



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, Colorado 80203

June 16, 2022

Phillip Courtney
Martin Marietta Materials Inc.
1627 Cole Boulevard, Suite 200
Lakewood CO 80401

Re: Preliminary Review of a 112 Construction Materials Reclamation Permit Amendment Application AM04, Martin Marietta Materials – Specification Aggregates Quarry, Permit M1974-004

Mr Courtney:

The Division of Reclamation, Mining, and Safety has completed its preliminary adequacy review of your 112 construction materials reclamation permit amendment application. The application was called complete for review on April 26, 2022. All comment and review periods began on April 26, 2022. **The decision date for this application is July 25, 2022. 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 Division will deny this application. In order to allow the Division adequate time to review your responses to any adequacy issues, please submit your adequacy responses to the Division no later than one week prior to the decision date (July 18, 2022).**

Please note that any changes or additions to the application on file in our office must also be reflected in the public review copy, which has been placed with the Jefferson County Clerk and Recorder.

The review consisted of comparing the application content with specific requirements of Rule 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. As with most applications, there are items that will require clarification of the existing information. This letter summarizes the requirements for all exhibits, and any comments and/or inadequacies are identified under the respective exhibit heading.

APPLICATION FORM:

- *Adequate as submitted*

6.2 GENERAL REQUIREMENTS OF EXHIBITS

6.2.1 General Requirements

(1) This Rule provides for the guidelines for, and information requirements of, each Exhibit required to be submitted with the permit application, as specified according to Section 6.1.

(2) Maps and Exhibits Maps, except the index map, must conform to the following criteria:

- (a) show name of Applicant;



- (b) must be prepared and signed by a registered land surveyor, professional engineer, or other qualified person;
- (c) give date prepared;
- (d) identify and outline the area which corresponds with the application;
- (e) with the exception of the map of the affected lands required in Section 34-32.5-112(2)(d), C.R.S. 1984, as amended, shall be prepared at a scale that is appropriate to clearly show all elements that are required to be delineated by the Act and these Rules. The acceptable range of map scales shall not be larger than 1 inch = 50 feet nor smaller than 1 inch = 660 feet. Also, that a map scale, appropriate legend, map title, date and a north arrow shall be included.

- ***Adequate as submitted.***

EXHIBIT A - Legal Description (Rule 6.4.1): The legal description must identify all affected land and be wholly adequate for field location of the property. It can be in the form of metes and bounds survey or a description by reference to township, range and section to at least the nearest quarter/quarter section. Where applicable, the street address or lot numbers may be used.

- ***Adequate as submitted***

EXHIBIT B - Index Map (Rule 6.4.2): An index map showing the regional location of all affected land and all roads and other access to the area. A standard U.S. Geological Survey topographic quadrangle or equivalent is acceptable. Scale criteria need not be followed for this map.

- ***Adequate as submitted***

EXHIBIT C - Pre-mining and Mining Plan Map(s) of Affected Lands (Rule 6.4.3): One or more maps may be necessary to legibly portray the following information:

- (a) all immediately adjacent surface owners of record;
- (b) the name and location of all creeks, roads, buildings, oil and gas wells and lines, and power and communication lines on the area of affected land and within two hundred (200) feet of all boundaries of such area
- (c) the existing topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of the affected land;
- (d) the total area to be involved in the operation, including the area to be mined and the area of affected lands (see definition of "Affected Land");
- (e) the type of present vegetation covering the affected lands; and

(f) in conjunction with Exhibit G - Water Information, Subsection 6.4.7, if required by the Office, further water resources information will be presented on a map in this section.

(g) Show the owner's name, type of structures, and location of all permanent or man-made structures contained on the area of affected land and within two hundred (200) feet of the affected land.

(h) In conjunction with Exhibit I - Soils Information, Subsection 6.4.9, soils information may be presented on a map in this section;

(i) Aerial photos, if available, may be included in this section.

- ***Please show the locations and expected volumes of the topsoil and overburden stockpiles on the Mining Plan map.***
- ***Please identify all mining and processing related features and structures (site roads, stockpile areas, processing areas, cement/asphalt facilities, offices, equipment maintenance facilities, etc) currently located within the permit on either/both the pre-mining and mining plan maps.***
- ***Please show the 16.12 acre "buffer zone" referred to in the first paragraph of the mining plan on the mining plan map***
- ***Please show how mining activity, and/or phasing is anticipated to proceed on the Mining Plan map.***

EXHIBIT D - Mining Plan (Rule 6.4.4): The mining plan shall supply the following information, correlated with the affected lands, map(s) and timetables:

(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;

(b) earthmoving;

(c) all water diversions and impoundments; and

(d) the size of area(s) to be worked at any one 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. You will not be required to meet specific dates for initiation, or completion of mining in a phase as may be identified in the timetable. This does not exempt you from complying with the performance standards of Section 3.1. Such timetable should include:

(i) an estimate of the periods of time which will be required for the various stages or phases of the operation;

(ii) a description of the size and location of each area to be worked during each phase; and

(iii) outlining the sequence in which each stage or phase of the operation will be carried out.

