

**South Carolina Department of Environmental Services
Summary Response to Comments**

Vulcan Construction Materials, LLC | I-002407 | Orangeburg Limestone Quarry
Orangeburg County, South Carolina
August 15, 2024

This summary is being provided in conjunction with the South Carolina Department of Health and Environmental Control's (SCDES) decision to approve the permit application and issuance of a permit for the Orangeburg Limestone Quarry located along Addidas Road in Eutawville, Orangeburg County, S.C. The approved operation of this mine site is to excavate limestone.

SCDES's mission is to protect and promote the health of the public and the environment. Through the passage of environmental statutes and regulations, the S.C. General Assembly has established the conditions and criteria that SCDES follows in the permitting process. SCDES's role is to ensure that a proposed project meets all regulatory requirements that have been established in order to be protective of human health and the environment. If it has been determined that an applicant or application has met all applicable regulatory requirements, SCDES does not have the authority to withhold the issuance of a permit.

As part of the permitting process, SCDES engages other state and federal agencies, the surrounding communities, and the general public prior to making a final permit decision in order to:

- 1) Provide information about the proposed permitted activities in the communities;
- 2) Give agencies, community members, and other interested parties an opportunity to submit relevant information to SCDES for consideration prior to making a final permit decision; and,
- 3) Provide an opportunity to submit other concerns to the attention of SCDES and the applicant.

Public meetings and public hearings are methods SCDES uses to hear concerns and receive comments during the permitting process. A public meeting is an informal conversation with SCDES staff, to include questions and answers. A public hearing is a formal opportunity for comments to be stated and recorded by a court reporter for inclusion in the official file.

SCDES held an in-person public meeting and a public hearing at the Eutawville Community Center on February 8, 2024. SCDES also extended the period to accept written comments through February 23, 2024.

SCDES values all public comments received during the permitting process and is committed to addressing and considering all relevant information prior to making a final permit decision. Public input is an important part of the permitting process and can result in changes to permit conditions and operational practices if a permit is issued.

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The following responses are being provided in response to comments received during the public comment period, the public meeting, and the public hearing for Orangeburg Limestone Quarry.

Section 1: The South Carolina Mining Act

The principal law governing mining in this state is Title 48 Chapter 20: The South Carolina Mining Act. The legislative purpose of the Act is to provide that: (1) the usefulness, productivity, and scenic value of all lands and waters involved in mining within the state receive the greatest practical degree of protection and restoration; and that (2) no mining may be carried on in the state unless plans for the mining include reasonable provisions for protection of the surrounding environment and for reclamation of the area of land affected by mining. A complete copy of the Act can be found here:

<https://www.scstatehouse.gov/code/t48c020.php>

The Act provides specific criteria for review of mine permit applications by SCDES. The Act does not supersede local zoning ordinances. Issues related to zoning (i.e., property value and industrial development) are under the jurisdiction of county and municipal planning departments and governed by zoning and land use regulations. SCDES has not been given the authority to consider the effect of a mining operation on property values. SCDES is required to evaluate the application in a timely manner and to consider relevant environmental issues.

The Act allowed the development of regulations to establish minimum standards for mining operations. Regulations 89-10 through 89-350 became effective on June 24, 1983 and have been subsequently modified. These regulations outline the requirements for permitting the design, construction, operation, maintenance, reclamation, and closure of mine sites. The complete list of regulations can be found here:

https://scdhec.gov/sites/default/files/Library/Regulations/R.89-10_89-350.pdf

In reaching the decision to approve the permit application and issuance of a permit for the Vulcan Limestone Quarry, SCDES staff reviewed all information contained in the application, supplemental information submitted by the applicant, and all agency and public comments to ensure that the requirements of the Act and Regulations had been met. SCDES has determined that the applicant has met the applicable requirements and is approved to construct and operate the mine in accordance with the conditions and limits set forth in Permit No. I-002407.

