



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

February 9, 2023

Garrett Varra
Raptor Materials LLC
8120 Gage Street
Frederick, CO 80516

**Re: Two Rivers Sand, Gravel and Reservoir Project, File No. M-2022-013,
112c Permit Application, Third Adequacy Review**

Dear Mr. Varra:

The Division of Reclamation, Mining and Safety (Division/DRMS) reviewed the contents of the 112c permit application for the Two Rivers Sand, Gravel and Reservoir Project (TRP), File No. M-2022-013 and submitted preliminary adequacy review letters on June 24 and August 5, 2022. We received responses to these items from Raptor Materials LLC (RM) on September 6, 2022. We then sent second adequacy review letters on October 17 and November 17, 2022. RM sent responses to those letters on January 4, 2023 and February 2, 2023. This letter is a third adequacy review letter based on the two RM submittals in 2023. The Division is required to issue an approval or denial decision no later than February 15, 2023. Another extension will possibly be required.

The review consisted of comparing the application contents with the specific requirements of Rules 1, 3, 6.1, 6.2, 6.4 and 6.5 of the *Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials* (effective date July 15, 2019). Any inadequacies are identified under the respective exhibit heading along with suggested actions to correct them.

The following items are listed by numbers that correspond to the original items in our previous adequacy letters. *New comments are in bullets and italic font below the original adequacy items.* Please note that an additional item has been added at the end of the list (item #58).



General Comments

- 1) On May 18, 2022, the Division approved a transfer of the Two Rivers Sand, Gravel and Reservoir Project 112 Application from Varra Companies, Inc. to Raptor Materials, LLC. Please provide a letter from Kevin Jeakins (as part of your response to this adequacy review) stating that Bradford Janes is authorized to act as a permitting representative of Raptor Materials LLC.
 - *No additional response is required from RM.*
- 2) Please commit to submitting Financial and Performance Warranties with the name Raptor Materials LLC.
 - *No additional response is required from RM.*
- 3) The Division received timely state agency comments from History Colorado and the Division of Water Resources, as well as a late comment letter from Colorado Parks and Wildlife. The letters from these agencies are included as an enclosure with this adequacy review letter. Please review the letters and provide comments accordingly.
 - *No additional response is required from RM.*

Application Form

- 4) The application form must be updated to indicate that the new permittee is Raptor Materials LLC.
 - *No additional response is required from RM.*
- 5) On Page 1, Item #1.1 of the application form, the Applicant indicated the type of organization as a corporation. Please provide the corporation seal on Page 8 of the application form, if the corporation does not have a seal please indicate "no seal".
 - *No additional response is required regarding "no seal."*

6.2 General Requirements of Exhibits

- 6) Rule 6.2.1(2)(b) requires maps be signed by a registered land surveyor, professional engineer, or other qualified person. Please submit signed copies of the Exhibit C and Exhibit F maps.
 - *No additional response is required from RM.*

6.4 Specific Exhibit Requirements - Regular 112 Operations

The following items must be addressed by the Applicant in order to satisfy the Mineral Rules and Regulations of the Mined Land Reclamation Board.

6.4.1 Exhibit A - Legal Description

- 7) The Applicant indicated that a portion of the permit area is in Sections 3 and 4 of Township 4 North, Range 65 West. However, it appears (based on the Exhibit Map in Exhibit B) that the text should indicate Range 66 West instead of 65 West. Please

address this apparent error, and revise the Exhibit A text as necessary.

- *No additional response is required from RM.*

8) It appears that the coordinates for the Central Field SW Entrance are incorrect. Please check them and revise the Exhibit A text as necessary. (The coordinates listed for this entrance appear to be near the Varra Coulson Project.)

- *No additional response is required from RM.*

6.4.3 Exhibit C - Pre-Mining and Mining Plan Maps of Affected Land

9) The irrigation ditches need to be clearly shown and labeled on the Existing Conditions Map (Exhibit C-1).

