



July 14, 2021

David Bieber  
Front Range Aggregates, LLC  
c/o Martin Marietta Materials, Inc.  
1627 Cole Boulevard, Suite 200  
Lakewood, CO 80401

**Re: Parkdale Quarry, Permit No. M-1997-054; Preliminary Adequacy Review for 112 Construction Materials Reclamation Permit Amendment Application (AM-02)**

Dear Mr. Bieber:

The Division of Reclamation, Mining and Safety (DRMS) has completed its preliminary adequacy review of your 112 Construction Materials Reclamation Permit Amendment Application (AM-02) for the Parkdale Quarry, Permit No. M-1997-054. The application fee was received on May 10, 2021 and after receiving corrections, called complete for review on May 17, 2021. **The decision date for this application is August 16, 2021.** Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period.** If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the DRMS may deny this application.

The review consisted of comparing the application content with specific requirements of Rules 3.1, 6.4 and 6.5 of the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials. Any inadequacies are identified under the respective exhibit heading along with suggested actions to correct them.

The following items must be addressed by the applicant in order to satisfy the requirements of C.R.S. 34-32.5-101 et seq. and the Mineral Rules and Regulations of the Mined Land Reclamation Board:

**GENERAL COMMENTS**

1. **Map Exhibits:** Rule 6.2.1(2) requires all maps, except the index map (Exhibit B) to show the name of the Applicant, be prepared and signed by a qualified person, as well as other requirements that are generally met. The Applicant for the Parkdale Quarry is Front Range Aggregates, LLC. All the maps in Exhibits C, D, F, and I have the Martin Marietta logo in the title blocks and only the initials of the preparer. The intent of Rule 6.2.1(2)(b) is to identify who prepared, authorized, or approved the map. Please resubmit Exhibit C, D, F and I maps



with the preparer' signature and/or name and Front Range Aggregates, LLC in place of Martin Marietta.

2. Figures: Nine figures were received with the Application:

<u>Figure</u>	<u>Title</u>	<u>Referenced from</u>
1	Typical Haul Road Cross-section	Exh D, Sect. 3
2	Cross-section of Typical Production and Reclamation Benches	Exh D, Sect. 4
1	Site Location Map	Exh. G, Sect. 1
2	Land Ownership and Site Layout	Exh. G, Sect. 2
3	Locations of USGS and CDPHE Surface Water Monitoring Stations with Background Data for Currant and Tallahassee Creeks	Exh. G, Sect. 4.1.3
4	Site Geology and Locations of Groundwater Users Near the Parkdale Quarry	Exh. G, Sect. 4.2
5	Proposed Surface Water Monitoring Locations	Exh. G, Sect. 5
6	Proposed Groundwater Monitoring Locations	Exh. G, Sect. 5
9	Conceptual Drainage Channel Layout	Not Referenced

Six are continuous and included in Exhibit G. The numbering sequence for the other three (Figures 1 and 2 referenced from Exhibit D, and Figure 9) suggest there are Figures 3 through 8 that could not be found in the Application. {*Note: Figure 9 should be referenced from Exhibits E and/or F*} Please provide the missing figures or confirm there were no Figures 3 through 8 (outside Exhibit G).

### **APPLICATION**

The Application form is adequate as submitted

## **6.4 SPECIFIC EXHIBIT REQUIREMENTS – REGULAR 112 OPERATIONS**

### **6.4.2 EXHIBIT B - Index Map**

3. Exhibit B: This map is intended to show the regional location of the affected land and all roads and other access to the area. The submitted map labels highways 9 and 50, but in very small font. Please resubmit Exhibit B with readable highway and other labels, such as the railroad as it is site access for product transportation.

### **6.4.3 EXHIBIT C - Pre-mining and Mining Plan Map(s) of Affected Lands**

4. Exhibit Maps: Please see Comment No. 1 above. All structures within 200 feet of the affected area boundary (not the mining limits) need to be identified. Structures on the maps that are not identified and are within 200 feet of the affected area include the railroad, the existing Tallahassee Creek bridge (noted in Exhibit L); and the following structures discussed in Exhibit S: the buildings and corrals to the west of the alluvial quarry, the Black Hills Energy powerline, and Fremont County Road 157. An expected structure related to crossing Tallahassee Creek using the proposed conveyor to the expansion area is not indicated. There is also an apparent discrepancy in affected area between the Index Map and maps in Exhibits C (Pre-Mining BLM Boundaries and Pre-Mining only). Exhibit B and Exhibit maps C4 and