(Timetables need not be separate and distinct from the mining plan, but may be incorporated therein.)

(f) A map (in Exhibit C - Pre-Mining and Mining Plan Maps(s) of Affected Lands, Subsection 6.4.3) may be used along with a narrative to present the following information:

(i) nature, depth and thickness of the ore body or deposit to be mined and the thickness and type of overburden to be removed (may be marked "CONFIDENTIAL," as per Paragraph 1.3(3)); and

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

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

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

(i) Specify if explosives will be used in conjunction with the mining (or reclamation). In consultation with the Office, the Applicant must demonstrate pursuant to Rule 6.5(4), Geotechnical Stability Exhibit, that off-site areas will not be adversely affected by blasting.

(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 upgraded to support the mining operation. Describe any associated drainage and runoff conveyance structures to include sufficient information to evaluate structure sizing.

- *Please fully address items (d), (e), (f), (g), (h) and (j) as listed above. Also please modify the existing map, or provide additional mining plan maps, as needed to clearly convey the information provided.*
- *Please identify, and show on the mining plan map, where the topsoil and overburden stockpiles discussed in the mining plan will be located.*
- *Does Martin Marietta conduct any kind of “real time” or concurrent stability monitoring of mined rock face areas (such as LiDAR scans or periodic photogrammetry) to monitor for high wall movement or potential stability issues? How are mined and reclaimed areas monitored and determined to be stable “long term” for the purposes of reclamation?*

EXHIBIT E - Reclamation Plan (Rule 6.4.5):

(1) In preparing the Reclamation Plan, you should be specific in terms of addressing such items as final grading (including drainage), seeding, fertilizing, revegetation (trees, shrubs, etc.), and topsoiling. You are encouraged to allow flexibility in your plans by committing to ranges of numbers (e.g., 6"-12" of topsoil) rather than specific figures.

(2) The Reclamation Plan shall include provisions for, or satisfactory explanation of, all general requirements for the type of reclamation proposed to be implemented by you. Reclamation shall be required on all the affected land. The Reclamation Plans shall include:

(a) A description of the type(s) of reclamation you propose 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;

(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. In those instances where the post-mining land use is for industrial, residential, or commercial purposes and such use is not reasonably assured, a plan for

revegetation shall be submitted. Appropriate evidence supporting such reasonable assurance shall be submitted;

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

(d) Where applicable, plans for topsoil segregation, preservation, and replacement; for stabilization, compaction, and grading of spoil; and for revegetation. The revegetation plan shall contain a list of the preferred species of grass, legumes, forbs, shrubs or trees to be planted, the method and rates of seeding and planting, the estimated availability of viable seeds in sufficient quantities of the species proposed to be used, and the proposed time of seeding and planting;

(e) A plan or schedule indicating how and when reclamation will be implemented. Such plan or schedule shall not be tied to any specific date but shall be tied to implementation or completion of different stages of the mining operation as described in Subparagraph 6.4.4(1)(e). The plan or schedule shall include:

(i) An estimate of the periods of time which will be required for the various stages or phases of reclamation;

(ii) A description of the size and location of each area to be reclaimed during each phase; and

(iii) An outline of the sequence in which each stage or phase of reclamation will be carried out. (The schedule need not be separate and distinct from the Reclamation Plan, but may be incorporated therein.)

(f) A description of each of the following:

(i) Final grading - specify maximum anticipated slope gradient or expected ranges thereof;

(ii) Seeding - specify types, mixtures, quantities, and expected time(s) of seeding and planting;

(iii) Fertilization - if applicable, specify types, mixtures, quantities and time of application;

(iv) Revegetation - specify types of trees, shrubs, etc., quantities, size and location; and

(v) Topsoiling - specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.

- ***The final in-lake slopes proposed are steeper, in some parts significantly, than what is recommended by Rule 3.1.5(7) which states: "... In all cases where a lake or pond is produced as a portion of the Reclamation Plan, all slopes, unless otherwise approved by the Board or Office, shall be no steeper than a ratio of 2:1 (horizontal to vertical ratio), except from 5 feet above to 10 feet below the expected water line where slopes shall be not steeper than 3:1. If a swimming area is proposed as a portion of the Reclamation Plan, the slope, unless otherwise approved by the Board or Office, shall be no steeper than 5:1 throughout the area proposed for swimming, and a slope no steeper than 2:1 elsewhere in the pond." Please provide a rationale for the steeper final slopes proposed in the current submittal.***
- ***Is a "swimming area" part of the final reclamation plan for this site?***
- ***The reclamation plan discusses reconstruction of natural drainages that will take place on the "exposed floor" area, however, no information is provided as to what criteria will be used to design these drainages or how they will be constructed. These features are also not shown on the***

Reclamation Plan Map provided. Please commit to providing design specifications and construction plans for any/all French drains, culverts, etc. planned for reconstructing surface drainages for final reclamation as Technical Revisions to the permit, prior to installation.