- *No additional response is required from RM.*

10) Also, per Rule 6.4.3(e), the existing vegetation at the site should be shown.

- *No additional response is required from RM.*

11) The scale on Exhibit C-1 appears to be incorrect. Please check and revise as necessary.

- *No further response required from RM.*

12) The legend on Exhibit C-1 includes the 100-year floodplain, but the floodplain lines are not on the map. These lines should be added to this map as well as the Extraction Plan Map, Exhibit C-2.

- *No additional response is required from RM.*

13) For the sake of clarity, the Division recommends that the entire permit area be permitted to be affected, and this should be stated in Exhibit C and Exhibit D. (The Division recognizes that this statement is made in Exhibit L.)

- *No additional response is required from RM.*

14) During the pre-operations inspection on June 14, 2022, the idea of relocating the access point at the northwest corner of the site (to the east) was discussed. Please update Exhibit C-2 to reflect any change in that location.

- *No additional response is required from RM.*

15) Please add the following to the Extraction Plan Map, Exhibit C-2: roads, parking and equipment storage areas, levees, soil piles, keyways, settling basins, and other structures pertinent to the mining operation that are not currently shown on the map. Comments on the map can indicate where these features are subject to change.

- ***The use of the term “subject to change” related to the location of the scale house and the parking and storage area is discouraged by the Division, as all aspects of the Reclamation Permit are subject to change through the appropriate revision process. A mining plan and associated map should show features that can be changed in the future (with a revision) but are the initial plan of action.***

6.4.4 Exhibit D - Mining Plan

- 16) In this and other exhibits, an effort should be made to update agency names. For example, the Colorado Division of Wildlife is now Colorado Parks and Wildlife. The abbreviation CDH should be CDPHE.
- *No further response required by RM.*
- 17) The mining plan (aka extraction plan) requires more detail. In particular, the plan should include a schedule that specifies the areas to be worked for given phases, with ranges of time periods. The phases described in Exhibit D should be coordinated with the Extraction Plan Map, Exhibit C-2. The operator can change the plan later, as needed, with technical revisions and/or amendments. Additional clarification on the sequence of the mining plan is necessary to calculate the required financial warranty.
- *No further response required by RM.*
- 18) The discussion on pages 6 and 7 regarding structures and easements should discuss which structures and easements will be relocated or removed from the site (if any).
- *No further response required by RM.*
- 19) On page 7, more detail is needed for the roads onsite. Please explain which roads will be built and which will be modified. Explain construction method and dimensions.
- *No further response required by RM.*
- 20) On pages 12 – 13, the discussion on stockpiles should include text indicating that soil management practices will protect the soil piles from erosion, prevent contamination of the soil from toxic or acid-forming material, and insure that the soil will remain usable for reclamation.
- *No further response required. The Extraction Plan does discuss how soil piles will be stabilized. It also discusses how fertilizer can compensate for the loss of organic matter. Finally, the applicant has stated that potentially toxic or acid forming materials would not be utilized in the reclamation activities.*
- 21) On page 14 in the second to last paragraph, the sentence that begins “Specific variations in the location of ...” should be rewritten. The structure of this sentence does not follow standard rules of grammar, and (more importantly) the meaning is not clear. Please revise this statement accordingly.
- *No further response required by RM.*
- 22) On page 14 in the last paragraph, the units are not specified (appears to be 125 feet), and this should be revised. Also, add a discussion on pipelines to this paragraph as appropriate.
- *No further response required by RM.*

23) On page 16, regarding the discussion on topsoil and overburden stockpiles, more detail is needed regarding the storage volumes and locations of the piles, including distances from the piles to the areas to be reclaimed. It is recommended that they be shown on Map C-5. It should also be stated that the piles will be configured to prevent obstruction of flood waters, namely elongate the piles to make them parallel to the flow direction.

- *No further response required by RM regarding topsoil.*

24) In the section Plant Site Development & Operations, text should be added regarding the details of structures that will be built, including the conveyor. Dimensions and other details should be provided to aid in the estimate of demolition costs for these structures.

