Material: Stockpile: Truck Ownership:	E Number els:  vs. Job Condition within this Baser Material Description:  - Unadjusted Baser Material 1/8'  No adjustme Common ow	on Rating:  NA ic Rating:  NA ription:  Maneuver:  NA asic Loader Cycle Tim to 3/4" diameter -0.0 nt - factor not applicate the reship of trucks and	ne (load, dump, no load)	Dump: 0.100 maneuver): 0.100 Factor (min.) -0.020 0.000 -0.040	Source (Cat HB) (Cat HB) (Cat HB)	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile:  Truck Ownership: Operation:	E Number els:  vs. Job Condition within this Base Material Describition:  - Unadjusted Base Material 1/8'  No adjustme Common ow Constant ope	on Rating: NA	ne (load, dump, no load)	Dump: 0.100 naneuver): 0. Factor (min.) -0.020 0.000 -0.040 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
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Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile:  Truck Ownership: Operation:	E Number els:  vs. Job Condition within this Base Material Describition:  - Unadjusted Base Material 1/8'  No adjustme Common ow Constant ope	on Rating:  On Rating:  NA  NA  ription:  Maneuver:  NA  asic Loader Cycle Tim  'to 3/4" diameter -0.0  nt - factor not applicate restaion -0.04  get 0.00  Net Cycle Tim	ne (load, dump, no ple 0.00 loaders -0.04 lo	Dump: 0.100 maneuver): 0. Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100	Source (Cat HB) minutes	
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value  Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile:  Truck Ownership: Operation:	E Number els:  vs. Job Condition within this Base Material Describition:  - Unadjusted Base Material 1/8'  No adjustme Common ow Constant ope	on Rating:  NA ic Rating: NA ription:  Maneuver: NA asic Loader Cycle Tim to 3/4" diameter -0.0 nt - factor not applicate the reation -0.04 get 0.00  Net Cycle Tim Adjusted Loader	ne (load, dump, no ple 0.00 loaders -0.04 lo	Dump: 0.100 maneuver): 0. Factor (min.) -0.020 0.000 -0.040 -0.040 0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
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Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation: Dump Target:  Truck Cycle Time:	E Number els:  vs. Job Condition within this Base Material Describ:  - Unadjusted Base Material 1/8'  No adjustme Common ow Constant open Nominal target.	on Rating:  On Rating:  NA  Ic Rating:  NA  Iniption:  Maneuver:  NA  asic Loader Cycle Time  of to 3/4" diameter -0.0  Int - factor not applicate the control of trucks and detection -0.04  get 0.00  Net Cycle Time  Adjusted Loade  Net Load Ti	ne (load, dump, no possible 0.00 loaders -0.04 loaders -0.	Dump: 0.100 maneuver): 0. Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.100	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	utes
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value 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	E Number els:  vs. Job Condition within this Base Material Describ:  Unadjusted Base No adjustme Common ow Constant open Nominal targeter (Constant open Nominal targeter)  e: 0.50	on Rating:  On Rating:  NA  Ic Rating:  Maneuver:  NA  asic Loader Cycle Time  To 3/4" diameter -0.0  Int - factor not applicate  The reship of trucks and interesting of truc	ne (load, dump, recorded to the loaders of the load	Dump: 0.100 maneuver): 0.100 Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.100  for site altitude:	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes 0.500	utes
Loading Tool Cycle Time  Excavators and Front Show  Machine Cycle Time Selected Value Track Loaders  Cycle Time Elements (min.  Load: NA  Wheel and Track Loaders  Cycle Time Factors  Material: Stockpile: Truck Ownership: Operation: Dump Target:  Truck Cycle Time:	E Number els:  vs. Job Condition within this Basser Material Describit.  Unadjusted Baser Material 1/8'  No adjustmer Common ow Constant open Nominal target.  e: 0.50  e: 0.100	on Rating:  On Rating:  NA  Ic Rating:  NA  Iniption:  Maneuver:  NA  asic Loader Cycle Time  of to 3/4" diameter -0.0  Int - factor not applicate the control of trucks and detection -0.04  get 0.00  Net Cycle Time  Adjusted Loade  Net Load Ti	ne (load, dump, no processed process	Dump: 0.100 maneuver): 0. Factor (min.) -0.020 0.000 -0.040 -0.040 0.000 -0.100 0.400 0.100	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> penetration 4.0

Road Condition: Rutted dirt, little maintenance, no water, 1" tire

500.00

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	4.00	4.00	2665	0.285

Haul Time: 0.285 minutes Return Route: Haul Distance Grade (%) Roll. Res **Total Res** Velocity Travel Seg# Time (Ft) (%) (%) (fpm) (min)

