June 29th, 2022

Mr. Rob Zuber
Division of Reclamation, Mining, and Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203

RE: Monarch-DENM Gravel Mine, File No. M-2022-009, 112c Permit Application, Third General Adequacy Review and Geotechnical Review Response

Dear Mr. Zuber:

This letter is being generated to satisfy the preliminary review dated June 29th, 2022 for the Monarch DENM Gravel Mine. The italicized items are the current comment and the bold text are the responses:

Mr. Regan:
The Division of Reclamation, Mining and Safety (Division/DRMS/Office) reviewed the contents of your adequacy responses (letter dated June 8, 2022) for the Monarch-DENM Gravel Mine, File No. M-2022-009 and submits the following additional comments.
The following headings indicate the item number from the preliminary adequacy review letter.
Item #1
No additional response required.

Item #2
No additional response required.

Item #19
In the Weed Management Plan (begins on page E-6), please make the following revisions:

- In the first paragraph of this section, add the following sentence to the end, "Efforts to address List C species will follow guidelines of Weld County weed experts." ***Added, see the attached Exhibit E.***
- The third paragraph (starting with "The presence of noxious weeds will be monitored annually …") should be deleted. It is the Division's policy to require mine operators to control weeds when they are identified. It is not appropriate to allow weeds to reach a certain percentage of species or percentage of cover prior to implementing control practices. ***Removed, see the attached Exhibit E.***

Item #25
Per our conversation on June 9, 2022, the Division requires that an underdrain be added to the Mining Plan and associated map (Exhibits C and D) with a commitment that this will be built prior to slurry wall construction. ***Two underdrains have been added to the Mine Plan Map Exhibit C-5 south of Cell 1 and Cell 3, the upgradient side of the site. The following text has been added to the Mining Plan, Exhibit D:***

> ***There will be no mining below the groundwater table until the slurry wall is complete, tested and approved for each slurry wall lined cell. In order to mitigate mounding upgradient of the site two underdrains will be constructed prior to slurry wall construction on the southern end of Cell 1 and Cell 3. A mounding and shadow***

groundwater model will be performed prior to construction to inform the design and necessity of the underdrains. The model will be provided to the Division when available. If the model demonstrates that excessive mounding is not anticipated at the site, MMMA may apply for a Technical Revision to remove either or both underdrains from the Mine Plan. Prior to starting construction of any slurry wall, the applicant shall apply for a Technical Revision with a slurry wall design and underdrain design report.

Item #32
No additional response required.

Regarding the geotechnical analysis, no additional response is required.

The Division has looked closer at Exhibit L, Reclamation Costs, and has the following additional adequacy items. In the context of these items, please update Exhibit L or other portions of the application, as appropriate.

Item #L1
Explain the fact that the cost estimate covers concrete pads and foundations, but there are no costs for the superstructures. Please add these costs. In particular, add costs for the large concrete silos. ***Lump sumps have been included for demolishing disposing of the drying and screening building and the concrete silos. The wash plant and scale will be portable.***

Item #L2
In your adequacy response of June 3, 2022 (Item #12), you stated that "a large quantity of overburden is not anticipated to be utilized in reclamation." Does this address the backfilling operation at the freshwater and siltation ponds? In the Exhibit L table, the costs for backfilling these ponds are substantial, suggesting that there may be hauling costs in the total amounts in Section B. of the table. Please clarify and elaborate on the location of stockpiles to be used for backfilling. ***This statement was meant to point out that large quantities of overburden will not be utilized in the 3:1 reclamation slopes since they will be mined at a 3:1 which is why there is no line item for this in each of the slurry wall lined cells. The overburden for the reclamation of the Fresh Water Ponds and Siltation Ponds will come from the stockpile north of the plant.***

Item #L3
Explain the differences between Exhibit L and the Mining Plan Map, C-5. In particular, the volumes in Section B of the Reclamation Costs (reclamation of the Freshwater Pond and the Silt Pond) require explanation when compared to the volumes listed on C-5. For example, on the map the volumes for the Siltation Pond are 826,300 CY for AG and 130,600 CY for OB), and in the cost table the value is 655,000 CY (prior to multiplying by 50%).

The Freshwater Pond is approximately 12 acres and will have 1' of topsoil placed in the pit which is already accounted for in line item B.4. The topsoil placed is approximately 20,000 cy. The total volume of material extracted from the pit is 422,000 cy minus 20,000 cy equals 402,000 cy.

I have changed the calculation for the siltation pond to the following reasoning. MMMA only needs 10 acres of siltation pond open at a time. The whole pond is approximately 25 acres. The total material removed is 956,900cy and topsoil added to the pit is approximately 41,000cy. The whole pit will require 915,900 cy of overburden to fill the whole 25 acre pit. 915,900 cy / 25 acres = 36,636 cy/acre. 36,636 cy/acre x 10 acres ≈ 366,000 cy of fill needed per 10 acres.