C5 show the previously approved sandstone quarry as affected area; the other mentioned maps do not. If the sandstone quarry is to be released from the affected area boundary, a separate acreage reduction revision must be requested. Otherwise, all maps need to show consistent boundaries. There are notes regarding the image date on Exhibits C (Pre-Mining BLM Boundaries and Pre-Mining) citing Google Earth. *[Please note Google Earth imagery dates are found by hovering the mouse/cursor in the margin of Google Earth, just below the image and to the left of the displayed coordinates]*. Please resubmit Exhibit C with the following:

- a. Show name of Applicant (Front Range Aggregates) and preparer's name/signature on all maps;
  - b. Identify all existing and proposed structures within 200 feet of the affected area;
  - c. Identify creeks, highways and county roads with readable labels;
  - d. Include the sandstone quarry affected area boundary on all maps showing that area *(as it is part of the Permit until a release is requested separately and approved)*;
  - e. Include contour labels on the Exhibit C Pre-Mining map; and
  - f. Google Earth imagery dates on maps using Google Earth imagery.
5. Overburden and Topsoil Stockpiles: In order to estimate haul distances for reclamation, please indicate on Exhibit C (or D) maps where topsoil and overburden are to be stockpiled.

#### **6.4.4 EXHIBIT D – Mining Plan**

6. Exhibit Maps: Please see Comment No. 1 above. There is also an apparent discrepancy in affected area between the Index Map and maps in Exhibits D. Exhibit B and Exhibit maps C4 and C5 show the previously approved sandstone quarry as affected area; the Exhibit D maps do not. If the sandstone quarry is to be released from the affected area boundary, a separate acreage reduction revision must be requested. Otherwise, all maps need to show consistent boundaries. There are notes regarding the image date on Exhibits D1 – D7 (Mining Plan) citing Google Earth. *[Please note Google Earth imagery dates are found by hovering the mouse/cursor in the margin of Google Earth, just below the image and to the left of the displayed coordinates]*. Adding contour labels will also help with Comment No. 7 below. Please resubmit Exhibit D maps
7. Thickness of Deposit: Rule 6.4.4(f) requires information be provided on the nature, depth and thickness of the deposit to be mined and the thickness and type of overburden to be removed. This information could not be located. If contour labels were added to the seven Exhibit D maps, that would probably be the best way to describe the depth and thickness of the deposit to be mined, given the rugged terrain. Please provide information on the overburden thickness the depth/thickness of the deposit to be mined, noting Comment No. 1 above.
8. Mining Limits: The second paragraph of Exhibit D describes moving the southern limit of the existing granite quarry and removing the previously approved sandstone mining area from the permit. As indicated in Comment No. 4 above, if these areas are to be removed from the affected area boundary, a separate acreage release request must be submitted. If the intent is to simply remove these areas from the mining/excavation limits (which the DRMS views as primarily a distinction for the Operator only, other than how it affects the approved mining plan), then no release is necessary for the affected area, but reclamation cost estimates for the

bond will be adjusted accordingly. Please clarify the intent for adjustments to the existing granite quarry the sandstone quarry boundaries.

9. Conveyor System: Both the first and third bullet on the first page of Exhibit D mention the possible construction of a conveyor system. The construction of a conveyor system will a significant impact on the expected reclamation cost. As this item is uncertain, please commit in writing to submitting a Technical Revision to the DRMS for reclamation cost consideration at least 30 days prior to constructing a conveyor system.
10. Mine Phasing: The duration of each phase is provided. When do you anticipate beginning to mine Phase 1? Will they overlap?
11. Phase 6 Plan: Exhibit D7 – Mining Plan suggests the mostly below grade mining in existing Granite Quarry will not take place till the completion of Phase 5 (East Pit) mining. If this is the case, it will have some impact on a phased bonding effort (if that is what is desired). Please clarify the planned extent of the current mining in the Existing Granite Quarry vs. Phase 6 on Exhibit D7; and confirm the request for a phased bonding approach.
12. Haul Road: The mine plan states the haul road will have 33 inches of material placed and be 60 feet wide. For the purpose of estimating reclamation costs, please indicate how long the roads will be and how reclamation is to be accomplished (grading, placing as sub-topsoil backfill, etc.), given the high gravel content will likely make poor growth media.
13. Bench Design: Section 4 and Figure 2 explain the different configurations between production and reclamation benches. The DRMS has done some rough estimates on the volume of rock that would need to be removed for each bench (first bench up to a ninth bench – see **Attachment A**). The expectation is the first bench would require 750 cubic feet per linear foot of bench length be removed via blasting to meet the proposed reclamation configuration from the production configuration. This volume increases to 6,150 cubic feet per linear foot for a ninth bench. Current blasting costs are about \$0.66/ton or \$1.40/cubic yard. The DRMS will need to bond for this highwall reconfiguration under worst case conditions, should the State have to take over reclamation. Please consider the potential costs here and confirm you wish to proceed with a bench configuration that differs between production and reclamation.
14. Material Handling: Sections 5 and 6 discuss material handling for the Alluvial Quarry and the Granite Quarry, respectively. Please confirm material handling will be the same for the expansion area as it is for the Granite Quarry. If it is different, please provide details.
15. Water Supply: Section 7 indicates water usage is not anticipated to increase as mining progresses into the BLM area. If the haul roads are significantly longer than to the existing granite quarry, would dust suppression water usage not increase accordingly? Please explain.