- ***Please provide an approximate number per acre and species list for bushes and trees to be planted during reclamation. DRMS needs this information for use in calculating the revegetation portion of the reclamation bond.***
- ***Please also provide the preferred seed mix provided by Jefferson County. If Jefferson County's seed mix is not currently available, please state so, and the provided seed mix will be utilized for bond calculation.***
- ***Please provide a weed control plan for the site during mining and reclamation activities. The plan should include, at a minimum, what species are expected and how they will be controlled/eradicated.***

EXHIBIT F - Reclamation Plan Map (Rule 6.4.6): The map(s) of the proposed affected land, by all phases of the total scope of the mining operation, shall indicate the following:

(a) The expected physical appearance of the area of the affected land, correlated to the proposed mining and reclamation timetables. The map must show proposed topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of all reclaimed lands; and

(b) Portrayal of the proposed final land use for each portion of the affected lands.

- ***Please make the line type/thickness depicting the anticipated final water level more easily visible – it is currently very difficult to find/follow.***
- ***Please color code the different final slopes/areas discussed in the text and legend on the provided map.***
- ***Please provide the locations of the post-reclamation service roads discussed in the Reclamation Plan***
- ***Please show the proposed final course of Jackson Gulch, along with other proposed surface drainage-ways on the Reclamation Plan Map***

EXHIBIT G - Water Information (Rule 6.4.7):

(1) If the operation is not expected to directly affect surface or groundwater systems, a statement of that expectation shall be submitted.

(2) If the operation is expected to directly affect surface or groundwater systems, you shall:

(a) Locate on the map (in Exhibit C) tributary water courses, wells, springs, stock water ponds, reservoirs, and ditches on the affected land and on adjacent lands where such structures may be affected by the proposed mining operations;

(b) Identify all known aquifers; and

(c) Submit a brief statement or plan showing how water from dewatering operations or from runoff from disturbed areas, piled material and operating surfaces will be managed to protect against pollution of

either surface or groundwater (and, where applicable, control pollution in a manner that is consistent with water quality discharge permits), both during and after the operation.

(3) You must provide an estimate of the project water requirements including flow rates and annual volumes for the development, mining and reclamation phases of the project.

(4) You must indicate the projected amount from each of the sources of water to supply the project water requirements for the mining operation and reclamation.

(5) You must affirmatively state that the Operator/Applicant has acquired (or has applied for) a National Pollutant Discharge Elimination System (NPDES) permit from the Water Quality Control Division at the Colorado Department of Health, if necessary.

- *SEO has provided comments to DRMS on the amendment application (included with this letter) which include the requirement that “The Applicant must submit a water well permit application for a dewatering system (GWS-45).”*
- *SEO also indicated that additional leak testing of the expanded excavation may be required when mining is complete and prior to use as a storage reservoir.*
- *Please acknowledge and commit to complying with all SEO requirements, including those contained in the SEO approval letter included in TR03.*

EXHIBIT H - Wildlife Information (Rule 6.4.8):

(1) In developing the wildlife information, you may wish to contact the local wildlife conservation officer. You must include in this Exhibit, a description of the game and non-game resources on and in the vicinity of the application area, including:

- (a) a description of the significant wildlife resources on the affected land;
 - (b) seasonal use of the area;
 - (c) the presence and estimated population of threatened or endangered species from either federal or state lists; and
 - (d) a description of the general effect during and after the proposed operation on the existing wildlife of the area, including but not limited to temporary and permanent loss of food and habitat, interference with migratory routes, and the general effect on the wildlife from increased human activity, including noise.
- *The wildlife study provided focuses primarily on federally threatened and endangered species. It may be useful to provide some additional discussion of other seasonal wildlife uses of the proposed amendment area by non-threatened species (if any), and the extent of permanent vs. temporary loss of habitat. The CPW comment letter has been included with this adequacy letter.*

EXHIBIT I - Soils Information (Rule 6.4.9): In consultation with the Soil Conservation Service or other qualified person, you must indicate on a map (in Exhibit C) or by a statement, the general type, thickness and distribution of soil over the affected land. Such description will address suitability of topsoil (or other material)

for establishment and maintenance of plant growth. The above information shall satisfy "completeness" requirements for purposes of determination of date of filing.

- ***Adequate as submitted***

EXHIBIT J - Vegetation Information (Rule 6.4.10):

(1) You must include in this Exhibit a narrative of the following items:

- (a) descriptions of present vegetation types, which include quantitative estimates of cover and height for the principal species in each life-form represented (i.e., trees, tall shrubs, low shrubs, grasses, forbs);
- (b) the relationship of present vegetation types to soil types, or alternatively, the information may be presented on a map; and
- (c) estimates of average annual production for hay meadows and croplands, and carrying capacity for range lands on or in the vicinity of the affected land, if the choice of reclamation is for range or agriculture.

