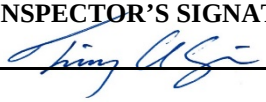
COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Ranch Land Rock Pit #2	**MINE/PROSPECTING ID#:** M-2003-021	**MINERAL:** Gravel	**COUNTY:** Fremont
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Timothy Cazier, P.E.	**INSP. DATE:** January 28, 2022	**INSP. TIME:** 09:30
OPERATOR: Ranch Land LLC dba Pioneer Sand Co Inc	**OPERATOR REPRESENTATIVE:** Jason Ulmer	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $83,750.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** 	**SIGNATURE DATE:** March 31, 2022

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Gen. Compliance With Mine Plan
PROBLEM/POSSIBLE VIOLATION: Problem: The current mine plan needs to be updated and clarified pursuant to C.R.S. 34-32.5-112 (1)(c)(VI). The operator must update the mine plan to define future mine phases as committed to in Amendment 1 and clarify whether active highwalls are to be mined near vertical or at 3H:1V.
CORRECTIVE ACTIONS: The operator shall submit a Technical Revision, with the required $216 revision fee, to update and clarify the current approved mine plan to define future mine phases, reflect existing and proposed activities, and increase the maximum disturbed area at one time by the corrective action date.
CORRECTIVE ACTION DUE DATE: 5/16/22

OBSERVATIONS

This inspection was conducted as part of the Division's regular monitoring program. The Operator (Pioneer Sand) was represented during the inspection by Mr. Jason Ulmer. The Ranch Land Rock Pit #2 is accessed from Fremont Co Rd 112 approximately 2.5 miles southeast of Portland (on Hwy 120). This is a 112c gravel mine. It was operating at the time of the inspection.

Availability of Records: Annual reports are current, having been filed through March 2022, stating the last mining activity was March 9, 2022. The previous inspection was on March 8, 2016. The approved post-mine land use is rangeland. There are no open infractions. Both the surface and minerals are privately owned.

Acid And Toxic Materials: The above ground fuel storage tank was observed to have adequate secondary containment (see **Photo 1**).

Backfilling and Grading: Sufficient backfill material appeared to be available by pushing down material from the crest of the active highwall.

Financial Warranty: The $83,750 bond held by the DRMS was last reviewed in 2016. The practice at the time of mining at 3H:1V and that backfilling/grading had been completed in Phase 1 was cited for not increasing the bond at that time. An additional 35 acres have been disturbed since the last inspection (see Gen. Compliance with Mine Plan, below) and no release request for Phase 1 has been received. As such, the DRMS has revised the reclamation cost estimate accordingly (see **attached updated reclamation cost estimate**). Tasks 104 (reseed 25% of Phase 1), 304 (revegetate Phase 3), and A03 (push down existing highwalls) were added as new tasks, not previously needed or considered. This unit cost update increases the estimated cost for reclamation to $192,337. Please review it and contact me with questions or concerns. **The DRMS will issue a surety increase in two weeks**.

Fish and Wildlife: No impact to wildlife was observed.

Hydrologic Balance: No standing water was observed in the pit and no exposed groundwater was observed.

Gen. Compliance with Mine Plan: The current maximum allowed disturbed area at one time is 40 acres. Google Earth was used to measure the disturbed areas (based on 2021 imagery as follows (also see attached **Post-Inspection Map**) and compared with the disturbances reported in the 2022 annual report:

Phase	Area disturbed: Annual Report // Google Earth (acres)	Status
1	13.5 // 11.3	Vegetation establishing, likely releasable
3	20 // 24 (Google Earth includes ~2 acres around the truck scales)	Highwalls ≤ 3H:1V, awaiting seeding
5/6	26.1 // 35	Actively being mined

Accepting Phase 1 (13.5 // 11.3 acres) may be releasable, the DRMS estimated affected area (Phases 3, 5 and 6) is 46.1 // 59 acres.

