STATE OF COLORADO

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

Adequacy response for M1997027 Technical Revision 3

2 messages

Michael and Vicki Ripp <mvripp@aol.com> Sun, Oct 8, 2023 at 10:28 PM
To: Rob Zuber - DNR <rob.zuber@state.co.us>

Rob,

Revised introduction, mining plan and reclamation plan and map attached.

Michael Ripp
MVR Resources, Inc.

2 attachments

M1997027TR03pages.pdf
579K

M1997027RecMapTR3.pdf
1611K

Zuber - DNR, Rob <rob.zuber@state.co.us> Mon, Oct 9, 2023 at 7:19 AM
To: Michael and Vicki Ripp <mvripp@aol.com>

Thanks, Michael, I'll take a look soon.

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

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

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INTRODUCTION

The existing 110c Moonscape Pit is located 4 miles west of Delta in Delta County, Colorado. The proposed expansion area is an abandoned irrigated pasture. The site is bordered to the north by a chicken farm, owned by Foster Farms LLC. To the east it is bordered by irrigated pasture owned by Virgil R. Barnhart and Pineneedle Development LLC, and to the west by the Moonscape pit, owned by Gray Rock Aggregate Company LLC. The south side of the pit is bordered by rangeland owned by Gray Rock Aggregate Company LLC. The property lines are shown on Map C-1 and the mailing addresses of the landowners are listed in Exhibit R. The Moonscape Pit to the west has been mined for gravel since 1997. The gravel reserves on the existing site are nearly exhausted.

The topography of the site slopes gently down toward the northwest and is perched on an alluvial terrace. Within the permit area, there will be an increase in disturbed area from 7.57 acres to 18.89 acres. There will be 2.76 acres of the permit area left undisturbed as a buffer around the unnamed drainages on site. The resulting permit area will be 21.65 acres.

This site has historically produced and sold approximately 30,000 tons of gravel per year. The gravel on site meets road base specifications without needing to be washed. The gravel deposit is approximately 14.5 feet deep. The upper portion consists of loose gravel and the lower 2-3 feet consists of conglomerate gravel. There are approximately 4-8 inches of topsoil and 1 foot of overburden on site.

The permittee for this site is Gray Rock Aggregate Company LLC, who is the land and primary mineral rights owner.

The site will be reclaimed to a land use of general agriculture. The topography of the reclaimed land is shown on Map F.

MINING PLAN EXHIBIT D

1. General Mining Plan

The permit area will be staked prior to any additional site disturbance. Map C-2B shows the mine plan. The plan shows that mining will be done in 3 phases: Mining Areas 1, 2 and 3. Processing of the gravel will be conducted within the product stockpile and processing area shown on Map C-2B. The gravel will be excavated and hauled to the crusher with a loader. Mining will progress from Mining Area 1 to Mining Area 2 and finish in Mining Area 3.

Access to the permit area will not change. The site has a gated access to Sundown Road. The anticipated haul route is shown on Map B-1. There is minimal overburden on site, but it averages at approximately 1 foot thick. The loose gravel deposit is very uniform at approximately 12 feet thick. Below the loose gravel deposit is a conglomerate gravel deposit with an approximate thickness of 2.5 feet, which can also be used for road base. The overall deposit to be mined is approximately 14.5 feet thick. Below the conglomerate is shale.

Topsoil will be salvaged from all Mining Areas. The expected topsoil thickness is limited to approximately 6 inches. Initially, topsoil will be stockpiled in the northeast corner of the permit area (See Map C-2B). Approximately 3,549 cubic yards of topsoil from Mining Area 1 will be stockpiled. The topsoil in this stockpile will be used for reclamation. All other topsoil will be salvaged and directly replaced on the 3h:1v slopes of areas that have been previously excavated. The operation will mine for a few months per year and produce stockpiles to last 1-2 years. Crushed product will be stored within the product stockpile and processing area. See Map C-2B. All final slopes will be mined to 3H:1V to reduce the amount of reclamation required after mining. The overburden will be stockpiled and added to crushed gravel product to produce specific gradation requirements. The mining areas and stockpiles are shown on Map C-2B.

Table D-1 Mining Area Material Table

Mining Area	Acreage	Topsoil (C.Y.)	Overburden (C.Y.)	Gravel (tons)
Mining Area 1	5.01	3,549	7,099	154,396
Mining Area 2	4.19	3,380	6,760	147,027
Mining Area 3	4.18	2,259	4,517	65,501
Total	13.38	9,188	18,376	366,924

The material volumes described in Table D-1 are approximate but are based on test pits that were dug on site. Note that the areas above are located in the expansion area. The anticipated total disturbed area for the operation consists of 18.89 acres. The additional disturbance comes from the existing disturbance of the Moonscape Pit. There are 2.76 acres of undisturbed area corresponding to the unnamed drainages.