(2) You must show the relation of the types of vegetation to existing topography on a map in Exhibit C. In providing such information, you may want to contact the local Soil Conservation District.

- ***Adequate as submitted***

EXHIBIT K - Climate (Rule 6.4.11): Provide a description of the significant climatological factors for the locality.

- ***Adequate as submitted***

EXHIBIT L - Reclamation Costs (Rule 6.4.12): All information necessary to calculate the costs of reclamation must be submitted and broken down into the various major phases of reclamation. You must provide sufficient information to calculate the cost of reclamation that would be incurred by the state.

- ***DRMS will evaluate the reclamation bond calculation when the other adequacy issues have been resolved. The following is the kind of information DRMS will likely need at a minimum:***
 - ***What is the maximum benched working area within the mining area that will require reclamation?***
 - ***How much overburden will be needed to rebuild the required slopes?***
 - ***How much topsoil (CY) will be need to be replaced on the re-sloped area?***
 - ***How far are the topsoil and overburden stockpiles from where they will be utilized for reclamation (haul/push distance)?***
 - ***How many acres will need to be graded/ripped/topsoiled/revegetated for the "exposed floor area"?***
 - ***Size and construction type for on-site structures to be removed, (sq ft, slab on grade, slab thickness, etc)***

- ***Please note that the DMRS cost estimation software is geared toward a “task based” reclamation approach, requiring parameters such as “how many cubic yards of what kind of material is moved how far over what kind of terrain and by what equipment”. The reclamation cost information provided seems to be based on more of an “hours required” approach to move an amount of material with the provided equipment/labor. Some discussion/meeting may be required to reconcile these differing methods and obtain an accurate bond calculation.***

EXHIBIT M - Other Permits and Licenses (Rule 6.4.13): A statement identifying which of the following permits, licenses and approvals the Operator/Applicant holds or will be seeking in order to conduct the proposed mining and reclamation operations: effluent discharge permits, air quality emissions permits, radioactive source material licenses, the State Historic Preservation Office clearance, disposal of dredge and fill material (404) permits, permit to construct a dam, well permits, highway access permits, U.S. Forest Service permits, Bureau of Land Management permits, county zoning and land use permits, and city zoning and land use permits.

- ***Please include the well permit required by SEO in their comment letter.***

EXHIBIT N - Source of Legal Right to Enter (Rule 6.4.14): You must provide the source of your legal right to enter and initiate a mining operation on the affected land.

- ***Adequate as submitted***

EXHIBIT O - Owner(s) of Record of Affected Land (Surface Area) and Owners of Substance to be Mined (Rule 6.4.15): Please submit a complete list of all owners or show the owners on your map in Exhibit C.

- ***Adequate as submitted***

EXHIBIT P - Municipalities Within Two Miles (Rule 6.4.16): Please list any municipality(s) within two miles of the proposed mining operation and address of the general office of each municipality.

- ***Adequate as submitted***

EXHIBIT Q - Proof of Mailing of Notices to County Commissioners and Soil Conservation District (Rule 6.4.17): Please submit proof of actual delivery or proof of mailing by Certified Mail, return receipt requested, of Notice of the Application to the local Board of County Commissioners and, if the mining operation is within the boundaries of a Soil Conservation District, to the Board of Supervisors of the Soil Conservation District.

- ***Adequate as submitted***

EXHIBIT R - Proof of Filing with County Clerk and Recorder (Rule 6.4.18): You must submit an affidavit or receipt indicating the date on which the application was placed with the local County Clerk and Recorder.

- ***Adequate as submitted***

EXHIBIT S - Permanent Man-Made Structures (Rule 6.4.19): Please note that roadways and above-ground or underground utilities (if present) within 200 feet of the proposed affected area are considered permanent man-made structures. In accordance with Rule 6.4.19, when mining operations will adversely affect the stability of any significant, valuable and permanent man-made structure located within 200 feet of the affected area, the applicant may either:

(a) Provide a notarized agreement between the applicant and the person(s) having an interest in the structure, that the applicant is to provide compensation for any damage to the structure;

or

(b) Where such an agreement cannot be reached, the applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation.

