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: DDD	**MINE/PROSPECTING ID#:** M-1984-076	**MINERAL:** Clay (general)	**COUNTY:** Elbert
INSPECTION TYPE: Surety Release Inspection	**INSPECTOR(S):** Amy Eschberger	**INSP. DATE:** April 13, 2021	**INSP. TIME:** 10:00
OPERATOR: General Shale Brick, Inc.	**OPERATOR REPRESENTATIVE:** Jason McGraw	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Surety Release Requested	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $194,050.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** Amy Eschberger	**SIGNATURE DATE:** April 20, 2021

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: Right of Entry
PROBLEM #1: The Division has no evidence the operator has the legal right to enter to conduct mining and reclamation for all owners of record of the surface and mineral rights of the affected lands, as required by Rule 6.4.14 and C.R.S. 34-32.5-112(1)(c)(IV).
CORRECTIVE ACTIONS: By the corrective action date, the operator must provide documentation of its legal right to enter to conduct mining and reclamation for all owners of record of the affected land. This may include a copy of a lease, deed, abstract of title, a current tax receipt, or a signed statement by the landowner and acknowledged by a Notary Public stating the operator has the legal right to enter to conduct mining and reclamation.
CORRECTIVE ACTION DUE DATE: May 20, 2021

INSPECTION TOPIC: Financial Warranty
PROBLEM #2: The financial warranty is not adequate to reclaim the site in accordance with the approved reclamation plan. This is a failure to maintain the proper financial warranty amount to complete reclamation of the affected lands pursuant to C.R.S. 34-32.5-117(4)(b) and Rule 4.2.1(1).
CORRECTIVE ACTIONS: The Division has re-evaluated the required financial warranty for reclaiming the site in accordance with the approved reclamation plan (see enclosed bond estimate). Any comments regarding the Division's bond estimate and/or evidence demonstrating reclamation work has been completed shall be submitted

by the corrective action date. If, by the corrective action date, no comments or additional information has been received, a notice of surety increase will be mailed to the operator for the amount shown in the enclosed bond estimate. The operator will have 60 days from the date on the surety increase notice to post the additional financial warranty.

CORRECTIVE ACTION DUE DATE: June 19, 2021

OBSERVATIONS

This was a surety release inspection of the DDD site (Permit No. M-1984-076) conducted by Amy Eschberger of the Division of Reclamation, Mining and Safety (Division) in response to an Acreage Reduction Request (AR-04) filed with our office on March 23, 2021. No comments or objections on AR-04 were received within the public comment period which closed on April 7, 2021. The operator was represented during the inspection by Jason McGraw. This site is split into two mine areas, referred to by the operator as the DWR mine (west pit) and the DEB mine (east pit), which are located approximately 1.5 miles apart. The site is located approximately 19 miles north of Elizabeth, CO at the northern edge of Elbert County. Each mine area is accessed from the north directly off of Co Rd 194. **Photos 1-36** taken during the inspection are included with this report.

This is a 112c operation permitted for 100.52 acres to mine clay for brick manufacturing. The DWR mine consists of 59.05 acres and the DEB mine consists of 41.47 acres (see enclosed Google Earth image showing both DWR and DEB mines). This is an intermittent operation. The maximum allowed disturbed area at any time is 68 acres (for both mine areas), per Technical Revision No. 4 (TR-04; approved on April 11, 2018). The maximum mining depth is approximately 40 feet. Mined clay product is temporarily stored on site until needed at the operator's offsite brick manufacturing facility. Any salvaged overburden and topsoil is stored separately on site for reclamation. The operation is authorized to import up to 45,000 tons of inert fill (scrap brick generated from the operator's Denver brick plant) to the site for use in reclamation, per Technical Revision No. 2 (TR-02; approved on January 24, 2013). Stormwater management at the site will include the construction of diversion channels/berms and detention ponds, as needed.

The approved post-mining land use for the site is pastureland for grazing purposes. The reclamation plan calls for backfilling the scrap brick material into the pits in 5-10 foot lifts, blended with overburden and compacted, grading all disturbed slopes to 3H:1V or flatter, ripping compacted areas (e.g., stockpile/equipment storage areas, roads), replacing topsoil on disturbed land at an approximate depth of 10 inches, and revegetating the land with a grass seed mixture comprised of Blue grama, Little bluestem, Western wheatgrass, and Prairie sandreed. Two stormwater ponds will remain at the DWR mine for reclamation, including the "Wiesner stormwater pond" and the "Bostons stock pond". The approved reclamation plan does not call for leaving any stormwater ponds at the DEB mine.

In TR-04, the operator provided updated landowner information for the DWR mine, showing the affected lands are owned by three separate landowners, Wiesner, Faulhaber, and McDonald. According to the original approved permit, the affected lands at the DEB mine are owned by D. D. Daughenbaugh. If there has been a change in land ownership or a substantial change to a lease agreement that affects legal right of entry upon the affected lands, the operator must promptly notify the Division of such change in accordance with Rule 1.16(2). Additionally, the operator must provide the Division with documentation of its legal right to enter to conduct mining and reclamation for all owners of record of the surface and mineral rights of the affected lands. While the current operator took over the permit from Robinson Brick Company in 2008, the Division was unable to find any documentation in the permit file of General Shale Brick, Inc.'s legal right to enter the affected lands. **This is cited as a problem in this report (Problem #1; see page 1), requiring the operator to provide evidence of its legal right to enter to conduct mining and reclamation for all owners of record of the affected lands. This may include a copy of a lease, deed, abstract of title, a current tax receipt, or a signed statement by the landowner and acknowledged by a Notary Public stating the operator has the legal right to enter to conduct mining and reclamation.**

At the time of the inspection, the weather was cool and windy, and the ground was mostly dry. However, a few puddles remained in some areas from a recent storm event. A permit identification sign was posted at the main entrance to each mine site. The permit boundaries were delineated with property fencing and white posts. The

DWR mine was not active during the inspection. However, the Division did observe a haul truck at the DEB mine loading clay product to be transported to the operator's off-site brick manufacturing facility. According to the operator, the site is active every year in accordance with its intermittent status. While extraction activities have not occurred at the site since 2016/2017, the operation does haul off from product stockpiles throughout the year. Extraction activities are expected to recommence at the site later this year.

The Division first inspected the DWR mine (see enclosed Google Earth image of DWR mine), at which, the western 19.99 acres (owned by Wiesner) are proposed for release in AR-04 (see enclosed maps of DWR mine submitted with AR-04). The area proposed for release was used primarily as a stockpile storage area. A small stormwater pond (Wiesner stormwater pond) was constructed at the southwestern corner of the disturbed area. Approximately 14 acres were disturbed on this property. The operator completed removing the product stockpiles from this area and regrading and retopsoiling the area in 2016. The land was drill seeded in late 2016. According to the Division's last inspection report for this site (for its November 30, 2017 inspection), the vegetation was establishing well in this area for the first year of growth. During the current inspection, the Division observed all slopes in this area have been graded to 3H:1V or flatter, and the vegetative cover consists of an established stand of grasses. No erosion issues were observed. The stormwater pond remains at the southwestern corner of the reclaimed area. This pond was dry during the inspection. The Division believes the western portion of the permit area at the DWR mine has been reclaimed in accordance with the approved reclamation plan. Therefore, on April 13, 2021, the Division approved the operator's Acreage Reduction request (AR-04), leaving a permit area of 39.06 acres in the DWR mine area, and a total permit area of 80.53 acres (including the 41.47 acres in the DEB mine area). While no comments were submitted for AR-04, the Division did speak with the landowner of the parcel proposed for release, Thomas Wiesner, prior to the inspection. Mr. Wiesner stated he was pleased with the reclamation completed on his property and had no issues with the land being released from the permit.

The Division estimates current disturbance at the DWR mine to cover approximately 21 acres. This disturbance is split into two main areas, including a clay stockpile area to the north (near the site entrance), and a clay, scrap brick, overburden, and topsoil stockpile area to the south, adjacent to the mining area. Two narrow pits elongated in a north-south direction are present at the eastern and southeastern edges of the permit area, covering approximately 4 acres. These pits are approximately 25 feet deep, with highwall slope gradients ranging from near vertical to 2H:1V. The eastern highwall of the southern pit is located adjacent to the eastern permit boundary, so the operator will need to be careful not to disturb land offsite while reclaiming this highwall. Some stormwater was ponded on the pit floors. A pond approximately 0.95 acre in size (Bostons stock pond) is located west of the pits with slopes graded to 3H:1V and stable with good grass establishment. The land directly north, west, and south of the pond also has a good grass establishment and will not be redisturbed by the operation. The pond was dry during the inspection. Plenty of topsoil has been salvaged and stockpiled on site to complete reclamation, including a large topsoil stockpile stored west of the pit area, and topsoil stockpiles bermed along the northern and southern edges of the clay stockpile area. These stockpiles were stable with good grass cover. The portion of the permit area located south of the clay stockpile area (owned by Faulhaber) may not be disturbed by the operation, and is currently fenced off.