Topsoil will be stripped prior to mining each year. The slope between the existing pit and the expansion area has been reclaimed and will need the topsoil re-stripped prior to mining. Overburden will be removed at the same time as the topsoil but will be handled separately. Overburden will be stockpiled to later be incorporated in crushed gravel products. Topsoil will be stockpiled or directly replaced depending on the portion of the area being mined. Details of the topsoil handling are shown in Table D-2 and also in Exhibit E - Reclamation Plan. Gravel will be directly loaded into the crusher by a loader or will be hauled to the crusher from the mining face in a truck. A dozer may be used at the mining face to loosen the gravel for the loader.

Highway trucks will haul sellable material to market from the processing site. Truck traffic will utilize Sundown Road.

2. Mining Timetable

The following table (**Table D-2)** is a best estimate of the sequence of operations for the life of the mine and is based on producing 30,000 tons per year.

Table D-2 Moonscape Pit Mining Sequence

Year	Production per year (tons)	Phase	Comments	Length of time to complete (months)
2009	-	1	Site Preparation, Topsoil stripping, build stockpile along northern permit boundary.	1
2009-2014	30,000	2	Mine in Mining Area 1, stockpile topsoil. Seed the stockpile. Seed the topsoil stockpile.	61.8
2014-2019	30,000	3	Mine in Mining Area 2, place topsoil on the sideslopes of Mining Area 1. Seed and mulch topsoiled area.	58.8
2019-2022	30,000	4	Mine in Mining Area 3, Place topsoil on the sideslopes of Mining Area 2. Seed and mulch topsoiled area.	122.2
2030	-		Remove scale and mobile equipment. Place stockpiled topsoil on the sideslopes of Mining Area 3 and remaining sideslopes in the existing pit area. Seed and mulch topsoiled area.	0.5
			Total	244.3

The mining schedule is planned to minimize disturbance by reclaiming areas as additional mining is undertaken. This table is based on a reasonable projection of average production rates. The table shows that mining and reclamation will occur approximately 12 years and the total gravel mined will be approximately 366,900 tons. This is based on the average thickness of the loose gravel and the conglomerate gravel being 14.5 feet, and the area of land being mined.

3. Mine Facilities and Operation

The crushing and screening will take place within the Product Stockpile and Processing Area. Fuel will be brought to the site by a mobile fueling truck. No new permanent structures will be built within the permit area, since all necessary structures are already located on site. Water will be used to control dust on the haul roads. Water for this operation will be trucked to the site from an offsite source. The source of water is Seep Creek. It is estimated that the operation will consume 4,000 gallons per day for dust suppression.

Maintenance vehicles will visit the site regularly to provide oil, grease, and perform other minor maintenance on vehicles and equipment. Any major repair work required will be performed off site.

The following list is the best estimate of the required equipment to be used onsite throughout the mine life:

Gravel Crushing Equipment

- Jaw Crusher
- Cone Crusher
- Screen Decks
- Stacking / Transporting Conveyors
- Water Truck for dust suppression
- Generator
- Electric Control Van
- Wheel Loader Cat 988, Cat 980

Pit Equipment

- Yard Loader Cat 980
- Motorgrader for haul road maintenance
- Water Truck for dust suppression
- Dozer for reclamation / stripping

Support equipment will to come to the site on an as-needed basis.

There will be no blasting as part of this operation.

No refuse, acid or toxic producing materials are expected to be encountered in this operation. If these materials are encountered, topsoil will be placed over the area and mining will move to a different area.

The stormwater containment berms are intended to hold the water for less than 24 hours. This will be done by storing the water on the pit floor. The stormwater will infiltrate to the groundwater as it did prior to mining.

If any fuel spill is encountered, the material will be removed from the site. The Division will be notified in the case of any spill. Upon final reclamation, all equipment will be removed from the site.

All existing fencing will stay in place. Any new fencing will be installed according to the Division of Wildlife's specifications. No problems with vandalism are expected. The propane tank associated with the shop owned by A.J. Botti Construction and Gravel will be moved outside of the permit boundary. The current location of the propane tank is shown on Map C-2A and the approximate future location of the propane tank is shown on Map F.

The operator commits to clearly marking the permit boundary with stakes surveyed on site. The site will use all existing roads to haul the product to its final destination. It is planned that the material may be used to provide base material for construction projects in the area.

One main road will be present in the permit area and will change locations in the pit as mining progresses. This road will access Sundown Road through the existing initial access point shown on Map C-2A.