Section 2: Additional Terms and Conditions

In response to information contained within the application, as well as by comments received by other agencies and the communities during the public comment period, SCDES incorporated additional terms and conditions in the final permit. These additional terms and conditions are as follows:

1. Temporary or permanent placement of refuse and debris (e.g., concrete, brick, asphalt) from off-site locations is prohibited without approval by SCDES. Topsoil fill approved by SCDES may be brought in from off-site sources only for the purposes of mine land reclamation.
2. The operator shall maintain a 50-foot buffer around archaeological sites 38OR0420 and 38OR421, as shown on the approved mine map.
3. A revised mine map, reclamation map, and reclamation schedule must be submitted and approved by the Department prior to initiating any mining activity in Future Reserves.
4. Seven (7) groundwater monitoring wells around the perimeter of the site shall be installed as shown on the mine map. If, in the future, SCDES determines additional monitoring wells should be installed, the operator shall comply with the department's request.

The monitoring wells shall be installed by a certified well driller in accordance with R.61-71: *Well Standards and Regulations*. The surveyed elevation of the measuring point, relative to an established benchmark, must be submitted with the driller/geologist's log for each well. The driller/geologist's log must also include the elevation of the top of the limestone layer to use as a compliance point for groundwater elevation.

Groundwater monitoring wells shall be measured monthly. Groundwater elevations shall be normalized to mean sea level, and hydrographs plotted for each monitoring well. These data shall be submitted quarterly to the Division of Mining and Solid Waste Management by the 28th of the first month of the following quarter. The report should include a record of daily precipitation measurements, with monthly rainfall totals graphed to facilitate comparison to well hydrographs.

5. The operator shall maintain groundwater elevation at least two (2) feet above the top of the limestone layer at all of the perimeter compliance wells. If the groundwater elevation falls below two (2) feet above the top of the limestone layer, the operator shall notify the department within twenty-four (24) hours and cease dewatering activities at the site until the groundwater level rebounds back above the compliance point.
6. The operator shall notify the department prior to excavation in Phase 4. The operator must submit to the Department feasibility documentation to show that the operator can remain in compliance with AT&C #4 and #5 prior to the initiation of activity in this phase.
7. The following measures shall be taken to ensure there are no undue adverse effects to wildlife:

Rafinesque's Big-Eared Bat (*Corynorhinus rafinesquii*): The operator may choose one of the following two options:

Option 1: The operator may assume the presence of maternity roosting trees within all isolated and non-isolated wetlands, buffer 1,000ft from all wetlands, and avoid tree clearing in these areas from May 1st to July 31st. Tree clearing may occur in uplands and isolated wetlands, designated as Affected Area, during the rest of the year.

Option 2: Prior to initiating tree clearing activities on this site, the operator may survey for maternity roosting trees within the site, buffer 1,000ft from the identified maternity roosting trees, and avoid tree clearing in these areas from May 1st to July 31st. Tree clearing may occur in uplands and isolated wetlands, designated as Affected Area, during the rest of the year. For the purpose of this term and condition, a maternity roosting tree is defined as a tree standing 59 to 82 feet tall with a large, hollow cavity, approximately 4 feet tall by 1 foot wide. The operator shall provide a survey map of the location of any identified roosting trees with associated 1,000ft buffer(s) to the Department upon completion of the survey.

Tricolored Bat (*Perimyotis subflavus*): As of the issuance of this permit, the tricolored bat is not a federal or state-protected species; however, it has been proposed to be added for federal listing. The operator shall consult with the U.S. Fish and Wildlife Service within thirty (30) days of the tricolored bat's federal listing (if/when approved) and shall comply with the USFWS's recommendations.

Red-Cockaded Woodpecker (*Leuconotopicus borealis*): If a red-cockaded woodpecker, or their cavity trees, are observed on the site, the operator shall immediately notify SCDES, the SCDNR's Red-cockaded Woodpecker Project (803-260-4132; RCW@dnr.sc.gov), and the USFWS. The operator shall consult with these agencies before proceeding any further towards that area.