Active highwalls were estimated to vary between 30 and 40 feet in height (see **Photos 2** and **3**). Finally, there is a commitment in AM-1 to submit a TR to formalize the phases beyond #6. As the current active mining area is encroaching into the adjacent unspecified phase to the west, a technical revision is now required. **The need for a technical revision to define future mining phases and update the mining plan to include more than 40 acres of disturbance at one time is cited as a problem on page 1 of this report.**

Off-site Damage: The operation appeared to be confined to the permit boundary, based on Google Earth review and site observations.

Processing Waste: Crusher fines are stockpiled and should be available for reclamation backfill.

Roads: Haul and access roads did not appear to be a source of sediment that could be tracked offsite. Road side ditches were clean. Dust control was not necessary and the time of the inspection as it had recently snowed.

Right of Entry: Ranch Land LLC (Permittee) owns the land, and is doing business as Pioneer Sand Co.

Reclamation Success: The east pit (Phase 1) has been graded, topsoiled and seeded as per the approved reclamation plan (see **Photos 4** and **5**). A two to three-foot high, vegetated, stormwater berm (see **Photos 6** and **7**) remains around the perimeter of the Phase 1 disturbance to control runoff on the downgradient slopes. Mr. Ulmer indicated the Phase 3 area, just east of the north-south access road (see **Photo 8**) has been mostly graded and topsoiling and seeding are planned for 2022.

Revegetation: The revegetation effort observed in Phase 1, appeared to be releasable (see **Photos 4, 5** and **9**). No other phases were observed to have initiated revegetation. No noxious weeds were observed.

Sediment Control: An erosion gully (see **Photo 10**) was observed on the south side of the access road down the slope to the Phase 1 reclaimed area. This gully will need to be repaired prior to release, but was not causing offsite impacts, so was not cited as a problem.

Support Facilities On-site: A screen plant, crusher, loaders, conveyors, and haul trucks were observed on site. The truck scale (see **Photo 11**) had not moved closer to the active mining area. It is still in the north end of Phase 4, just south of the Phase 3 area entering reclamation.

Signs and Markers: The permit sign was properly posted (see **Photo 12**). Although the Phase 1 and 2 mining boundaries on the approved Exhibit C map do not fully encompass the mined areas, the approved affected area boundary is coincident with the permit boundary, which includes all observed mining disturbance. As the affected area boundary extends well beyond the terrace area being mined (roughly 650 feet for Phase 1 and 250 feet in Phase 6). As such, boundary markers were not checked.

Permit Stipulations: There are no permit stipulations.

Storm Water MGT Plan: No oil or fuel spills observed. Stormwater drains to the pit and infiltrates. Berms are constructed along the outside edge of the mined terrace to prevent stormwater from running down and eroding the outslopes.

Topsoil: Topsoil is not distinguished from overburden and is stockpiled as a single source of reclamation material.

Structures: None observed within 200 feet of the affected area.

Please contact Tim Cazier (303) 328-5229 or email at tim.cazier@state.co.us if you have any questions regarding this report.

PHOTOGRAPHS

Photo 1. Secondary containment for onsite fuel tank (looking SW from north end of Phase 6).

Photo 2. North facing highwall (Phase 6, looking south from pit floor).

PHOTOGRAPHS (cont.)

Photo 3. North and east facing highwalls (Phase 6, looking west).

Photo 4. Phase 1 pit floor reclamation/reveg. (looking north from south end).

PHOTOGRAPHS (cont.)