The Division estimates reclamation of current disturbance at the DWR mine would include backfilling the eastern pit highwalls to 3H:1V (due to their close proximity to the eastern permit boundary), grading other pit highwalls to 3H:1V using cut/fill methods, backfilling the imported scrap brick material into the pits, ripping 15.8 acres of compacted areas (stockpiling/equipment storage areas and roads), replacing topsoil on 19.8 acres (21 acres disturbance – 1.2 acres reclaimed stock pond area), and revegetating 19.8 acres.

The Division inspected the DEB mine next (see enclosed Google Earth image of DEB mine), which is located approximately 1.5 miles east of the DWR mine. The Division estimates current disturbance at the DEB mine to

cover approximately 22.5 acres. This disturbance is split into two main areas, including a pit and scrap brick stockpile area to the east (near the site entrance), and a clay stockpile area to the west. The pit is elongated in an east-west direction, covering approximately 3.2 acres. The pit is approximately 25-30 feet deep, with highwall slope gradients ranging from 1H:1V to 2H:1V. The pit opens up to the west and is deeper at its northern edge. The eastern highwall of the pit is located adjacent to the eastern permit boundary, so the operator will need to be careful not to disturb land offsite while reclaiming this highwall. The area directly north of the pit has been stripped in preparation of mining. Two stormwater ponds have been constructed at this site, one along the western edge of the pit area (approximately 0.95 acre in size) and the other at the southern edge of the clay stockpile area (approximately 0.35 acre in size). These ponds were dry during the inspection. A large scrap brick stockpile is stored just south of the pit. Plenty of topsoil has been salvaged and stockpiled on site to complete reclamation, including the topsoil stockpiles stored along the northern and southern edges of the pit area and along the northern edge of the clay stockpile area. A draw runs along the western and southern edges of the current mining area. This draw flows to the southeast when carrying water, but is typically dry. The operator has constructed a berm along the western and southern edges of the mining area to keep runoff from the mine from entering the draw.

The Division estimates reclamation of current disturbance at the DEB mine would include backfilling the eastern pit highwall to 3H:1V (due to its close proximity to the eastern permit boundary), grading other pit highwalls to 3H:1V using cut/fill methods, backfilling the imported scrap brick material into the pit, backfilling the two stormwater ponds, ripping 18 acres of compacted areas (stockpiling/equipment storage areas and roads), replacing topsoil on 22.5 acres, and revegetating 22.5 acres.

After conducting this inspection, the Division re-evaluated the required financial warranty for reclaiming the site (both the DWR mine and the DEB mine) in accordance with the approved reclamation plan (see enclosed bond estimate), and found this amount to be $325,670.00, which is $131,620.00 more than the currently held amount of $194,050.00. **This is cited as a problem in this report (Problem #2; see pages 1 and 2) for failure to maintain the proper financial warranty amount to complete reclamation of the affected lands in accordance with the approved reclamation plan.** The operator is encouraged to review the enclosed bond estimate and submit any comments or evidence of reclamation work completed within 60 days of the date of this inspection report. If, by the 60-day corrective action deadline, the Division has not received any comments from the operator, a notice of Surety Increase will be issued for the amount calculated in the enclosed bond estimate. The operator will then have 60 days from the date of such notice to post the additional required financial warranty.

If the operator wishes to revise the reclamation plan for the site, this can be done through the submittal of a Technical Revision (for a minor change; see enclosed form) or an Amendment application (for a significant change and/or increase in affected acreage).

This concludes the report.

Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at amy.eschberger@state.co.us.

PHOTOGRAPHS

Photo 1. View of DWR mine looking north across eastern edge of area proposed for release in AR-04, showing white post marking its eastern boundary. Note established grasses in this area.

Photo 2. View of DWR mine looking northwest across area proposed for release in AR-04, showing slopes graded to 3H:1V or flatter and an established grass cover.

Photo 3. View of DWR mine looking west across area proposed for release in AR-04, showing slopes graded to 3H:1V or flatter and an established grass cover.

Photo 4. View of DWR mine looking southwest across area proposed for release in AR-04, showing slopes graded to 3H:1V or flatter and an established grass cover.

Photo 5. View of DWR mine looking south across area proposed for release in AR-04, showing slopes graded to 3H:1V or flatter and an established grass cover.

Photo 6. View of DWR mine looking northwest across northern portion of stormwater pond that remains in area proposed for release in AR-04. This pond was dry during the inspection.

Photo 7. View of DWR mine looking southwest across southern portion of stormwater pond that remains in area proposed for release in AR-04. This pond was dry during the inspection.

Photo 8. View of DWR mine looking south across southern portion of area proposed for release in AR-04 which was undisturbed by the operation.

Photo 9. View of DWR mine looking southeast across southern portion of Faulhaber parcel, which may not be mined by the operation.

Photo 10. View of DWR mine looking northwest across clay stockpiles area near site entrance. Some imported scrap brick was also stored in this area (visible at right).

Photo 11. View of DWR mine looking west across clay stockpiles area near site entrance.

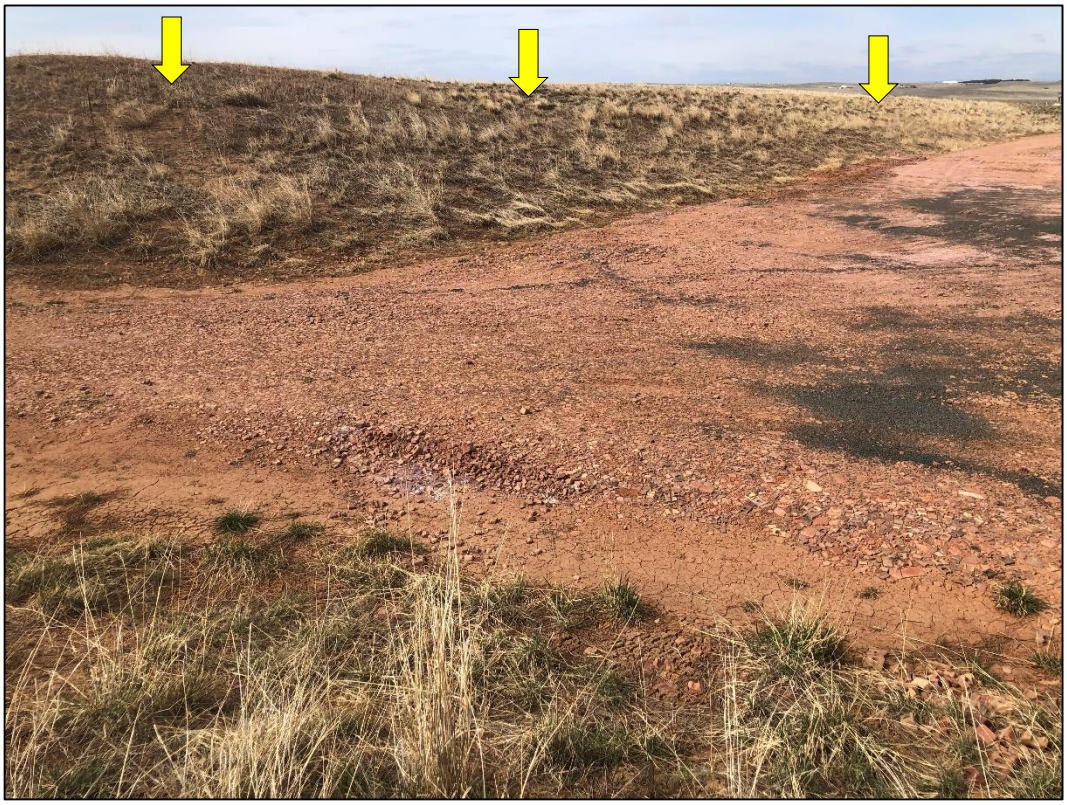


Photo 12. View of DWR mine looking southwest at topsoil stockpile (indicated) stored along southern edge of clay stockpile area. This stockpile was stable with good grass cover.

