

**STATE OF  
COLORADO****Gagnon - DNR, Nikie** <nikie.gagnon@state.co.us>

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**M2022053 CO Gravel Third Adequacy Letter**

1 message

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**Gagnon - DNR, Nikie** <nikie.gagnon@state.co.us>  
To: PFM Consulting <pfmconsultingcompany@gmail.com>  
Cc: Amy Eschberger - DNR <amy.eschberger@state.co.us>

Mon, Jul 31, 2023 at 11:11 AM

Hi Jodi.

Please find attached to this email a copy of the Division's Third Adequacy Review Letter for the Colorado Gravel Pit, application M-2022-053.

As you review the deficiency items, feel free to reach out to me or Amy if you have any questions. For reference, I attached the Mile High Flood District (formerly Urban Drainage) Guidelines for Gravel Mines discussed in Item 5 in the adequacy letter.

Kind regards,

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**Nikie Gagnon**  
Environmental Protection Specialist**COLORADO**  
Division of Reclamation,  
Mining and Safety  
Department of Natural Resources

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**2 attachments****M2022053 CO Gravel Third Adequacy Review.pdf**

251K

**Technical\_Review\_Guidelines\_for\_Gravel\_Mining\_and\_Water\_Storage\_Activities\_2013.pdf**

2644K



July 31, 2023

Jodi Schreiber  
PFM Consulting LLC  
1774 N. Cougar Drive  
Pueblo West, CO 81073

**Re: Colorado Gravel LLC Pit, File No. M-2022-053; Third Adequacy Review for 112 Construction Materials Reclamation Permit Application**

Dear Ms. Schreiber,

The Division of Reclamation, Mining and Safety (Division) reviewed the content of the Colorado Gravel LLC 112 permit application second adequacy response dated July 17, 2023 for the Colorado Gravel LLC Pit, Permit No. M-2022-053 and submits the following comments. The Division is required to issue an approval or denial decision no later than August 7, 2023, therefore a response to the following adequacy review concerns should be submitted to the Division as soon as possible.

The review consisted of comparing the application content with the specific requirements of Rules 1, 3, 6.1, 6.2, 6.4, and 6.5 of the Mineral 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 below with suggested actions to correct them.

- 1) The Applicant is proposing a permit area of 54.5 acres, with 9 acres (along the northern and western permit boundaries) to be unaffected by the mining operation. The revised mining plan map indicates the southern 6.3 acres will not be mined, but will be disturbed by the operation, primarily by the construction of a haul road. Please confirm the proposed affected area for the operation is 45.5 acres (54.5 acres – 9 acres).
- 2) The Applicant had previously stated the proposed maximum disturbed land at any time is 20.5 acres. However, in its July 17, 2023 adequacy response, the revised Exhibit L reclamation cost estimate appears to cover 40 acres of disturbance. Please confirm the proposed maximum disturbance at any time is 40 acres. This is the acreage that will be used to calculate the initial required financial warranty amount for the operation.
- 3) The Applicant is proposing to mine at a maximum depth of 40-45 feet, and to backfill the pit (to mitigate exposed groundwater) as the pit is expanded to the north. Only the final 10 acres of the pit will remain (at the northern edge of the permit area) as an unlined groundwater pond. The Applicant has committed to limiting the (unbackfilled) pit size at any time to 10 acres throughout operations. It appears the operation will ultimately mine approximately 40 acres. Based on the proposed mining and reclamation plans, approximately 30 acres of the mined pit will be backfilled (40 acres mined – 10 acre pond to remain). Per the Division's requirements, the pit will need to be backfilled a minimum of two feet above the static groundwater level. In Exhibit G, the



Applicant states that groundwater in the area is approximately 16-75 feet in depth. Since the Division must consider the worst case scenario, the static groundwater level in the proposed mine area is assumed to be approximately 16 feet. This means the pit will need to be backfilled to a depth of approximately 14 feet to mitigate the exposed groundwater.