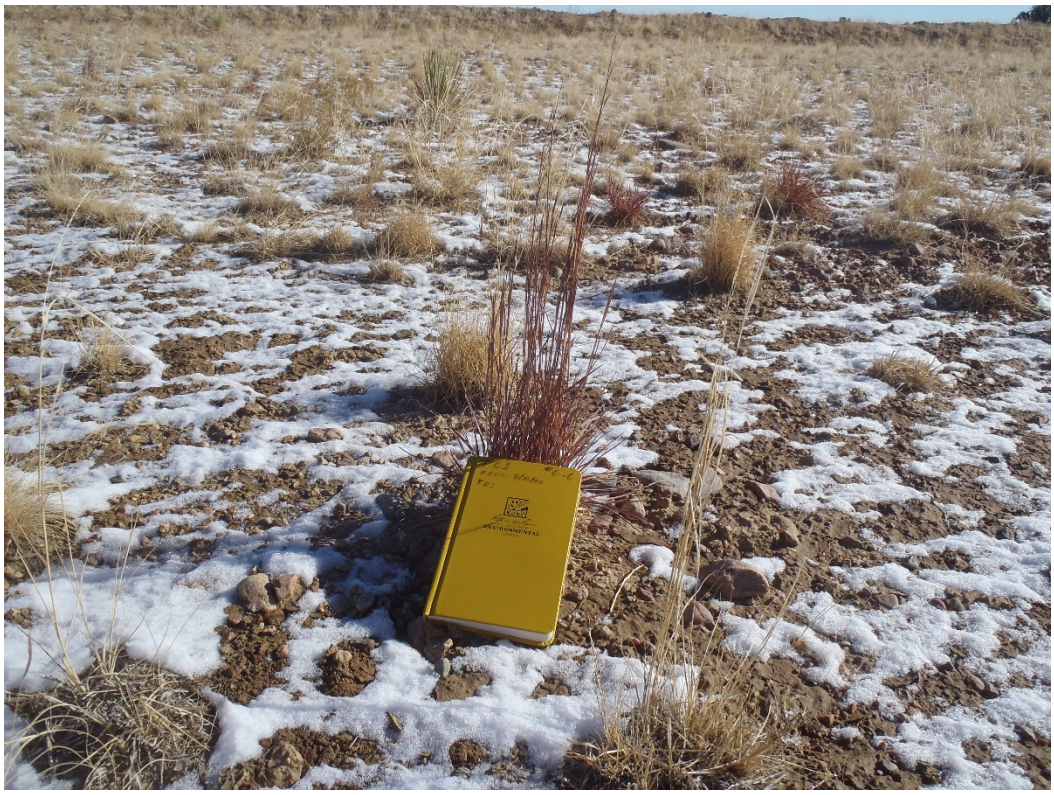


Photo 5. Phase 1 pit floor reclamation/reveg. (diverse grass species).

Photo 6. Phase 1 pit floor reclamation (east stormwater berm, looking south).

PHOTOGRAPHS (cont.)

Photo 7. Phase 1 pit reclamation (south stormwater berm, & east-facing highwall).

Photo 8. Phase 3 pit reclamation grading (looking NW from scale house).

PHOTOGRAPHS (cont.)

Photo 9. Phase 1 pit floor revegetation (looking south from midpoint).

Photo 10. Erosion gully along Phase 1 access road – needs repair prior to release.

PHOTOGRAPHS (cont.)

Photo 11. Truck scale & scale house (Phase 4 north end, looking NW).

Photo 12. Permit sign at entrance near Minnequa Canal.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