Photo 13. View of DWR mine looking south across clay stockpiles area near site entrance.

Photo 14. View of DWR mine looking south across eastern edge of clay stockpile area where imported scrap brick is stored.

Photo 15. View of DWR mine looking south across northern portion of north pit, approximately 25 feet deep with highwall slopes at 1H:1V to 2H:1V.

Photo 16. View of DWR mine looking south across southern portion of north pit. Note some ponded stormwater present on pit floor.

Photo 17. View of DWR mine looking east across southern portion of north pit, approximately 25 feet deep with highwall slopes at near vertical to 2H:1V. Note some ponded stormwater present on pit floor.

Photo 18. View of DWR mine looking east across stock pond constructed west of pit area, with slopes at 3H:1V or flatter and stable with good grass cover. This pond was dry during the inspection.

Photo 19. View of DWR mine looking northeast at eastern highwall of south pit, approximately 25 feet in height with slopes at near vertical to 1H:1V.

Photo 20. View of DWR mine looking north across south pit, approximately 25 feet deep with highwall slopes at near vertical to 2H:1V. Note some ponded stormwater present on pit floor.

Photo 21. View of DWR mine looking east at large topsoil stockpile (indicated) stored just west of pit area. This stockpile was stable with good grass cover.

Photo 22. View of DWR mine looking west at clay stockpile (at left) and large scrap brick stockpile (at right) stored just west of pit area.

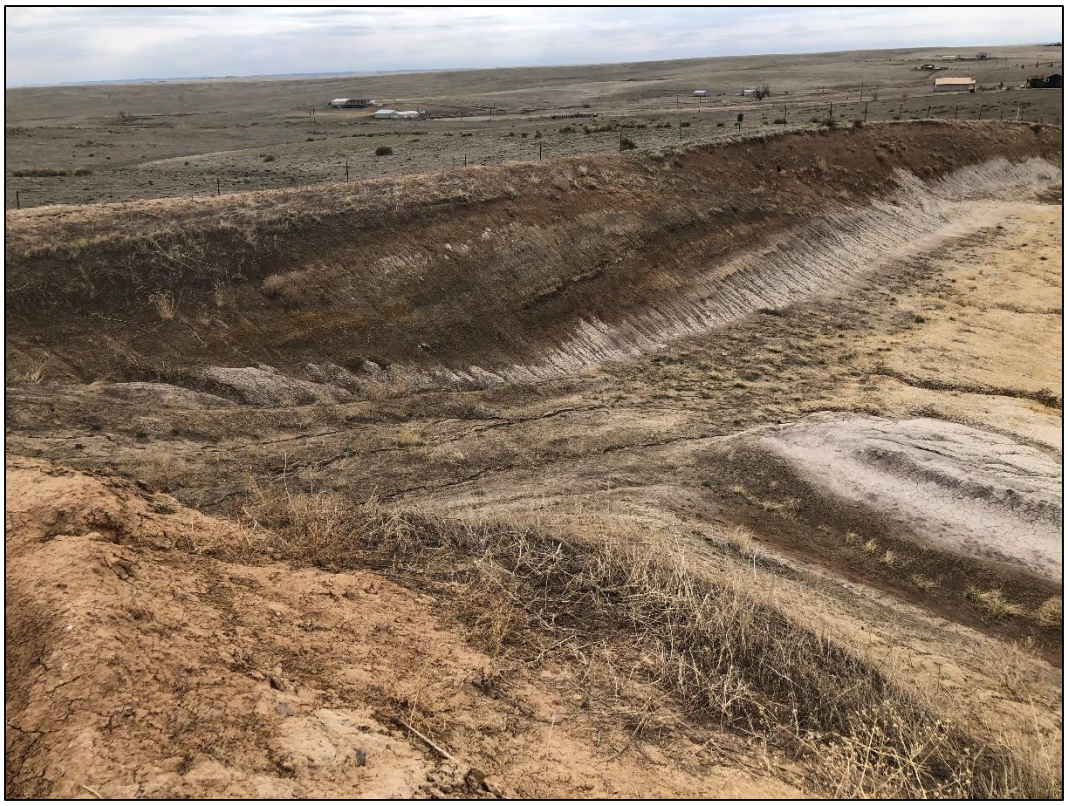


Photo 23. View of DEB mine looking southeast at eastern pit highwall, approximately 25 feet in height with slopes at 1H:1V to 1.5H:1V.

Photo 24. View of DEB mine looking south across pit. Note large scrap brick stockpile (in background) stored south of pit.

Photo 25. View of DEB mine looking southwest across pit, approximately 25-30 feet deep with highwall slopes at 1H:1V to 2H:1V.

Photo 26. View of DEB mine looking north at northern pit highwall, approximately 30 feet in height with slopes at 1H:1V to 2H:1V.

Photo 27. View of DEB mine looking northwest at topsoil stockpile stored along northern edge of pit area. This stockpile was stable with good grass cover.

Photo 28. View of DEB mine looking southeast across stormwater pond constructed along western edge of pit area. This pond was dry during the inspection.

Photo 29. View of DEB mine looking east at large scrap brick stockpile stored south of pit area. A topsoil stockpile is stored to the south of this stockpile (not shown in photo).

Photo 30. View of DEB mine looking east across entire pit area disturbance. Note pit (at center), area north of pit to be mined (at left), and scrap brick stockpile (at right). Topsoil stockpiles are stored along northern and southern edges of this area (far left and far right)

Photo 31. View of DEB mine looking north at topsoil stockpile (indicated) stored along northern edge of clay stockpile area. This stockpile was stable with good grass cover.

Photo 32. View of DEB mine looking south across clay stockpile area located at western edge of permit area.

Photo 33. View of DEB mine looking north across clay stockpile area located at western edge of permit area.

Photo 34. View of DEB mine looking north at clay stockpile area, showing haul truck present during inspection to transport clay off site to operator's brick manufacturing facility.

Photo 35. View of DEB mine looking east across stormwater pond constructed at southern edge of clay stockpile area. This pond was dry during the inspection.

Photo 36. View of DEB mine looking east across undisturbed portion of permit area between pit area (to the east) and clay stockpile area (to the west).

GENERAL INSPECTION TOPICS

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

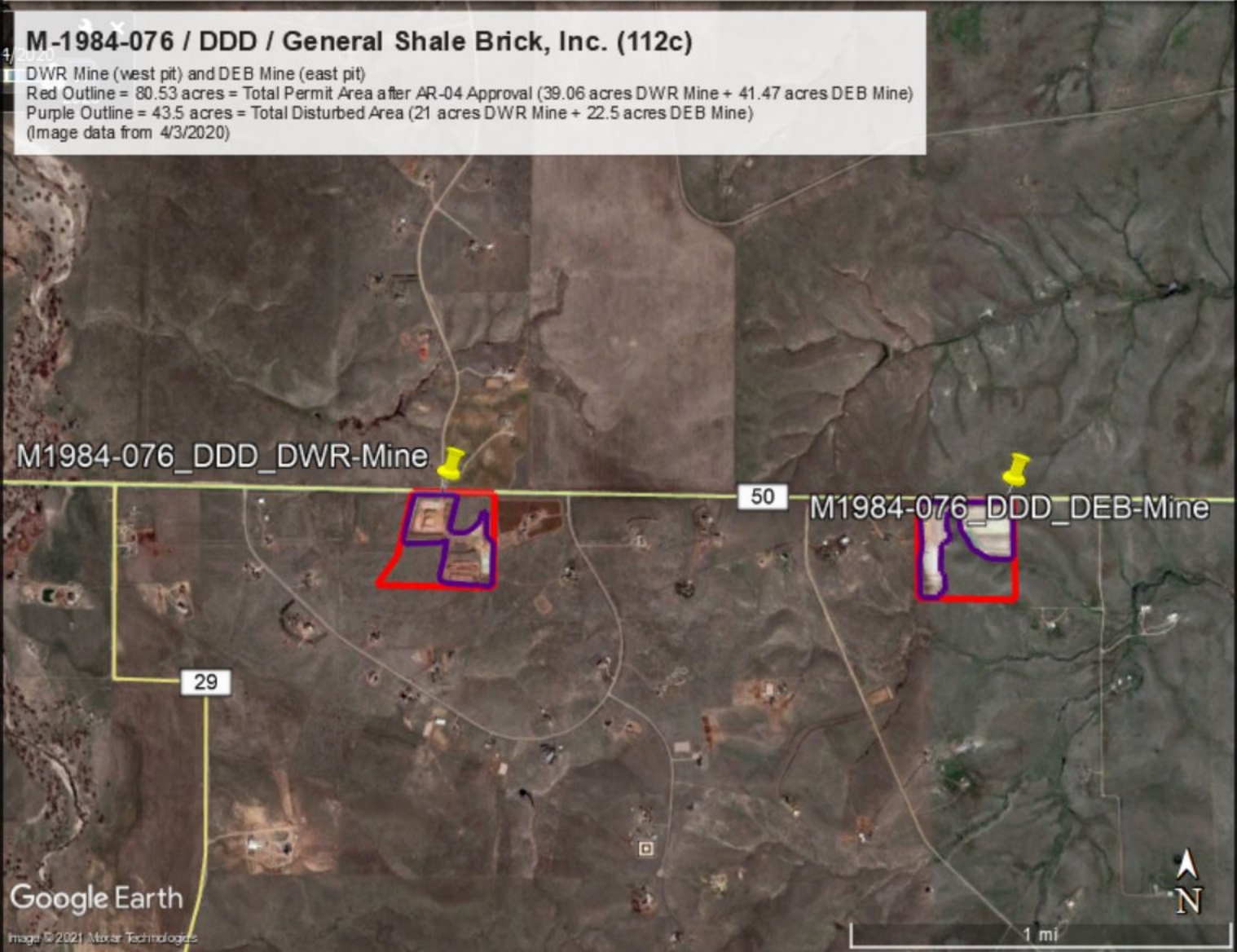
(AR) RECORDS---------- Y	**(FN) FINANCIAL WARRANTY-------- PB**	**(RD) ROADS---------- Y**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- NA**
(PW) PROCESSING WASTE/TAILING---- Y	**(SF) PROCESSING FACILITIES------- N**	**(TS) TOPSOIL---------- Y**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