Spotted Turtle (*Clemmys guttata*): The operator may initiate land disturbing activities (to include the clearing of vegetation) at any time during June 1st and January 14th. If the operator initiates land disturbing activities in an area between January 15th and May 31st, the operator shall install silt fencing between mining operations and the delineated wetlands shown on the mine map; the silt fencing barrier shall include 45-degree arms to direct spotted turtles away from the mining operations. When feasible, the operator shall install the silt fencing between November 15th and January 15th. However, if the operator is unable to install the silt fencing during this period, then the operator shall check the perimeter of the silt fencing twice daily for fourteen (14) days prior to the initiation of mining activities in that area. The silt fence shall be monitored weekly to ensure the integrity of the fence and for the presence of spotted turtles. If a spotted turtle is observed at any time, the operator shall notify the Department and consult with the State Herpetologist (843-527-8448).

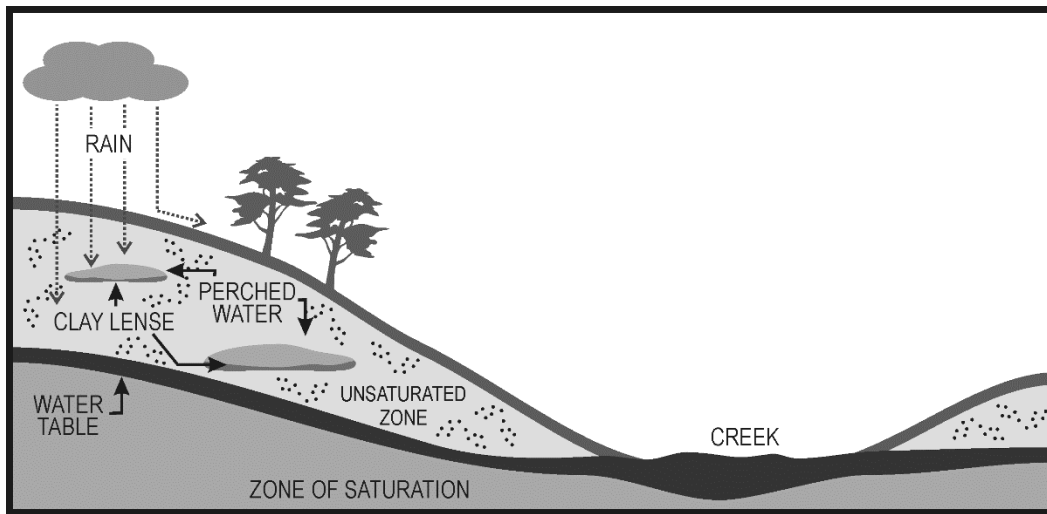
The operator shall conduct a survey between February 15th and April 15th prior to the initiation of mining activities in isolated or non-jurisdictional wetlands at any time to determine the presence of spotted turtles. Survey results should be submitted to SCDNR and further coordination occur if spotted turtles are found to be present on-site.

Some of these conditions are also detailed in subsequent sections.

Section 3: Groundwater & Water Quality

Groundwater is water that collects or flows below the soil surface. The main source for groundwater is rainfall. Runoff from rainwater can go directly into water bodies or seeps into the ground. When water soaks (infiltrates) into the ground, gravity pulls the water down through the spaces between the soil particles and rocks until it reaches a depth where all of the spaces are filled with water, or saturated. The water level where the soils are saturated is called the water table. The area above the water table is called the unsaturated zone, the area below the water table is the saturated zone.

As shown in the following diagram, the water table is not always at the same depth below the land surface; the level moves up or down depending on rainfall and the rate water is removed (e.g., irrigation, industry, well). The unsaturated zone may contain pockets (lenses) of tightly bound clayey soils that do not allow the water to infiltrate. In this situation, the water will collect (perch) on the top of these impermeable lenses. This is "perched water" and is not the true water table along the top of the saturated zone.



The Orangeburg Limestone Quarry will be operating as a “wet” mine. As the overburden above the limestone is being removed, the outer edge of the pit will be developed and dewatered, however, the pit itself will remain “wet” and the groundwater levels will not drop below two (2) feet above the top of limestone layer at the perimeter compliance wells. With these limited amounts of dewatering, potential impacts to groundwater offsite are not anticipated at this mine site.

Seven (7) groundwater monitoring wells shall be installed prior to mining activity being initiated at the site and will be measured monthly. Groundwater elevations shall be normalized to mean sea level, and hydrographs plotted for each monitoring well. This data shall be submitted quarterly to the Division of Mining and Solid Waste Management by the 28th of the first month of the following quarter.