Item #L4
Explain the reason for multiplying by 50% for the volume of the Siltation Pond. Will this pond be large enough to function properly? The 50% has been changed to 10 acres open at one time per the reasoning above.

Item #L5
Explain the difference between the unit cost in the text of Section F. for slurry wall costs ($6.92 per SF) and the value in the table ($5.12 per SF). Also, for the slurry wall costs, please include a bid from a contractor to support your estimate. $6.92 was left over from a different project that had a deeper site. $5.12 per SF for the slurry wall curtain was the average of bids we received for a different project with similar depth which has been included with this letter.

Item #L6
Add costs for the construction of the underdrain at Cell 1. Please include a bid from a contractor or other supporting documentation. Costs have been added for the construction of the Cell 1 underdrain and a bid from Fischer Construction including the cost of providing and installing the 6" PVC.

The Division is currently required to issue an approval or denial decision no later than July 1, 2022. If your organization cannot address the concerns in this letter by June 30, 2022, please request an extension to an appropriate date (allowing the Division at least two days for review time).

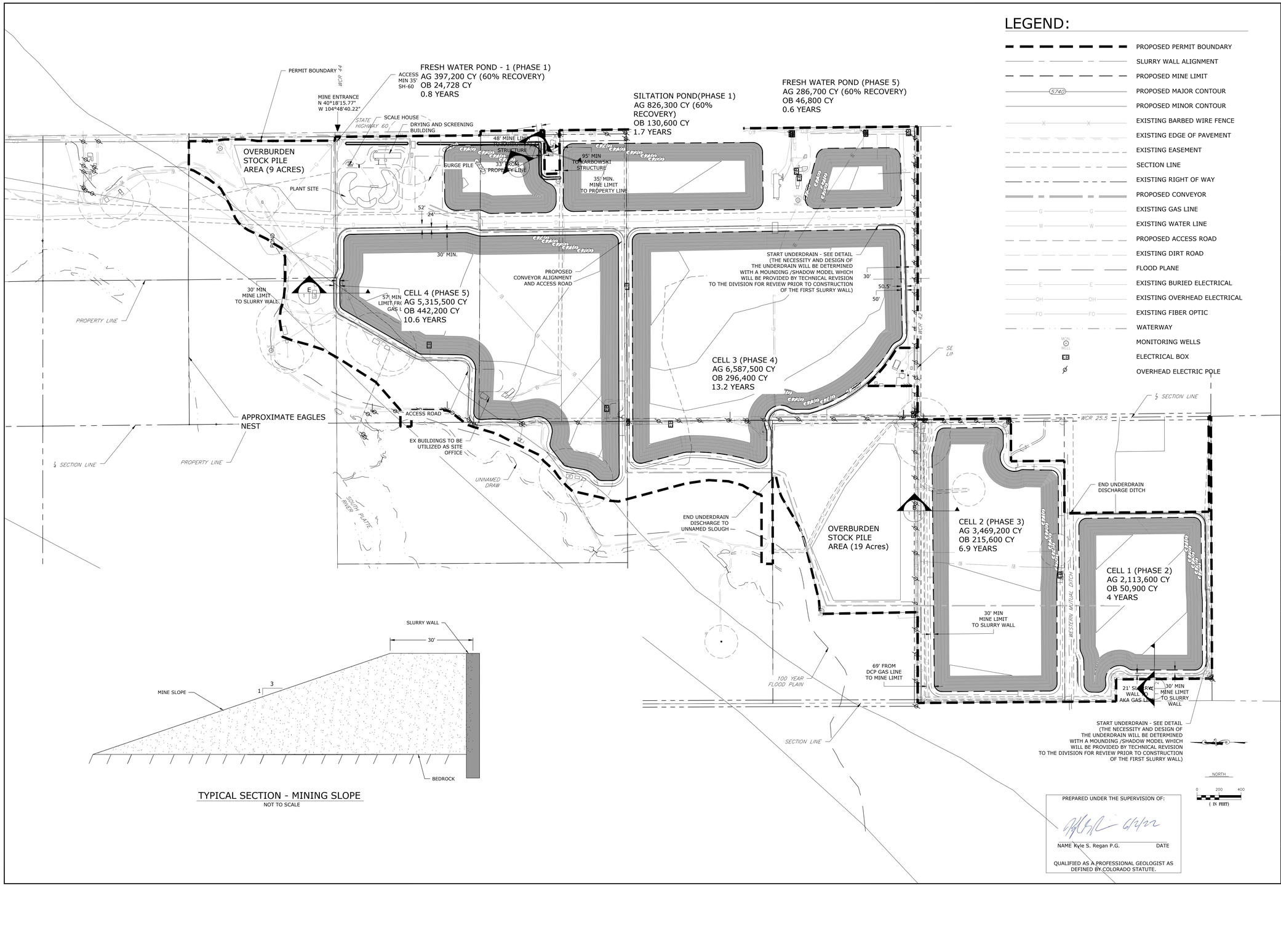
Attachments included with this letter:

Exhibit C-5 Mining Plan Map
Exhibit D – Mining Plan
Exhibit E – Reclamation Plan
Exhibit L – Reclamation Costs
Summary of slurry wall bids
Underdrain Bid Tab

Please feel free to contact me with any questions or concerns.