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

Inspection Contact Address
Jason McGraw
General Shale Brick, Inc.
1845 W. Dartmouth Ave.
Denver, CO 80110

Encls: Google Earth image showing both DWR and DEB mines
Google Earth image of DWR mine
(2) Maps of DWR mine submitted with AR-04
Google Earth image of DEB mine
Division's bond estimate
Technical Revision form

CC: Harold Stickler, General Shale Brick, Inc.
Michael Cunningham, DRMS


M-1984-076 / DDD / General Shale Brick, Inc. (112c)
DWR Mine (west pit) and DEB Mine (east pit)
Red Outline = 80.53 acres = Total Permit Area after AR-04 Approval (39.06 acres DWR Mine + 41.47 acres DEB Mine)
Purple Outline = 43.5 acres = Total Disturbed Area (21 acres DWR Mine + 22.5 acres DEB Mine)
(Image data from 4/3/2020)
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M1984-076_DDD_DEB-Mine
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Google Earth
Image © 2021 Maxar Technologies
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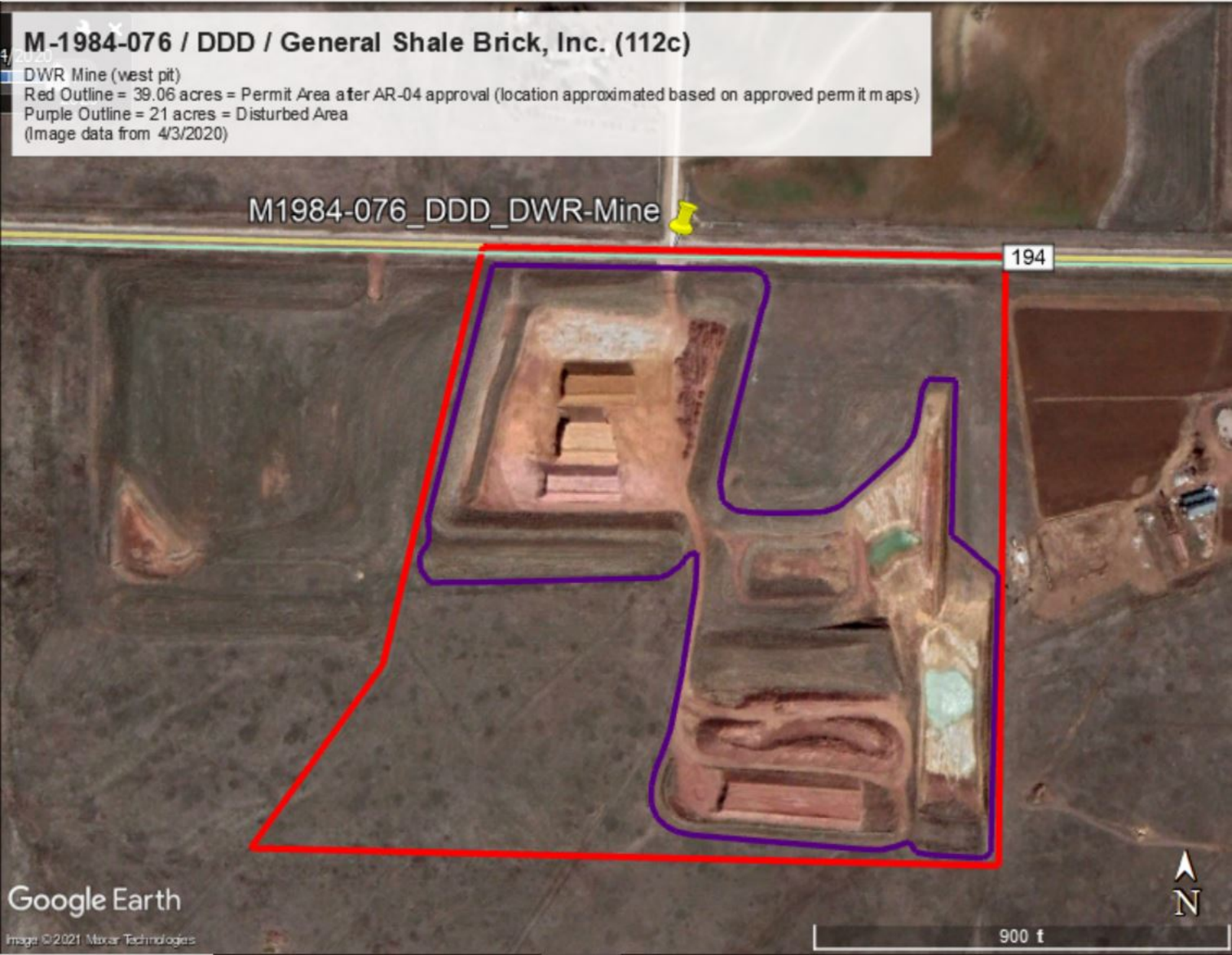
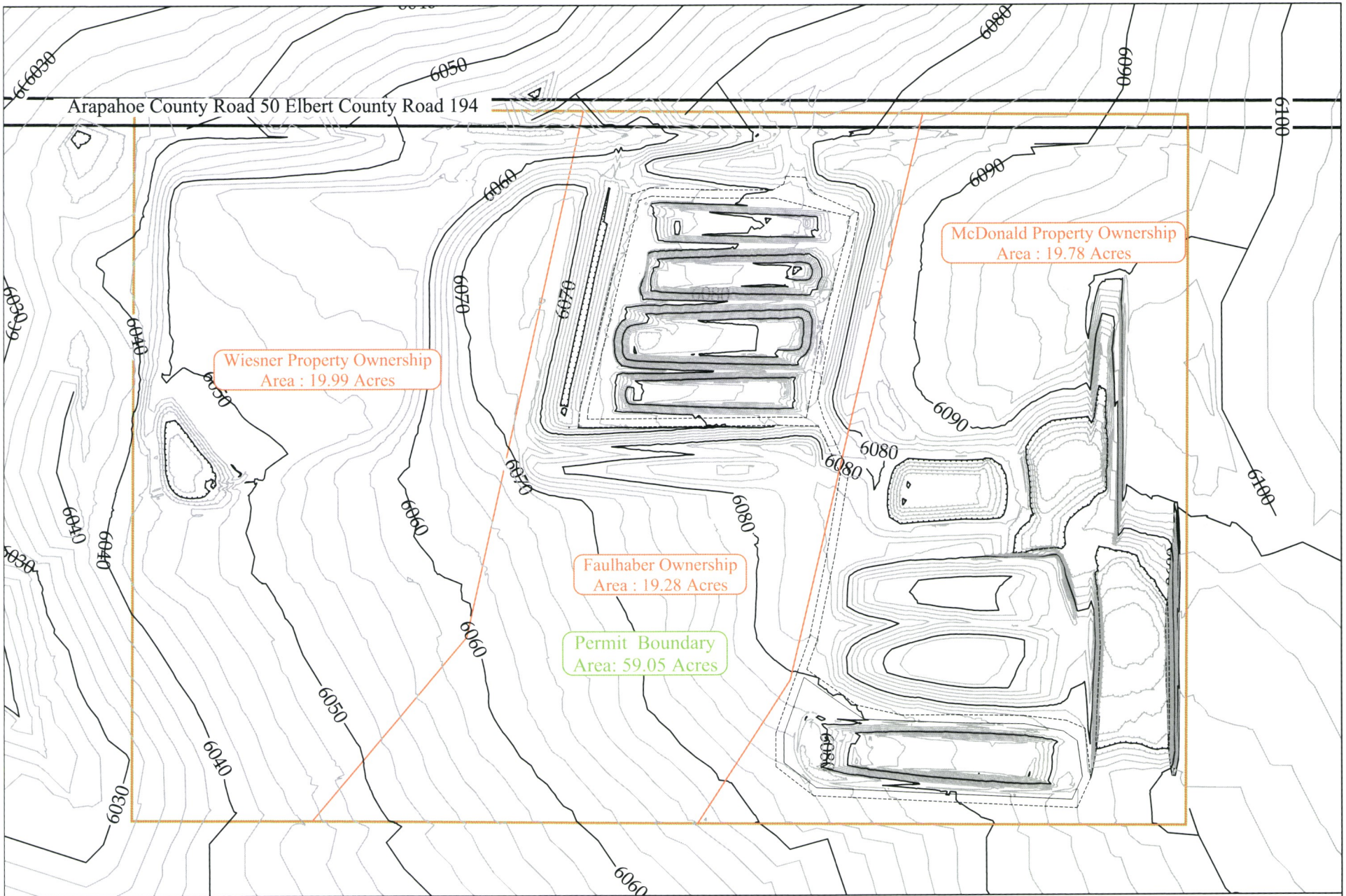