4. Topsoil, Overburden Handling

Topsoil will be salvaged from all Mining Areas as well as the reclaimed slope that needs to be re-disturbed. Topsoil from Mining Area 1 will be stockpiled. All other topsoil will be directly replaced on 3h:1v slopes in finished mining areas. Overburden encountered during mining will be used in the finished gravel products. The expected average topsoil thickness available for salvage is approximately 4"-8". The topsoil stockpile will be seeded with the rangeland seed mix shown in Exhibit E.

Further details of topsoil re-distribution are discussed in **Exhibit E: Reclamation Plan.**

5. Water Handling

All water rights issues such as availability of water for this operation, consumption rates, dust control, etc. are presented in Exhibit G - Water Information.

6. Schedule of Operations

Mining operations will only occur as dictated by demand. Mining, crushing and screening may take place 12 months out of the year and product will be sold throughout the year, although less material is expected to be sold in winter months. The product will be crushed and stockpiled prior to being hauled off site, so that crushing is only needed for a short period of time. The operator will not have night gravel mining operations, although minor truck activity or repairs may occur after hours.

7. Delta County Impacts and Environmental Impacts

The aggregate production is estimated to be 30,000 tons. Impacts to Delta County include:

a) Truck traffic, similar to existing traffic from the pit.

b) Noise, which will be minimized as the majority of the operations will be on the pit floor which is up to 12' below the surrounding ground. The nearest residence is approximately 1800 feet from the Botti Pit.

c) Dust, although the pit activities will be watered and all operations on the site are regulated by the Air Quality Control Division of the CDPHE. The low annual tonnage also limits dust.

d) Visual impact, which is subject to an evaluation as part of the Specific Development process and will also be minimized by the depth of the pit.

The product from this mine will positively impact the local community by supplying construction materials.

The hydrological system will detain all runoff so that sediment will not leave the site and cloud any downstream waters. There will be sanitation facilities located at the shop, therefore no leach fields or other means of sewage disposal will be present within the Moonscape Pit boundary. There will be no new demands on Delta County services from the operation.

The Moonscape Pit will be reclaimed to general agriculture as shown on Map F. The operator will work closely with the County and the DRMS to ensure that the reclamation plan is the most appropriate for achieving the post-mining land use.

RECLAMATION PLAN EXHIBIT E

1. General Reclamation Plan

The total area of the permit is 21.65 acres. The permit has both a disturbed area (18.89 acres) and an undisturbed area (2.76 acres). The farm road is to be left in place for access to the reclaimed general agriculture land and land owner's home. The reclaimed land use is shown in Table E-1.

Table E-1 Moonscape Pit Reclamation Land Use

Land Use	Area (acres)
Reclaimed General Agland	17.87
Access Road Undisturbed	1.02
Rangeland	2.76

Reclamation will be conducted as new areas are disturbed throughout the year. This will most likely happen in small increments a few times per year, with topsoil being placed in the previously excavated areas of the pit. See Map F for details. This will also help reduce the exposed land area, which will reduce the reclamation bond and impacts to wildlife. The pit floor will be graded to drain to the northwest. The stormwater containment berm will prevent on site stormwater from leaving the site until reclamation is complete. There is virtually no ground that drains towards the site.

2. Topsoil Replacement

The amount of topsoil proposed to be salvaged and replaced is shown in Table D- 1. All of the areas with 3h:1v final slopes will receive topsoil replaced to a thickness of 4"-8", including the existing disturbance. There will be no topsoil replaced on the gently sloping pit floor. Mining Area 3 and the existing disturbance will receive topsoil fom the stockpiles. All other mining areas will receive topsoil directly from surrounding mining areas. Any compacted areas will be ripped prior to topsoil placement the help root penetration past the topsoil.

3. Haul Roads and Access

Portions of the existing farm road in the permit area will be removed and others altered. See Map F for details. Access through the site will remain after mining.

4. Reclamation Timetable

The timetable for reclamation is shown below in **Table E-2. Reclamation Timetable.** Exhibit L: Reclamation Costs describes the worst case bond scenario.

Table E-2 Reclamation Timetable

Year	Phase	Comments	Length of time to complete (months)
2009	1	Site Preparation, Topsoil stripping, build stockpile along northern permit boundary.	1
2009-2014	2	Mine in Mining Area 1, stockpile topsoil. Seed the stockpile. Seed the topsoil stockpile.	61.8
2014-2019	3	Mine in Mining Area 2, place topsoil on the sideslopes of Mining Area 1. Seed and mulch topsoiled area.	58.8
2019-2030	4	Mine in Mining Area 3, Place topsoil on the sideslopes of Mining Area 2. Seed and mulch topsoiled area.	122.2
2030	5	Remove scale and mobile equipment.Place stockpiled topsoil on the sideslopes of Mining Area 3 and aremaining sideslopes in the existing pit area. Seed and mulch topsoiled area.	0.5
		Total	148.3
			20.3 Years