4.00

Return Time: 0.205 minutes
Total Truck Cycle Time: 1.890 minutes

2849

0.205

Loading Tool unit

Production \_\_\_\_\_397.75 \_\_\_ LCY/Hour Adjusted for job efficiency: \_\_\_\_330.13 \_\_\_ LCY/Hour

4.00

Truck Unit Production

126.27 LCY/Hour Adjusted for job efficiency: 104.80 LCY/Hour

0.00

Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 209.61 LCY/Hour Adjusted single truck/loader team production: 209.61 LCY/Hour Adjusted multiple truck/loader team production: 209.61 LCY/Hour

### **JOB TIME AND COST**

 Fleet size:
 1
 Team(s)
 Total job time:
 40.26
 Hours

 Unit cost:
 \$3.209
 /LCY
 Total job cost:
 \$27,075

# TRUCK/LOADER TEAM WORK

-	Γask description:	Place be	dding materi	al for r	iprap on wei	r		
Site:	Western Sugar I Land Developme		Permit A	Action:	2023 Update	e	Permit/Job#: M	2010049
]	PROJECT IDEN	TIFICATION	<u>.</u>					
	Task #: 08C			lorado		Ab	breviation: No	
	Date: 7/19/2 User: RDZ	2023	County: We	eld			Filename: MO	)49-08C
		organization nar	ne: DRMS					
						~		
ļ	HOURLY EQUI	PMENT COS	<u>Ľ</u>	Е.	· D ·		is: 1 per day	
	Т	ruck Loader Tea	m -Truck:		pment Descri 5-6 cy, 4x2	ption		
_			-Loader:	Cat 320	D L 9'-6" Sti	ck		
	Supp	ort Equipment -L		CAT 95	0H D L=9'-6" Sti	ck		
-	Road M	aintenance –Mot	1	NA	DL 7 0 Bii	CK		
		-Wa	ter Truck:	NA				
	Cost Breakdown:	Truck/Lo	ader Team		Support I	Equipment	Maintenar	ce Equipment
	OSE DI CUITA WII.	Truck	Excavator	Lo	ad Area	Dump Area	Motor Grader	Water Truck
6Util	ization-machine:	100	5	50	100	50	NA	N.A
	ership cost/hour:	\$12.22	\$70.8	35	\$49.32	\$70.85	NA	NA NA
Ope	rating cost/hour:	\$31.22	\$25.0	01	\$39.80	\$25.01	NA	N/
	Utilization-riper:	NA		0	NA	NA	NA	N.
	r own. cost/hour:	NA	\$0.0		\$0.00	\$0.00	NA	N.
	per op. cost/hour:	NA	\$0.0		\$0.00	\$0.00	NA NA	N.
Οþ	erator cost/hour: Unit Subtotals:	\$24.82 \$68.26	\$46.8 \$142.7		\$35.97 \$125.09	\$46.87 \$142.73	NA NA	NA NA
N	Number of Units:	2	\$142.7	1	\$123.09 1	\$142.73 1	0	102
	Group Subtotals:	Work:	\$279.25	1	Support:	\$267.82	Maint:	\$0.00
	-				Бирроги.	\$207.02	TVIMITE.	Ψ0.00
	Total work team cos	st/nour: <u>\$547.07</u>						
]	MATERIAL QU	<u>ANTITIES</u>						
	Initial volume	2,500	C	CY	Swell	factor: 1.000		
	Loose volume:			CY				
	So	urce of estimated	volume: D	ivision	of Reclamatio	on, Mining & Safe	ety	
	Source	of estimated swe		at Hand	book			
		Material Purch		0.00				
		10						
]	HOURLY PRO	<b>DUCTION</b>						
ŗ	Fruck Capacity:							
	Truck Payload (wei				_			
	Material v		Dry, loose		Pounds/LCY			
	Rated Pa	<u> </u>	•		Pounds			