- ***Please provide evidence (receipt/tag for certified letter to structure owners) that a notarized agreement between all structure owners and the applicant was pursued.***
- ***If an agreement is unable to be reached a geotechnical assessment may be provided to demonstrate that the structures shall not be damaged. You must provide information sufficient to demonstrate that the stability of any structures located within two hundred (200) feet of the operation or affected land will not be adversely affected. DRMS will also review the stability assessment provided for Rule 6.5 for this purpose.***

6.5 GEOTECHNICAL STABILITY EXHIBIT

(1) On a site-specific basis, an Applicant shall be required to provide a geotechnical evaluation of all geologic hazards that have the potential to affect any proposed impoundment, slope, embankment, high-wall, or waste pile within the affected area. A geologic hazard is one of several types of adverse geologic conditions capable of causing damage or loss of property and life. The Applicant may also be required to provide a geotechnical evaluation of all geologic hazards, within or in the vicinity of the affected lands, which may be de-stabilized or exacerbated by mining or reclamation activities.

(2) On a site-specific basis, an Applicant shall be required to provide engineering stability analyses for proposed final reclaimed slopes, high-walls, waste piles and embankments. An Applicant may also be required to provide engineering stability analyses for certain slopes configuration as they will occur during operations, including, but not limited to embankments. Information for slope stability analyses may include, but would not be limited to, slope angles and configurations, compaction and density, physical characteristics of earthen materials, pore pressure information, slope height, post-placement use of site, and information on structures or facilities that could be adversely affected by slope failure.

(3) Where there is the potential for off-site impacts due to failure of any geologic structure or constructed earthen facility, which may be caused by mining or reclamation activities, the Applicant shall demonstrate through appropriate geotechnical and stability analyses that off-site areas will be protected with appropriate factors of safety incorporated into the analysis. The minimum acceptable safety factors will be subject to approval by the Office, on a case-by-case basis, depending upon the degree of certainty of soil or rock strength determinations

utilized in the stability analysis, depending upon the consequences associated with a potential failure, and depending upon the potential for seismic activity at each site.

(4) At sites where blasting is part of the proposed mining or reclamation plan, the Applicant shall demonstrate through appropriate blasting, vibration, geotechnical, and structural engineering analyses, that off-site areas will not be adversely affected by blasting.

The Division of Reclamation, Mining and Safety engineering staff (DRMS) have reviewed the Rule 6.5 Geotechnical Stability Exhibit for Amendment 4 to Permit M-1974-004, Martin Marietta Materials, Inc. (MMM) Specification Aggregates Quarry, dated April 5, 2022 and prepared by MMM.

The review consisted of comparing the application content with specific requirements of C.R.S 34-32.5-116(4)(i), Rule 6.5 of the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials, and Policies of The Mined Land Reclamation Board, Section 30.0 – Factors of Safety for Slope Stability/Geotechnical Analyses (MLRB Policy 30). Any inadequacies are identified below along with suggested actions to correct them.

1. Commitment: The DRMS acknowledges the Permittee's commitment to "continue to provide a Structural Geology Evaluation annually to DRMS. Martin Marietta will verify the conditions in Area 2 once safe entry can be made into the area and prior to mining below the point where permanent benches will be left (approximately mean sea level 6,500 feet in elevation). Any supplemental data and design changes, if needed, will be submitted to DRMS as a technical revision."
2. Blasting Plan: The last paragraph on p. 6 states a blast plan prepared in accordance with CFR 30, Part 56 Subpart E is in place for blasting operations. The DRMS acknowledges the "General Blasting Procedures" section (beginning at the bottom of p. 5 address much of the Key Elements of a Blasting Plan (attached), it does not address all of these items. Please provide a copy of the referenced in place blast plan.

Geotechnical Stability Report – Appendix A, prepared by Schnabel Engineering

3. Fault Locations: Several references to faults being shown on Figure 3 are made in Section 3.0 Location and Geologic Setting (paragraphs 4, 5 and 8 on p. 3). No faults are identified or labeled on Figure 3. Please provide an updated Figure 3 with the fault locations shown.
4. Friction Angle: Paragraph 6.3 indicates basic friction angle of the discontinuities ranged from 13.7° to 49.3° with a mean value of 28°. The range appears to be quite large with the maximum being nearly twice the mean and the minimum being less than half the mean. This paragraph also mentions results do not include the two direct shear tests conducted on samples with clay material along the foliation plane, which produced an average friction angle of 5° that were not included. It would seem a sensitivity analysis might be warranted, given the variability and the presence of clay materials found adjacent to foliation planes in at least two samples. Was a sensitivity analysis performed? If so, please provide the results. If not, please explain why.
5. Results and Discussion: Section 6.4.2 includes two recommendations from Schnabel related to future activities needing verification:

- a. The persistence of Set P-6 should be verified during excavation at Area 1.
- b. a Schnabel engineer should be engaged as mining activities begin to confirm the assumptions in our analyses are correct.

Please provide a commitment in writing to adhere to these two items requiring verification.