M-1984-076 / DDD / General Shale Brick, Inc. (112c)
DWR Mine (west pit)
Red Outline = 39.06 acres = Permit Area after AR-04 approval (location approximated based on approved permit maps)
Purple Outline = 21 acres = Disturbed Area
(Image data from 4/3/2020)
M1984-076_DDD_DWR-Mine
194
Google Earth
Image © 2021 Maxar Technologies
N
900 ft



-N-

CONFIDENTIAL

DRAWING FILE NAME
DWR_2021A.dwg

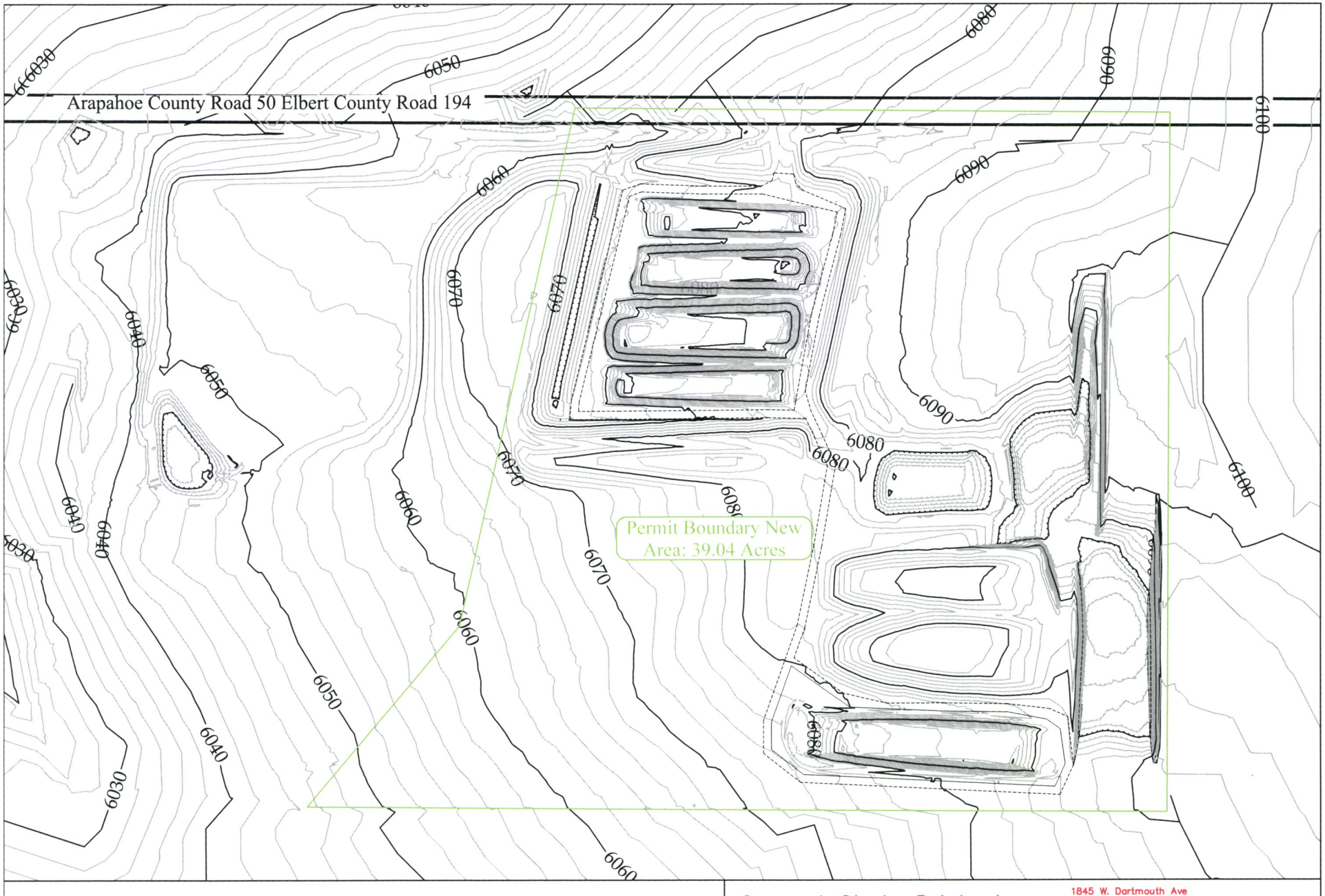
General Shale Brick, Inc.

1845 W. Dartmouth Ave
Denver, Colorado 80110
Phone (303) 783-3000

DRAWING TITLE

DDD Mine DWR Pit
Wiesner Permit Release

CONTOUR INTERVAL: 5'	DRAWING NUMBER: –	REVISION: A	SHT. 1 OF 1
	DRAWN BY: Jason E. McGraw	DATE:	March 18, 2021
	APPROVAL BY:	SCALE:	1" = 250'