#### **6.4.5 EXHIBIT E – Reclamation Plan**

16. Reclamation similar to Webster Park: Section 3 indicates “reclamation on the BLM mining area will be to create a topographic and ecological setting that is similar to that of Webster Park and the hillsides surrounding Webster Park”. Please provide photographs of the Webster Park area as examples of the intended reclamation.

17. Valley Floor Drainage Channels: Section 3.1.1 states drainage channels will be excavated into the valley floor, directing flows to Current Creek and have “a depth, cross-section, and sinuosity similar to that of the natural drainages in Webster Park”. If these channels are undersized, frequent flood events will scour the growth media and vegetation on the overbanks. A natural sinuosity is geomorphologically dependent upon flow rates, channel gradient and scour resistance of the drainage bed. The DRMS supports the proposed more natural approach to reclamation. However, designs supported by hydrologic and hydraulic analyses need to be provided. Furthermore, construction of these channels must be addressed for the reclamation cost estimate (Exhibit L). Will blasting be required or is a more conventional construction anticipated? Based on Figure 9 (which should be referenced), the DRMS estimates about 25,000 feet of channel will need to be constructed (~6,900 feet on the west side, ~9,800 feet in the central area, and ~8,200 feet on the east side). Pursuant to Rules 3.1.6(3), 6.4.4(j) and 6.4.5(1), please provide:
  - a. hydrologic and hydraulic analyses for channel design, and
  - b. anticipated construction techniques for the reclamation effort (blasting, dozers, excavators, etc.)
18. Bench Vertical Slopes: Section 3.1.2 indicates some parts of the benches will be left with near vertical slopes. If this is a significant portion of the benches, it will impact the reclamation cost estimate. Please define what is meant by “some” and if it is not insignificant, these areas should be shown on the Exhibit F map in accordance with Rule 6.4.6(a).
19. Bench Configuration: Section 3.1.2 describes the reclamation benches as being 40 to 80 feet high and about 80 feet wide. Figure 2 shows reclamation benches being 35 feet high and 30 feet wide. Please provide a narrative and figure that are consistent. If the proposed configuration is different than that presented in Figure 2, the estimated reclamation volumes in **Attachment A** will need to be revised.
20. Reclamation Performance Standards: Rule 6.4.5(2)(c) requires the applicant address reclamation performance standards in Rule 3.1. Please address the following:
  - a. Rule 3.1.7(6): Given the groundwater monitoring results in Exhibit G, points of compliance for groundwater monitoring need to be established. Please see Comment No. 23 below.
  - b. Rule 3.1.10(6): Exhibit M lists a Weed control plan approved by the Fremont County Weed Advisory Board. Please provide a copy of this plan for the public record.
21. Seeding: The end of the second paragraph in Section 3.5 states “Seeds will be applied to benches and the valley floor area at a seeding rate of approximately 20 pounds of pure live seed (PLS) per acre...” {note Exhibit L indicates an application rate of 16 pounds per acre}, then switches to discussing the seeding rate for temporary stockpiles, before ending the paragraph stating seed will be broadcast. It is unclear if all seed is to be applied via broadcast methods, or just for the stockpiles. Please be aware it is DRMS practice to double recommended drill seed rates for broadcasting application methods. Please clarify if the seeding rates in the two tables for “Roads and Quarry Floors” and “Quarry Benches” are drill or broadcast rates and what application method is intended for each.