5. Revegetation Plan

The areas with topsoil replacement will be harrowed and drill seeded in the spring and fall with a mix consisting of the following in order to control erosion:

Rangeland Mix	lbs. of PLS/Acre
Alkali Sacaton	3.0
Inland Saltgrass	3.0
Indian Ricegrass	2.0
Needle and Thread Grass	1.0
Western Wheatgrass	3.5
Rubber Rabbit Brush	0.3
Fourwing Saltbush	0.25
	Total 13.05 lbs/acre

These grasses and shrubs have proven to do well in the dry lowland environment of western Colorado. They will prevent erosion and do provide forage and cover for animals. Certified weed free hay or straw mulch will also be applied at the rate of 2000 lbs/acre. The mulch will be crimped into the ground to provide soil stabilization.

6. Post-Reclamation Site Drainage

The site will contain a 100 year 24 hour event event. The stormwater containment berms will hold back the water producing a shallow pool. This pool will quickly dissipate into the pit floor. No drainages enter the site, meaning a diversion ditch will not be needed. Stormwater will sheet flow down the side slopes (3H:1V) across the pit floor and pool behind the isolation berm.

There are no dams on site, therefore the Office of the State Engineer does not need to be notified. This pit will be operated above the water table and water to be used for dust suppression will be supplied from Seep Creek. This site will not discharge water until vegetation is sufficient to control erosion from stormwater, therefore, the Water Quality Control Commission does not need to be notified.

7. Revegetation Success Criteria

Revegetation will be deemed adequate when erosion is controlled, and the vegetation is considered satisfactory according to Division standards.

8. Monitoring Reclamation Success

Monitoring the reclamation on an ongoing basis will ensure its success. The operator plans to use the local NRCS office to determine the capacity of the reclaimed land to control erosion. If minor changes or modifications are needed to the seeding and reclamation plan, revision plans will be submitted to the Division. It is hoped that the Division will provide assistance in evaluating the success of the ongoing reclamation process. Information on all areas disturbed and reclaimed as well as any other important items regarding the reclamation will be submitted in the annual reports to the Division.

Sec 28 Sec 27

Chicken Barn

Unnamed Drainage
Draining to Seep Creek

Aluminum Pipe Marking
the West quarter of Section 27
T15 S, R 96 W 6th P.M.

Concrete
Irrigation
Ditch

Permit # M-1997-027 Confidential? N
Class Revision Type Seq CN-01
MV# Inspection Date
Doc Date (if no date stamp) 10-08-09
Doc Name Map F Reclamation Plan Map
From DRMS/Other Greg Lewicki and Associates
To DRMS/Other DRMS
Recipients TAM

RECEIVED
OCT 19 2009
Division of Reclamation,
Mining and Safety

Reclaimed area
17.87 acres

Farm Road
Remain Unvegetated
1.02 acres

2' High Gravel
Berm For
Stormwater Control

Product
Stockpile
and Processing
Area

Initial Access Point
To The Site
038.71786° N
108.12154° W

Farm Road
Remain Unvegetated
1.02 acres

Truck Scale

Access Road

All 3H:1V slopes will receive
a minimum of 6" of topsoil

Pit Floor - no
overburden,
topsoil or vegetation
Reclaimed Slope
1-2%

3H:1V
Reclamation
Slope

Disturbed Area
Restored for general
agriculture

FNC Laterial
Owned by the
Uncompaghre Valley Water
Users Association

Farm Road

Approximate Future
Propane Tank Location

COLORADO REGISTERED
GREGORY C. LEWICKI
20335
PROFESSIONAL ENGINEER

Greg Lewicki
10-6-09

Access Road

Shop and
Residence

2' High Gravel Berm
For Stormwater Control

Moonscape Pit
2009 Conversion
to a 112
Permit Area
21.65 Acres

Unnamed Drainage
Draining to Seep Creek

N

0' 100' 200' 300'

Sec 28 Sec 27

Existing Moonscape Pit Permit Boundary
Moonscape Pit 2009
Expansion Permit Boundary
Ditch
Fence
Road
Revclaimed Boundary
gen-agland
Cottonwood Tree
Farm Road

Notes:

Revisions	BY	DATE
Add Pre Mine Veg - Trees	RE	10/6/09
TR Rangeland to General Agriculture	MLR	10/4/2023

DES RE
DRN RE
CHK
APPD

DATE
3/16/09
SCALE
1" = 100'

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A.J. Botti Construction and Gravel
Map F
Reclamation Plan Map
Moonscape Pit 2009 Conversion