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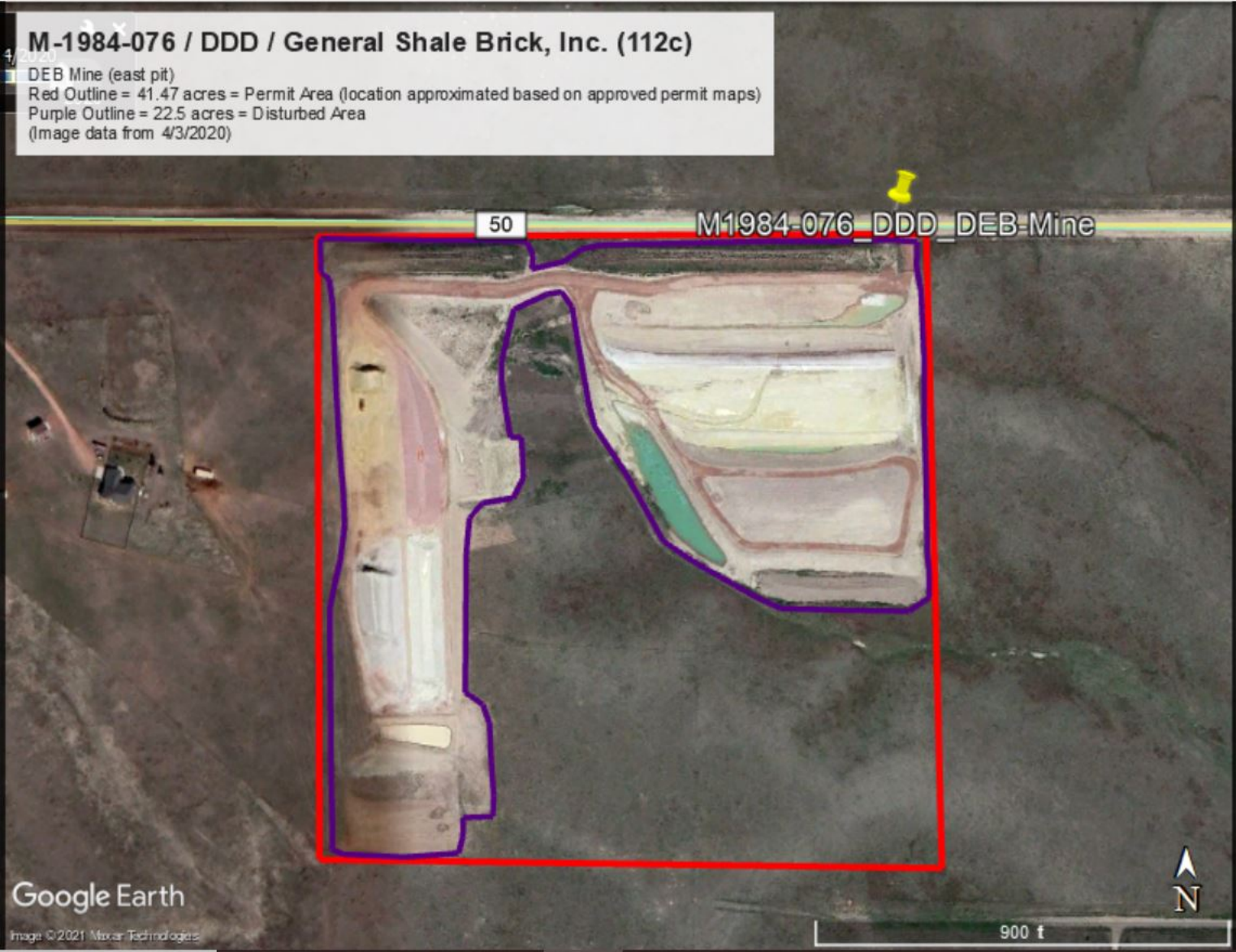
DRAWING FILE NAME
DWR_2021A.dwg

General Shale Brick, Inc.
1845 W. Dartmouth Ave
Denver, Colorado 80110
Phone (303) 783-3000

DRAWING TITLE

DDD Mine DWR Pit
New Permit Boundary

CONTOUR INTERVAL: 5'	DRAWING NUMBER: —	REVISION: A	SHT. 1 OF 1
	DRAWN BY: Jason E. Mostraw	DATE:	March 18, 2021
	APPROVAL BY:	SCALE:	1" = 250'


M-1984-076 / DDD / General Shale Brick, Inc. (112c)
DEB Mine (east pit)
Red Outline = 41.47 acres = Permit Area (location approximated based on approved permit maps)
Purple Outline = 22.5 acres = Disturbed Area
(Image data from 4/3/2020)
50
M1984-076_DDD_DEB Mine
Google Earth
Image © 2021 Maxar Technologies
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900 ft

COST SUMMARY WORK

Task description: **Cost Summary**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-000
User: AME

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	DWR mine - Backfill eastern pit highwalls	DOZER	2	21.86	$10,814
002	DWR mine - Cut/fill pit highwalls	DOZER	2	5.53	$2,737
003	DWR mine - Backfill south pit with inert fill	LOADER	2	109.45	$23,300
004	DWR mine - Rip compacted areas	RIPPER	2	11.46	$6,156
005	DWR mine - Retopsoil 19.8 acres	SCRAPER1	1	22.39	$23,816
006	DWR mine - Revegetate 19.8 acres	REVEGE	1	9.90	$28,960
007	DEB mine - Backfill eastern pit highwalls	DOZER	2	4.92	$2,433
008	DEB mine - Cut/fill pit highwalls	DOZER	2	5.41	$2,676
009	DEB mine - Backfill pit with inert fill	LOADER	2	114.88	$24,455
010	DEB mine - Backfill eastern pond	LOADER	2	63.16	$13,446
011	DEB mine - Backfill western pond	LOADER	2	11.37	$2,421
012	DEB mine - Rip compacted areas	RIPPER	2	12.98	$6,971
013	DEB mine - Retopsoil 22.5 acres	SCRAPER1	1	34.61	$36,807
014	DEB mine - Revegetate 22.5 acres	REVEGE	1	11.25	$32,909
015	Mobilization/demobilization	MOBILIZE	1	13.94	$36,106
		SUBTOTALS:		**453.11**	**$254,007**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$5,131
Performance bond:	1.05	Total =	$2,667
Job superintendent:	150.00	Total =	$10,432
Profit:	10.00	Total =	$25,401
		TOTAL O & P =	$43,631
		CONTRACT AMOUNT (direct + O & P) =	$297,638

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	4.25	Total =	$12,650
Reclamation management and/or administration:	5.00		$14,882
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$71,663

TOTAL BOND AMOUNT (direct + indirect) = $325,670

BULLDOZER WORK

Task description: **DWR mine - Backfill eastern pit highwalls**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-001
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	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: $247.28
Total Fleet Cost/Hour: **$494.57**

MATERIAL QUANTITIES

Initial Volume: 23,148
Swell factor: 1.125
Loose volume: **26,042** LCY

Source of estimated volume: East highwalls 1,000 ft L x 25 ft H
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 5 %
Average site altitude: 6,080 feet

Material weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

Job Condition Correction Factor		Source
Operator Skill:	1.000	(EXCL.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5855

Adjusted unit production: 595.51 LCY/hr
Adjusted fleet production: **1191.02** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.415/LCY

Total job time: **21.86** Hours
Total job cost: **$10,814**

BULLDOZER WORK

Task description: **DWR mine - Cut/fill pit highwalls**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-002
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	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: $247.28
Total Fleet Cost/Hour: **$494.57**

MATERIAL QUANTITIES

Initial Volume: 7,813
Swell factor: 1.250
Loose volume: **9,766** LCY

Source of estimated volume: North, West, and South Highwalls 1,350 ft L x 25 ft H
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
Average site altitude: 6,080 feet

Material weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

Job Condition Correction Factor		Source
Operator Skill:	1.000	(EXCL.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8676

Adjusted unit production: 882.44 LCY/hr
Adjusted fleet production: **1764.88** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.280/LCY

Total job time: **5.53** Hours
Total job cost: **$2,737**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **DWR mine - Backfill south pit with inert fill**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-003
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 962H Horsepower: 209
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$28.67	NA
Operating Cost/Hour:	$37.06	100
Operator Cost/Hour:	$40.71	NA
Total Unit Cost/Hour:	$106.44	

Total Fleet Cost/Hour: $212.87

MATERIAL QUANTITIES

Initial volume: 22,500 CCY Swell factor: 1.000
Loose volume: **22,500** LCY

Source of estimated volume: Per TR-2 max 45,000 tons inert fill on site at any time
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(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:	-0.020	minutes
	Adjusted Basic Cycle Time:	0.480	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	750	3.00	5.00	8.00	0.8524	(Cat HB)
Return Route:	750	-3.00	5.00	2.00	0.5427	(Cat HB)

Total Travel Time:	1.3951	minutes
Total Cycle Time:	**1.8751**	minutes

Load Bucket Capacity

Rated Capacity:	4.30	LCY (heaped)
Bucket Fill Factor:	0.900	Rock - Poorly Blasted (85%-95%) 0.900
Adjusted Capacity:	**3.87**	LCY

Job Condition Correction Factors
Site Altitude: 6080 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	123.83	LCY/Hour
Adjusted Hourly Unit Production:	102.78	LCY/Hour
Adjusted Hourly Fleet Production:	**205.56**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**109.45**	Hours
Unit cost:	$1.036	/LCY	Total job cost:	**$23,300**	