CIVIL RESOURCES, LLC

Kyle Regan



TYPICAL SECTION - MINING SLOPE
NOT TO SCALE

PREPARED UNDER THE SUPERVISION OF:

NAME Kyle S. Regan P.G. DATE

QUALIFIED AS A PROFESSIONAL GEOLOGIST AS DEFINED BY COLORADO STATUTE.

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MONARCH-DENM GRAVEL MINE
DRMS 112 PERMIT APPLICATION
WELD COUNTY, COLORADO

REVISIONS

NO.	DESCRIPTION	DATE

DESIGNED BY: BLH DATE: 6/28/2022
DRAWN BY: KR SCALE AS NOTED
CHECKED BY: BLH AS NOTED
JOB NO.:
DWG NAME: EX-C5-MINE PLAN AND REC PLAN

MINING PLAN MAP

SHEET: C-5

J:\Data\a - 2020\Monarch DENM\Drawings\Sheets\EX-C5-Mine Plan and Rec Plan.dwg, 6/30/2022 2:25:58 PM

EXHIBIT D – MINING PLAN

The information provided in this Exhibit is intended to satisfy the requirements outlined in Section 6.4.4 of the Colorado Mined Land Reclamation Board Construction Material Rules and Regulations:

(a) Description of the method(s) of mining to be employed in each stage of the operation as related to any surface disturbance on affected lands;

The permit area includes a significant deposit of sand and gravel located in the alluvium of the South Platte River in Weld County. The site is located west of Highway 60, north of Weld County Road 40.5, and east and south of the South Platte River. It encompasses 545.90 acres (plus or minus) and consists of four slurry wall lined pits, an unlined Siltation Pond, and two Fresh Water Ponds.

Site Preparation:
Initial disturbance on the property will be stripping overburden from Fresh Water Pond 1 and the Siltation Pond to establish the plant footprint and construction of site berms. Mining will then commence in these phases once the plant has been established.

During preparation of the Plant, Fresh Water Pond and Siltation Pond, roads will be established from the entrance to the plant area and to the office. A scale with a scale house will be installed along the exit road in the plant area. A drying and screening building will be constructed at the east end of the plant site in the initial phases of the mine. The miner will utilize the existing buildings in the west of Cell 4 as the office until the point when mining progresses to the buildings.

Existing Structures:
The site is currently utilized as irrigated crop land, as such there is irrigation infrastructure located in the south freshwater pond, Cell 2, Cell 3, and Cell 4 that will need to be removed prior to mining. There are existing farm buildings along the western edge of Cell 4 that will be utilized as the site offices. These buildings will be removed prior to mining that side of Cell 4 during the later stages of the mine. There is an access easement that bisects Cell 4 to service the farm buildings which is owned by the property owner and will be removed. The office building structures located between the southern Fresh Water Pond and the Siltation Pond are planned to remain through the duration of the mine.

There are multiple oil and gas companies operating wells at the site that have facilities that will need to be removed prior to mining. These facilities include:

- 2 PDC wells and gas lines in Cell 2
- 1 KPK well and tank battery west of Cell 4
- 1 PDC well and tank battery west of Cell 4
- 1 PDC well and tank battery located in the Plant Site

The Miner is responsible for obtaining the necessary agreements for removal of these facilities prior to mining in the area.

Mining:
Scrapers and/or bulldozers will strip the topsoil of any affected land prior to mining or stockpiling. Topsoil will be segregated and stockpiled either in berms around the mine pits or in the processing area. Topsoil stockpiles and berms that remain dormant for fourteen days

shall be roughened, mulched, or tackified to stabilize them. Topsoil stockpiles that remain in place over 180 days will be seeded with the seed mixture described in the Reclamation Plan.

Overburden will then be stripped with scrapers and stockpiled in the processing area north of the plant. Any excess material not needed for reclamation may be sold or hauled off-site during the life of the mine.

There will be no mining below the groundwater table until the slurry wall is complete, tested and approved for each slurry wall lined cell. In order to mitigate mounding upgradient of the site two underdrains will be constructed prior to slurry wall construction on the southern end of Cell 1 and Cell 3. A mounding and shadow groundwater model will be performed prior to construction to inform the design and necessity of the underdrains. The model will be provided to the Division when available. If the model demonstrates that excessive mounding is not anticipated at the site, MMMA may apply for a Technical Revision to remove either or both of the underdrains from the Mine Plan. Prior to starting construction of any slurry wall, the applicant shall apply for a Technical Revision with a slurry wall design and underdrain design report.

Each slurry wall lined phase will be dry-mined using scrapers, bulldozers, front-end loaders, excavators, or similar equipment. The Fresh Water Pond and Siltation Pond will be unlined an wet mined with excavators.

For unlined cells, there will be no mining below the groundwater table until an approved Substitute Water Supply Plan(SWSP) has been obtained.