Additionally, no chemicals will be used in this mining operation to treat water. Impacts to the quality and potability of groundwater is not anticipated and unlikely from this mining operation.

Section 4: Wetlands

The operator shall maintain a minimum 50-foot undisturbed buffer between all land disturbance activity and any USACE jurisdictional wetlands on-site. This buffer shall be permanently flagged prior to the initiation of any mine activity. The flags shall be maintained throughout the active mine operation of the site. The operator is allowed to discharge accumulated stormwater—that meets NPDES permit limits—into wetlands through a regulated NPDES outfall.

Section 5: Public Safety

Public safety around a mine site is always a concern. A primary method to ensure public safety is controlling access to the mine property. A gated entry and warning signs will minimize physical hazards to persons and adjoining land uses. Additionally, natural barriers (e.g., streams, wetlands, vegetation) and constructed berms provide a deterrent for accidental entry into a mine site. The combination of these barriers and site characteristics will limit public exposure to the operations at the site.

Section 6: Traffic

A common concern expressed is the increase of truck traffic hauling mined material. The SC Mining Act only authorizes SCDES to regulate truck traffic on roads *inside* the permit boundary. SCDES can only evaluate impacts to public roads as it pertains to the physical effects from the mining operation (e.g. blasting, undermining, etc.). It does not give SCDES the authority to regulate or restrict vehicle traffic outside the permit boundary or deny a permit based on the potential increased use of such roads.

Other concerns with road systems, including use of the roads or general wear-and-tear issues, are under the jurisdiction of S.C. Department of Transportation (SCDOT), S.C. Public Service Commission, or Orangeburg County Department of Public Works.

Section 7: Blasting

Surface blasting requirements are regulated in R.89-150. All blasting is required to be performed by a S.C. licensed blaster and be within 1.0 inch per second peak particle velocity (PPV) at the closest inhabited structure, which is considered more than adequate to protect the structure's integrity.

Per Regulation 89-150.I., to provide for adequate public safety, SCDES is required to establish a minimum distance between blasting and any structure not owned by the operator. Typically, for a new ("green-site") quarry, we set that distance no closer than 1,000ft. The applicant has indicated on the MR-400 that they will observe at least 1,000ft from blasting to the nearest inhabited structure, in order to satisfy that part of the Regulation.

Ground vibrations, due to blasting, may be felt outside of the permit boundary. Federal guidelines on surface blasting state that a PPV of 2.0ips is considered safe for structures; South Carolina goes one step further and limits PPV to 1.0ips (Regulation 89-150.E.) at the closest structure for an additional measure of safety. So, while ground vibrations may be felt offsite as an annoyance, it is not considered intense enough to cause damage to structures or roads. Additionally, the air blast from a quarry may be heard off-site, but would not be strong enough to produce damage to residential structures.

R.89-150.A. requires the operator to perform a Pre-Blast Survey of inhabited structures that are within one-half mile of any blasting at the landowners' approval. A copy of this report will be given to the operator, the landowner, and SCDES.

Section 8: Air Quality

Dust: Fugitive dust emissions from the proposed mining activities has been a concern with this proposed mine. The Division of Mining and Solid Waste Management is responsible for regulating dust emissions from a mining site. Sources of dust include: moving equipment, handling of the mineral resource and overburden, truck traffic, and wind erosion.

At active sites, the major contributors of dust are equipment and truck traffic. Properly constructed access roads with dust suppression methods (e.g., water trucks, sprinklers) is the most effective way to manage dust from traffic. The operator will use a watering truck. The frequency of watering will depend on weather conditions and volume of traffic.

Wind erosion of areas stripped of vegetation and material stockpiles are also sources for potential dust. The operator, where feasible, shall establish vegetation in non-active mine areas barren of vegetation to stabilize the soil and reduce potential for wind erosion and dust emissions. The combination of minimizing land disturbance and re-vegetation will lessen the potential for windblown dust.

Health Risks with Dust Exposure: Health risks are mitigated by controlling the dust at the source. Source control measures include best management practices, such as water trucks, dust suppressants, sprinklers, etc.