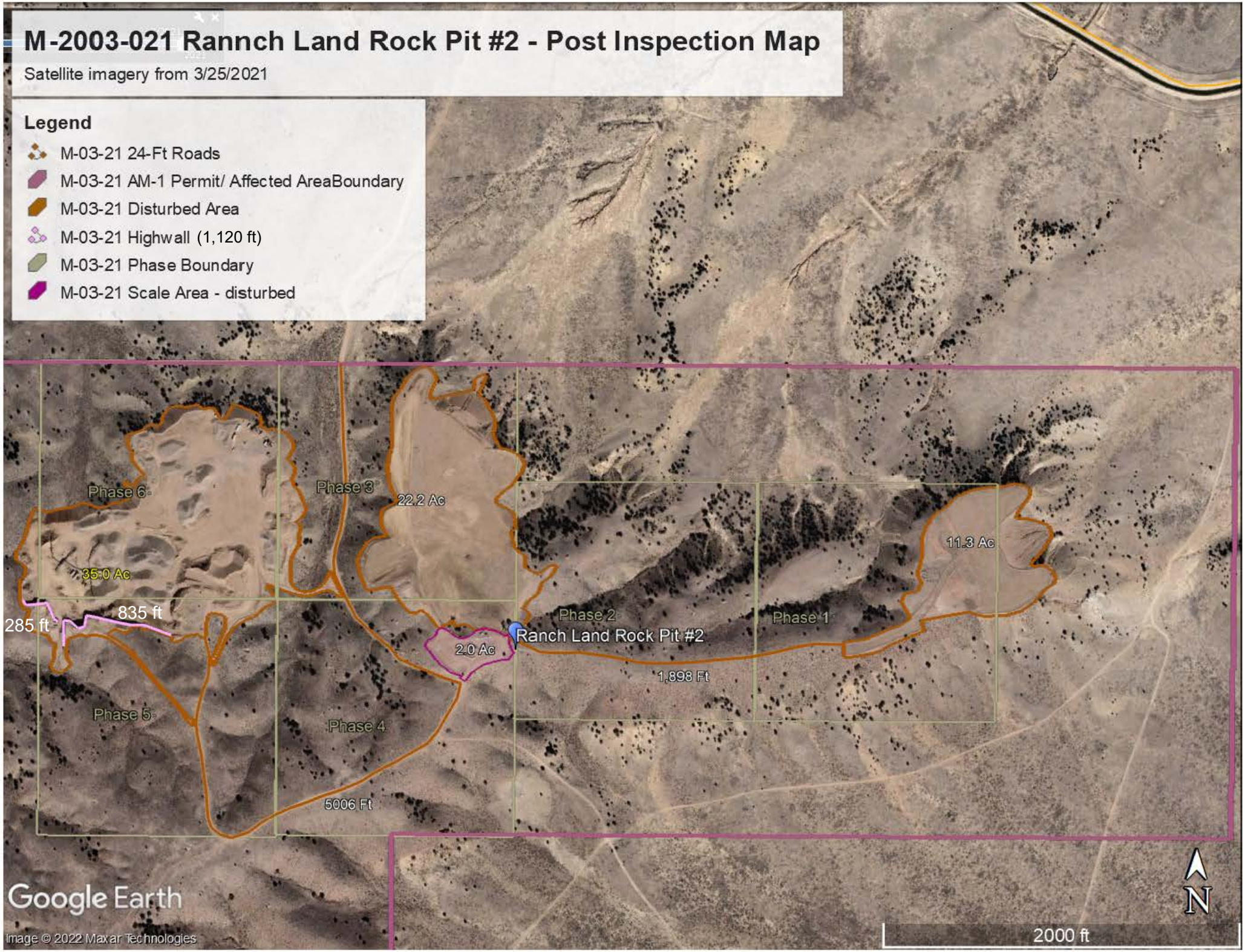
(AR) RECORDS---------- Y	**(FN) FINANCIAL WARRANTY-------- Y**	**(RD) ROADS---------- Y**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- NA**
(PW) PROCESSING WASTE/TAILING---- Y	**(SF) PROCESSING FACILITIES------- Y**	**(TS) TOPSOIL---------- Y**
(MP) GENL MINE PLAN COMPLIANCE- PB	**(FW) FISH & WILDLIFE---------- Y**	**(RV) REVEGETATION---- Y**
(SM) SIGNS AND MARKERS---------- Y	**(SP) STORM WATER MGT PLAN---- N**	**(RS) RECL PLAN/COMP-- Y**
(ES) OVERBURDEN/DEV. WASTE--------- Y	**(SC) EROSION/SEDIMENTATION--- Y**	**(ST) STIPULATIONS------- Y**
(AT) ACID OR TOXIC MATERIALS------- Y	**(OD) OFF-SITE DAMAGE----------Y**	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address
Jason Ulmer
Ranch Land LLC dba Pioneer Sand Co Inc
1107 Main St.
Cañon City, CO 81212

