

June 28, 2018

Jason Burkey
Oldcastle SW Group, Inc. dba United Companies of Mesa County
2273 River Road
Grand Junction, CO 81502



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

***RE: DeBeque Sand and Gravel Resource, Permit No. M-2011-054, Technical Revision (TR-1)
Approval***

Dear Mr. Burkey:

On June 28, 2018 the Division of Reclamation, Mining and Safety (Division) approved the Technical Revision request (TR-1) submitted on June 12, 2018, addressing the following:

Revise Mining and Reclamation Plan to address Phase 2 and 3.

- *Reconfiguration of mining phases and sizes as depicted on Map C-2 (received on 6-12-18). Phase 1 -5.8 acres, Phase 2 - 13.5 acres and Phase 3 - 16.0 acres*
- *Revise the total maximum surface disturbance to 20.5 acres with a total maximum pit excavation requiring backfill to not exceed 10 acres. Total affected land of 35.7 acres.*
- *A maximum of 20.5 acres will require topsoil and revegetation.*
- *The Phase 3 – 6 acre lake will not be exposed until long-term water rights are provided to the Division in the form of a Technical Revision. The additional bond necessary to dewater and shape the lake will be addressed under a future TR.*

The terms of the TR-1 approved by the Division are hereby incorporated into Permit No. 2011-054. All other conditions and requirements of the permit remain in full force and effect.

The estimated liability amount of \$548,245.00 exceeds the \$ 423,630.40 Financial Warranty currently held for this site. If you have not already done so, please submit additional bond in the amount of \$ 126,614.60. The revision will not be final until the bond is approved by the Division.

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

Sincerely,

Amy Yeldell
Environmental Protection Specialist

Cc: Wally Erickson, Senior EPS, Grand Junction DRMS



COST SUMMARY WORK

Task description: TR-1 update

Site: Debeque Sand and Gravel Permit Action: TR-1 Permit/Job#: M2011054
Resource

PROJECT IDENTIFICATION

Task #: ACY State: Colorado Abbreviation: None
Date: 6/28/2018 County: Mesa Filename: M054-ACY
User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Dewater 10 acres of Pond	PUMPING	1	282.46	\$18,143.00
02a	Backfill 10 ac of Pond	SCRAPER1	2	170.45	\$328,250.00
03a	Topsoil 20.5 ac of disturbance	SCRAPER1	2	16.76	\$32,284.00
04a	Reveg 20.5 ac	REVEGE	1	30.00	\$45,982.00
05a	Initial mobilization of reclamation crew and equipment	MOBILIZE	1	3.60	\$8,947.00
05b	Secondary mobilization of reclamation crew and equipment	MOBILIZE	1	3.60	\$1,731.00
<u>SUBTOTALS:</u>				506.87	\$435,337

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$8,793.81
Performance bond:	1.05	Total =	\$4,571.04
Job superintendent:	125.00	Total =	\$9,131.25
Profit:	10.00	Total =	\$43,533.70
		TOTAL O & P =	\$66,029.80
		CONTRACT AMOUNT (direct + O & P) =	\$501,366.80

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$21,308.09
Reclamation management and/or administration:	5.00		\$25,068.34

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$112,906.23

TOTAL BOND AMOUNT (direct + indirect) = \$548,243.23

TOTAL BOND AMOUNT (Rounded) = \$548,245.00

PUMPING WORK

Task description: Dewater 10 acres of Pond

Site: Debeque Sand and Gravel Permit Action: TR-1 Permit/Job#: M2011054
Resource

PROJECT IDENTIFICATION

Task #: 01A State: Colorado Abbreviation: None
Date: 6/28/2018 County: Mesa Filename: M054-01a
User: ACY

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	2
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	2
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	3
Labor Unit 1:	Pump operator	1
Horsepower:	95	
Shift Basis:	1 per day	
Weight:	0.70	
	(US Tons)	

Cost Breakdown:

	Utilization %
Ownership Cost/Hour: \$11.22	NA
Operating Cost/Hour: \$24.48	100
Operator Cost/Hour: \$28.53	NA
Total Unit Cost/Hour: \$64.23	
Total Fleet Cost/Hour: \$64.23	

PUMPING QUANTITIES

Initial Pond Volume:	250.00	Conversion factor:	325850.5800
Final Pond Volume:	81,462,645.00	gallons	
Total Pond Inflow Surface Area:	435,600	Sq. ft.	
Total Pond Inflow Volume per Hour:	76,578.48	gallons	
		Unit inflow rate in gph/sq. ft.:	0.1758