Based on a maximum mining depth of 40 feet, a backfill depth of 14 feet, and a pit size of 30 acres, the Division estimates the proposed reclamation plan will require a total of approximately 1,258,400 cubic yards of backfill material. The application estimates only 4-12 inches of overburden is available at the site, which would provide only 21,511 to 64,533 cubic yards of backfill material, based on a total disturbed area of 40 acres. Assuming an average overburden depth of 8 inches (which would provide approximately 43,022 cubic yards of backfill material), an additional 1,215,378 cubic yards of backfill material will be needed. Please describe the anticipated source(s) for the required backfill material. Will any of this material need to be imported to the site? If so, please provide an estimated volume of material that will need to be imported. Additionally, please note that for any proposed backfill material generated outside of the permit area, the Applicant must provide all information required by Rule 3.1.5(9). If this information is not known at this time, the Applicant must commit to providing this information in a Technical Revision prior to importing this material to the site.

- 4) The Applicant has stated the slopes of the final 10 acre pond will be graded to 2H:1V. This does not comply with the requirements of Rule 3.1.5(9) which state that pond slopes from 5 feet above to 10 feet below the expected water line must be no steeper than 3H:1V. Please revise the reclamation plan accordingly.
- 5) The Applicant has stated the entire proposed permit area is located within the 100 year floodplain of the Arkansas River. The proposed plans include mining and leaving a 10 acre, 40-45 foot deep unlined groundwater pond only 50 feet from the river. The Applicant states that no bank protection and/or flood mitigation measures will be implemented at the site unless they are required by FEMA and/or Prowers County. Please be advised, regardless of any requirements by other agencies, the Division will require the Applicant to demonstrate compliance with Rules 3.1.6(1) and (3) and 6.5(2) and (3). This means that appropriate bank protection measures and inlet/outlet structures will need to be installed on any ponds proposed to remain within 400 feet of the river. Additionally, the Applicant must provide engineering stability analyses for the proposed final reclaimed slopes of the pond as well as for the pit slope configuration to occur during mining operations within 400 feet of the river. Per Rule 6.5(3), the Applicant must demonstrate through appropriate geotechnical and stability analyses that off-site areas (including the Arkansas River) will be protected with appropriate factors of safety incorporated into the analysis.

The Division recommends the Applicant refer to the Technical Review Guidelines for Gravel Mining and Water Storage Activities Within or Adjacent to 100-Year Floodplains (Guidelines) issued by Urban Drainage and Flood Control District on January 2013. These Guidelines describe the minimum requirements for gravel mining operations located in or adjacent to 100-year floodplains, including the minimum riverbank berm top width requirements and bank protection measures for pits located adjacent to a river with an existing unstable alignment and no riverbank



protection (such as what is present at the proposed mine site). The Applicant should note, according to Section 2.6.1 and Table 2.1 of the Guidelines, the minimum allowable top width of riverside berms is 400 feet if no bank protection is proposed for the mined pit, and 300 feet if pitside slope protection is provided. The different types of pitside bank protection are described in Section 2.4 of the Guidelines. While the Guidelines were formulated primarily for gravel mining operations and water storage reservoirs located in or adjacent to 100-year floodplains within the Urban Drainage and Flood Control District (including the South Platte River and its tributaries), the technical criteria provided in the Guidelines are based upon industry practices, civil and geotechnical engineering practices, and agency requirements, and in most cases, are applicable to gravel mining operations within other 100-year floodplains. Any proposed variance(s) from the Guidelines must be supported by a thorough technical evaluation based on site-specific conditions.

If the Applicant is unable to provide at this time the engineering analyses and proposed bank protection/flood mitigation structures mentioned above, please commit to not mining within 400 feet of the river until a Technical Revision with this information has been submitted and approved by the Division.

- 6) The Applicant states the proposed 10 acres of exposed groundwater is permanently covered under the Lower Arkansas Water Management Association's (LAWMA's) plan and therefore, the Division should not require a bond to backfill this exposed groundwater. The Division met with the Applicant and LAWMA on July 27, 2023 to discuss this matter further. During the meeting, the Division learned that while the landowner has dedicated preferred shares through LAWMA that would cover the exposed groundwater, LAWMA will need to file an application with the water court to add this "structure" to their master plan for augmentation. Depending on when the application is actually submitted, and whether there are any objectors to the application, it could be a few years before a permanent augmentation plan is in place to cover the proposed 10 acres of exposed groundwater at the site. In the meantime, any depletions resulting from groundwater exposure occurring during operations will be covered by a Substitute Water Supply Plan (SWSP) and a well permit approved by the Division of Water Resources (DWR). DWR's approval of a SWSP does not relieve the Applicant and/or landowner of the requirement to obtain a water court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions, after the mining operations have ceased.