Mining at the site will progress in five major stages comprised of minor phases expected to last approximately 37 years. A map depicting the phases can be found in Exhibit C-5.

Processing:
The material will be wet screened and transported offsite by truck. No crushing is planned at the site. The processing area will be located on the north side of the siltation pond, east of Cell 4.

Drying and Screening Building:
The building that houses the drying and screening operation will be on a reinforcd concrete pad that will be approximately 250' x 50' and located at the processing area. Included with the building is a rotary dryer, baghouse, and 2 80-foot-tall silos with a truck loading spout. The entire footprint for the drying and screening operation is under 2 acres.

Import Material:
The Operator may import material from and export material to other sites. The applicant is aware that in accordance with Rule 3.1.5(9) of the Construction Material Rules and Regulations, if any offsite material is used as backfill, a notarized letter will be submitted to the Division indicating the materials are inert. The applicant will supply such a letter to the Division if, at the time of Reclamation, the applicant intends to use off-site material as backfill.

(b) Earthmoving;

Topsoil will be stripped with scrapers and/or bulldozers in the mining cells and stockpile areas and stockpiled in berms surrounding the pit for use in reclamation. Overburden will then be

stripped with scrapers and/or bulldozers and placed either in the stockpile to the north of Cell 2 or to the stockpile north of the plant.

Excavators, front-end loaders, and bulldozers will be used to excavate the material. Haul trucks and conveyors will be utilized to transport the raw material from the active mine phase to the processing area. See Exhibit C-5 for a cross-section of side-slope mining; the mine slope will be at a 3 horizontal to 1 vertical slope from the mine limit. If needed, overburden, recovered silt or other suitable fill will be replaced to establish the final slope profile.

(c) All water diversions and impoundments;

Storm water will be discharged per a CDPHE discharge permit. There are no planned diversions or impoundments of existing water bodies. A wash cycle for the aggregate processing area will be established using the freshwater pond as a source and the silt pond for return flow, with a pipe between the source pond and the return pond. Any water consumed will be provided by the existing water rights associated with the property and/or a groundwater well with associated substitute water supply plan (see Exhibit G).

(d) The size of area(s) to be worked at any one time.

Each phase is approximately 27-97 acres in size. The Operator may mine multiple phases concurrently in order to obtain a range of material for production. In addition to mining, the Operator, will begin reclaiming slopes as mining is finished in each stage. Since multiple phases will be being worked at any one time, the approximate size of the areas to be worked at any one time will range from 25 acres to 120 acres and will depend on market conditions. The Financial Warranty will be increased, as appropriate, to reflect all of the phases being mined at any time.

(e) An approximate timetable to describe the mining operation. The timetable is for the purpose of establishing the relationship between mining and reclamation during the different phases of a mining operation.

The Operator anticipates that mining will commence as soon as all permits are in place. The Operator anticipates extracting approximately 750,000 tons of aggregate in a typical year, up to 1,000,000 tons at peak capacity. Production rate will vary based on market demands.

Timetable for Mining and Reclamation

TIMETABLE

- *Phase 1 (Freshwater and Siltation Ponds) – 2.3 years*
- *Phase 2 (Cell 1) – 4 years*
- *Phase 3 (Cell 2) – 6.9 years*
- *Phase 4 (Cell 3) - 13.2 years*

- *Phase 5 (Cell 4) – 10.6 years*

Total Project – 37 years

(f) Use Mining Plan Map in conjunction with narrative to present:

(i.) Nature, depth and thickness of the deposit and thickness and type of overburden to be removed

The deposit consists mainly of sand and gravel with some lenticular clay deposits. The depth to bedrock ranges from 13 feet deep near the river to 58 feet deep to the east side of the site. Overburden is mainly sandy silt grading in to silty sand averaging approximately four feet in depth.

(ii.) Nature of the stratum immediately beneath the material to be mined in sedimentary deposits

Bedrock consists mostly of soft bluish-grey claystone consistent with the Denver Formation.

(g) Identify the primary and secondary commodities to be mined/extracted and describe the intended use.

The primary commodities are sand, gravel and fill; intended for construction materials.

(h) Name and describe the intended use of all expected incidental products to be mined/extracted by the proposed operation.

Gold may be extracted as an adjunct component of any wash equipment installed at the site.

(i) Specify if explosives will be used in conjunction with the mining (or reclamation)

No explosive material will be used on-site.

(j) Specify the dimensions of any existing or proposed roads that will be used for the mining operation. Describe any improvements necessary on existing roads and the specifications to be used in the construction of new roads. New or improved roads must be included as part of the affected lands and permitted acreage. Affected land shall not include off-site roads which existed prior to the date on which notice was given or permit application was made to the office and which were constructed for purposes unrelated to the proposed mining operation and which will not be substantially upgrades to support the mining operation. Describe any assocated drainage and runoff conveyance structures to include sufficient information to evaluate structure sizing.