Enclosures: Post Inspection Map
Updated Reclamation Cost Estimate

ec: DRMS file
Angela Bellantoni, PhD, Pioneer Sand


M-2003-021 Rannch Land Rock Pit #2 - Post Inspection Map
Satellite imagery from 3/25/2021
Legend
M-03-21 24-Ft Roads
M-03-21 AM-1 Permit/ Affected AreaBoundary
M-03-21 Disturbed Area
M-03-21 Highwall (1,120 ft)
M-03-21 Phase Boundary
M-03-21 Scale Area - disturbed
Phase 6
Phase 3
22.2 Ac
11.3 Ac
35.0 Ac
835 ft
285 ft
Phase 2
Phase 1
Ranch Land Rock Pit #2
2.0 Ac
1,898 Ft
Phase 5
Phase 4
5006 Ft
Google Earth
Image © 2022 Maxar Technologies
N
2000 ft

COST SUMMARY WORK

Task description: **Cost Summary Sheet**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 3/30/2022 County: Fremont Filename: M021-000
User: TC1

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
002	Replace Topsoil	TRUCK1	1	78.72	$29,984
003	Grade Topsoil	DOZER	1	11.08	$3,422
004	Reseed Disturbed 40 acre phase	REVEGE	1	100.00	$59,136
005	Mob/demob equipment	MOBILIZE	1	11.77	$9,463
104	Reseed 25% of Phase 1 Area	REVEGE	1	6.00	$3,802
304	Reseed Disturbed Phase 3 Area	REVEGE	1	50.00	$32,821
A03	Push down highwalls	DOZER	1	12.58	$3,883
		SUBTOTALS:		**270.15**	**$142,511**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$2,879
Performance bond:	1.05	Total =	$1,496
Job superintendent:	207.07	Total =	$14,915
Profit:	10.00	Total =	$14,251
		TOTAL O & P =	$33,541
		CONTRACT AMOUNT (direct + O & P) =	$176,052

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	4.25	Total =	$7,482
Reclamation management and/or administration:	5.00		$8,803
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$49,826
		TOTAL BOND AMOUNT (direct + indirect) =	**$192,337**

TRUCK/LOADER TEAM WORK

Task description: **Replace Topsoil**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 3/28/2022 County: Fremont Filename: M021-002
User: TC1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Generic 12-18 cy, 6x4
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	85	NA	NA	NA	NA
Ownership cost/hour:	$27.72	$67.72	NA	NA	NA	NA
Operating cost/hour:	$47.23	$57.48	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	$0.00	NA	NA	NA	NA
Operator cost/hour:	$32.54	$40.71	NA	NA	NA	NA
Unit Subtotals:	$107.49	$165.90	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work:	$380.88	Support:	$0.00	Maint:	$0.00

Total work team cost/hour: **$380.88**

MATERIAL QUANTITIES

Initial volume: 32,267 CCY Swell factor: 1.215
Loose volume: **39,204** LCY

Source of estimated volume: Calculated from 6/25/2003 - original app. (6” over 40Ac.)
Source of estimated swell factor: Cat Handbook
Material Purchase Cost: $0.00
Total Cost: $0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 1,600 Pounds/LCY
Description: Top Soil
Rated Payload: 50,300 Pounds
Payload Capacity: 31.44 LCY

Truck Bed (volume) Basis:

Struck Volume:	12.00	LCY
Heaped Volume:	18.00	LCY
Average Volume:	15.00	LCY
Adjusted Volume:	18.00	LCY

Final Truck Volume Based on Number of Loader Passes: **12.75** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	7.500	LCY (heaped)
Bucket Fill Factor:	0.850	Hard, tough clay (80% - 90%) 0.850
Adjusted Capacity:	**6.375**	LCY