- *No further response required by RM.*

25) In the section Plant Site Development & Operations, text should be added regarding the control of prairie dogs. Will they be relocated?

- *No further response required by RM.*

26) The applicant should discuss the following (related to Rule 3.1.8): How will the operation minimize impacts on mule deer habitat during the winter season (December 1 through April 30). This should include (but not be limited to) a discussion on fencing. Fencing should be limited as practical, and wildlife-friendly fencing should be used.

- *No further response required by RM.*

27) Include a discussion on how the operation will allow for deer and other animals to “escape” the mining operations.

- *No further response required by RM.*

6.4.5 Exhibit E - Reclamation Plan

28) The Application form specifies that the post-mining land use of the site will be developed water resource. Additionally, the Applicant has provided a shadowing/mounding analysis for the installation of clay liners. However, the Reclamation Plan notes (page 5) that lining of the reservoirs is an option only. If the Applicant wishes to maintain lining of the reservoirs as an option only, then the Application must be revised to reflect that the reservoirs will be reclaimed to open groundwater ponds. If the Applicant chooses to reclaim the reservoirs to open groundwater ponds, then the following options are available to address the liability associated with exposed groundwater:

- a) Provide adequate bond to backfill the pit to two feet above the historic highest groundwater level.
- b) Obtain a court approved augmentation plan prior to exposing groundwater at the site.

Alternatively, the Applicant may clarify that the post-mining land use of developed water resource will be achieved through clay lining the reservoirs. If the Applicant chooses to clay line the reservoirs, then the Applicant shall provide enough detail for the Division to calculate the cost to line the reservoirs.

- *No further response required by RM.*

29) The reclamation plan requires more detail. In particular, the plan should include a schedule that specifies the areas to be reclaimed for given phases, with ranges of time periods. The phases described in Exhibit E should be coordinated with the Reclamation Plan Map, Exhibit F.

- *No further response required by RM.*

30) The discussion on pit slopes (pages 4 – 5) should include a discussion on the method for grading these slopes, including push distances. Also, the discussion should include the method for verifying the final slopes and documenting this information.

- *No further response required from RM.*

31) The reclamation plan needs to state that all compacted areas will be ripped prior to addition of topsoil and seed.

- *No further response required from RM.*

32) The reclamation plan needs to include a clear plan for the storage and application of topsoil prior to seeding. The plan should include push distances to the areas and minimum depth.

- *No further response required by RM.*

33) On page 6, the discussion on seeding should include timing of seeding (and planting if applicable). At what time of year will seeding operations be conducted?

- *No further response required by RM.*

34) The weed control paragraph (page 9) should reference the more detailed plan in Exhibit I/J.

- *No further response required by RM.*

35) The Backfill Notice must state the maximum quantity of inert fill that will be stockpiled on the site at any given time. This information is necessary to calculate the required financial warranty amount. Will buildings or other structures be constructed on backfill areas? If so, how will the material be placed and stabilized to prevent settling and voids?

- *No additional response is required of RM, but the Division would like to make two comments for the record. The purpose of the Backfill Notice is to address imported material, not material that originates within the permit area. Also, if imported material contains rubble or similar, RM should handle this material to avoid any instability of slopes.*

36) The applicant should discuss the following related to the ponds:

- The use of very flat slopes (8H:1V) and irregular shorelines in some locations, to allow for diverse habitat.
- The use of constructed islands in the ponds for wildlife habitat.
- *No further response required from RM.*

6.4.5 Exhibit F - Reclamation Plan Map

37) The permit boundary is not shown on this map and needs to be added (or the line weight needs to be larger to improve clarity).

- *No further response required from RM.*

38) A legend should be added to the map clearly showing what the hatching and other features represent. A yellow box is shown at the southeast corner of the site; please indicate if this symbol represents a real feature or if it is an error.