MSHA is responsible for protecting the health of workers at mine operations. As part of their duties, MSHA monitors exposure of workers to dust. Results from monitoring show the risk is greatest within work environments involving processing (crushing/grinding) and operating equipment. If a problem concerning overexposure exists, MSHA would require the company install some type of engineering control to eliminate the concern at the source.

Meeting MSHA requirements to control dust in the immediate work area will further minimize any exposure risk outside the permitted area. No elevated exposure risk is anticipated from the mine beyond the property line.

We are exposed on a daily basis to dust from non-industrial sources such as dirt roads, fields, and bare lots. Although the proposed mining operation does not add any new hazards, engineering and administrative controls have been designed to minimize the production of airborne dust. Based on the proposed controls at the mine (natural buffers, distance from property lines, controls on the haul road), an increase in the exposure to silica or other materials beyond the property line is not anticipated.

Information on air monitoring in South Carolina is available on SCDES's Bureau of Air Quality website at:

<http://www.scdhec.gov/HomeAndEnvironment/Air/AmbientAir/>.

Section 9: Threatened or Endangered Species

The S.C. Mining Act and Regulations do not allow an undue adverse effect on wildlife or freshwater, estuarine, or marine fisheries. SCDES has interpreted an "undue" effect as an effect on a federally recognized endangered or threatened species that cannot be properly mitigated for.

According to the Endangered and Threatened Species Preliminary Biological Assessment Report conducted on August 31, 2023 provided by synTerra, comments received by the South Carolina Department of Natural Resources (SCDNR) and the National Fish and Wildlife Service (NFWS), there are five (5) threatened, endangered, or at-risk species believed to inhabit the general area. These species include: the Rafinesque big-eared bat, the northern long-eared bat, the tri-colored bat, the red-cockaded woodpecker, and the spotted turtle. Following recommendations from synTerra, SCDNR, and the NFWS, the Department has conditioned the mine operating permit with measures that shall be taken to ensure that there are no undue adverse effects to wildlife. Please see Section 2 of this document for more information regarding these conditions.

Section 10: Cultural and Historic Sites

If archaeological materials are encountered prior to or during the construction of mine facilities or during mining, the S.C. Department of Archives and History and SCDES should be notified immediately. Archaeological materials consist of any items, fifty years or older, which were made or used by humans. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, oyster shell, worked wood, bone and stone, metal and glass objects, human skeletal remains, and concentrations of charcoal and stones below the ground surface. These materials may be present on the ground surface and/or under the surface of the ground.

Per the *Cultural Resource Reconnaissance Survey of the Orangeburg Tract* performed by Brockington Associates, Inc. dated September 2021, and the concurrence letter provided by the State Historic Preservation Office (SHPO) dated August 3, 2021, six (6) archeological sites (38-OR0417-38OR0422) within the proposed mine site. Two (2) of those sites (38OR0420 and 38OR0421) have been recommended for either additional testing to determine if they meet the criteria for listing in the Register of Historic Places (NRHP) or to be protected from ground disturbance via a minimum 50' buffer. The operator shall maintain this 50' buffer around both of these resource sites unless otherwise authorized by SCDES and SHPO.

Section 11: Community/Quality of Life

Comments were received regarding the potential impacts of the proposed mine on the local community's way of life. SCDES is committed to fulfilling the agency's responsibilities to protect and promote the health of the public and the environment. Through the exercise of those responsibilities, SCDES works to improve the quality of life of individuals and communities. However, the agency may only act within the limits of its statutory and regulatory authority. Through statutes and regulations, the General Assembly has established conditions and criteria the agency uses to ensure public health and environmental protection. SCDES is required to make its permit decision based only on technical review of the permit application and the Act and Regulations in place at the time of SCDES's review.

Section 12: General Opposition

SCDES received several comments requesting denial of a permit. While SCDES appreciates all comments received, it is important to recognize that we do not have the authority to make permitting decisions based on community, business, employee, or customer approval or disapproval of a proposed operation. SCDES is required by law to make a decision based only on the technical review of an application and the regulatory requirements in place at the time of that review. In 48-20-70 of the Act, SCDES is required to grant an operating permit to the applicant if there are no technical reasons to deny the permit.