Job Condition Corrections: Site Altitude (ft.): 5350 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	**0.830**	**0.830**	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 2 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description:

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	**0.490**	minutes
	Net Load Time per Truck:	**0.590**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.590	Minutes	Adjusted for site altitude:	0.590	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	1.00	5.00	6.00	1855	0.349

Haul Time: **0.349** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	-1.00	5.00	4.00	2849	0.211

Return Time: **0.211** minutes
Total Truck Cycle Time: **2.550** minutes

Loading Tool unit Production 701.83 LCY/Hour Adjusted for job efficiency: 582.52 LCY/Hour

Truck Unit Production 300.00 LCY/Hour Adjusted for job efficiency: 249.00 LCY/Hour

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

Adjusted hourly truck team production: 498.00 LCY/Hour
Adjusted single truck/loader team production: 498.00 LCY/Hour
Adjusted multiple truck/loader team production: **498.00** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **78.72** Hours

Unit cost: $0.765 /LCY Total job cost: **$29,984**

BULLDOZER WORK

Task description: **Grade Topsoil**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 3/28/2022 County: Fremont Filename: Xxx
User: TC1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$126.01	NA
Operating Cost/Hour:	$141.41	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $308.72
Total Fleet Cost/Hour: **$308.72**

MATERIAL QUANTITIES

Initial Volume: 8,000
Swell factor: 1.000
Loose volume: **8,000** LCY

Source of estimated volume: Calculation - original application
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 700.0 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 5,350 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.0312

Adjusted unit production: 721.84 LCY/hr

Adjusted fleet production: **721.84** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: $0.428/LCY

Total job time: **11.08** Hours
Total job cost: **$3,422**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mob/demob equipment**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 3/28/2022 County: Fremont Filename: Mmm
User: TC1

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:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

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
Cat D9T - 9SU	60.01	$126.01	$147.95	1	$273.96	$147.95	$250.00
CAT 980H	33.12	$67.72	$132.49	1	$200.21	$132.49	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$7.98	$68.37	1	$76.35	$68.37	$250.00
Power Mulcher (Bowie LD-90)	6.00	$14.98	$68.37	1	$83.35	$68.37	$250.00
Subtotals:					**$633.87**	**$417.18**	**$1,000.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 12-18 cy, 6x4	$106.86	2	$213.72	$213.72
Subtotals:			**$213.72**	**$213.72**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	CAÑON CITY	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	45.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$9,272.97
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$189.97

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.44	0.44
Return Time (Hours):	0.44	0.44
Loading Time (Hours):	2.50	NA
Unloading Time (Hours):	2.50	NA
Subtotals:	5.89	0.89

JOB TIME AND COST

Total job time:	**11.78**	Hours
Total job cost:	**$9,463**	

REVEGETATION WORK

Task description: **Reseed 25% of Phase 1 Area**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 104 State: Colorado Abbreviation: None
Date: 3/30/2022 County: Fremont Filename: M021-104
User: TC1

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
	$
Total Tilling Cost/Acre	**$0.00**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	0.60	9.79	$9.59
Indian Ricegrass - Nespar	1.25	4.05	$11.09
Little Bluestem - Camper	1.00	5.97	$12.58
Sideoats Grama - Butte	2.25	7.39	$20.25
Thickspike Wheatgrass - Critana	1.10	3.89	$7.56
Needle and Thread	1.50	3.96	$62.78
Rose, Wood's	0.50	0.00	$10.25
Saltbush, Four Wing	0.50	0.69	$6.25
Sumac, Skunkbrush	1.00	0.47	$21.00
Totals Seed Mix	9.70	36.20	**$161.35**

Application

Description	Cost /Acre
Drill seeding (MEANS 32 92 19.13 0020)	$440.00
Total Seed Application Cost/Acre	**$440.00**

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$307.02	$307.02
Total Mulch Materials Cost/Acre				**$307.02**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$71.57
Power mulcher (MEANS 32 91 13.16 0350)	$106.29
Total Mulch Application Cost/Acre	**$177.86**