Payload Capacity:	6.92	LCY	Y			
Truck Bed (volume) Basis:						
Struck Volume:	5.00	LCY				
Heaped Volume:	6.00	LCY				
Average Volume:	5.50	LCY				
Adjusted Volume:	6.00	LCY				
Fina	al Truck Volum	ne Based on Number	of Loader Passes:	6.01	LCY	
<u>Loading Tool Capacity</u>			Rucl	ket Size Class: M	Medium	
Rated Capacity:	1.540	LCY (heaped		ket Size Classiv	rearan	_
Bucket Fill Factor:	0.975			ates to 1/8" (95-100	0%) 0 975	=
Adjusted Capacity:	1.502	LCY	ii - uiiiioiiii aggieg	aics to 1/6 (75-100	570) 0.713	_
Adjusted Capacity.	1.502	LC1				
Job Condition Correction	<u>s:</u>		Site Altitude (ft.): 4	1658 feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HE	,		
	0.020	0.830	(CAT HE	3)		
Job Efficiency:	0.830		(C/III III			
Job Efficiency:  Net Correction:	0.830	0.830	(CATT III	,		
	0.830			<i>,</i>	41	passes
Net Correction:	0.830	0.830		<i>,</i>	1	passes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time	<b>0.830</b> :: Numb	0.830  oer of Loading Tool I  ion Rating: EXCE		<i>,</i>	4 1	passes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time	0.830  E: Numb rels: vs. Job Conditi e within this Ba	0.830  oer of Loading Tool I  ion Rating: EXCE	Passes Required to	<i>,</i>	1	passes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value	0.830  E. Numberels:  vs. Job Condition  within this Ba  Material Description	0.830  oer of Loading Tool I  ion Rating: EXCE	Passes Required to	<i>,</i>	1	passes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders	0.830  E. Numberels:  vs. Job Condition  within this Bath  Material Description  (i):	0.830  oer of Loading Tool I  ion Rating: EXCE	Passes Required to	<i>,</i>		passes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min.	0.830  E: Numberels:  vs. Job Condition  within this Bath  Material Description  (i):	o.830  oer of Loading Tool I  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA	Passes Required to	Fill Truck:  Dump: 0.100		
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors	0.830  E: Numberels:  vs. Job Condition  within this Bath  Material Description  :	o.830  oer of Loading Tool I  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA	Passes Required to	Fill Truck:  Dump: 0.100 maneuver):  Factor (min.)	0 NA min	
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material:	0.830  els:  vs. Job Condition within this Ba  Material Description  - Unadjusted I	o.830  oer of Loading Tool I  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA	Passes Required to	Fill Truck:  Dump: 0.100 maneuver):  Factor (min.)  NA	NA mini Source (Cat HB)	
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors Material: Stockpile:	0.830  els:  vs. Job Condition within this Ba  Material Description  - Unadjusted I  NA  NA	o.830  oer of Loading Tool I  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA	Passes Required to	Dump: 0.100 maneuver): Factor (min.) NA NA	NA min Source (Cat HB) (Cat HB)	
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Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.830  et : Numberels: vs. Job Condition within this Barel - Material Description in the second in t	o.830  oer of Loading Tool I  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA	Passes Required to	Dump: 0.100 maneuver): Factor (min.) NA NA NA NA NA NA	NA minumon Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership:	0.830  et : Numberels: vs. Job Condition within this Barel - Material Description in the second in t	o.830  oer of Loading Tool II  ion Rating:EXCE sic Rating: _EXCE cription:  Maneuver: _NA  Basic Loader Cycle T	Passes Required to	Dump: 0.100 maneuver): Factor (min.) NA NA NA NA NA NA NA NA NA	NA mine Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	
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Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	0.830  Pels:  Vs. Job Condition  Within this Bath  Material Description  - Madjusted I  NA  NA  NA  NA  NA  NA  NA  NA  NA  N	o.830  Deer of Loading Tool II  Sion Rating: EXCE  EXC	Passes Required to ELLENT ELLENT Fime (load, dump, region of the content of the c	Dump: 0.100 maneuver): Factor (min.) NA NA NA NA NA NA NA NA NA O.167	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes	utes
Net Correction:  Loading Tool Cycle Time Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min. Load: NA  Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	0.830  et : Numb rels: vs. Job Conditi e within this Ba — Material Desc ):	o.830  oer of Loading Tool II  ion Rating: EXCE sic Rating: EXCE cription:  Maneuver: NA  Basic Loader Cycle T  Adjusted Load Net Load	Passes Required to ELLENT ELLENT Time (load, dump, rader Cycle Time: Time per Truck: Adjusted	Dump: 0.100 maneuver): Factor (min.) NA NA NA NA NA NA NA O.167 0.601	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	

<u>Truck Travel (Haul & Return) Time:</u> <u>maintained 2.0</u>

Road Condition: Hard, smooth, stabilized, surfaced, watered,

#### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	2.00	2.00	2868	0.445

Return Route:						
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	2.00	2.00	2905	0.374

Return Time: 0.374 minutes
Total Truck Cycle Time: 2.720 minutes

Loading Tool unit

Production 327.30 LCY/Hour Adjusted for job efficiency: 271.66 LCY/Hour Truck Unit Production 132.49 LCY/Hour Adjusted for job efficiency: 109.96 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: \_\_\_\_\_ 2 \_\_\_\_ Truck(s)