BULLDOZER RIPPING WORK

Task description: **DWR mine - Rip compacted areas**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-004
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	100
Ripper Ownership Cost/Hour:	$12.00	NA
Ripper Operating Cost/Hour:	$9.18	100
Operator Cost/Hour:	$41.30	NA
Total Unit Cost/Hour:	$268.46	

Total Fleet Cost/Hour: **$536.91**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 15.80 acres Rip Depth (ft): 1.50 Volume: 38,236 BCY or CCY

Source of estimated quantity: 21 acres disturbed - 1.2 acre pond - 4 acre pit

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.56	feet/pass
Average Ripping Width:	7.08	feet/pass
Average Ripping Length:	650.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.830	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.830 Acres/hr

Site Altitude:	6,080	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.69 Acres/hr
Adjusted Hourly Fleet Production: **1.38** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **11.47** Hours

Unit cost: $389.653 Per acre Total job cost: **$6,156**

SCRAPER TEAM WORK

Task description: **DWR mine - Retopsoil 19.8 acres**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-005
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 631G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	100	100
Ownership cost/hour:	$144.75	NA	$116.22	NA	$55.79	$10.06
Operating cost/hour:	$145.83	NA	$89.77	NA	$60.08	$18.78
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	NA	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	NA	$0.00	$0.00
Operator cost/hour:	$30.90	NA	$41.30	NA	$28.56	$0.00
Unit Subtotals:	$321.47	NA	$247.28	NA	$144.43	$28.84
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	$642.94	Support:	$247.28	Maint:	$173.27

Total work team cost/hour: **$1,063.49**

MATERIAL QUANTITIES

Initial volume: 26,619 CCY Swell factor: 1.215
Loose volume: **32,342** LCY

Source of estimated volume: 21 acres disturbed - 1.2 acre pond, 10 in depth
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 1,600 lbs/LCY
Material description: Top Soil
Rated Payload: 81,600 pounds
Payload Capacity: 51.00 LCY

Scraper Bowl (volume) Basis:

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.70 Minutes

Job Condition Correction: Site Altitude: 6080 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	300.00	4.00	3.00	7.00	962	0.35

Haul Time: **0.35** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	-4.00	3.00	-1.00	2920	0.15

Return Time: **0.15** minutes

Total Scraper team cycle time: **2.00** minutes
Adjusted for job conditions: 722.10 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,444.20 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,444.20** LCY/Hour

Unadjusted unit production/hour: 870.00 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **22.39** Hours

Unit cost: $0.736 /LCY Total job cost: **$23,816**

REVEGETATION WORK

Task description: **DWR mine - Revegetate 19.8 acres**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-006
User: AME

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Potassium nitrate, 13-46-0	87.00	pound	$1.23	$106.58
			Total Fertilizer Materials Cost/Acre	**$106.58**

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	$37.03
Total Fertilizer Application Cost/Acre	**$37.03**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$107.16
Total Tilling Cost/Acre	**$107.16**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	0.90	14.69	$14.38
Little Bluestem - Native	1.40	8.36	$18.99
Western Wheatgrass - Arriba	4.80	12.12	$31.20
Prairie Sandreed - Goshen	1.30	8.15	$13.46
Totals Seed Mix	8.40	43.31	**$78.03**

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
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$301.00	$602.00
Total Mulch Materials Cost/Acre				**$602.00**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$70.17
Weed spray, hand, non-aquatic area, nox. [DMG]	$183.16
Total Mulch Application Cost/Acre	**$253.33**

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: 19.8
Estimated Failure Rate: 15%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $1,416.13
Cost /Acre*: $310.03

Initial Job Cost: **$28,039.37**
Reseeding Job Cost: **$920.79**
Total Job Cost: **$28,960**
Job Hours: **9.90**

BULLDOZER WORK

Task description: **DEB mine - Backfill eastern pit highwalls**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 007 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-007
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	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: $247.28
Total Fleet Cost/Hour: **$494.57**

MATERIAL QUANTITIES

Initial Volume: 5,208
Swell factor: 1.125
Loose volume: **5,859** LCY

Source of estimated volume: East highwalls 225 ft L x 25 ft H
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: 5 %
Average site altitude: 6,020 feet

Material weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

Job Condition Correction Factor		Source
Operator Skill:	1.000	(EXCL.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5855

Adjusted unit production: 595.51 LCY/hr
Adjusted fleet production: **1191.02** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.415/LCY

Total job time: **4.92** Hours
Total job cost: **$2,433**

BULLDOZER WORK

Task description: **DEB mine - Cut/fill pit highwalls**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #:	008	State:	Colorado	Abbreviation:	None
Date:	4/16/2021	County:	Elbert	Filename:	M076-008
User:	AME				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D8T - 8SU
Horsepower:	310
Blade Type:	Semi-Universal
Attachment:	NA
Shift Basis:	1 per day
Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	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: $247.28
Total Fleet Cost/Hour: **$494.57**

MATERIAL QUANTITIES

Initial Volume:	7,639
Swell factor:	1.250
Loose volume:	**9,549** LCY

Source of estimated volume: North, West, and South Highwalls 1,320 ft L x 25 ft H
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -5 %
Average site altitude: 6,020 feet

Material weight: 2,650 lbs/LCY

Weight description: Decomposed rock - 25% Rock, 75% Earth

Job Condition Correction Factor		Source
Operator Skill:	1.000	(EXCL.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8676

Adjusted unit production: 882.44 LCY/hr
Adjusted fleet production: **1764.88** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.280/LCY

Total job time: **5.41** Hours
Total job cost: **$2,676**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **DEB mine - Backfill pit with inert fill**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 009 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-009
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 962H Horsepower: 209
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$28.67	NA
Operating Cost/Hour:	$37.06	100
Operator Cost/Hour:	$40.71	NA
Total Unit Cost/Hour:	$106.44	

Total Fleet Cost/Hour: $212.87

MATERIAL QUANTITIES

Initial volume: 22,500 CCY Swell factor: 1.000
Loose volume: **22,500** LCY

Source of estimated volume: Per TR-2 max 45,000 tons inert fill on site at any time
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Bank or broken material 0.04	0.040	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(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:	-0.020	minutes
	Adjusted Basic Cycle Time:	0.480	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	800	3.00	5.00	8.00	0.9092	(Cat HB)
Return Route:	800	-3.00	5.00	2.00	0.5789	(Cat HB)

Total Travel Time:	1.4881	minutes
Total Cycle Time:	**1.9681**	minutes

Load Bucket Capacity

Rated Capacity:	4.30	LCY (heaped)
Bucket Fill Factor:	0.900	Rock - Poorly Blasted (85%-95%) 0.900
Adjusted Capacity:	**3.87**	LCY

Job Condition Correction Factors
Site Altitude: 6020 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	117.98	LCY/Hour
Adjusted Hourly Unit Production:	97.93	LCY/Hour
Adjusted Hourly Fleet Production:	**195.85**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**114.88**	Hours
Unit cost:	$1.087	/LCY	Total job cost:	**$24,455**	

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **DEB mine - Backfill eastern pond**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 010 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-010
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 962H Horsepower: 209
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$28.67	NA
Operating Cost/Hour:	$37.06	100
Operator Cost/Hour:	$40.71	NA
Total Unit Cost/Hour:	$106.44	

Total Fleet Cost/Hour: $212.87

MATERIAL QUANTITIES

Initial volume: 22,990 CCY Swell factor: 1.165
Loose volume: **26,783** LCY

Source of estimated volume: 0.95 acre pond x 15 ft deep
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(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:	-0.040	minutes
	Adjusted Basic Cycle Time:	0.460	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	350	3.00	5.00	8.00	0.3978	(Cat HB)
Return Route:	350	-3.00	5.00	2.00	0.2533	(Cat HB)

Total Travel Time:	0.6510	minutes
Total Cycle Time:	**1.1110**	minutes

Load Bucket Capacity

Rated Capacity:	4.30	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**4.73**	LCY

Job Condition Correction Factors
Site Altitude: 6020 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	255.44	LCY/Hour
Adjusted Hourly Unit Production:	212.01	LCY/Hour
Adjusted Hourly Fleet Production:	**424.02**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**63.16**	Hours
Unit cost:	$0.502	/LCY	Total job cost:	**$13,446**	

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **DEB mine - Backfill western pond**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 011 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-011
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 962H Horsepower: 209
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$28.67	NA
Operating Cost/Hour:	$37.06	100
Operator Cost/Hour:	$40.71	NA
Total Unit Cost/Hour:	$106.44	
Total Fleet Cost/Hour:	$212.87	