The affected land and permitted acreage is inclusive of over one and one-half miles of land directly abutting public roadways; there is no need for any additional driveways, and on-site

haul roads will be incidental to mining areas depicted on the Mining Plan Map. No roadways are affected by the mining operation other than access roads within the permit boundary and existing public roads to the site. The Operator will apply for a Weld County Access Permit for the site.

EXHIBIT E – RECLAMATION PLAN

This information provided in this Exhibit is intended to satisfy the requirements outlined in Section 6.4.5 of the Colorado Mined Land Reclamation Board Construction Material Rules and Regulations: The proposed mining and reclamation plan focuses on minimizing the ecological impacts of mining, minimizing the length of time of impact, and maximizing long-term benefits.

(a) A description of the type(s) of reclamation the Operator proposes to achieve in the reclamation of the affected land, why each was chosen, the amount of acreage accorded to each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving;

The majority of the site (Cell 1 through Cell 4) will be reclaimed to lined water storage reservoirs due to a need within the county and state for water storage facilities. The mined area in the Siltation Pond and Fresh Water Pond may be backfilled back to native grade and used as farmland or may be converted to a water storage facility if economically feasible and sufficient void space exists at the completion of mining. Refer to Exhibit F for the acreages of each cell and additional details.

Earthmoving

Topsoil mined while establishing the plant sites and establishing the Fresh Water Pond and Siltation Pond will be placed in a berm along the edge of the pit. The bermed topsoil will be used in final reclamation of the siltation pond and freshwater pond. Any excess topsoil will be place to the north of the plant site(See Figure C-5).

Topsoil mined in later phases will be placed in berms around the current mine phase or placed in the topsoil stockpiles to the north of the plant site or north of Cell 2. Topsoil from these stockpiles will be used to reclaim vegetated areas over the rest of the site. Topsoil may be replaced by a scraper or haul truck, excavator, and bulldozer, and will generally be graded with a blade. All grading will be done in a manner that controls erosion and siltation of the affected lands, to protect areas outside the affected land from slides and other damage.

Reclamation in each phase will begin as soon as mining in that phase is completed. Overburden and clay seam materials will be removed from mining phases and stockpiled north of Cell 2 and adjacent to the Freshwater Pond and Siltation Pond(See Figure C-5). Overburden and clay materials may also be sold as general fill to remove excess material not needed in Reclamation. All disturbed areas will be regraded and smoothed to a finished grade that is suitable for revegetation or the final land use.

(b) A comparison of the proposed post-mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs.

The water storage reservoirs will be compatible with the other land uses in the vicinity, which includes farmland, industrial land, and rural residential. Municipal boundaries have

approached the vicinity of the site and represent a growing need for both construction materials and water storage facilities.

(c) A description of how the Reclamation Plan will be implemented to meet each applicable requirement of Section 3.1.

The Operator will carry reclamation to completion with reasonable diligence. Each phase of reclamation will be generally completed within one to two years from completion of mining, but not more than five years from the date the Operator informs the Board or Office that final reclamation has commenced.

Section 3.1.5 Reclamation Measures Material Handling:

Grading will be performed to help control erosion and siltation of the affected lands through phased mining, implementing good operation techniques to handle material as little as possible, and vegetation of stockpiles remaining in place for more than 180 days. Although the use of erosion protection devices is not anticipated, if deemed necessary by the operator at the time of excavation, silt fence, haybale dams or other erosion control devices will be installed. Backfilling and grading will be completed as soon as feasible after the mining process is complete for each phase.

Maximum slopes and slope combinations will be compatible with the configuration of surrounding conditions and selected land use. Mining will occur at a 3:1 slope. Reclaimed slopes in the water storage reservoir will not be steeper than a 3:1 ratio and will be shaped by a bulldozer to remove rills caused by precipitation. Any gaps in the slope will be filled with fill materials and construction methods that will insure stability. The upland area will be reclaimed to grades consistent with pre-mining drainage patterns.

The operator will backfill using fill material generated on-site, or imported inert fill generated outside the permit area. If any inert off-site material is used as backfill, a notarized letter will be submitted to the Division as required by Section 3.1.5(9) of the MLRB Construction Material Rules and Regulations.

It is not anticipated that mining will uncover any refuse or acid-forming or toxic producing materials, however if any such materials are encountered the operator will take precaution to handle the materials in a manner that will control unsightliness and protect the drainage system.

Drill or auger holes that are part of the mining operation shall be plugged with non-combustible material, which shall prevent harmful or polluting drainage. Any test pits, soils boring holes, or monitoring wells not located within the mine excavation limits will be plugged as soon as it can be confirmed that they are no longer needed for the operation.

Mined material to be disposed of within the affected area will be handled in such a manner to prevent any unauthorized release of pollutants to the surface drainage system. No unauthorized release of pollutants to groundwater shall occur from any materials mined, handled or disposed of within the permit area.

***Section 3.1.6 Water-General Requirements*:**

The Operator will comply with applicable Colorado water laws governing injury to existing water rights and with applicable state and federal water quality and dredge and fill laws and regulations.