6. Table 6.3: This table provides a summary of the number of identified sets contributing to the specific failure type for both the 1H:1V (45°) and 0.5H:1V (63°) considered highwall configurations. Based on the summarized results, there is a significantly greater presence of possible wedge failures for the 63° configuration. How are these additional potential failures going to be mitigated?
7. Slope Configurations: Paragraph 7.2 references three highwall sections (E, F and G) for which limit equilibrium slope analyses were performed. Based the locations of these sections shown on Figures 3 and 4, it appears sections E and F are very similar, while no section was analyzed in the southeast “corner” of the proposed pit (a section that might run nearly north-south [180°] to more SSE [130°]). Why were two similar sections evaluated and not one with a different orientation as suggested here?
8. Geologic Strength Index: The paragraph below Table 7-1 states “It should be noted that reducing the GSI to a value of 50 reduces the FS observed in our analyses.” This is in comparison to the GSI = 55 used for the limit equilibrium analyses. This statement suggests a sensitivity analysis may have been performed. Please elaborate on the impact on stability the lower GSI has on the factors of safety.
9. Conclusions and Recommendations: The last paragraph of Section 8.0 states “the slopes will likely experience minor raveling as a result of small-scale failures planar, wedge, and toppling, particularly in the bench faces prior to reclamation.”
 - a. Are permanent catch benches sufficient to contain expected small raveling/sloughing rock fall?
 - b. How will reclamation reduce the frequency of these small scale failures?
10. Appendix A Figures: All four map figures (Figures 1 through 4) include a draft stamp in the lower corner. Please provide “final” permit level figures.

Blast Impact Analysis– Appendix B, prepared by Vibra-Tech Engineers, Inc.

11. Locations of Selected Evaluations: The blast impact analyses focused on the Avalanche Harley Davidson building (located approximately 1181 feet to the closest point on the proposed mine) and the Highway 40 Exxon station (located approximately 836 feet to the closest point on the proposed mine boundary). A review of Google Maps in the area shows the Origin Hotel Red Rocks (roughly 640 feet from the mine boundary) which appears to be a four-story structure. As this building is taller and closer than the buildings evaluated, why was it not evaluated?
12. Existing Seismograph Locations: The fifth paragraph of the executive summary references “two other locations” for seismographs around the Spec Agg Quarry, making the total number of seismographs equal to five. Figures A-1 through A-5 show only three seismographs. Where are the other two?

If either you or the applicants have any questions regarding the comments above, please call Tim Cazier at (303) 328-5229 (mobile #).

Additional Information: You will also need to provide the Division with proof of notice publication as well as proof of notice to surrounding property owners within 200' of the permit. Any letters from other commenting agencies/entities received by the Division to-date have been included with this correspondence for you to review.

This concludes the Division's preliminary adequacy review of this application. This letter shall not be construed to mean that there are no other technical deficiencies in your application. Other issues may arise as additional information is supplied. Please remember that the decision date for this amendment application is July 25, 2022. 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 will be denied. If you have any questions, please contact me at (303) 229-9414.

Sincerely,

Eric Lott

Eric Scott – Environmental Protection Specialist

CC:

Enclosures: SEO Division of Water Resources comment letter dated 5/11/22
History Colorado comment letter rcvd 5/6/22
CPW comment email received 6/15/22



Response to Construction Materials Reclamation Permit Amendment Application Consideration

DATE: May 11, 2022
TO: Eric C. Scott, Environmental Protection Specialist
FROM: Javier Vargas-Johnson, Water Resources Engineer
RE: Specification Aggregates Quarry, File No. M-1974-004 - AM04
Applicant/Operator: Martin Marietta Materials, Inc., (970)612-6232
Section 15, Twp 4 South, Rng 70 West, 6th P.M., Jefferson County
Water Division 1, Water Districts 7 and 9

CONDITIONS FOR APPROVAL

- ☒ A dewatering system well permit must be obtained for the pumping and discharge of any groundwater at the site. If the groundwater is not returned to the stream system with efforts to ensure minimal consumption, an approved substitute water supply plan or decreed plan for augmentation will be required.
 - ☒ Any stormwater runoff intercepted by this operation that is not diverted or captured in priority must be released to the stream system within 72 hours; otherwise the operator will need to make replacements for evaporation.
-

COMMENTS: The Applicant operates the Specification Aggregates Quarry under Colorado Division of Reclamation Mining and Safety (DRMS) permit no. M-1974-004. The subject amendment request seeks to add 64.1 acres to the currently permitted 325.2 acres, for a total of 389.3 permitted acres. The 64.1 acres are located south of, and immediately adjacent to, the existing permit area.

The Applicant proposes to mine 48 out of the 64.1 acres being added to the permit. The remaining 16.1 acres will be an undisturbed buffer area. Only mining activities will be allowed on the acreage being added, with all processing activities to be located within the existing permit area. The Applicant will utilize the “mine from behind” technique and concurrent reclamation. The “mine from behind” technique will remove the crystalline rock in benches that will average 35 to 50 feet in height, until the lowest proposed level of the quarry is reached at an elevation of 5,400 feet.