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: 2.8
Estimated Failure Rate: 25%
*Selected Replanting Work Items: SEEDING,MULCHING

Cost /Acre: $1,086.23
Cost /Acre*: $1,086.23

Initial Job Cost: **$3,041.44**
Reseeding Job Cost: **$760.36**
Total Job Cost: **$3,802**
Job Hours: **6.00**

REVEGETATION WORK

Task description: **Reseed Disturbed Phase 3 Area**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: 304 State: Colorado Abbreviation: None
Date: 3/30/2022 County: Fremont Filename: M021-304
User: TC1

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$96.50
Total Tilling Cost/Acre	**$96.50**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	0.60	9.79	$9.59
Indian Ricegrass - Nespar	1.25	4.05	$11.09
Little Bluestem - Camper	1.00	5.97	$12.58
Sideoats Grama - Butte	2.25	7.39	$20.25
Thickspike Wheatgrass - Critana	1.10	3.89	$7.56
Needle and Thread	1.50	3.96	$62.78
Rose, Wood's	0.50	0.00	$10.25
Saltbush, Four Wing	0.50	0.69	$6.25
Sumac, Skunkbrush	1.00	0.47	$21.00
Totals Seed Mix	9.70	36.20	**$161.35**

Application

Description	Cost /Acre
Drill seeding (MEANS 32 92 19.13 0020)	$440.00
Total Seed Application Cost/Acre	**$440.00**

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$307.02	$307.02
Total Mulch Materials Cost/Acre				**$307.02**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$71.57
Power mulcher (MEANS 32 91 13.16 0350)	$106.29
Total Mulch Application Cost/Acre	**$177.86**

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:	22.2	Cost /Acre:	$1,182.73
Estimated Failure Rate:	25%	Cost /Acre*:	$1,182.73
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		

Initial Job Cost:	**$26,256.61**
Reseeding Job Cost:	**$6,564.15**
Total Job Cost:	**$32,821**
Job Hours:	**50.00**

BULLDOZER WORK

Task description: **Push down highwalls**

Site: **Ranch Land Rock Pit #2** Permit Action: 2022 Update Permit/Job#: M2003021

PROJECT IDENTIFICATION

Task #: A03 State: Colorado Abbreviation: None
Date: 3/28/2022 County: Fremont Filename: M021-A03
User: TC1

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$126.01	NA
Operating Cost/Hour:	$141.41	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $308.72
Total Fleet Cost/Hour: **$308.72**

MATERIAL QUANTITIES

Initial Volume: 13,267
Swell factor: 1.000
Loose volume: **13,267** LCY

Source of estimated volume: 1,120 feet of highwall, ~30 ft high (see Task A03.1)
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,514.3 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -10 %
Average site altitude: 5,350 feet

Material weight: 2,900 lbs/LCY

Weight description: Decomposed rock - 50% Rock, 50% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6966

Adjusted unit production: 1,054.86 LCY/hr

Adjusted fleet production: **1054.86** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $0.293/LCY