- *No further response required from RM.*

39) It appears that the map requires more detail regarding the processing area. Do the topographical lines on Exhibit F accurately show the post-mining topography? If not, the map needs to be updated.

- *No further response required from RM.*

40) Per Rule 6.4.6, post-mining land uses should be shown on the map. This is especially important for the material processing and wash pond areas.

- *No further response required from RM.*

41) Several structures and easements are shown on Exhibit C-1, and none are shown on Exhibit F. Please explain if all of these structures will be removed during the mining and reclamation operations.

- *No further response required from RM.*

42) The Division recommends adjusting the scale on this map. The current version includes considerable area that is beyond the permit boundary.

- *No further response required from RM.*

6.4.7 Exhibit G - Water Information

43) On Page 1 of Exhibit G, the text states that the site will drain internally. Please add a statement that the site will be operated to prevent any significant runoff from disturbed areas from flowing offsite. Also state that the site will be operated to prevent any negative impacts to the hydrologic balance of the two rivers.

- *No further response required from RM.*

- 44) Describe the physical dewatering system and provide a description of the operation of this system.
- *No further response required from RM.*
- 45) The Water Information exhibit should provide a detailed discussion of floodplain management at the site. This must include a discussion of the conveyor crossing of the Big Thompson River. It should also reference the Floodplain Permit report by Headwaters Corporation, as appropriate.
- *No further response required from RM.*
- 46) To ensure that the Two Rivers project does not impact the hydrologic balance of the rivers, the application needs to include a water quality monitoring plan, specifically for the alluvium. The groundwater monitoring plan should be developed in accordance with Rule 3.1.7(7)(b) and should include a Quality Assurance Project Plan (QAPP) for the collection of groundwater samples. The plan should provide mitigation steps if there is an exceedance at a groundwater or surface water monitoring location. Potential impacts to quality and/or quantity the nearby domestic wells should also be addressed. A copy of the Division's Groundwater Monitoring and Protection Technical Bulletin has been included as an enclosure to this letter for your reference.
- ***Response is still under review, and Division comments will be provided under separate cover.***
- 47) Change "NPDES" to "CDPS" to reflect the requirements of the Water Quality Control Commission.
- *No further response required from RM.*

Exh H - Wildlife

- 48) Indicate which recommendations on wildlife protection in "Threatened and Endangered Species Habitat Assessment, Two Rivers Parcels" (ERO, 2022) will be implemented at the site. This report was submitted with Exhibit H of your application.
- *No further response required from RM.*

Exhibits I/J

- 49) This exhibit should include a discussion on wetlands in the project area, including the wash pond and material processing areas. Please state that operations will be conducted to minimize impacts on wetlands or state that no operations will be conducted in wetland areas.
- *No further response required from RM.*
- 50) In the Weed Management Plan, the paragraph that mentions the State of Colorado noxious weeds list should state that List A species will be eradicated and List B Species will be controlled. The plan should also describe the efforts that will be made to control

List C species, including field bindweed, a focus in Weld County. The Division recognizes that mapping and vector identification can be useful tools for weed control, but these practices should not delay treatment of weeds.

- *No further response required from RM.*

6.4.12 Exhibit L - Reclamation Costs

51) This exhibit should be updated, as necessary, to match any revisions to Exhibits D and E, per the adequacy items for those sections. This includes details on structures.

- ***Exhibit L requires a statement by RM committing to posting additional bond in the future as mining progresses beyond the initial extraction shown on the map in Exhibit C-2.***
- ***Page 3 must be updated to explain the value of 70.21 acres. The Division also recommends that an explanation for this value be added to page 16 in Exhibit D.***
- ***Regarding the dewatering calculations on page 4, there appear to be errors and omissions in the way the calculations are shown. Please check this and add explanations. For example, what is the origin of 9,710,931 gallons per acre? Is this based on a water depth of 30 feet in the pit? Also, please explain the origin of the inflow rate of 14,700,000 gallons per day as well as the volume percentage of 19.6.***
- ***It appears that only one side of the crescent-shaped pit (the yellow hatching on the map in Exhibits C-2 and L) will require grading. Please provide an explanation of this in Exhibit L (pages 5 – 7); in particular, discuss if the internal perimeter length will be graded concurrently as the extraction progresses. The explanation can entail a reference to the mining process in Exhibit D or the reclamation process in Exhibit E.***
- ***More detail is needed for the liner installation in Exhibit L. Add a discussion on the construction process, including if and where the liner material will be sourced and where it will be stockpiled prior to use as a liner. Discuss the size of lifts and the need for compaction.***