MATERIAL QUANTITIES

Initial volume: 4,517 CCY Swell factor: 1.165
Loose volume: **5,262** LCY

Source of estimated volume: 0.35 acre pond x 8 ft deep
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(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:	-0.040	minutes
	Adjusted Basic Cycle Time:	0.460	minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	300	3.00	5.00	8.00	0.3409	(Cat HB)
Return Route:	300	-3.00	5.00	2.00	0.2171	(Cat HB)

Total Travel Time:	0.5580	minutes
Total Cycle Time:	**1.0180**	minutes

Load Bucket Capacity

Rated Capacity:	4.30	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**4.73**	LCY

Job Condition Correction Factors
Site Altitude: 6020 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	278.77	LCY/Hour
Adjusted Hourly Unit Production:	231.38	LCY/Hour
Adjusted Hourly Fleet Production:	**462.76**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**11.37**	Hours
Unit cost:	$0.460	/LCY	Total job cost:	**$2,421**	

BULLDOZER RIPPING WORK

Task description: **DEB mine - Rip compacted areas**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 012 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-012
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$116.22	NA
Operating Cost/Hour:	$89.77	100
Ripper Ownership Cost/Hour:	$12.00	NA
Ripper Operating Cost/Hour:	$9.18	100
Operator Cost/Hour:	$41.30	NA
Total Unit Cost/Hour:	$268.46	

Total Fleet Cost/Hour: **$536.91**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 18.00 acres Rip Depth (ft): 1.50 Volume: 43,560 BCY or CCY

Source of estimated quantity: 22.5 ac disturbed - 3.2 ac pit - 0.95 ac pond - 0.35 ac pond

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.56	feet/pass
Average Ripping Width:	7.08	feet/pass
Average Ripping Length:	800.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.835	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.835 Acres/hr

Site Altitude:	6,020	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.69 Acres/hr
Adjusted Hourly Fleet Production: **1.39** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **12.98** Hours

Unit cost: $387.261 Per acre Total job cost: **$6,971**

SCRAPER TEAM WORK

Task description: **DEB mine - Retopsoil 22.5 acres**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 013 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-013
User: AME

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 631G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	NA	100	100
Ownership cost/hour:	$144.75	NA	$116.22	NA	$55.79	$10.06
Operating cost/hour:	$145.83	NA	$89.77	NA	$60.08	$18.78
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	NA	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	NA	$0.00	$0.00
Operator cost/hour:	$30.90	NA	$41.30	NA	$28.56	$0.00
Unit Subtotals:	$321.47	NA	$247.28	NA	$144.43	$28.84
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	$642.94	Support:	$247.28	Maint:	$173.27

Total work team cost/hour: **$1,063.49**

MATERIAL QUANTITIES

Initial volume: 30,249 CCY Swell factor: 1.215
Loose volume: **36,753** LCY

Source of estimated volume: 22.5 acres disturbed, 10 in depth
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Material weight: 1,600 lbs/LCY
Material description: Top Soil
Rated Payload: 81,600 pounds
Payload Capacity: 51.00 LCY

Scraper Bowl (volume) Basis:

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.70 Minutes

Job Condition Correction: Site Altitude: 6020 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	700.00	5.00	3.00	8.00	783	0.91

Haul Time: **0.91** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time: **0.31** minutes

Total Scraper team cycle time: **2.72** minutes
Adjusted for job conditions: 530.96 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,061.91 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,061.91** LCY/Hour

Unadjusted unit production/hour: 639.71 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **34.61** Hours

Unit cost: $1.001 /LCY Total job cost: **$36,807**

REVEGETATION WORK

Task description: **DEB mine - Revegetate 22.5 acres**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 014 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-014
User: AME

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Potassium nitrate, 13-46-0	87.00	pound	$1.23	$106.58
			Total Fertilizer Materials Cost/Acre	**$106.58**

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	$37.03
Total Fertilizer Application Cost/Acre	**$37.03**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$107.16
Total Tilling Cost/Acre	**$107.16**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	0.90	14.69	$14.38
Little Bluestem - Native	1.40	8.36	$18.99
Western Wheatgrass - Arriba	4.80	12.12	$31.20
Prairie Sandreed - Goshen	1.30	8.15	$13.46
Totals Seed Mix	8.40	43.31	**$78.03**

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
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$301.00	$602.00
Total Mulch Materials Cost/Acre				**$602.00**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$70.17
Weed spray, hand, non-aquatic area, nox. [DMG]	$183.16
Total Mulch Application Cost/Acre	**$253.33**

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: 22.5
Estimated Failure Rate: 15%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $1,416.13
Cost /Acre*: $310.03

Initial Job Cost: **$31,862.93**
Reseeding Job Cost: **$1,046.35**
Total Job Cost: **$32,909**
Job Hours: **11.25**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization/demobilization**

Site: **DDD** Permit Action: 4/13/2021 Inspection-2 Permit/Job#: M1984076

PROJECT IDENTIFICATION

Task #: 015 State: Colorado Abbreviation: None
Date: 4/16/2021 County: Elbert Filename: M076-015
User: AME

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:	$17.20	$29.63	$38.69
Operating Cost/Hour:	$26.56	$47.02	$55.69
Operator Cost/Hour:	$23.63	$23.63	$23.63
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$67.39	$123.81	$141.54

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 D8T - 8SU	47.71	$116.22	$123.81	2	$480.06	$247.62	$250.00
Cat D8T - 8SU	53.08	$128.22	$141.54	2	$539.52	$283.08	$250.00
CAT 16M	28.73	$55.79	$123.81	2	$359.20	$247.62	$500.00
Cat 631G	52.50	$144.75	$141.54	2	$572.58	$283.08	$500.00
CAT 962H	20.95	$28.67	$67.39	2	$192.12	$134.78	$500.00
Drill/Broadcast Seeder with Tractor	25.00	$6.72	$67.39	2	$148.22	$134.78	$500.00
Subtotals:					**$2,291.70**	**$1,330.96**	**$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.	$28.84	2	$57.68	$57.68
Light Duty Pickup, 4x4, 3/4 T.	$13.23	2	$26.46	$26.46
Subtotals:			**$84.14**	**$84.14**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	AURORA	
Total one-way travel distance:	26.75	miles
Average Travel Speed:	55.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$36,024.26
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$81.85

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.49	0.49
Return Time (Hours):	0.49	0.49
Loading Time (Hours):	3.00	NA
Unloading Time (Hours):	3.00	NA
Subtotals:	6.97	0.97

JOB TIME AND COST

Total job time:	**13.95**	Hours
Total job cost:	**$36,106**	

COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
1313 Sherman Street, Room 215, Denver, Colorado 80203 ph(303) 866-3567

REQUEST FOR TECHNICAL REVISION (TR) COVER SHEET

File No.: M- _____ Site Name: _____

County _____ TR# _____ *(DRMS Use only)*

Permittee: _____

Operator (If Other than Permittee): _____

Permittee Representative: _____

Please provide a brief description of the proposed revision: _____

_____

_____

As defined by the Minerals Rules, a Technical Revision (TR) is: "a change in the permit or application which does not have more than a minor effect upon the approved or proposed Reclamation or Environmental Protection Plan." The Division is charged with determining if the revision as submitted meets this definition. If the Division determines that the proposed revision is beyond the scope of a TR, the Division may require the submittal of a permit amendment to make the required or desired changes to the permit.

The request for a TR is not considered "filed for review" until the appropriate fee is received by the Division (as listed below by permit type). Please submit the appropriate fee with your request to expedite the review process. After the TR is submitted with the appropriate fee, the Division will determine if it is approvable within 30 days. If the Division requires additional information to approve a TR, you will be notified of specific deficiencies that will need to be addressed. If at the end of the 30 day review period there are still outstanding deficiencies, the Division must deny the TR unless the permittee requests additional time, in writing, to provide the required information.

There is no pre-defined format for the submittal of a TR; however, it is up to the permittee to provide sufficient information to the Division to approve the TR request, including updated mining and reclamation plan maps that accurately depict the changes proposed in the requested TR.

Required Fees for Technical Revision by Permit Type - Please mark the correct fee and submit it with your request for a Technical Revision.

Permit Type	**Required TR Fee**	**Submitted** (mark only one)
110c, 111, 112 construction materials, and 112 quarries	$216	☐
112 hard rock (not DMO)	$175	☐
110d, 112d(1, 2 or 3)	$1006	☐