Water for mining operations and dust control purposes will be obtained from the Spec Agg Pit and the Magic Mountain Reservoirs located within the existing Specification Aggregates Quarry site. Although the Spec Agg Pit is not a lined reservoir, on November 15, 2018, the Division of Water Resources certified that the Spec Agg Pit achieved the design standard for groundwater seepage for lined reservoirs in accordance with the August 1999 State Engineer Guidelines for Lining Criteria for Gravel Pits. After this proposed enlargement, the Spec Agg Pit will be much larger than when the leakage test was performed. Therefore, this office may require that the Applicant perform a second leak test once the mining is complete and prior to the use of the enlarged Spec Agg Pit as a storage reservoir. The two reservoirs are included in a plan for augmentation originally decreed in Division 1 Water Court Consolidated Case Nos. 90CW0215 and



91CW0047 and subsequently amended in Water Court Case No. 13CW3053. The augmentation plan replaces depletions at the Specification Aggregates Quarry site due to evaporation from the Magic Mountain Reservoir, Spec Agg Pit and Spec Agg Sedimentation Ponds, and operational losses from dust control, concrete batching and other industrial uses associated with the site. Total depletions at the covered facilities are limited to 200 acre-feet per year. Depletions are replaced using the Applicant's water rights previously changed for augmentation use, water leased from Coors Brewing Company, and water released from Magic Mountain Reservoir and/or the Spec Agg Pit. Magic Mountain Reservoir has a decreed storage volume of 147 acre-feet, and the Spec Agg Pit has a decreed storage volume of 320 acre-feet. The Spec Agg Sedimentation Ponds were constructed to contain stormwater runoff from the quarry area and have a decreed surface area of 1.1 acres. The Memorandum prepared by Bishop Brogden Associates, Inc., states that the proposed mining activities on the subject property are expected to increase surface drainage flows to the Spec Agg Pit. Any increase in surface water flows accruing to the Spec Agg Pit are proposed to either be stored under the Applicant's existing water rights or released downstream. Any unauthorized inflows must be released to the stream as soon as practical, but within 72 hours unless a different time frame is approved in writing by the water commissioner or division engineer.

The Applicant proposes to dewater the enlarged Spec Agg Pit reservoir only to the extent necessary to facilitate mining. The pit is equipped with a pump and pipeline to lift water out to the quarry and all pumping from the pit is recorded with a totalizing flow meter. The groundwater must be returned to the stream system and may not be stored under the Applicant's existing water rights as groundwater is not a decreed source for the two reservoirs. The existing dewatering operations are considered to meet the definition of a dewatering system and must be properly permitted with our office. The Applicant must submit a water well permit application for a dewatering system (GWS-45).

This office has no concerns regarding the requested amendment so long as the existing plan for augmentation is operated in accordance with its decreed terms and conditions and a permit is obtained for the dewatering system. The Division of Reclamation, Mining and Safety and/or the Applicant may contact the State Engineer's Office with any questions.



History Colorado

Eric C. Scott
Division of Reclamation, Mining and Safety
Department of Natural Resources
1313 Sherman St, Room 215
Denver, CO 80203

Re: Specification Aggregates Quarry – File No. M-1974-004, Martin Marietta Materials, Inc. Amendment Application (AM-4). AM04 to add 64.13 ac to south side of currently permitted area (HC#41152)

Dear Mr. Scott:

We received your letter dated April 26, 2022 initiating consultation with our office on the subject action pursuant to the Colorado State Register Act – Colorado Revised Statute (CRS) 24-80.1 et. seq.

A search of our database indicates five historic sites, including two historic camps (5JF.2114 and 5JF.2117) and three historic isolates (5JF.2115, 5JF.2116, and 5JF.2180), are located within or adjacent the amended permit area. Each of these properties were determined not eligible for listing to the National Register of Historic Places. As there are no properties of historical significance included or nominated for inclusion in the state register within the proposed permit area, a finding of no adverse effect is appropriate.

As most of Colorado has not been inventoried for cultural resources, our files contain incomplete information. Consequently there is the possibility that as yet unidentified cultural resources exist within the proposed permit area. The requirements under CRS 24-80 part 13 apply and must be followed if human remains are discovered during ground disturbing activities.

We thank you for the opportunity to comment. If we may be of further assistance, please contact Holly McKee-Huth, Cultural Resource Information/Section 106 Compliance at (303) 866-4670/holly.mckee@state.co.us.

Sincerely,

Dawn DiPrince
State Historic Preservation Officer



CPW's response to DRMS's Martin Marietta mine (I-70 & US40) [Specification Aggregates Quarry - File No. M-1974-004, Martin Marietta Materials, Inc.]