52) The cost estimate should include a task for ripping areas that will be topsoiled and vegetated.

- *No further response required from RM.*

53) The Applicant has noted under the Reclamation Plan (page 5) that water shares will be dedicated to the Division of Water Resources (DWR) to cover the liability associated with exposing groundwater. Please be aware that the Division no longer accepts the dedication of water shares to DWR as a bonding mechanism. The Applicant will need to post a financial warranty to allow for backfilling the areas of exposed groundwater or a financial warranty to cover the cost of installing clay liners in the reservoir. Please see additional comments under Item No. 29.

- *No further response required from RM.*

6.4.13 Exhibit M - Other Permit and Licenses

54) Please commit to providing copies of all required and approved permits and licenses to the Division when available. This should include well permits and documents related to water rights, such as a Substitute Water Supply Plan.

- *No further response required from RM.*

6.4.14 Exhibit N – Source of Legal Right to Enter

55) This document must show that Raptor Materials LLC (rather than Varra Companies, Inc.) has the legal right to enter lands under this permit.

- *No further response required from RM.*

6.4.18 Exhibit R - Proof of Filing with County Clerk and Recorder

56) Please provide an affidavit or receipt indicating the date on which the revised application information required to address this adequacy letter was placed with the Weld County Clerk and Recorder for public review, pursuant to Subparagraph 1.6.2(1)(c).

- *No further response required from RM.*

6.4.19 Exhibit S - Permanent Man-made Structures

57) The Division requires Raptor Materials LLC to demonstrate that they attempted to obtain notarized structure agreements with all owners of the structures within 200 feet of the affected area of the proposed mine site, pursuant to Rule 6.4.19. This attempt must be made prior to the Division's consideration of a stability analysis. Please also indicate what agreements have been obtained.

- *No further response required from RM.*

6.5 Geotechnical Stability Exhibit

58) The Division has reviewed the Slope Stability Analyses (prepared by AWES, LLC), and our comments are provided as an enclosure with this letter. Please review this memorandum and provide responses.

- *No further response required from RM.*

Condition of Approval

59) **Because of the phased nature of the mining and reclamation plans for the TRP, a condition of approval will be a commitment from RM that prior to moving from the initial (five-year) phase of the project, RM will notify the Division in writing of this transition. Also, at this time, RM will submit a Technical Revision to update the mining plan, indicating that the first phase is over, and provide additional Financial Warranty. Pursuant to Rule 1.4.1(12), a condition or limitation to approval of the application, unless acknowledged and consented by the Applicant in writing, shall be treated as a denial. Please affirm in writing that RM accepts this condition of approval of the Reclamation Permit Application.**

Please be advised that the Two Rivers, Sand, Gravel, and Reservoir Project application may be deemed inadequate, and the application may be denied unless the above-mentioned adequacy review items are addressed to the satisfaction of the Division. If more time is needed to complete the reply, the Division can grant an extension to the decision date. This will be done upon receipt of a written waiver of the Applicant's right to a decision by February 15, 2023 and a request for additional time. This must be received no later than the decision date.

If you have any questions, please contact me at rob.zuber@state.co.us or (720) 601-2276.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert D. Zuber".

Robert D. Zuber, P.E.

Environmental Protection Specialist

Cc: Brad Janes, RM; Kevin Jeakins, RM;
Peter Christianson, RESPEC;
Michael Cunningham, DRMS