#### **6.4.6 EXHIBIT F – Reclamation Plan Map**

22. Exhibit Maps: Please see Comment No. 1 above. There is also an apparent discrepancy in affected area between the Index Map and maps in Exhibit F. The legend indicates the topographic contours are “10”, but no units are provided. Exhibit B and Exhibit maps C4 and C5 show the previously approved sandstone quarry as affected area; Exhibit F does not. All maps need to show consistent boundaries. There is a note regarding the image date on Exhibit F citing Google Earth. [*Please note Google Earth imagery dates are found by hovering the mouse/cursor in the margin of Google Earth, just below the image and to the left of the displayed coordinates*]. As stated in Comment No. 17 above, different type of reclamation also need to be shown on Exhibit F. Please resubmit Exhibit F with the following:

- a. Show name of Applicant (Front Range Aggregates) and preparer’s name/signature on all maps;
- b. Include the existing affected area boundary (Rule 6.2.1(2)(d) – specifically the alluvial pit) and its final contours;
- c. Identify structures that will remain after reclamation (original Harvey Ranch residence and associated outbuildings?);
- d. show final land use – Rule 6.4.6(b): Wildlife habitat vs water storage (and vertical highwalls if not insignificant – See Comments No. 17 above, and No. 29 below), and the drainage channels (or reference Figure 9);
- e. Include the sandstone quarry affected area boundary on all maps showing that area;
- f. Include contour labels on the map and the interval in the legend; and
- g. Google Earth imagery dates on maps using Google Earth imagery.

#### **6.4.6 EXHIBIT G – Water Information**

23. Groundwater: Based on our July 13, 2021 meeting with site representatives, the DRMS is continuing to review Exhibit G and will provide supplementary adequacy comments at a later date

#### **6.4.8 EXHIBIT H – Wildlife Information**

Exhibit H is adequate as submitted.

#### **6.4.9 EXHIBIT I – Soils Information**

Exhibit I is adequate as submitted.

#### **6.4.10 EXHIBIT J – Vegetation Information**

Exhibit J is adequate as submitted.

#### **6.4.11 EXHIBIT K – Climate**

Exhibit K is adequate as submitted.

#### **6.4.12 EXHIBIT L – Reclamation Costs**

24. Scope of Submitted Cost Estimate: The cover sheet of Exhibit L includes tasks for the “Granite Quarry Reclamation” and the “Alluvial Area Reclamation”. Based on the 34 acres of “top dressing” on the top of the second page, it appears this is just for the existing granite quarry area. The cost estimate needs to include all five phases of the expansion area and Phase 6 of the existing Granite Quarry area. (*Note: If you prefer a phased bond approach, a financial warranty phases 2 through 5 will not be required*). Please provide a bond estimate for all phases of mining.
25. Seeding: Exhibit E states seeding of the valley floor and benches will use 20 pounds of seeds per acre. Exhibit L indicates only 16 pounds per acre will be used. Please update the quantity of seed.
26. Tallahassee Bridge Demolition: Page 3 indicates 400 tons of bridge debris will require disposal. Please provide the following:
  - a. a description of the bridge (length, width, height and primary materials of construction: wood, steel, or concrete),
  - b. location of planned disposal (on/off site, distance to facility).
27. Top Dressing: Pages 2 and 4 indicate top dressing will be six inches. Exhibit E, section 3.2 states an average of nine inches of topsoil will be placed. Please revise Exhibit L accordingly.
28. Toe Drain Construction: There is a line item on the fifth page for toe drain construction. The DRMS cannot find any previous mention of the toe drain in either the original permit or amendment 1. Please provide details on the toe drain or where it was previously included in the permit.
29. Clay liner fill: The seventh page indicates 10% of the necessary clay liner will be imported from Martin Marietta’s Penrose Pit. The previous page (sixth) states at the top that “Approximately half of the required liner material can be derived onsite”. Where will the other 40% of the material be obtained?
30. Alluvial Revegetation: The ninth page states “less than the 66 acres {only 60 acres} outside of the pit area because of roads, graveled parking areas, and other areas that will remain abd [sic] will not be revegetated”. This statement reinforces the need to show on Exhibit F map(s) the intended types reclamation and areas discussed above in Comment No. 22d. Please identify all areas that won’t be revegetated on the Exhibit F map(s).
31. Valley Floor Drainage Channels: Please provide excavation and material volumes for construction of the proposed valley floor drainage channels.
32. DRMS Estimate: The DRMS will generate a reclamation cost estimate based on this amendment application and responses to this adequacy review letter. Please be aware the bond estimate provided in Exhibit L may be modified based on our reclamation cost estimate. No response is necessary.

#### **6.4.13 EXHIBIT M – Other Permits and Licenses**

Exhibit M is adequate as submitted.

**6.4.14 EXHIBIT N – Source of Legal Right to Enter**

Exhibit N is adequate as submitted.