1 message

Marette - DNR, Brandon <brandon.marette@state.co.us>

Wed, Jun 15, 2022 at 4:57 PM

To: Eric Scott - DNR <eric.scott@state.co.us>

Cc: Tim Woodward - DNR <tim.woodward@state.co.us>, Joe Halseth - DNR <joseph.halseth@state.co.us>, Mark Lamb - DNR <mark.lamb@state.co.us>, Lance Carpenter - DNR <lance.carpenter@state.co.us>

Good afternoon Eric,

Thank you for the opportunity to review and provide comments for the proposed DRMS application that would allow for a 48-acre expansion and 16-acre buffer of the Spec Aggregate Quarry. The property is in the northern portion of Jefferson County Open Space's (JCOS) Matthews/Winters Park, which is currently closed to the public. The Matthews/Winters JCOS property is adjacent to the existing Martin Marietta mine to the north, the Missionary Sisters of the Sacred Heart (Cabrini Shrine) on the west, by I-70 on the south, and US Highway 40 on the east. The proposed land exchange would transfer 60 acres of the Matthews/Winters property to Martin Marietta for mining. After mining is complete, Martin Marietta would return the mined and reclaimed property to JCOS.

The mission of CPW is to perpetuate the wildlife resources of the state, to provide a quality state parks system, and to provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado's natural resources. CPW has a statutory responsibility to manage all wildlife species in Colorado, and to promote a variety of recreational opportunities throughout Colorado. One way we achieve this goal is by responding to referral comment requests, as is the case for this project.

CPW's main concern is the permanent loss of 64 acres of four (4) mapped High Priority Habitats: Elk and Mule Deer Severe Winter Range and Winter Concentration Areas. Our secondary concern is the subsequent distribution response of the large resident and wintering elk herd and smaller mule deer herds into less desirable habitats.

- This proposed disturbance area is currently utilized year-round by 150-200 elk, and is mapped as elk "overall range" and "severe winter range" which shows the importance of these lands for elk, especially in winter. Elk utilization and numbers have increased dramatically over the last 10 years as documented by local District Wildlife Managers and managers of the Cabrini Shrine. Yearly census work and collar data confirm elk movements and numbers.
- A priority for CPW in this area is to manage elk population levels, reduce chronic wasting disease prevalence, and prevent game damage complaints. Converting JCOS property to mined lands will result in habitat loss and may impact CPW's ability to manage elk in this area. CPW relies on hunter harvest to manage big game populations. Herds in this area have grown in size due to lack of harvest because of the minimal access for hunters and habitat loss. CPW, in partnership with Cabrini Shrine and JCOS, started a novice hunter program and this effort has reduced game damage by dispersing elk using a limited number of novice adult hunters. Harvest on the land proposed for exchange has been an important piece of the hunter program's success. CPW is interested in working with the mine to continue hunting on the proposed land exchange property to manage elk populations until active mining commences. Maintaining harvest on this property could help prevent the elk from overusing the critical winter range that remains and keep the herd(s) to the west of Golden.
- There are already a lot of human-elk conflicts associated with this herd, and eliminating this habitat could shift elk herds to other adjacent areas where greater conflict may occur. Currently, elk are pioneering to the east as far as the Rolling Hills Golf Course (McIntyre Street and W. 32nd Avenue). Such movement and continued change in distribution into urban areas east of Highway 6 is expected to increase the number of resident (non-migratory) elk. Resident elk in urban settings results in increased elk-human conflicts, which are exceedingly difficult to manage in populated areas where hunting is not feasible.
- Even though mule deer can cause fewer conflicts with humans and are more adaptable within the urban fringes, CPW's district wildlife managers and biologists similarly need to manage foothills mule deer herds to reduce chronic waste disease prevalence.

CPW also recommends that the revegetation mix for the eventual reclamation include native seed, composed of both grass and forb species found in the area. That way, reclaimed habitats that are once again available and accessible to these elk herds will lessen their impact on eastern golf courses and residents' lawns.

Proposals such as this one may be relatively small in size but they contribute to cumulative habitat loss for all wildlife species. Habitat loss and fragmentation from developments can be offset with habitat protection adjacent to or offsite of development. CPW and JCOS are currently collaborating on several long-term conservation strategies that will protect wildlife habitats from development along the Front Range. The addition of other conserved lands in this area can increase important wildlife habitats and provide habitat connectivity to offset the loss of habitat from this development. CPW appreciates the ability to consult with DRMS on wildlife management issues as we collaboratively discuss the responsible development of this quarry with protecting year-round and wintering elk habitats.

If you have any questions regarding this letter, please feel free to contact me, or local District Wildlife Manager Tim Woodward at tim.woodward@state.co.us.

Regards,

Brandon B. Marette, CWB®
Northeast Region Energy Liaison and Land Use Coordinator



**LIVE LIFE
OUTSIDE**

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[CPW's Energy Webpage](#)

[CPW's Wildlife Movements Webpage](#)



THINK SAFETY FIRST!



*(*Upcoming days off: June 21-July 1)*