Source of estimated volume: 10 ac pond 10 ft deep

PUMPING TIME

Maximum Pump Capacity:	170,000	gph/pump
Estimated Suction Head:	5	feet
Estimated Discharge Head:	30	feet
Total Head:	35	feet
CPB Pump Capacity:	163,200	gph/pump
Site Altitude:	4,880	feet
Adjusted Pumping Capacity:	326,400	gph
Initial Unadjusted Pumping Time:	249.58	hours
Inflow during Initial Pumping:	19,112,394	gallons
Net Unadjusted Pumping Time:	308.13	Hours
Altitude Adjustment Factor:	1.0000	(3% rule)
Pump Efficiency Factor:	0.9167	(55 min./hr.)
Total Adjusted Pumping Time:	282.47	hours

JOB TIME AND COST

Total job time: 282.47 Hours

Unit cost: \$0.000180 /Gallon

Total job cost: \$18,143

SCRAPER TEAM WORKTask description: **Backfill 10 ac of Pond**Site: **Debeque Sand and Gravel**
ResourcePermit Action: **TR-1**Permit/Job#: **M2011054****PROJECT IDENTIFICATION**Task #: **02A**
Date: **6/28/2018**
User: **ACY**State: **Colorado**
County: **Mesa**Abbreviation: **None**
Filename: **M054-02a**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	50	NA	NA
Ownership cost/hour:	\$152.84	\$83.81	\$83.81	\$83.81	NA	NA
Operating cost/hour:	\$158.39	\$66.17	\$33.09	\$33.09	NA	NA
%Utilization-ripper:	NA	NA	30	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$7.55	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	\$2.16	\$0.00	NA	NA
Operator cost/hour:	\$41.46	\$40.52	\$40.52	\$40.52	NA	NA
Unit Subtotals:	\$352.69	\$190.50	\$167.13	\$157.42	NA	NA
Number of Units:	4	1	1	1	0	0
Group Subtotals:	Work: \$1,601.26		Support: \$324.55		Maint:	\$0.00

Total work team cost/hour: **\$1,925.81****MATERIAL QUANTITIES**Initial volume: **354,093** CCY Swell factor: **1.135**
Loose volume: **401,896** LCYSource of estimated volume: **10 ac backfilled 22 ft deep**
Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	2,700 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Sand and clay - Loose	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	30.22 LCY	Adjusted Capacity:	29.00	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4880 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	1867	0.46

Haul Time: 0.46 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	2795	0.39

Return Time: 0.39 minutesTotal Scraper team cycle time: 2.45 minutesAdjusted for job conditions: 1,178.94 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,178.94 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,357.88 LCY/HourUnadjusted unit production/hour: 1,420.41 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 170.45 HoursUnit cost: \$0.817 /LCYTotal job cost: \$328,250

SCRAPER TEAM WORKTask description: Topsoil 20.5 ac of disturbanceSite: Debeque Sand and Gravel
ResourcePermit Action: TR-1Permit/Job#: M2011054**PROJECT IDENTIFICATION**Task #: 03A
Date: 6/28/2018
User: ACYState: Colorado
County: MesaAbbreviation: None
Filename: M054-03aAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	50	50	NA	NA
Ownership cost/hour:	\$152.84	\$83.81	\$83.81	\$83.81	NA	NA
Operating cost/hour:	\$158.39	\$66.17	\$33.09	\$33.09	NA	NA
%Utilization-ripper:	NA	NA	30	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$7.55	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	\$2.16	\$0.00	NA	NA
Operator cost/hour:	\$41.46	\$40.52	\$40.52	\$40.52	NA	NA
Unit Subtotals:	\$352.69	\$190.50	\$167.13	\$157.42	NA	NA
Number of Units:	4	1	1	1	0	0
Group Subtotals:	Work:	\$1,601.26	Support:	\$324.55	Maint:	\$0.00

Total work team cost/hour: \$1,925.81**MATERIAL QUANTITIES**Initial volume: 33,073 CCY Swell factor: 1.215
Loose volume: 40,184 LCYSource of estimated volume: 12" of topsoil over 20.5 acres
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4880 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	1867	0.42

Haul Time: 0.42 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	5.00	5.00	2795	0.39