The operator will develop and comply with a stormwater management plan and will use best management practices (BMPs) to ensure groundwater and surface water are protected to the greatest possible extent. BMPs include schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution in runoff from the site.

***Section 3.1.7 Groundwater - Specific Requirements*:**

The Operator will comply with the applicable standards and conditions for classified and unclassified groundwater.

***Section 3.1.8 Wildlife*:**

The mining and reclamation plans have been designed to account for the safety and protection of wildlife on the mine site. The Operator will mine the site in phases and use concurrent reclamation methods to minimize the impact on wildlife. The proposed reclamation plan may improve wildlife habitat. The proposed seed mix and plantings will create improved cover, foraging, roosting, and nesting areas for wildlife. The water area within the reservoir will serve as habitat for waterfowl and other bird species and the fringes of the reservoir will be used by mammal, bird, reptile and amphibian species. Control and/or removal of noxious and weedy species during the project and the introduction of desirable graminoid, forb and potential woody species during reclamation will result in enhancement of wildlife habitat on the project site.

***Section 3.1.9 Topsoiling*:**

Topsoil shall be removed and segregated from other spoil. Topsoil stockpiles shall be stored in places and configurations to minimize erosion and located in areas where disturbance by ongoing mining operations will be minimized. Once stockpiled, topsoil shall be re-handled as little as possible. Stockpiles that will remain in place for more than 180 days will receive vegetative cover with the Weld County Sandy Site Mix noted below:

Weld County - Sandy Site Mix Sand
Bluestem (Champ, Chet) 1.00 lbs pls/acre
Sand Lovegrass (Bend, Native, Ne27) 2.50 lbs pls/acre
Indian Ricegrass (Nezpar, Rimrock) 3.00 lbs pls/acre
Prairie Sandreed (Goshen) 0.75 lbs pls/acre
Green Needlegrass (Lodorm) 1.50 lbs pls/acre
Little bluestem (Blaze, Cimarron, Camper) 0.75 lbs pls/acre

Yellow Indiangrass (Cheyenne, Holt, Scout) 0.50 lbs pls/acre
Switchgrass (Blackwell, Nebraska 28) 1.50 lbs pls/acre
Sand Dropseed 0.50 lbs pls/acre Total: 12.00 pounds pls/acre

Section 3.1.10 Revegetation:

In those areas where revegetation is part of the reclamation plan, the land shall be revegetated in a manner that establishes a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation or fertilizer and is at least equal in extent of cover to the natural vegetation of the surrounding area. These areas are relatively minimal given the water development reclamation plan for the site. The proposed seed-mix and plantings for reclamation are outlined below:

Weld County - Areas South of County Road 68 Mix
Western Wheatgrass (Arriba, Barton, Rosana) 2.50 lbs pls/acre
Blue Grama (Hachital, Lovington) 1.50 lbs pls/acre
Sideoats Grama (Vaughn, Butte, Niner, El Reno, Haskell) 2.25 lbs pls/acre
Smooth Brome (Lincoln, Manchar) 2.00 lbs pls/acre
Sand dropseed 0.25 lbs pls/acre
Perennial Ryegrass (Calibra or Garibaldi tetraploid) 0.75 lbs pls/acre
Slender Wheatgrass (Pryor, Revenue or San Luis) 2.50 lbs pls/acre
Alkaligrass (Fults II, Salt on Sea) 1.25 lbs pls/acre
Switchgrass (Nebraska 28, Blackwell) 1.00 lbs pls/acre
Total: 14.00 pound pls/acre

Section 3.1.11 Buildings and Structures:

The existing house and outbuilding in the western portion of Cell 4 will be utilized as office buildings until mining progresses to that portion of the Cell and the buildings are removed. A portable building will be utilized as an office during Phase 5 and will be placed in the plant area.

An aggregate processing plant, a 250 by 50-foot sand drying and screening plant and two 80-foot tall silos will be located at the site for the duration of mining operations. These structures will be removed and the footprint will be graded back to native grade prior to final reclamation. The plant structures are shown on Figure C-5.

Conveyors will be constructed at the site to move material from the cells to the processing plant. The approximate conveyor alignment is shown on Figure C-5.

Section 3.1.12 Signs and Markers:

The Operator will post appropriate signage at the entrance to the mine site. The permit area will be marked by existing fencing, or proximity to existing County roads.

(d) Plans for topsoil segregation, preservation and replacement; for stabilization, compaction and grading of spoil; and for revegetation.

Topsoil will be removed and segregated from other spoil. Topsoil not needed for reclamation may be sold or removed from the site. For reclamation, topsoil will be replaced by a scraper and generally graded with a blade. Grading shall be done in a manner that controls erosion and siltation of the affected land and protects areas outside the affected land from slides and other damage. In addition, backfilling and grading shall be completed as soon as feasible after the mining process.