**6.4.15 EXHIBIT O – Owners of Record of Affected Land (Surface Area) and Owners of Substance to be Mined**

Exhibit O is adequate as submitted.

**6.4.16 EXHIBIT P – Municipalities Within a Two-mile Radius**

Exhibit P is adequate as submitted.

**6.4.17 EXHIBIT Q – Proof of Mailing of Notices to Board of County Commissioners and Soil Conservation District**

Exhibit Q is adequate as submitted.

**6.4.18 EXHIBIT R – Proof of Filing with County Clerk and Recorder**

Exhibit R is adequate as submitted.

**6.4.19 EXHIBIT S – Permanent Man-Made Structures**

33. Eligible Structures: The purpose of Exhibit S is to provide damage compensation agreements, or where those cannot be obtained, engineering analyses demonstrating structures within 200 feet of the affected area (not to be confused with excavated areas only) will not be damaged by the proposed activity. The following structures listed in Exhibit S, appear to be within 200 feet of the affected area and require proof of attempting to obtain a structure damage compensation agreement (Rule 6.4.19(a) and (c)), or in lieu of that, an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation (Rule 6.4.19(b)):
- a. Black Hills Energy powerline,
  - b. Royal Gorge Express Railroad rail tracks along the southern permit boundary,
  - c. County Road 157.

**6.5 GEOTECHNICAL STABILITY EXHIBIT**

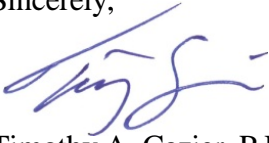
34. Geotechnical Stability Exhibit: The submitted exhibit is from the 2008 amendment and applies only to the existing granite quarry. The DRMS requires geotechnical stability analyses to demonstrate the following:
- a. Stability of the reclaimed highwalls in the BLM expansion area will be stable Pursuant to C.R.S 34-32.5-102(1) and Rules 1.1(45), 6.5(2) post reclamation; and pursuant to Rule 6.5(4).



- b. The area outside the permit boundary and adjacent to the southwest edge of the Phase 3 Central Pit will not be adversely affected by blasting through appropriate blasting, vibration, geotechnical, and structural engineering analyses.

**Please remember that the decision date for this application is August 16, 2021.** As previously mentioned if you are unable to provide satisfactory responses to any inadequacies prior to this date, it will be your responsibility to request an extension of time to allow for continued review of this application. If there are still unresolved issues when the decision date arrives and no extension has been requested, the application may be denied. If you have any questions, please contact me at (303) 328-5229.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tim Cazier', with a stylized flourish at the end.

Timothy A. Cazier, P.E.  
Environmental Protection Specialist

Enclosures: Attachment A

ec: Michael Cunningham, DRMS  
Eric Scott, DRMS  
DRMS file  
Stephanie Carter, BLM

300 ft [5<sup>TH</sup> BENCH]

# ATTACHMENT A

M-1997-054  
PARKDALE  
AM-2  
BENCH RECLAMATION  
QUANTITIES

7/2/2021  
T. CAZIER  
DRMS  
(PAGE 1 OF 2)

240 ft [4<sup>TH</sup> BENCH]

PRODUCTION  
BENCHES

2700 ft<sup>2</sup>/ft

3450 ft<sup>2</sup>/ft

180 ft [3<sup>RD</sup> BENCH]

RECLAMATION  
BENCHES


1950 ft<sup>2</sup>  
per foot

120 ft [2<sup>ND</sup> BENCH]

~~1450~~ ft<sup>2</sup>/ft  
1450

60 ft [1<sup>ST</sup> BENCH]

750 ft<sup>2</sup>  
per ft

 = 10 sq. ft.

0.0

540 ft [9<sup>TH</sup> BENCH]

480 ft [8<sup>TH</sup> BENCH]

420 ft [7<sup>TH</sup> BENCH]

360 ft [6<sup>TH</sup> BENCH]

300 ft [5<sup>TH</sup> BENCH]

240 ft [4<sup>TH</sup> BENCH]

2700 ft<sup>2</sup>/ft

6150 ft<sup>2</sup>/ft

5550 ft<sup>2</sup>/ft

PRODUCTION  
BENCHES

4650 ft<sup>2</sup>/ft

RECLAMATION  
BENCHES

4050 ft<sup>2</sup>/ft

3450 ft<sup>2</sup>/ft

M-1997-054  
PARKDALE  
AM-2  
BENCH RECLAMATION  
QUANTITIES

7/2/2021  
T. CABLER  
DRMS  
(PAGE 2 OF 2)