Total job time: **12.58** Hours

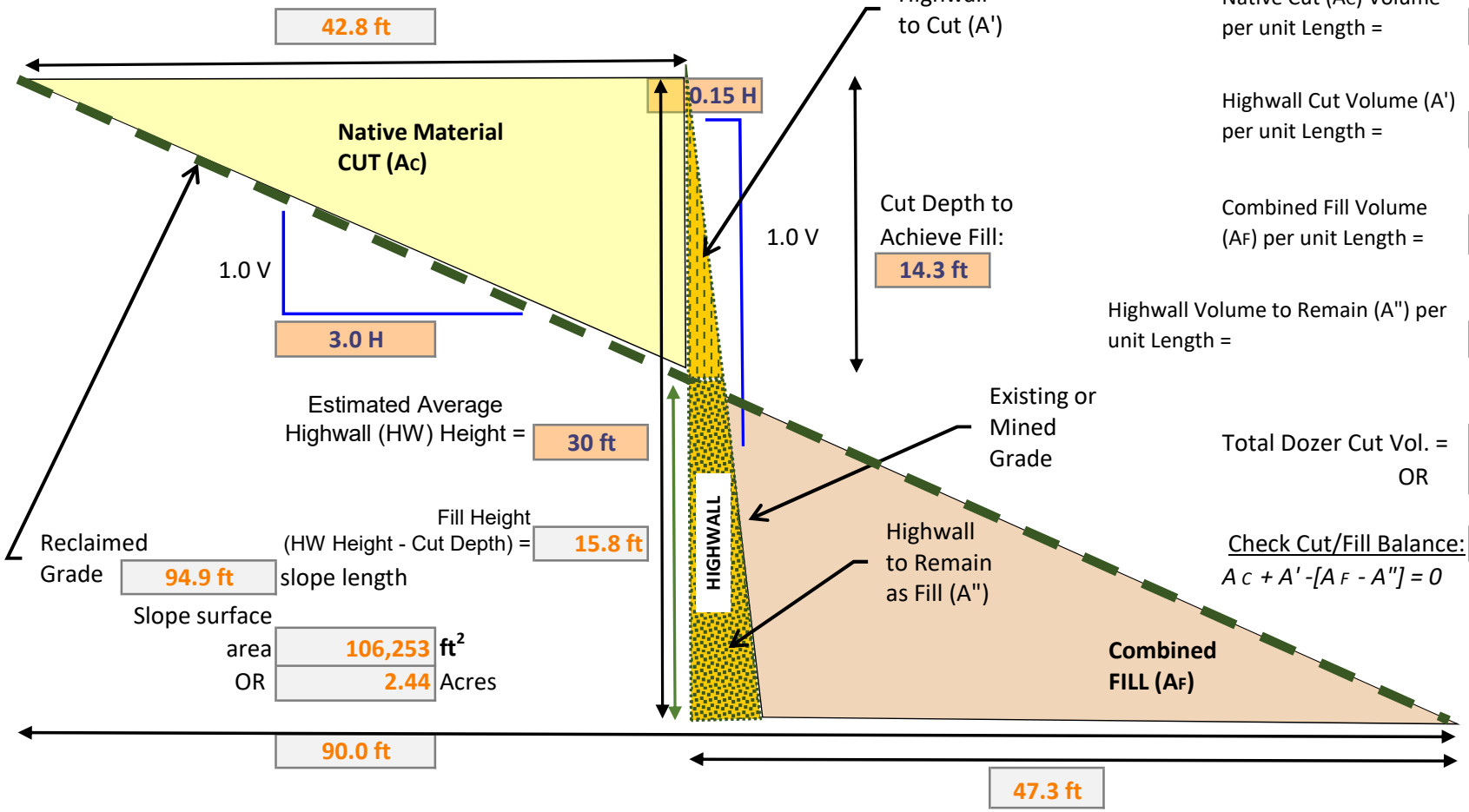
Total job cost: **$3,883**

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

Task # A03.1 Highwall Backfill Volume Estimate

PROJECT: Ranch Land Rock Pit #2
PERMIT No.: M-2003-021
HIGHWALL LOCATION: 2021 Google Earth Highwall

LEGEND
Input
Result



Highwall Length =	1120	ft
Native Cut (Ac) Volume per unit Length =	304.6	ft²
Highwall Cut Volume (A') per unit Length =	15.2	ft²
Combined Fill Volume (AF) per unit Length =	372.1	ft²
Highwall Volume to Remain (A") per unit Length =	52.3	ft²
Total Dozer Cut Vol. =	358,202	ft³
OR	13,267	CY
Check Cut/Fill Balance:	0.0	

$A_C + A' - [A_F - A''] = 0$

HIGHWALL CUT - FILL VOLUME ESTIMATE