Adjusted hourly truck team production: 219.93 LCY/Hour Adjusted single truck/loader team production: 219.93 LCY/Hour Adjusted multiple truck/loader team production: 219.93 LCY/Hour

### **JOB TIME AND COST**

 Fleet size:
 1
 Team(s)
 Total job time:
 11.37
 Hours

 Unit cost:
 \$2.488
 /LCY
 Total job cost:
 \$6,219

## HYDRAULIC EXCAVATOR WORK

Place	riprap on weir			
	Permit Actio	on: _2023 Update	Permit/.	Job#: <u>M2010049</u>
ENTIFICATIO	<u>N</u>			
9/2023	State: Colora County: Weld	ado	_	
or organization n	ame: DRMS			
JIPMENT CO	<u>ST</u>			
		Wei S	ight (MT):hift Basis:	194 24.85 1 per day (CRG)
	\$99.66	Utilization % NA		
	\$65.77	100		
		NA		
		<u> </u>		
_	\$212.30			
ne: 6,875			1.000	-
			ing & Safety	
	well factor. Cat I	landbook		
	t awing looded due	nn huakat ayiina amated		
i iiie (ioad bucke	•			7
Sacon				
Secon	dary Job Colldition			minutes
acit <u>y</u>		- J	· ~ · ·	
		В	ucket Size Class:	Large
			<b>7</b> 04	
		- Well blasted (60% - 75	0%) 0.675	
	2.01 LCY	Cita All	titudo: 1650 foot	
HECHOH FACIOIS	a.		iiiuue. <u>4038</u> leet	
Adi: 10	ii .			
	,			
Unadjusted H	Iourly Unit Producti	ion: 645.40	LCY/Hour	
Adjusted H	Iourly Unit Producti	on: 535.68	LCY/Hour	
			LCY/Hour	
D COST				
1 1	Excavator	Total job time:	12.83	Hours
	r Reclamation ment Project  ENTIFICATIO  9/2023 Z  or organization in  UIPMENT CO  hine: Cat 324I  ROPS C  p Cost/Hour: g Cost/Hour: gr Cost/Hour: et Cost/Hour: et Cost/Hour: et Cost/Hour: fr Cost/Hour: et Cost/Hour: cor 6,875 ne: 6,875 ne: 6,875 ne: 6,875 ne: 6,875  Source of estimated sy  DUCTION  Time (load bucke)  Second  acity  Capacity: Il Factor: Capacity:	State: Colora    State: Colora	r Reclamation ment Project  STATIFICATION  D State: Colorado	Permit Action:

### EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Equipment Mobilization/Demobilization

Western Sugar Reclamation Permit Action:

Site: Land Development Project 2023 Update Permit/Job#: M2010049

### **PROJECT IDENTIFICATION**

Task #:10AState:ColoradoAbbreviation:NoneDate:8/15/2023County:WeldFilename:M049-10A

User: RDZ

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:

<b>Available Rig Capacities</b>	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$20.26	\$36.04	\$47.05
Operating Cost/Hour:	\$39.51	\$76.08	\$82.85
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$82.29	\$158.17	\$175.95

### **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)		t		fleet		
Centrifugal pump -	1.95	\$16.59	\$82.29	3	\$296.64	\$246.87	\$250.00
200M, 10 in.							
Cat D9T - 9SU	65.36	\$259.02	\$175.95	2	\$869.94	\$351.90	\$500.00
Cat 627G	41.80	\$230.18	\$158.17	1	\$388.35	\$158.17	\$250.00
CAT 14M	23.57	\$149.33	\$82.29	1	\$231.62	\$82.29	\$250.00
CAT 966H high	25.80	\$65.69	\$82.29	1	\$147.98	\$82.29	\$250.00
lift							
CAT 815F	22.88	\$147.57	\$82.29	2	\$459.72	\$164.58	\$500.00
Drill/Broadcast	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00
Seeder with							
Tractor							
Cat 324D L 9'-8"	27.33	\$99.66	\$158.17	1	\$257.83	\$158.17	\$250.00
Stick							

Subtotals: \$2,741.10 \$1,326.56 \$2,500.00

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$34.27	1	\$34.27	\$34.27

Generic 12-18 cy, 6x4 \$115.97	4	\$463.88	\$463.88

Subtotals: **\$498.15 \$498.15** 

### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

GREELEY

miles

35.00

mph

#### **Transportation Cycle Time:**

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.14	0.14
Return Time (Hours):	0.14	0.14
Loading Time (Hours):	0.75	NA
Unloading Time (Hours):	0.75	NA
Subtotals:	1.79	0.29

### **JOB TIME AND COST**

Total job cost: 3.57 Hours

Total job cost: \$14,528