Final grading will create a final topography that is appropriate for the final land use. For example, final grading of the reservoir above the high water line will replace material no steeper than 3:1 slope to meet the grade at the top of the banks. Topsoil will be uniformly placed and spread on areas disturbed by the mining, above the anticipated high water line. The minimum thickness shall be 6 inches above the surrounding finished grade. The topsoil shall be keyed to the underlying and surrounding material by the use of harrows, rollers or other equipment suitable for the purpose.

In those areas where revegetation is part of the reclamation plan, the Operator will revegetate the land in such a manner to establish a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation or fertilizer and is at least equal in extent of cover to the natural vegetation of the surrounding area. Seed will be drilled and mulched.

The revegetation seeding list on the Reclamation Plan Map contains the preferred species of grasses to be planted.

Seeding will take place once final grading and replacement of topsoil have been completed for each phase. Timing of seeding will be consistent with standard horticultural practice for dryland applications - generally between late September and the middle of April to ensure there is adequate moisture for germination.

(e) A plan or schedule indicating how and when reclamation will be implemented. Include:

i. An estimate of the periods of time which will be required for the various stages or phases of reclamation.
Reclamation for any given stage of mining may take up to five years to allow for successful revegetation. Please refer to the Timetable for Mining in Section (e) of Exhibit D.

ii. A description of the size and location of each area to be reclaimed during each phase.

Please refer to the Reclamation Plan Map (Exhibit F).

iii. Outlining the sequence in which each stage or phase of reclamation will be carried out.

Please refer to the Timetable for Mining in Section (e) of Exhibit D.

(f) A description of:

i. Final grading – maximum anticipated slope gradient or expected ranges thereof;
The finished slopes of the reservoir will be no steeper than 3:1 for slopes mined at a 3:1.

ii. Seeding – types, mixtures, quantities and time of application;
Please refer to the Reclamation Plan Map for the list of plant materials and seeds to be utilized. Timing of seeding will be consistent with standard horticultural practice for dryland applications - generally between late September and the middle of April to ensure there is adequate moisture for germination. Additional plantings may be installed once the reservoirs are full of water and the grasses are established.

iii. Fertilization – types, mixtures, quantities, and time of application;
The type and application rate of fertilizer shall be determined based on a soil test at the time of final reclamation.

iv. Revegetation – types of trees, shrubs, etc.;
The site is historically irrigated farmland. The site will be revegetated with an upland grass seed mix in areas that are above the highwater line or are graded back to native grade.

v. *Topsoiling – specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.*
Topsoil will be uniformly placed and spread on all areas disturbed by the mining above the anticipated high water line and areas graded back to native grade. The minimum thickness shall be 6 inches above the surrounding finished grade.

WEED MANAGEMENT PLAN

Noxious weeds will be eradicated or managed within Monarch DENM operations areas. Noxious weed species to be managed are defined as those plant species currently identified by the Colorado State Department of Agriculture (CDA) as noxious under the Colorado Noxious Weed Act. Management efforts will be directed to those species identified under List A or List B by the CDA. List A species are required to be eradicated, while List B species will be controlled. Efforts to address List C species will follow guidelines of Weld County weed experts.

The noxious species are not listed here as the list of noxious species changes regularly. The Colorado State Department of Agriculture maintains a list of noxious weed species on their web site (https://www.colorado.gov/pacific/agconservation/noxious-weed-species).

Noxious weeds will be controlled by any combination of cultural, mechanical, biological or chemical measures. Weed control measures will be developed specifically for the noxious weed species encountered and in conjunction with the local county weed control district and/or the Colorado State Department of Agriculture. Weed control measures will be undertaken by trained and/or licensed (if required by law) personnel. Weed management control will initiate within two weeks of noxious weed identification at any operation, or as specified by the county weed control specialist.

Where noxious weed control measures cause elimination of vegetation at a revegetated site, seeding or planting of desirable replacement vegetation will occur during the first normal planting or seeding season after weed control measures have been implemented.