As stated in the Division's groundwater mailer sent to all operators on April 30, 2010 (a copy of which was provided to the Applicant with the Division's June 21, 2023 adequacy review letter), the Division has a statutory duty to ensure that water resources are protected during and after mining, that lands affected by mining are reclaimed in a manner that complies with state law, and that operators have sufficient bonding in place to cover all reclamation liability at the site. Mining operations which expose groundwater without complying with state law create a reclamation liability by impacting available groundwater. State law requires that any person exposing groundwater must obtain a well permit and an approved SWSP or decreed plan for augmentation. If reclamation of the mine site will produce a permanent water surface exposing groundwater to



evaporation, an application for a plan for augmentation must be filed with the water court at least 3 years prior to completion of mining to include, but not be limited to, long-term evaporation losses and lagged depletions. If the pond is backfilled or lined, replacement of lagged depletions must continue until there is no longer an effect on stream flow. Augmentation plans must be approved through a decree of the water court. While an application for an augmentation plan is pending before the water court, a SWSP may allow for operation of the project until the water court approves (decrees) the augmentation plan. Therefore, any exposed groundwater at a mining operation is considered a reclamation liability until it is covered under a court approved augmentation plan.

As outlined in its April 30, 2010 mailer, the Division has identified four approaches for operators to achieve compliance with the requirements pertaining to groundwater exposure, including:

- I) File a financial warranty that will ensure backfilling of the pit to cover the exposed groundwater to a depth of two feet above the static groundwater level, or
- II) Obtain a court approved augmentation plan prior to exposing groundwater, or
- III) File a financial warranty to cover the cost of installing a clay liner or slurry wall that meets DWR's requirements for preventing groundwater exposure, or
- IV) Obtain approval from the DWR that acknowledges compliance with the SEO's requirements pursuant to C.R.S. 37-90-137(11).

As of the date of the mailer (April 30, 2010), all new permit applications must meet the requirements of one of the options listed above in order for the application to be approved by the Division.

In summary, if an Applicant does not have a water court approved permanent augmentation plan in place for the proposed groundwater exposure, the Applicant must file a financial warranty that covers costs for either backfilling the pit to two feet above the static groundwater level or to installing a liner system that meets the DWR's requirements. The only other option (approach #4) would be to provide a letter from the DWR acknowledging the proposed groundwater exposure is in compliance with the SEO's requirements, and therefore, does not require the Division to hold a financial warranty for mitigating the groundwater exposure.

Based on the information provided by the Applicant, the proposed 10 acres of exposed groundwater is not currently covered by a water court approved augmentation plan. Additionally, the Applicant has not provided a letter from the DWR acknowledging the proposed groundwater exposure is otherwise in compliance with the SEO's requirements and therefore, does not create a reclamation liability for which the Division must ensure sufficient bonding. Therefore, in order for the Division to approve the application, the Applicant must commit to filing a financial warranty that ensures backfilling of the pit to cover the exposed groundwater to a depth of two feet above the static groundwater level.



Given the proposed 10 acres of exposed groundwater, a mining depth of approximately 40 feet, and a static groundwater level of approximately 16 feet, the Division estimates that backfilling the pit to two feet above the static groundwater level will require a total of approximately 419,467 cubic yards of material. As mentioned above, the Division needs to know how much backfill material will be available on site versus how much will need to be imported. This information is needed in order for the Division to calculate the required financial warranty for the proposed operation.