Return Time: 0.39 minutesTotal Scraper team cycle time: 2.41 minutesAdjusted for job conditions: 1,198.51 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,198.51 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 2,397.01 LCY/HourUnadjusted unit production/hour: 1,443.98 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 2 Team(s)Total job time: 16.76 HoursUnit cost: \$0.803 /LCYTotal job cost: \$32,284

REVEGETATION WORKTask description: Reveg 20.5 acSite: Debeque Sand and Gravel
ResourcePermit Action: TR-1Permit/Job#: M2011054**PROJECT IDENTIFICATION**Task #: 04AState: ColoradoAbbreviation: NoneDate: 6/28/2018County: MesaFilename: M054-04aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
8-24-24, 10-15-15, 10-20-20	200.00	pound	\$0.32	\$64.00
			Total Fertilizer Materials Cost/Acre	\$64.00

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$144.62
Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.30	11.71	\$8.50
Bottlebrush Squirreltail	0.90	3.97	\$21.15
Muttongrass	0.20	4.13	\$6.91
Western Wheatgrass - Arriba	3.20	8.08	\$25.86
Saltgrass, Inland	0.50	6.93	\$21.77
Bluebunch Wheatgrass - Goldar	2.40	7.71	\$13.20
Totals Seed Mix	7.50	42.53	\$97.38

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$2.74	\$5.48
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	\$7.16	\$14.32
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	2.00	ACRE	\$4.16	\$8.32
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$550.12

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$66.02
Power mulcher (MEANS 32 91 13.16 0350)	\$99.32
Weed spray, hand, aquatic area, nox. [DMG]	\$170.90
Weed spray, truck, non-aquatic area, nox. [DMG]	\$71.50
Total Mulch Application Cost/Acre	\$407.74

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	20.5	Cost /Acre:	\$1,602.15
Estimated Failure Rate:	40%	Cost /Acre*:	\$1,602.15
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		
Initial Job Cost:	\$32,844.08		
Reseeding Job Cost:	\$13,137.63		
Total Job Cost:	\$45,982		
Job Hours:	30.00		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial mobilization of reclamation crew and equipment**Site: **Debeque Sand and Gravel**
ResourcePermit Action: **TR-1**Permit/Job#: **M2011054****PROJECT IDENTIFICATION**

Task #: 05A State: Colorado Abbreviation: None
 Date: 6/28/2018 County: Mesa Filename: M054-05a
 User: ACY

Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**

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

Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

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

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Submersible pump - 460v, 8 in.	0.70	\$5.50	\$88.67	1	\$94.17	\$88.67	\$250.00
Cat 637G w/push- pull	59.59	\$152.84	\$125.45	2	\$556.58	\$250.90	\$500.00
Cat D8T - 8SU	53.08	\$91.36	\$125.45	3	\$650.43	\$376.35	\$750.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00

Subtotals: **\$1,497.77** **\$893.26** **\$2,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$47.96	1	\$47.96	\$47.96

Subtotals: **\$47.96** **\$47.96**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION, CO	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	50.00	mph
Total Non-Roadable Mob/Demob Cost *	\$8,908.36	
'* two round trips with haul rig:		
Total Roadable Mob/Demob Cost **	\$38.37	
** one round trip, no haul rig:		

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.40	0.40
Return Time (Hours):	0.40	0.40
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.80	0.80

JOB TIME AND COST

Total job time:	3.60	Hours
Total job cost:	\$8,947	

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Secondary mobilization of reclamation crew and equipmentSite: Debeque Sand and Gravel
ResourcePermit Action: TR-1Permit/Job#: M2011054**PROJECT IDENTIFICATION**

Task #: 05B State: Colorado Abbreviation: None
 Date: 6/28/2018 County: Mesa Filename: M054-05b
 User: ACY

Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**

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

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

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

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00
Subtotals:					\$196.59	\$177.34	\$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, 1 T. Crew	\$47.96	1	\$47.96	\$47.96
Subtotals:			\$47.96	\$47.96

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION, CO	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	50.00	mph
Total Non-Roadable Mob/Demob Cost *	\$1,692.32	
'* two round trips with haul rig:		
Total Roadable Mob/Demob Cost **	\$38.37	
** one round trip, no haul rig:		

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.40	0.40
Return Time (Hours):	0.40	0.40
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.80	0.80

JOB TIME AND COST

Total job time:	3.60	Hours
Total job cost:	\$1,731	