EXHIBIT L - RECLAMATION COST

Activity	Quantity	Units	Unit Costs	Cost
A. Processing area/Office/Shop (Equipment: Excavators, Dozers, Tractor, Water Truck)				
1 Remove concrete pad for wash plant	30	CY	$ 65.00	$ 1,950.00
2 Demolish and remove foundation of 250' x 50' drying screening operation	400	CY	$ 65.00	$ 26,000.00
3 Demolish building	1	LS	$ 3,000.00	$ 3,000.00
4 Remove concrete base for scale	10	CY	$ 65.00	$ 650.00
5 Remove 12' diamter concrete foundation for silos	4	CY	$ 65.00	$ 260.00
6 Remove and dispose of silos	1	LS	$ 3,000.00	$ 3,000.00
7 Scarify ground	15	Acres	$ 150.00	$ 2,250.00
8 Spread 12" topsoil	24,300	CY	$ 0.75	$ 18,225.00
9 Seed and Mulch	15	Acres	$ 900.00	$ 13,500.00
			Subtotal	$ 68,835.00
B. Unlined Ponds and Stockpiles (Equipment: Excavators, Dozers, Scrapers, Water Truck)				
1 Backfill Fresh Water Pond 12.5 acres, 60% recovery(one pond open at a time)	402,000	CY	$ 2.05	$ 824,100.00
2 Backfill Siltation Pond, 60% recovery(10 acres open at one time)	366,360	CY	$ 2.05	$ 751,038.00
3 Scariffy Ground(unlined pond and stockpile areas)	66	Acres	$ 150.00	$ 9,900.00
4 Spread 12" topsoil(unlined pond and stockpile areas)	106,121	CY	$ 1.50	$ 159,181.50
5 Seed and Mulch(unlined pond and stockpile areas)	66	Acres	$ 900.00	$ 59,400.00
			Subtotal	$ 1,803,619.50
C. Area Surrounding Lined Reservoirs (Equipment: Dozers, Scrapers, Water truck)				
1 Scariffy Ground	36	Acres	$ 150.00	$ 5,400.00
2 Spread 12" topsoil	58,300	CY	$ 1.50	$ 87,450.00
3 Seed and Mulch	36	Acres	$ 900.00	$ 32,400.00
			Subtotal	$ 125,250.00
D. Slurry Wall @ 100% Installation Cost ($6.92 per SF) per DRMS Bonding Requirement. Assumes 61'(North) and 52'(South) average depth (including 4' key into bedrock.) Cell 2-4 slurry wall and Cell 3 underdrain will not be constructed for more that 2 years. Equipment used- Excavators, Dozers, Scrapers, Water Truck				
1 Cell 1 Slurry Wall @100%, 5392 linear feet of slurry wall approx 50' deep	269,600	SF	$ 5.12	$ 1,380,352.00
2 Cell 1 Underdrain (approximately 2,500 linear feet along south-east of Cell 1)	2,500	LF	$ 29.00	$ 72,500.00
3 Cell 2 Slurry Wall @0%, 7,041 linear feet of slurry wall approx 50' deep				
4 Cell 3 Slurry Wall @0%, 8,782 linear feet of slurry wall approx 50' deep				
5 Cell 3 Underdrain(approximately 3,000' along south of Cell 3)				
6 Cell 4 Slurry Wall @0%, 9,042 linear feet of slurry wall approx 50' deep				$ -
(slurrywalls/underdrain for Cells 2-4 are more than 2 years out, and will be bonded prior to construction)				
			Subtotal	$ 1,452,852.00
Total Disturbance Costs				**$ 3,450,556.50**
Indirect Costs				
Overhead & Profit				
Performance Bond (2.02%) - Based on DRMS estimate				$ 69,701.24
Performance Bond (3.07%) - Based on DRMS estimate				$ 36,230.84
Job Superintendent (240 hours @ $75/hr) - Based on DRMS estimate				$ 18,000.00
Contractor Mob and DeMob (3%) - Based on DRMS estimate not including slurry wall				$ 62,106.14
Contractor Overhead and Profit (10%) - Based on DRMS estimate not including slurry wall				$ 207,020.45
			Subtotal	$ 393,058.67
Contract Amount (direct + O & P)				**$ 3,843,615.17**
Legal, Engineering & Project Management				
Financial warranty processing (legal/related costs) ($500)				$ 500.00
Engineering Work and/or contract/bid preparation (4.25%)				$ 163,353.64
Reclamation management and/or administration (5%) - Based on DRMS estimate				$ 192,180.76
Contingency (3%)				$ 103,516.70
			Subtotal	$ 459,551.10
Total Indirect Costs				$ 852,609.77
Total Bond Amount				$ 4,303,166.27

Kyle Regan

From: Kyle Regan
Sent: Wednesday, June 29, 2022 4:31 PM
To: 'Mariah Higgins'
Subject: RE: DRMS 112 Permit Application For Public Review
Attachments: Adequacy 3 Stitched.pdf

Hi Mariah,

I have another adequacy review response for Monarch Mountain Minerals and Aggregates, LLC Monarch DENM Gravel Mine DRMS 112 permit application. Will you please add this to the current application on file with the Weld County Clerk to the Board for public review and send me an email confirmation when you get a chance?

Thanks!

Kyle Regan
8308 Colorado Blvd Suite 200
Firestone, CO 80504
Phone: (303) 833-1416 x210
www.civilresources.com

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From: Mariah Higgins <mhiggins@weldgov.com>
Sent: Friday, February 25, 2022 10:23 AM
To: Kyle Regan <kyle@civilresources.com>
Subject: RE: DRMS 112 Permit Application For Public Review

Got it no problems, thank you!

From: Kyle Regan <kyle@civilresources.com>
Sent: Friday, February 25, 2022 10:20 AM
To: Mariah Higgins <mhiggins@weldgov.com>
Subject: DRMS 112 Permit Application For Public Review

Hi Mariah,

Here is the full application for the Monarch DENM Gravel Mine to be posted for public review.

Please let me know if this went through since it is a pretty large file.

Thank you!

Kyle Regan

Civil Resources, LLC
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Firestone, CO 80504
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