- 7) The Division has the following comments pertaining to the revised engineering evaluation provided by Kidd Engineering (dated July 13, 2023):
  - a. Please commit to installing and maintaining a de-watering system behind the wall excavation.
  - b. Please commit to maintaining 3H:1V pit slopes at all times within 50 feet of the western edge of the permit area.
  - c. Please commit to a maximum mining depth of 40 feet.
- 8) The Applicant has stated the operation will wash material on site and will utilize water from an adjudicated well on site. Please specify if this well is existing or will need to be installed for the operation. If the well is existing, please show its location on the appropriate map(s). If the well will be installed for the operation, please show its anticipated location on the mining plan map. Will this well remain after reclamation? Or will it be abandoned after mining is completed? If the well will remain after reclamation, please show its anticipated location on the reclamation plan map. If the well will be abandoned, please provide a detailed reclamation plan for the well.
- 9) The Applicant has provided a reclamation seed mixture that includes Western Wheatgrass, Tall Wheatgrass, Buffalograss, Switchgrass, Indiangrass, Sideoats Grama, and Alkali Sacaton. Please provide the seeding rate for each of these species in pounds of PLS/acre. Additionally, please describe how the grass seed mixture provided is consistent with the proposed agricultural post-mining land use for the site.
- 10) The Division has the following comments pertaining to the reclamation plan map:
  - a. Please clearly label the “10 acre pond” proposed to remain.
  - b. Please show the final slope gradients (horizontal:vertical) for the pond.
  - c. Please show the final slope gradients (horizontal:vertical) for all other reclaimed lands.
  - d. Please indicate all areas that will be revegetated for reclamation. This must include all proposed affected lands, for example: haul roads, processing/stockpiling areas, mining





areas, all lands disturbed by settling ponds and/or other water management structures, and pond shorelines above the expected water line.

- e. Please revise the statement “Finish grade will be approximately original contours except lowered to have a foot over static water levels” to change “have a foot over” to “have two feet over”.
  - f. Please show the proposed bank stabilization/flood protection structures to be installed on the final pond. If this information is not known at this time, please commit to submitting a Technical Revision with details on these proposed structures and an updated reclamation plan map prior to mining within 400 feet of the river.
  - g. Please add the proposed post-mining land use for the affected lands.
- 11) Rule 3.1.6 requires operations to minimize disturbances to the prevailing hydrologic balance of the affected land and of the surrounding area and to the quantity or quality of water in surface and groundwater systems both during and after the mining operation and during reclamation. Per Rule 3.1.7(7)(a), a groundwater monitoring program shall be required on a case-by-case basis where an adverse impact on groundwater quality may reasonably be expected. Rule 3.1.7(7)(b) outlines the information required for a groundwater monitoring program, including ambient groundwater quality data (which typically consists of five quarters of “baseline” data collected from the site prior to mining).

The proposed operation will directly affect groundwater systems by dewatering the site and mining below the water table. Groundwater intercepted during operations will be discharged to the Arkansas River under a discharge permit maintained with the Colorado Department of Public Health and Environment (CDPHE). The Applicant has stated that no toxic or acid-producing materials will be stored or exposed on site.

According to the Exhibit C – Existing Conditions map provided, there are 3 wells installed in the vicinity of the proposed operation, including 2 wells that appear to be located upgradient of the proposed operation that are owned by KICT LLC (the same landowner that owns the proposed affected lands), and one well that appears to be located side gradient to the proposed operation that is owned by John E. Schlager. None of the nearby well owners have submitted concerns regarding the proposed operation.

The Applicant has not provided a groundwater monitoring plan for the site. Therefore, it appears the Applicant does not intend to collect any baseline groundwater data prior to mining. The Applicant should be advised, in the event that a groundwater complaint were received after mining operations have commenced, it may be difficult to rule out any off-site groundwater impacts caused by the operation without having baseline groundwater data available for reference. If the Applicant intends to monitor groundwater at the site, please provide (in Exhibit G) a groundwater monitoring plan that meets the requirements of Rule 3.1.7(7).



Please be advised the Colorado Gravel LLC Pit application may be deemed inadequate, and the application may be denied on August 7, 2023, 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 August 7, 2023 and request for additional time. This may be received no later than the decision date.

If you have any questions, please contact me at [nikie.gagnon@state.co.us](mailto:nikie.gagnon@state.co.us) or 303-866-3567 Ext. 8126.

Sincerely,

*Nikie Gagnon*

Nikie Gagnon  
Environmental Protection Specialist

Enclosure: Technical Review Guidelines for Gravel Mining and Water Storage Activities

cc: Amy Eschberger, Senior EPS, DRMS

